DISCRETION AND INFLUENCE AT THE FRONT LINES:
THE CASE OF EMERGENCY MEDICAL SERVICES

by

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A dissertation submitted to the
Graduate School – Newark
Rutgers, The State University of New Jersey
in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy
Graduate Program in Public Administration
written under the direction of
Professor Frank J. Thompson
and approved by

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Newark, New Jersey
May, 2011
ABSTRACT OF THE DISSERTATION

Discretion and Influence at the Front Lines: The Case of Emergency Medical Services

By Alexander C. Henderson

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Understanding the factors that influence the behavior of front-line emergency medical services (EMS) providers is critical as these individuals can have a substantive impact on the health of the patients they treat. EMS providers can be examined as “street-level bureaucrats,” focusing specifically on the interrelationships between rules, discretion, and influence that surround the primary tasks of the occupation. To begin a conversation on this critical public service a mixed methods research design is employed, using qualitative data to inform quantitative data collection and analysis. The initial phase consisted of content analysis of policy documents, 30 semi-structured interviews, and three focus groups. A web-based survey was then employed to measure variables of interest emerging from the qualitative data collected.

Results indicate that substantial rule complexity is the norm. General rule-abidance is notable, especially in cases of extremely minor or very severe medical or traumatic emergencies. Where discretion is unrestricted sources of influence such as patient characteristics, peers and supervisory staff, medical command physicians, and situational factors were notable. In other cases rules were not sufficient to regulate behavior, and rule application was complicated by factors such as paramedic communication skills, patient identity, and bystanders. Deviation from rules occurred in several instances as a result of influences from patient need, occupational culture, and peer paramedics. Results from quantitative analysis show support for several
relationships of interest. Experienced paramedics are increasingly likely to bend rules in the face of patient benefit, and paramedics who are better able to understand the perspectives of others are likely to exhibit a more favorable rating of patient worthiness.

Theoretical contributions of this research include refinement of theories of street-level bureaucracy with attention to the nature of discretion in the unique context of EMS. Additionally, this study serves to bridge a gap between disparate areas of empirical research in the field of EMS, bringing together clinical, educational, and systems-level emphases. Practical contributions of this research improve patient care and outcomes by aligning discretionary behavior with clinical goals and patient outcomes, and the generation of additional considerations for improving initial professional education and on-going training of front-line EMS providers.
ACKNOWLEDGEMENTS

Several individuals made this work possible, and acknowledging their contribution is the least I can do to thank them. The impetus for this study was a conversation with my dissertation director, Dr. Frank Thompson. His sustained and focused interest in both health policy and management and street-level health care was instrumental in motivating this research. I cannot thank him enough. Likewise, committee members Drs. Norma Ricucci, Sanjay Panday, and Ed Dickinson provided crucial guidance and expertise along the way that substantively shaped the end product. Each of my committee members served as exemplars of rigorous scholarship and dedication to public service, and I am grateful for their help.

My sincere thanks go to the paramedics who participated in this study. These individuals volunteered their free time to speak with me about their professional experiences, and did so with great energy and enthusiasm. I am also indebted to my primary contacts at the three participating EMS agencies who endured a barrage of phone calls, emails, and site visits for more than a year despite both personnel shortages and the constraints of tight budgets. Thanks also goes to the administrators and paramedics at Lafayette Ambulance, Narberth Ambulance, and Second Alarmers Rescue Squad who were generous with their time and input as I pilot tested the research instruments.

Several people – a group of individuals that I count as both incredible friends and excellent clinicians – were instrumental in helping me understand the intricacies of prehospital care that were in more than a few instances beyond my grasp. I surely could not have fully comprehended many of the technical aspects of EMS without assistance from Aaron Bell, Jeff Bell, Tanya Bell, Liz Powell, Chris Reif, and Steve Roskos. This
same group – with notable additions of John Bell, Tadd Schwarz, and John Morrison – provided enough levity on trips to Vermont and Ohio to last the whole year. And, though they were several states away, Jonathan Jimenez and Joe Monestere always found humorous ways to provide encouragement.

My last four years at SPAA have been filled with great mentors and friends who have made the process more than enjoyable. Dean Marc Holzer and Associate Dean Judy Kirchhoff have been excellent mentors, and I thank them for their time, wisdom, and patience. The daily input and words of encouragement from Dan Bromberg, Atta Ceesay, Étienne Charbonneau, Michele Collins, Marc Fudge, Tia Sheree Gaynor, Ashley Grosso, Peter Hoontis, Weerasak Krueathec, Yuguo Liao, Aroon Manoharan, and Anne Visser are more appreciated than they will ever know. This list is surely incomplete, and I sincerely thank any that I may have missed.

In more than a few instances the Kobin family was instrumental in bringing new energy to this endeavor. My nieces Jamie, Jessie, and Jenna were more than willing to remind me on many occasions that the not-so-serious things in life can be just as important as writing a dissertation. And, special thanks go to my sister Julie and brother-in-law Jeff for providing a home away from home in New Hampshire.

Finally, words cannot express my thanks for the love and support provided by my parents. Despite enormous difficulties they consistently found the strength and energy to motivate me. We’ve been through so much, and I hope I have made you proud.

ACH
April 2011
Newark, New Jersey
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CHAPTER 1: INTRODUCTION

Understanding the factors that influence the behavior of front-line emergency medical services (EMS) providers is critical as these individuals can have a substantive impact on the health of the patients they treat. As the initial line of emergency treatment in a larger health care system, EMS providers are tasked with providing patient care in urgent, complex, and uncertain situations, and transportation of patients to definitive care. The potentially life-saving interventional and pain-reducing palliative treatments provided by EMS personnel are inarguably a vital social service, one that is “…a central component of the public health system” (David & Harrington, 2010, p. 604). Indeed, for patients in medically precarious situations, “…the decisions made and actions taken by EMS personnel may determine the outcome as much as the subsequent hospital-based care – and may mean the difference between life and death” (IOM, 2007, p. 1). In addition to the direct and immediate impact on patient health, EMS providers act as a primary entry point to the larger emergency medical care system of hospitals and medical professionals. As such, the quality of care rendered in the field can impact the nature of continued patient care.

Background and Motivation

The Institute of Medicine of the National Academy of Sciences (IOM) estimates that of the 114 million visits to emergency departments (ED) every year, approximately 16 million of these patients arrive via ambulance (2007, pp. xiv). These patients can often present with significant illnesses, with approximately 43% of all hospital admissions
arriving through the ED (IOM, 2007, p. xiv). This staggering volume of service is handled by EMS providers working for varying types of organizations, including local government as well as private nonprofit and for-profit agencies. The Bureau of Labor Statistics (2008) estimates that more than 207,000 of the most common types of EMS providers, emergency medical technicians (EMTs) and paramedics, are employed across the United States. This figure that does not include the hundreds of thousands of volunteer emergency medical technicians, paramedics, and other public safety professionals who provide emergency medical care (e.g., cross-trained firefighters and police officers). The American Ambulance Association estimates that there are more than 840,000 EMS providers in the United States (2009). When considered together, the vital nature of this social service, the substantial volume of services provided, and the palpably large body of individuals providing care, it is evident that EMS is worthy of scholarly attention through focused research.

**Statement of the Research Problem**

Although a substantial body of empirical research on the topic of EMS has been amassed from the perspectives of clinical medicine, EMS provider education, and “systems” level research, there is a dearth of research into the behavior of EMS providers at the front lines. Specifically, there is a lack of understanding of the internal and external sources of influence that act on these service providers as they provide crucial public services. Though clinical, educational, and systems-level research are all vitally important to understanding EMS, and will undoubtedly continue to investigate critical questions of service provision, they do not serve to fully illustrate this core public service.
Missing from this body of empirical research is a specific focus on discretion at the front lines and the various sources of influence that have a salient impact on how EMS workers behave.

EMS providers, in their capacity as front-line public servants, can be analytically examined as “street-level bureaucrats” (Lipsky, 1980). Previous empirical research into the behavior of street-level bureaucrats has focused on several distinct occupational areas, including law enforcement, nursing, front-line welfare workers, and teachers (Lipsky, 1980; Maynard-Moody & Musheno, 2003; Riccucci, 2005; Vinzant & Crothers, 1998). This valuable empirical research has uncovered the substantial discretion found in many front-line jobs, varying sources of influence on front-line employees, issues of monitoring employee behavior and compliance with supervisory and organizational directives, the nature of legitimacy of the actions of street-level bureaucrats in a democratic context, and the social processes that shape collective actions of street-level bureaucrats.

Many of these theories of discretion and influence are applicable to individual and group functioning in EMS organizations. Importantly, it has been shown that there is a relationship between the fundamental tasks of certain professions and the behavior of individuals fulfilling those roles (Hill & Hupe, 2003, p. 477). Thus, despite the large body of literature on street-level bureaucrats, it is important to examine EMS providers and not allow for the imposition of theories of behavior from other professions that may not be applicable.
Significance of the Research

Theoretical Implications

Several substantive contributions to theory will result from this avenue of research. First, this research will contribute to a better theory of street-level bureaucracy with attention to the nature of discretion in the unique context of EMS, and will make contributions to the theoretical understanding of rule-abidance and deviation. Much of this research on street-level bureaucrats places the concept of discretion at the fore, thus situating it within one of the most important debates in the field of public administration, namely the exercise of administrative discretion in a democratic system of government. This debate as to the appropriate extent and character of administrative discretion is certainly not new; the famous debates between Carl Freidrich and Herman Finer occurred nearly three quarters of a century ago (Finer, 1941; Freidrich, 1940). However, due to their intrinsically normative nature, these questions endure.

Second, it will allow for the identification of those sources of influence that have an increasingly salient effect on EMS provider behavior. The substantial body of research that has been amassed examining other street-level professions has identified how varying sources of influence can shape front-line workers, yet these same sources of influence may not be as important in the EMS profession. Last, this research will cast new light on a vital but woefully neglected area of public administration, namely the field of EMS. Past research into street-level bureaucrats has not focused on individuals providing this specific service, thus leaving a gap in knowledge to be filled.
Practical Implications

In general terms, systematic examination of discretion in EMS and the impact of various sources of influence could be useful in improving service and in the design of organizational arrangements and human resources systems. An improved understanding of the behavior of EMS providers may have positive implications for improving patient care and outcomes by aligning discretionary behavior with clinical goals, and may initiate the generation of additional considerations for improving initial professional education and ongoing training of front-line EMS providers. This research could contribute to, at least partially, several areas of inquiry put forth by the National EMS Research Agenda (2001). These include “ensuring proper and effective patient care,” “improving the quality of EMS care and systems,” “developing valid tools and methods for measuring the quality of EMS care and systems,” and “learning effective ways to provide professional education, training, and retraining that will maximize skill acquisition and retention and improve practice patterns and patient outcomes” (NHTSA, 2001, p. 12). Extension of the results of this study to practice may have a real impact on both organizational functioning and individual provider behavior.

Purpose of this Research

The purpose of this research is to empirically examine the behavior of front-line workers in EMS organizations during the course of service interactions. In the words of Prottas (1978), it is the purpose of this research to direct “. . . our attention to a very large class of people charged with grave public responsibilities who routinely behave in ways that are essentially unexplained” (p. 288). Though the role of the street-level bureaucrat
has been examined continually since its conceptualization more than three decades ago,
and the professional field of EMS has been subject to investigation by researchers
interested in clinical medicine, health care provider education, and system performance
and allocative efficiency, research examining the intersection of these two areas of
research has not emerged.

As will be discussed in depth, this research situates EMS providers in a larger
context of “governance,” and seeks to account for potentially numerous and varied forms
of influence on front-line service providers. While acknowledging the possibility of
influence from organizations, actors, and policies from all levels of government, citizens,
and varied situations, this research does not attempt to provide a comprehensive and
complete view of the policy implementation process that includes this multitude of
organizations and people. Such an investigation of all possible rules, regulations, and
policies that serve to guide bureaucratic behavior in EMS organizations would certainly
extend beyond the scope of a single study. Instead, it is the goal of this research to probe
and examine the final stage in the implementation process, the behavior of EMS
providers as they engage in their daily activities of caring for the sick and injured.

**Focus of this Research and Data Collection Methods**

This research will specifically focus on experienced front-line paramedics
providing prehospital emergency medical care in the State of Pennsylvania. Serving a
population of over 12 million (U.S. Census, 2000), EMS providers are prevalent in
Pennsylvania with substantial numbers of both career and volunteer personnel responding
to millions of calls for service every year. Three EMS agencies were chosen as
organizations of interest for reasons of both substantial call volume and specific organizational characteristics, and all study participants were actively serving as either full or part-time personnel for one of these three organizations. Taking a first step in filling gaps in knowledge surrounding EMS, this study employs mixed qualitative and quantitative data collection methods to study concepts of discretion and influence during service interactions.

**Outline of the Dissertation**

First, the role of the street-level bureaucrat will be discussed with a focus on the conceptual uniqueness of this position within service organizations. This discussion will continue with review of the concept of discretion and the nature of discretionary action in street-level professions. The nature of managerial oversight in front-line service will then be highlighted, with a focus on bureaucratic autonomy and relative freedom of action. The discussion of street-level bureaucrats will conclude with a review of the numerous sources of influence that shape discretionary behavior. An overview of the substantial body of research that has been amassed on the nature of street-level work in police departments, welfare offices, classrooms, hospitals, and other areas of social service will the presented and will serve as a foundation for this study. Though the focus and functions of EMS agencies and providers are intrinsically different from these other services, important role-specific similarities do exist that allow for in-depth examination.

Second, general characteristics of EMS organizations and roles of EMS providers within these organizations will be discussed. This discussion will include a focus on the historical development of EMS, a discussion on key aspects of present day EMS
organizations and systems of service provision, and a brief review of past empirical research on prehospital health care. As noted previously, this research is focused on the important areas of clinical medicine, health care provider education, and broader systems-level research. This section will conclude with a discussion on perceived gaps in knowledge that can be addressed from the perspective of the field of public administration and a foundation of street-level bureaucracy. Each of these distinct topics of EMS and street-level bureaucracy is represented by a rich and diverse body of literature originating from a wide array of scholarly disciplines. Every attempt will be made to be as thorough as possible in identifying both common strains and unique contributions.

Third, research methodology, design, and hypotheses will be addressed. This chapter will begin with a preliminary discussion on the nature of mixed methods research, followed by the research questions, selection of organizations, and sampling within participating organizations. Methods of data analysis, including review of pertinent policy documents, in-depth interviews, and focus groups are then outlined, followed by an overview of data analysis using grounded theory methods. Next, preliminary themes emerging from the first phase of the research will be discussed, focusing on the linkages between these themes and the development of two quantitative models seeking to further investigate these themes. The measurement of the dependent variables used in these models is then outlined, followed by hypotheses, review of the independent variables employed in the study, and a review of the estimators used.

Chapter 5 will present an analysis of pertinent policy documents that are employed by front-line EMS providers. This chapter will focus specifically on those
areas of discretionary action open to street-level bureaucrats working in EMS organizations. These documents include clinical protocols from state, regional, and local agencies, and organizational policy documents including personnel manuals and standard operating procedures. This review of policy literature indicates that rules are prevalent in EMS, technically complex, and are laced with areas of both purposefully created discretionary latitude and areas left open and unregulated.

Chapters 6, 7, and 8 will review the results from both one-on-one interviews and the focus group discussions. Chapter 6 will begin with a discussion on the use of rules in EMS, methods by which rules are referenced, and the instances in which multiple layers of rules are needed to effectively treat patients. The discussion will continue with an example of an emergency in which there was a close match between clinical rules and patient needs. Both the example provided and other notable cases in which rules and patient need were matched resulted in relatively little difficulty in determining appropriate courses of treatment. The chapter will continue with a discussion of those sources of influence that are important in the development of a front-line EMS workers ability to internalize rules and professional norms of behavior. Next, situations in which rules may not fully address all aspects of an emergency medical call are discussed with an emphasis on those sources of influence that shape this unrestricted discretionary behavior. These include other street-level bureaucrats, medical command physicians, patient characteristics, and other contextual factors.

Chapter 7 will outline those cases in which rules and actual patient need were not easily aligned. This difficulty is attributable to both the nature of EMS – with tasks based in less directly observable physiological or psychological needs of patients – and to other
sources of influence that shaped paramedic perceptions of patient needs. In the former, paramedic communication skills are found to be key in discovering important aspects of a patient’s past medical history, aspects of the current incident that give clues that may aid in considering differential diagnoses, and other contributing factors that may serve to make the process of selecting the right medications and procedures for a particular patient. In the latter outside sources of influence may serve to make this process of determining patient need more difficult. These can include a paramedic’s assessment of the patient’s identity, a tentative proposition that was tested during the one-on-one interviews through use of a clinical scenario. Results of paramedic treatment plans for these hypothetical patients indicate that the patient’s identity may play a role in determining a specific patient treatment plan. This chapter will conclude with a discussion of influence that may come from other individuals who have a close relationship with a patient or specific information about a patient’s medical history or present condition.

Chapter 8 will outline those cases in which tension existed between clinical rules and patient need, a tension that in many cases spurred paramedics to deviate from rules, policies, or procedures. This chapter will begin with a general discussion from focus group conversations about deviation, followed by four cases in which paramedics outlined specific rule deviations. Two of these cases were primarily spurred directly by patient need, whereas in two additional cases paramedics placed concepts of professional norms or occupational culture as the primary cause. A final case will outline deviation as a result of peer paramedic influence. Patient need was the primary cause in the first two cases; however, the final three cases also include clinical need as a key variable.
Chapter 9 will present the results from quantitative analysis of survey data collected from all paramedics employed by the study organizations. Two ordered probit models examining variation in rule-bending tendencies and conceptions of patient worthiness will be presented along with interpretation of results through examination of predicted probabilities for the dependent variables created through changes in key independent variables. Results of the first model indicate that rule-bending tendencies with a direct and tangible benefit to patient outcomes increase as tenure in the organization increases and levels of conformity decrease, while the second model indicates that paramedic perceptions of patient worthiness increase as their perspective-taking abilities increase.

Chapter 10 will begin with a discussion of the results from all four data collection methods and key findings. Next, contributions to both public administration and EMS literature will be outlined, followed by a discussion on limitations of the study and implications for future research. The dissertation will end with concluding comments on the nature of EMS and empirical research studying this core public service.

A review of pertinent literature on both street-level service provision and EMS is necessary to provide a substantive theoretical and empirical foundation for this study. First, however, some clarification on terminology is necessary to reduce the potential for confusion of meaning. The terms “street-level bureaucrat,” “front-line worker,” or an alternative combination of the terms will be used interchangeably throughout this study. This is intentional for purely stylistic purposes. Additionally, the term “EMS provider” and “provider” will also be used to describe a street-level employee working in an EMS organization. These individuals may also be identified using the formal titles of two types
of front-line workers in EMS agencies, including “emergency medical technician” or “paramedic,” or the shortened version, “medic.” Finally, use of the term “bureaucrat” or “bureaucratic” throughout this research reflects a neutral conceptualization of the term, and is not in any way meant in a pejorative or derogatory manner.
CHAPTER 2: STREET-LEVEL BUREAUCRATS

The purpose of this chapter is to discuss the unique role of street-level bureaucrats in the provision of public services. As a class of public servants, individuals occupying front-line positions in social services organizations enjoy potentially substantial discretion as they perform necessary functions, do so with relatively little managerial oversight, and respond to varying and potentially multiple types of influence. Though a substantial body of exceptional research has been generated on street-level public service, several gaps in knowledge remain. These gaps are a result of both the conceptual and methodological simplification often necessary for empirical research. The former includes, for example, the tendency for street-level studies to focus explicitly on one type of influence on discretionary behavior. Although many researchers are open to multiple sources of influence, several artificially simplify the complex interactions among individuals, rules, and situations. Also somewhat limiting is the tendency to employ single research methods in the data collection process. While constraints on research are in many cases inevitable, the use of multiple methods may allow for greater understanding of the topic being examined. Last, studies of street-level bureaucracy have not yet focused on EMS, a core public function assisting tens of millions of people every year.

This study seeks to begin to address many of these gaps by allowing for multiple sources of influence to emerge from data collected using both qualitative and quantitative research methods. This chapter will begin by defining and delimiting the concept of a
street-level bureaucrat, will then discuss each of these role-specific characteristics in turn, and will then review empirical research focusing on street-level public service.

Before engaging in a review of the literature, a brief discussion of concepts of policy implementation and governance are necessary to provide a foundation for this study. Though EMS agencies can be clearly identified as formal organizations, created through legislative action or incorporation as a private entity, these organizations, and more specifically the actors in these organizations, are part of much larger and more comprehensive systems of organizations and individuals. More specifically, EMS agencies work within both vertical, intergovernmental relationships, and horizontal, interagency relationships. A brief discussion of policy implementation and the concept of “governance” will help to clarify these formal and informal linkages that exist between organizations and individuals providing these services. Recent research on street-level bureaucrats (Hupe & Hill, 2007) has been grounded in these perspectives, allowing for increasingly inclusive examination of these phenomena.

**Policy Implementation and Governance**

Pressman and Wildavsky’s (1973) seminal work on policy implementation brought attention to the nature of the intrinsically complex multiorganizational (and multi-actor) collaboration in the enactment of public policy. More recent conceptual work has further expanded, and clarified, some of the important issues brought to the fore in the intervening decades. Hjern and Porter (1981), recognizing both a disconnect between research involving single organizations and program outcomes and the increasing complexity of service provision, proposed an alternative unit of analysis to the single
organization or individual. They outlined the concept of an “implementations structure,” consisting of portions of several organizations that are responsible, as their principal task, for engaging in specific actions that contribute to the implementation of a specific program (Hjern & Porter, 1981, p. 213). Perhaps most important, the individuals working within implementation structures can be influenced by organizations, processes, and people outside of their “home” organization, thus requiring the inclusion of these various factors in the study of implementation.

Likewise, Lynn, Heinrich, and Hill (2000) noted that consideration of single organizations without explicit attention to linkages with the wider organizational environment will in most cases be insufficient for serious scholarly investigation. Though this concept is not a new one to organizational studies (March & Simon, 1958; Thompson, 1967), it serves as a foundation for their conceptualization of governance as “…a schematic or heuristic framework that suggests how the values and interests of citizens, legislative enactments and oversight, executive and organizational structures and roles, and judicial review might be linked through a dynamic and interactive process” (Lynn, Heinrich, & Hill, 2000, p. 239). Perhaps most important to this study is the impact that all of these factors have on individuals working at the front lines. At their essence, these factors serve to “…create constraints and controls (both ex ante and ex post) and that confer or allow autonomy and discretion on the part of administrative actors, all towards fulfilling the purposes of the enacting coalition” (Lynn, Heinrich, & Hill, 2000, p. 239).

Finally, Hill and Hupe (2003) noted that in some cases “… low-layer parties … have a legitimate right to make [decisions regarding implementation]” (p. 477). This
perspective conforms more to the “bottom-up” approach (Elmore, 1985), and serves to elevate the status of those involved in the implementation process by acknowledging some amount of expertise or specialization in the specific policy area. In the end, the authors note that implementation of research should seek “… to identify the extent to which policy rule structures allow de jure participation, in other words about the extent to which delegation of power is formally acknowledged … [and] recognize de facto discretion regardless of what rule frameworks suggest” (Hill & Hupe, 2003, p. 477). Combined, these concepts of legitimate goal-setting, policy formulation, and implementation at the lowest organizational levels of government (e.g., street-level service provision) are conceptually central to this research.

Defining the Street-level Bureaucrat

There is general agreement among those studying the topic on the definition of a “street-level bureaucrat.” Lipsky (1980), in his seminal work on the subject, identified street-level bureaucrats as those “…who interact directly with citizens in the course of their jobs, and who have substantial discretion in the execution of their work…” (p. 3). Similarly, Vinzant and Crothers (1998) define a street-level bureaucrat as “…those who are directly responsible for service delivery to the public and who exercise a significant level of discretion in carrying out their responsibilities” (p. 12). Riccucci (2005) defined street-level bureaucrats as those workers “…who have direct, face-to-face contact with… clients” (p. 9). It is clear from these several definitions that the two key components of street-level work consist of both direct service provision to the citizens, and some amount of discretion or latitude in the way that these services are provided. Though discretion is
not uncommon in government – administrative discretion exists to some degree at all levels of bureaucracy – it is the special nature of the combination of discretion, lack of direct managerial oversight, and face-to-face provision of services that makes street-level bureaucrats truly interesting and critical to the provision of public services. Keiser (1999) noted this exceptional nature of street-level bureaucrats, and specifies that “…human service bureaucracies must deal with especially complex inputs – they process people” (p. 88).

The discretion intrinsic to these positions makes them important to public service provision, something that becomes even more pronounced when considering the volume of citizen interactions with street-level bureaucrats. By virtue of their hierarchical position and job functions street-level bureaucrats have, in general, the most frequent and sustained interactions with citizens of any other position in government (Goodsell, 1981). Brehm and Gates noted that “[d]aily, nearly every citizen in the United States comes in contact with a representative of the local, state, or federal bureaucracy in the form of a police officer, firefighter, or postal worker. Others will see case workers and social workers, soldiers, foresters, or health and safety inspectors” (1997, p. 1). As the face and personality of public services at the federal, state, and local level, street-level bureaucrats are critically important to the success of public sector programs.

It is important to note that street-level workers constitute an “…analytically unique category…” of public servant that can be viewed as different and distinct from other types of public servants, and can be “…understood in terms generic to the role rather than in organizationally specific, ad hoc terms” (Prottas, 1978, p. 288). Though myriad organizations employ individuals in street-level positions, many providing
markedly disparate services, they can be understood and studied as intrinsically different from bureaucrats at other levels of organizations. Indeed, street-level professions in vastly different organizations may exhibit more similarities to each other than to those at other levels in their respective organizations. All, however, serve as boundary-spanners between the organization and citizens who benefit from their services (Hupe & Hill, 2007; Prottas, 1978; Wenger & Wilkins, 2008).

Though they can be understood as a conceptually unique category of public servant, street-level bureaucrats are not, in fact, rare or new. Though the formal study of street-level bureaucrats as such is just over three decades old, this type of role within the public service has a substantial history. As Waldo noted in *The Enterprise of Public Administration*, civilization and administration are inextricably linked, and that “[t]he increase of ordered complexity that is an inevitable concomitant of civilization, in a way its defining feature, is in large part made possible by administrative means” (1980, p. 2). Thus, any administrative arrangement that provides services to citizens, no matter how simple or complex, young or old, will necessarily utilize some position or set of positions that will work directly with citizens.

It is not surprising, then, to learn that these positions have existed at the interface of administration and society throughout recorded history. Gladden (1972) noted that many of the core services of government, including education, public safety and security, providing for the public health, and distribution of food to the poor have existed for millennia. Citing written historical accounts of administrative activities of antiquity, Gladden (1972) noted in his discussion of public administration during the Hellenistic Age that “. . . social services were coming increasingly within the scope of [cities]” (p.
Both teachers and public doctors were employed by city-states to provide for public education and for fee-based or, for those that could not afford it, free health care (Gladden, 1972, p. 94). Likewise, public health administration, and thus the employment of front-line health workers, was advanced in the form of hospitals during both the Roman and Byzantine Empires (Gladden, 1972, pp. 129, 185). These core public functions have evolved substantially in scope and complexity in the intervening millennia, with present-day street-level bureaucrats providing a greater breadth of technically complex services.

Ideally, the function of modern street-level bureaucrats within the larger context of governance, according to Vinzant and Crothers (1998), is “... quite simple: such workers execute the rules, programs, and policies established by their agencies in accordance with the law” (p. 10). Similarly, Bovens and Zouridis (2002) noted that “[p]olicy comes alive in the daily practice of street-level bureaucracy” (p. 175). In other words, street-level bureaucrats are responsible, at the most basic level, for policy implementation. As Prottas (1978) noted, “[t]hese bureaucrats do the ‘actual’ work of the agency – they interview clients, arrest suspects, treat patients, and so forth…” (p. 286). Although bureaucrats located at other levels within public agencies that provide these types of social services are tasked with vitally important functions, their actions primarily serve to create the foundation and provide support and direction for the services provided by street-level bureaucrats.

Though relatively straightforward in description, the jobs of street-level bureaucrats are anything but simple or uncomplicated (Bovens & Zouridis, 2002; Hill, 1974; Lipsky, 1980). Often the tasks with which street-level bureaucrats are tasked are of
vital importance to individuals receiving the services, and in many cases represent core quality of life issues. The importance of these services to citizens, combined with the position of this unique category of bureaucrat at the front-lines leads to substantial task complexity. As Vinzant and Crothers (1998) noted, “…not only is there great variation and unpredictability in the problems these workers face, but the problems themselves are often multifaceted, intractable, and emotionally laden” (p. 4). These individuals are, in the words of Maynard-Moody and Musheno (2003) the “…coal miners of policy: they do the hard, dirty and dangerous work of the state” (p. 157). The vital work of street-level bureaucrats raises questions about decision-making and behavior in an uncertain and stressful environment.

As they distribute the public goods and provide services, they interact directly with citizens, a position that grants some power to the street-level bureaucrat (Prottas, 1978; Thompson, 1967). Street-level bureaucrats work … in two interdependent worlds. This simultaneity is the key to the bureaucrats’ power…. The bureaucracy and its nonstreet-level employees have access to the internal facts – rules, formal categories, procedures, and so forth. The clients have access to the external information – facts about themselves, their demands, and so forth. Only the street-level bureaucrat has routine access to both.” (Prottas, 1978, p. 293)

Thompson (1967) added that this power emanates from the need to meet contingences in a “…heterogeneous and shifting environment…” and to use discretion in the course of the service interaction (p. 111). However this only confers power in the case that the situations in which these individuals operate are complex and the magnitude of their actions is great. A simple, unchanging environment or low task complexity would entail little use of discretion or would not have consequences of interest to the organization. On the other hand, those environments that are characterized by significant
change or substantial consequences confer greater power on the street-level bureaucrat
(Thompson, 1967).

The cumulative actions of bureaucrats at the front-lines therefore constitute a
critical area of interest not just for individual clients, but for analysis and evaluation of
public programs. As Riccucci (2005) noted, “[i]t is at the street level where policy
delivery may be most critical for social programs, because the actions of front-line
workers have substantial and sometimes unexpected consequences for the actual
direction and outcome of benefit programs” (emphasis in original, p. 5). Whereas
bureaucrats at other levels of social services organizations contribute substantively to the
goals and objectives of public organizations, their efforts culminate in the tangible
actions of street-level bureaucrats as they interact with organizational clients. Barnard
(1938) noted this, stating that “… at least nine-tenths of all organization activity is on the
responsibility, the authority, and the specifications of those who make the last
contributions, who apply personal energies to the final concrete objectives” (p. 232). In
short, street-level bureaucrats distribute the goods and services of the state, and contribute
palpably to the “the way the public bureaucracy fulfills its public responsibility” (Prottas,

This position as the final step in the policy-implementation process places street-
level bureaucrats in vitally important positions in a democratic system of government. As
agents of the state, street-level bureaucrats are charged with fulfilling a public need or
achieving a desired outcome through distribution of goods and services (Riccucci, 2005).
However, the process of crafting legislation, administrative rules and regulations, and
additional policies and procedures can shape the actions of bureaucrats in a manner that
may or may not deviate from the intent of democratically elected officials, thus potentially “… violat[ing] our norm of democratic governance” (Keiser, 1999, p. 88). This potential for deviation comes through the delegation of discretionary power to bureaucrats and the exercise of this power in the policy-making and implementation processes. Specifically, the translation of the “broad mandates of legislation” from elected officials into the rules (broadly construed), and the continuing interpretation of those rules, serves to profoundly shape street-level work and impact citizen outcomes (Keiser, 1999, p. 87). This discretionary power becomes more necessary as the services provided become comprehensive. Stated more succinctly by Cooper (2006),

[The growing complexity and technical nature of problems addressed by government have created a tendency in legislators to delegate enormous powers to administrators, who are presumed to have specialized knowledge of particular policy areas. Thus, the implementation of legislation becomes, in fact, an exercise in substantive policymaking. Broad legislative ‘shells,’ debated publicly and approved by elected officials, are then filled with a multitude of administrative decisions that are far less visible and fare more difficult to monitor. (p. 57)]

In some cases, though the behavior of front-line workers may be satisfactory to managers, “… the workers are not doing what the elected officials – in particular, governors, and state legislators – and high-level bureaucrats expected them to do. That is to say, street-level bureaucrats are not implementing the policies that the ‘state’ intended to be delivered” (Ricucci, 2005, p. 75). Thus, there is potential, at all levels of government, for either substantial concordance or discordance among legislation, administrative rules, and translation and interpretation of those rules. These processes serve to places the fundamental task of resource allocation in the purview of bureaucrats (Keiser, 1999). This is important in that it highlights the role of street-level bureaucrats in
sustaining, or failing to sustain, the democratic ideals of the United States. Discretion in street-level service is, then, a critically important topic of discussion when considering the function of a democratic government.

**Discretion at the Front Lines of Public Service**

Though not unique to street-level work (Dimock, 1936/1967), discretion plays an especially important role in the face-to-face interactions of street-level bureaucrats and citizens, and is a key defining component of the concept of street-level bureaucracy (Keiser, 1999; Lipsky, 1980; Scott, 1997). For the purpose of this discussion, discretion can be defined as “… the making of a choice, within certain constraints, regarding the task process or outcomes” (Vinzant & Crothers, 1998, p. 40; Davis, 1969; Handler, 1986). Though it is the subject of substantial debate and academic research, discretion is also very much a reality of government. It is “… not primarily a legal concept – it is the very stuff of the daily duties in all branches of government” (Dimock, 1936/1967, p. 65). The act of exercising discretionary behavior is one that combines the fundamental functions of government – legislative, executive, and judicial – in the actions of an individual (Dimock, 1936/1967).

Discretion is a necessity at the front lines, according to Lipsky, for three reasons. First, street-level bureaucrats work in situations that are often “… too complicated to be reduced to programmatic formats” (1980, p. 15; Prottas, 1978). In the words of Frederickson, “… every application of a law involves further elaboration of that law” (as cited in Maynard-Moody & Musheno, 2003, p. 10). The complexities of street-level work do not allow for the promulgation of rules and regulations to cover every possible work
situation, thus requiring some amount of discretion. As Bovens and Zouridis (2002) noted, it is at the street-level where, “… despite detailed rules and regulations, reality is shown to be far more complex and varied than legislators had ever dreamed” (p. 175). In those cases in which rules and regulations do not sufficiently provide guidance for bureaucratic action, street-level workers may “… tend to routinize them so as to eliminate the cost of thinking out what to do each time the same situation recurs” (Downs, 1967, p. 63).

Even in those situations in which a substantial body of rules and regulations are created to guide behavior, street-level bureaucrats may not be able to internalize and follow every guideline. As Prottas (1978) noted,

To serve multiple and conflicting and ambiguous goals, agencies promulgate an even greater multitude of even more ambiguous and conflicting regulations. A small number of these rules are given de facto priority and are obeyed. The rest are all to be obeyed equally yet manifestly cannot be. They are too numerous and too inconsistent in content. Therefore they cannot provide clear priorities for street-level behavior nor a clear basis for evaluating that behavior. (p. 295)

Second, street-level work often results in situations that “… require responses to the human dimensions of situations” (Lipsky, 1980, p. 15). Bureaucrats working on the front-lines of public service are charged with the difficult and complex task of working directly with people, a job characteristic that should not be diminished as trivial (Davis, 1969; Dimock, 1936/1967; Prottas, 1978; Thompson, 1967). Front-line workers must continually evaluate and reevaluate their actions for appropriateness as client needs and situational factors change, contributing to the “individualization” of service (Davis, 1969, p. 25). Indeed, the act of responding to clients can, in and of itself, pose substantive difficulties. Prottas (1978) noted that “[w]hen we try to find a clear definition of street-level responsibilities, the impediments from above are matched by impediments from
below. The behavior of clients is not rule-bound and their demands are wholly unbureaucratic in form. This injects an irreducible element of uncertainty into the job of the street-level bureaucrat and the agency’s expectations of him / her cannot help by reflect that uncertainty” (pp. 295-296).

Finally, discretion in front-line work “. . . promotes workers’ self-regard and encourages clients to believe that workers hold the key to their well-being” (Lipsky, 1980, p. 15). Street-level bureaucrats may be more likely to consider the impact of their actions if the ramifications of their actions are proximal and if clients believe in the efficacy of the individuals with whom they are interacting.

Conceptually, discretion is dependent to a great extent on varying types of constraints. Dworkin (1977) noted that “[d]iscretion, like the hole in a doughnut, does not exist except as an area left open by a surrounding belt of restriction. It is therefore a relative concept” (p. 31). As Hupe and Hill (2007) noted, “[d]iscretion and rules are interrelated: as rules specify the duties and obligations of officials, discretion allows them freedom of action” (p. 280-281). But, the relationship between rules and discretion is not simple, and, given rule complexity, discretionary action may be allowable under one set of standards and not under another. Thus, “[i]t always makes sense to ask, ‘Discretion under which standards?’ or ‘Discretion as to which authority?’… [I]n some cases the official may have discretion from one stand-point though not from another” (Dworkin, 1977, p. 31).

Rules, however, are not the only types of constraints on discretionary action. Several types of discretion exist in the world of street-level bureaucrats, each of which is both created and constrained by the rules and norms created to shape the behavior of the
front-line workers (Dworkin, 1977; Handler, 1986; Hupe & Hill, 2003; Lipsky, 1980; Scott, 1997) (see Figure 2.1). First, discretion can be built-in to the myriad rules, policies, and procedures that are created to regulate action at the front-lines. This “within-rule” discretion will be bounded by the officially promulgated rules and will contain two or more outcomes that will presumably have the same intended outcome. Second, as noted previously, discretion can be found in those areas not regulated by the rules, policies, and procedures. Street-level work is inherently complex and not every aspect of the roles of those working at the front-lines can be legislated. In many cases, discretion that exists due to a dearth of regulations may be constrained by social and organizational norms, beliefs, and values. Finally, due to the rule-saturated environment of street-level work, rule complexity, and situational stress, front-line workers may, purposefully or not, follow all rules created to guide their actions. These deviations from rules open an additional area of decision-making to influence from outside sources. More generally, “… discretion is always about a tension between general and abstract rules, on one hand, and specific situations on the other – in other words, a flexibility versus uniformity dilemma” (Loyens & Maesschalck, 2010, p. 67).

Figure 2.1: Discretion and Urgency in Emergency Medical Services

![Diagram showing Discretion and Urgency in Emergency Medical Services](image_url)
Not all discretion is created equal, and the magnitude of discretionary decisions can vary significantly from one street-level occupation to another, and even within the varying tasks of a single occupation (Hupe & Hill, 2007). Indeed, the magnitude of these decisions are not firm, and are dependent to a great extent on the situation in which the street-level bureaucrat and client are immersed and on the perspectives of both bureaucrat and client. Though critically important, the discretionary decisions made by welfare eligibility workers or teachers can be viewed as less consequential than the life-or-death decisions faced by police officers, firefighters, and paramedics. Not every discretionary decision made by workers on either end of the spectrum is universally large or small (see Figure 2.2).

**Figure 2.2: Magnitude of Street-Level Discretionary Decisions**

- Vocational Counselor
- Teacher
- Welfare Worker
- Police Officer
- Firefighter
- Paramedic

Rather, the potential for decisions to have a substantial or insubstantial impact exists, and there is significant overlap among occupations along the continuum. Of course, it is also important to consider the concept of magnitude from multiple
perspectives. To the street-level bureaucrat working in his or her respective organization, the magnitude of the decision may feel great; he or she sees the first hand the effects that decisions have on clients, and have intimate knowledge of the process and needs of clients. To the citizen requesting services, the magnitude of these decisions is in many cases immense. And, the temporal component of the decision must be considered; in the case of public safety professions the impacts are often immediate, whereas other professions, such as welfare eligibility, may have longer-term consequences.

Administrative discretion, at any level of government, has often been viewed as suspect. Dimock (1936/1967) noted that “[l]aw is held to be inherently reasonable, while administrative discretion is by its nature arbitrary. According to this view, law means ‘rules’ whereas discretion involves the very antithesis of legal certainty” (p. 55). The same holds for the myriad theoretical and empirical studies describing the agency intrinsic to these street-level positions, though some studies take a somewhat ambivalent tone (Maynard-Moody, Musheno, & Palumbo, 1990). Lipsky noted that “[a]t best, street-level bureaucrats invent benign modes of mass processing that more or less permit them to deal with the public fairly, appropriately, and successfully. At worse, they give in to favoritism, stereotyping, and routinizing – all of which serve private or agency purposes” (1980, p. xii). In considering the virtues or vices of discretion, especially at the street-level, it is then important to note that discretion must be considered as a means, or hindrance to achieve the outcomes specified by government. Dimock (1936/1967) noted that “… administrative discretion is not an end in itself – it is relative to the objects which the government is attempting to secure” (p. 53).
Maynard-Moody and Musheno (2003) framed this discussion of the discretionary behavior of street-level bureaucrats in terms of two narratives of action. These narratives, including “state-agent” and “citizen-agent” narratives, differ in their perspective of the relationship between the street-level bureaucrat, law and policy, and the bureaucrat’s assessment of the client. In their words, “[t]he state-agent narrative is about law abidance, both of citizens and workers; the citizen-agent narrative is about normative and cultural abidance, identifying those who are worthy citizens and colleagues and those who are not” (Maynard-Moody & Musheno, 2003, p. 9). The authors noted that when there is concordance between policy and the front-line worker’s view of the client, there will be little need to use their discretionary power (Maynard-Moody & Musheno, 2003, p. 9). However, in those situations where “tension” exists between the assessment of the client and policy, the bureaucrat may be inclined to exercise discretion. In their words, “[w]hen law, policy, and rules are ill matched to workers’ view of fairness and appropriate action, street-level work smolders with conflict over what is the right decision and what is the right thing to do” (Maynard-Moody & Musheno, 2003, p. 9). The view of discretion also differs between these narratives. In the state-agent narrative discretion is viewed as something to be limited, and, when it cannot be eliminated, must fit the dictates and spirit of the law. Discretion in the citizen-agent narrative is viewed as a tool to be used in aiding citizens who are worthy of assistance by street-level bureaucrats.

This discussion of discretion has assumed to this point that all individuals are equally able to exercise discretion. However, this glosses over some important differences in the individuals working at the front-lines. Beyond the rules created to shape behavior and varying types of constraints on discretion, individuals differ in their
abilities and attitude towards discretion. As Thompson (1967) notes, “… there are obvious differences in the abilities of individuals to exercise discretion; both education and experience emphasize such differences and produce trained incapacity in other areas” (p. 117). Petter et al. (2002) note that some individuals may find solace in the certainty of rules provided for a given occupation (p. 378). Additionally, individuals may be more or less likely to exercise discretion based on their personal feelings about risk, uncertainty, and ambiguity (Thompson, 1967), and some bureaucrats may have different perceptions of the amount of latitude they have in providing services to certain groups (Sowa & Selden, 2003). And, similarly, managers and organizational leaders may be more or less comfortable with the nature of discretionary behavior by subordinates (Handler, 1986).

Management and Autonomy in Street-Level Work

In most cases, street-level bureaucrats work in an environment that is relatively free of direct supervision by superiors, a factor that complicates management of bureaucratic behavior. This is due in part to the location of service interactions and partly to the nature of street-level work. In many cases, the work of street-level bureaucrats happens in the public domain (even literally “in the street”), in office buildings, or in the homes of citizens, and is in many cases widely dispersed (Prottas, 1978). This, combined with the bottom-heavy nature of street-level occupations and inability to maintain a body of supervisors equal to the number of street-level workers, creates a problem of what Prottas called “compliance observability,” or an inability to actually watch the actions of street-level bureaucrats and determine to what extent they are following rules, policies, and procedures (1978, p. 298). Put in other terms, the nature of street-level is beset by
principal-agent issues, including both adverse selection and moral hazard (Moe, 1984). The former refers to the inability of managers or supervisors to the “… unobservability of the information, beliefs, and values on which the decisions of others are based…,” whereas the latter refers to “… unobservability of actual behavior …” which then requires the use of proxies for measuring individual performance (Moe, 1984, pp. 754-755).

The problems of supervision posed by the service location are complicated by the nature of human services in general. Indeed, “[t]he social programs that public service bureaucracies are charged with administering are almost invariably complex and controversial. As a result, the goals of these agencies are multiple, contradictory, and vague . . .” (Hill, 1974, p. 44, as cited in Prottas, 1978, p. 295). Though it is often possible to reduce organizational goals to a manageable list, the ability to pinpoint a specific definition of those goals is often elusive, and, if accomplished, may not always garner full and complete support from all stakeholders.

Once these issues have been acknowledged, the difficulty in supervising street-level employees becomes apparent. Attempting to compare the actual behavior and ideal behavior of the front-line worker is a daunting task, one that is complicated further considering the position of the street-level bureaucrat at the organizational boundary and in control of information (Handler, 1986; Prottas, 1978). As Prottas (1978) notes, . . . what the street-level bureaucrat should be doing necessarily depends on what clients are in fact doing. The hierarchy may say that if a client has characteristic X then the street-level bureaucrat will be expected to do Y. But the characterization of clients is the street-level bureaucrat’s job and so the agency must depend on the street-level bureaucrat for almost all of its information about clients. Therefore the hierarchy can judge street-level bureaucrat behavior only on a contingent basis, i.e., only in relation to the way a client has been slotted, but it is dependent on the street-level bureaucrat to first slot that client. The agency then needs a way of
independently judging the appropriateness of the client’s slotting. (Prottas, 1978, p. 297)

Thus, the performance of the street-level bureaucrat, and more specifically the information manager and supervisors used to gauge individual or group performance, depends largely on information provided by those individuals being evaluated.

Though these issues of supervision and observation pervade street-level professions, there are managerial tools available to shape bureaucratic behavior. Lynn, Heinrich, and Hill (2000) described these succinctly as “… *ex ante* controls [to] preclude noncompliant decisions and actions … [and] *ex post* controls [to] detect and punish non-compliance after the fact” (p. 238). The former most often take the form of the substantial formal and informal rules created to shape front-line bureaucratic behavior, while the latter occur through routine review of the documentation of service interactions or occasional direct oversight during the provision of services.

**Sources of Influence at the Front Lines**

The nature of discretion and resolution of these difficult problems of street-level service can only be understood by examining sources of influence at the front lines. As Riccucci (2002) noted, “[t]here is a long tradition of research in the social sciences on the multiple interests that interact during implementation to influence and shape policies as they devolve down hierarchical lines” (p. 902). Similarly, Weatherly, a protégé of Lipsky, correctly noted that “[t]he pyramid-shaped organization chart depicting at the bottom the front-line worker as passively receiving and carrying out policies and procedures dispensed from above is a gross oversimplification. A more realistic model would place the front-line worker in the centre of an irregularly shaped sphere with
vectors of differing size and directed inward” (1979, p. 9). Behavior, then, is as much a product of rules as the “… result of habit, custom, or the influence of other social actors in the environment” (Handler, 1986, p. 210). Thus, it is important to understand the nature and magnitude of many sources of influence at work on street-level bureaucrats that are sometimes interwoven and potentially conflicting. This is not to suggest that these various types of pressures on street-level bureaucrats are inseparable and impossible to study empirically, but underscores the intrinsic complexity of street-level work.

These pressures on street-level bureaucrats can be sorted into categories by their location relative to the organization, with several sources apparent both within and external to the organization. Sources of influence within the organization include coworkers, supervisors, formal organizational structure, and organizational culture (Vinzant & Crothers, 1998, pp. 12-14). Figure 2.3 illustrates the varying sources of both internal and external influence on front-line workers. It is important to note that causal arrows are purposefully excluded from the model, as the interaction between these items produces substantial complexity.

**Internal and Organizational Sources of Influence**

The nature and quality of interactions with peers, direct supervisors, and executive-level supervisors can impact how a front-line worker views problems and the process used to make decisions. As Simon (1945) noted, “[i]nfluence … is exercised through control over the premises of decision” (p. 308).
Figure 2.3: Sources of Influence on Street-Level Bureaucrats

Adapted from: Vinzant & Crothers (1998)
In the case of street-level bureaucrats, this control can come in the form of authority, both formal authority granted through a role in an organization, or informal authority derived from some amount of expertise or specialization.

Managerial influence on street-level bureaucrats has been studied empirically with varying results across different occupations and organizational settings. In a study of front-line welfare workers, Riccucci (2005) mentioned four distinct methods of fostering change at the front-lines through managerial action. First, formal and informal training may be important in that it can “… [educate] professionals about ‘cause and effect’ – that is to say, addressing specific types of behaviors … and the outcomes they are associated with” (Riccucci, 2005, p. 87). Second, as many street-level bureaucrats can be considered professionals in their specific occupation, it is important to “… afford the professionals a role in the process …” (Riccucci, 2005, p. 88). Similarly, Maynard-Moody, Musheno, and Palumbo (1990) suggested a method of limiting the “dangers” of discretion at the front-lines is through inclusion of street-level bureaucrats in programmatic decision-making (p. 844). Third, the importance of providing feedback to street-level bureaucrats must be understood. Concrete and tangible information about positive and negative performance is necessary to improve the outcomes for clients (Riccucci, 2005, p. 88). Finally, the option of using “administrative interventions” is available, which allows for “…creating barriers to undesired practices … or by reducing barriers to desired practices” (Greco & Eisenberg, 1993, in Riccucci, 2005, p. 89). Each of these, however, requires a significant devotion of time and energy on the part of managers and leaders. As Riccucci noted, “… this will almost certainly require the valuable resource of time (as well as a heavy dose of
creativity), but the point is that change is possible if there is a commitment by management and by those who control the purse strings” (2005, p. 89).

May and Winter (2007), in a study of street-level bureaucrats engaging in the implementation of employment assistance reforms in Denmark, found that both political actors and direct supervisors have a substantive impact on the manner in which street-level bureaucrats understand policy. The authors found that “… higher-level influences do shape the behavior of case-workers in implementing the national policy reforms,” and that vocal politicians bringing political attention to a specific policy may substantially increase the understanding of that policy by those charged with its implementation (May & Winter, 2007, p. 469). Additionally, the immediate supervisors of front-line workers were influential through expression of their views of national policy. Specifically, “[c]aseworkers are more willing to diverge from national goals when it is clear that their immediate political principals endorse this divergence” (May & Winter, 2007, p. 469).

Though both political principals and managers were found to be influential, this study may neglect important policies that effect street-level bureaucrats that are not as high-profile or widespread. Indeed, those policies that may shape street-level bureaucratic behavior more saliently are more likely to be those with which these workers are most familiar, including those more mundane policies that govern day-to-day behavior. Nevertheless, this study does highlight the importance of potentially charismatic or persuasive managers in bureaucratic acceptance and support of policies.

Managerial influence can also be exerted on street-level bureaucrats through performance measurement systems. Specifically, programs like the CompStat system in New York, used to evaluate police department functioning, can be used by managers to
monitor and evaluate the performance of street-level bureaucrats on a continual basis. As Moore (2003) notes:

… COMPSTAT could be viewed as a combined technical and managerial system that embeds the technical system for the collection and distribution of performance information in a broader managerial system designed to focus the organization as a whole, and a subset of managers who are relied on to exercise leadership in meeting the organization’s objectives, on the task that the organization faces. (emphasis in original, Moore, 2003, p. 470)

The applicability of data from CompStat to varying levels of the organization is what makes it useful for those managers overseeing street-level bureaucrats. The utility comes through the capacity to report “. . . on important dimensions of performance at a level that coincides with a particular manager’s domain of responsibility” (Moore, 2003, p. 470). Though managers reviewing front-line bureaucratic behavior may find these measures useful, it is also important to recognize the important fact that there are several potential flaws in these types of performance management systems. First, measures may only provide basic data on organizational or individual outputs, failing to truly evaluate meaningful processes or outcomes. Second, in many cases the individuals under review are also responsible for collecting and reporting the data, potentially providing incentives to either alter behavior to match measures that are highly valued over actual effective service provision or report data that have been favorably altered.

Organizational factors can influence the behavior of street-level bureaucrats through several avenues. First, organizational structure can influence the modes and methods of communication, distribution of authority, and assignment of tasks. Second, organizational culture in the form of norms, values, and beliefs can consciously and unconsciously shape behavior. Schein (2004) defined organizational culture as “… a pattern of shared basic assumptions that was learned by a group as it solve its problems of
external adaption and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct was to perceive, think, and feel in relation to those problems” (2004, p. 17). Members of a group devise methods of achieving these means and ends, and thus “… we can think of culture as the accumulated shared learning of a given group, covering behavioral, emotional, and cognitive elements of the group members’ total psychological functioning” (Schein, 2004, p. 17). In an attempt to routinize and make sense of organizational activity (Trice & Beyer, 1993; Weick, 1995), groups will create, negotiate, and renegotiate organizational culture (Schein, 2004, p. 11).

Kelly (1994) examined the effects of organizational norms on the street-level bureaucrat’s conceptions of justice and the exercise of discretion at the front lines. To cope with problematic situations, front-line workers may use their personally held conceptions of justice in the exercise of discretion. This exercise is, however, not without restrictions. Kelly added that “. . . the influence of [the street-level bureaucrat’s] beliefs on implementation depends in part on the organizational norms regarding the use of discretionary authority” (1994, p. 121). Through informal interviews with two different types of street-level bureaucrats, teachers and “employment development” officials (front-line workers engaging in unemployment eligibility determination and job placement services), Kelly found that the organizational culture of an agency does indeed shape the ability of front-line workers to exercise discretion in line with their conceptions of justice (1994, p. 138). In her words, “[w]here street-level bureaucrats have a significant degree of discretion, where their work is less rule centered, and where they have more control, their individual theories of justice have an important effect on the
final implementation of public policies. Where street-level bureaucrats are, above all else, constrained by rules, and where they operate within the confines of a traditional bureaucracy, individual theories of justice have much less impact on the final delivery of goods and services” (Kelly, 1994, p. 138).

This study of organizational culture displays several methodological strengths in the examination of the complex world of street-level bureaucrats. Using a method similar to Maynard-Moody and Musheno (2003), Kelly examined concepts of both fair and unfair situations in which these types of bureaucrats are found. This allows both for the examination of potentially difficult subjects without alerting the participant to the types of research questions being asked, and allows for deeper probing of the processes and decisions made by bureaucrats. Despite this methodological strength, other weaknesses exist in the conceptualization of culture and in the research design. Though the cultural differences to which the variations in justice are attributed to organizational factors, it is as likely that those differences could be attributed to differences in the norms, values, and beliefs of the occupations being considered. Organizational and occupational culture are concepts intrinsically intertwined and overlapping, requiring additional research that disentangles them.

Focusing on multiple sources of influence, Scott (1997) conducted an experimental study of the exercise of discretion among street-level bureaucrats that focused on three influences: organizational control, client characteristics, and characteristics of the street-level bureaucrat. Organizational characteristics were operationalized as “organizational control,” or the extent to which the fictional organization focused on accountability and strict interpretation of rules, as well as the
amount of justification street-level bureaucrats had to present in their documentation of the interaction (Scott, 1997). The results indicated that tighter organizational control resulted in lower levels of support for clients (Scott, 1997).

Conceptually similar to, and in some cases identical to professional norms and values, the concept of occupational culture permeates the roles that individuals hold within organizations. As Schein noted, “[a]s members of different occupations, we are aware that being a doctor, lawyer, engineer, accountant, or other professional involves not only the learning of technical skills but also the adoption of certain values and norms that define our occupation” (Schein, 2004, p. 10).

Occupational culture functions at the street-level just as it does in the offices of doctors and lawyers (Hupe & Hill, 2007), something that should not be surprising if we view these bureaucrats as professionals who are “… expected to exercise discretionary judgment in their field” (Lipsky, 1980, p. 14, emphasis added). Maynard-Moody and Musheno (2003) echoed this, and noted that street-level workers “… identify strongly with their occupation and similar occupations” (p. 58). Merging several concepts of the construct allows for occupational culture to be defined as the norms, values, beliefs, rules, practices, and technical skills of a profession, as well as the “… myths, rituals, symbols, and rites …” of the occupation (Trice & Beyer, 1993, p. 180; Schein, 2004). These task-related norms, values, and beliefs can both emphasize or deemphasize the importance of formal rules, policies, and procedures, and also shape the use of discretionary action by individuals within a particular profession (Keiser, 1999). Indeed, occupational culture can be seen as having greater importance in street-level work than in
other organizational roles for the simple reason that “… discretion is filled by rules professionals impose upon themselves” (Hupe & Hill, 2007, p. 282).

Trice and Beyer (1993) noted that “[t]he most highly organized, distinctive, and pervasive sources of subcultures in work organizations are people’s occupations” (p. 178). The socialization process for new members of a profession can directly shape the norms, values, beliefs, and assumptions of the individuals. This is especially true for those occupations that involve “… an intense period of education and apprenticeship …,” a characteristic of many public safety agencies (Schein, 2004, p. 20; Trice & Beyer, 1993). This intense period of socialization typically “…result in members’ internalizing rather detailed sets of expectations for their behavior in their work roles” (Trice & Beyer, 1993, p. 179). These expectations can take the form of incentives that shape the nature of peer relationships (Prottas, 1978). Beyond incentives, Hjern and Porter (1981) noted that “[i]ndividual cognitions and behaviour, to a degree, are structured and controlled by groups and cliques within organizations, professions, or programmes” (p. 221). Street-level bureaucrats may find that they gain in prestige, power, or social standing when they conform to occupational cultural norms.

Occupational culture can serve to bring ideas and perspectives on job functioning from the environment into the organization. Occupations, in this sense, are “… imported subcultures; they carry ideas that have their origins outside organizations. Furthermore, the ideas they carry are … focused on work-related issues.” (Trice & Beyer, 1993, p. 178). Additionally, like many other occupations, “[s]treet-level bureaucrats in many agencies are members of professional or quasi-professional associations…These
associations generate their own definitions of proper behavior for their members”


The importance of these professional norms goes beyond their direct impact on
behavior. Prottas (1978) noted that

… since bureaucracies can rarely provide satisfactory measures of their own
outputs (Downs, 1966: 24-31), in their own defense they must frequently point to
the expertise of their members rather than the success of their endeavors. But once
it admits that its workers have special skills and that those skills provide a
justification for the agency’s activities, two conclusions follow: one, the agency
admits that the norms of [the occupation] are a legitimate component in the
definition of street-level bureaucrat behavior, and two, it admits that the [front-
line worker’s] understanding of those norms has some validity based on their
expertise. In this way they admit, at least, to a potential limitation of their right
(aside from the capacity) to define appropriate street-level behavior. (pp. 296-297)

Thus, beyond the direct impact on behavior, the expertise of street-level
bureaucrats serves to reify their own position of power within agencies. Indeed, as Trice
& Beyer (1993) note, occupational culture can serve as a method of exerting power
against, or in place of administrative or managerial control (p. 185). Occupational
subcultures are also a source of power in that they can be self-supporting and work to
ensure their own continued existence within an organization. Thus, “[w]hen members of
occupations control recruitment, hiring, and induction into employing organizations, their
cultures are likely to influence those of employing organizations” (Trice & Beyer, 1993,
p. 220). Additionally, the existence of these professional skills, norms, and values exerts
pressure on methods of employee evaluation (Thompson, 1967). When it is
acknowledged that occupational cultures have specific and specialized skill sets, some
amount of power of evaluation and measurement of performance is ceded to those
individuals within the same “occupational family” (Thompson, 1967, p. 113).
The salient effects of occupational culture on street-level bureaucrats have been examined empirically. Sandfort (2000), in an examination of the impact of managers and leaders on the behavior of front-line welfare workers in public welfare eligibility determination agencies and private, contracted welfare-to-work agencies, found that occupational culture is of great importance in shaping the behavior of street-level bureaucrats. Though acknowledging the role of manager and leaders in shaping the behavior of street-level bureaucrats, Sandfort noted that there is “… a gap between management ideals and daily front-line realities” (p. 740). Rather, she theorizes that other sources of influence may be more important and that “… a more complex process motivates front-line workers and sustains front-line practices in these organizations” (Sandfort, 2000, p. 740).

Two important findings result from Sandfort’s efforts. First, she noted that “[i]n both the public welfare bureaucracy and privatized welfare-to-work systems, front-line practices strain the premises of the public management techniques designed to direct and influence them” (p. 740). The management practices intended to shape and direct the behaviors of front-line workers did not function as intended in either the public or private agencies. Second, street-level bureaucrats themselves play an important role in shaping the norms, values, and beliefs about the nature of their work, the work context, about their relationships with coworkers, and about work-related issues. Sandfort wrote, “[s]treet-level workers in both contexts exert more agency than is conventionally recognized. Through daily experiences, staff generate collective schema that help them to understand their work and efficiently utilize organizational resources” (2000, p. 731). In summary, “… front-line staff within the public welfare bureaucracy depend on their
collective knowledge and organizational resources to develop the structure within which they operate” (p. 746). This idea that much of what individuals do in completing work tasks is the product of experience, repetition, and expertise is not new. Barnard (1938) noted that “[i]nvolved in acts what are ascribed to decision are many subsidiary acts which are themselves automatic, the processes of which are usually unknown to the actor” and that “… much of the action of individuals as participating in organization is habitual, repetitive …” (pp. 185–186).

In addition to the contributions of her research to theory on street-level bureaucrats, Sandfort contributes substantively to broader traditional public administrative theory and to New Public Management. The author noted that “… it offers a new explanation for why front-line workers resist change within the public bureaucracy… [and also] provides a new understanding for how ineffective services are sustained in the decentralized, performance-based welfare-to-work program” (Sandfort, 2000, p. 732).

Riccucci (2005), in a study of the importance of management on street-level bureaucrats in welfare agencies, found that occupational culture is of great importance to understanding behavior at the front lines. While noting the importance of management, Riccucci argued that direct managerial influence has less of an effect on the behavior of front line workers than other sources of influence. Instead, “… workers at the front lines often pursue goals that are consistent with their work norms, familiar routines, professional standards, and socialization experiences (Riccucci, 2005, p. 2). Thus, behavior is often shaped not by direct managerial intervention, but by the salient experiences of workers as they struggle to simply do their jobs. These norms, routines,
and standards can be consciously or unconsciously incorporated into the front-line worker’s repertoire of action (Riccucci, 2005, p. 5). Thus, “… it is the work ethics, norms, professionalism, and occupational culture at the street level of bureaucracy that influence the behaviors of front-line staff, not management, leadership, and organizational factors” (Riccucci, 2005, p. 74, emphasis in original).

In a study of front-line health care providers, Isett, Morrissey, and Topping (2006) found that managerial changes to the policies at the macro-level are less important in the shaping the perspectives of healthcare providers. Specifically, they noted that “… the attitudes and perceptions of street-level bureaucrats, such as front-line health care workers in the managed care setting, are not likely affected by large-scale systems or regime changes because their day-to-day activities remain fairly constant” (Isett, Morrissey, & Topping, 2006, p. 223). Rather, providers’ perspectives are mainly shaped by the nature of their daily tasks. “In other words, what matters to street-level bureaucrats is how they do what they do, not the larger questions of what they are doing or some abstract paradigmatic explanations of why they are doing it (Isett, Morrissey, & Topping, p. 223). Their study also brings to the fore the nature of job satisfaction among street-level clinical workers. They note that “… reduced job satisfaction is especially important in health care because it affects the quality of care; clinicians are attracted to work settings in which the quality of care is thought to be high” (Isett, Morrissey, & Topping, 2006, p. 223).

A study of front-line workers in a hospital setting highlighted the concept of professionalism in the feelings of these workers about their jobs. Thomas and Johnson (1991) noted that these bureaucrats faced many of the same complexities that characterize
other street-level professions. These individuals “. . . professionals in Central Hospital workforce believe they must meet conflicting goals, while saddled with an oppressive workload, in an environment where pervasive rules limit employee influence over decisions” (Thomas & Johnson, 1991, p. 280). Despite the large workload, difficult and complex rule sets, and occasional lack of goal clarity, many felt that they were answerable for the end results of their actions, with “… 75 percent of all employees and 71 percent of the professionals [agreeing] that, ‘Whether or not this job gets done right is clearly my responsibility’” (Thomas & Johnson, 1991, p. 275, emphasis in original).

And, as would be expected with highly trained front-line employees, only 14% of these health care providers felt “dissatisfied” or “very dissatisfied” with their ability to exercise discretionary authority in their respective tasks, and most “… believed that their efforts help patients …” (Thomas & Johnson, 1991, pp. 276, 281). This descriptive study does much to explain the static feelings of the street-level health care workers in a hospital setting, however the data and methods used do not allow for concepts of causality or inference to be explored. And, while the professional identities of the street-level workers in this study are identified as the basis for their differences in perceptions of workload, rule-complexity, and clarity of task-related roles, many of those factors may be related to the organizational setting or contextual variables not included in the study.

In contrast, Oberfield (2010) examined two classes of new police officers and caseworkers working for a single municipality, empirically studying the rule-following tendencies for these two types of street-level workers as they entered and progressed through their initial professional training. This longitudinal study examines bureaucratic rule-following as a function of formal organizational influences, including training and
supervision, informal influences like peers, experienced employees, organizational culture, and demographics (Oberfield, 2010). The author found that individual rule-following identities were likely to stay relatively stable, though informal influences from both fellow trainees and from veteran bureaucrats did influence rule-following tendencies (Oberfield, 2010). Of the formal sources of influence included in the study, only training was associated with increased rule-following tendencies (Oberfield, 2010). The author noted, however, that these sources of influence worked in different directions. Specifically, “… those entrants shaped by peers and experienced workers were less likely to be default rule followers, those influenced by training and instructors were more likely to be default rule followers” (Oberfield, 2010, p. 753).

This study makes important contributions to knowledge regarding the shaping of bureaucratic tendencies to follow rules through the socialization process and the nature of several types of influence on this process. The findings, though, are limited to the bureaucrat’s “rule-following identities,” a complex term that serves to outline the bureaucrat’s espoused theories of action (Argyris & Schön, 1974). Additionally, while substantive findings from this paper serve to indicate that some relationship exists between the variables of interest, the causal processes at work are not fully explored, leaving aspects of the processes involved as yet undiscovered. Also of note, Oberfield (2010) characterized street-level bureaucrats as “discretion users” “neutral” or “rule-followers” depending on their score on an index variable measuring rule-following tendencies. It is important to note the conceptual difficulties associated with categorizing individuals as rule followers or discretion users at opposite ends of a spectrum. As noted in the preceding discussion on discretion, these two concepts are complexly interrelated,
often contingent on situational variables or context, and vary by individual over time. In addition to the several types of internal, organizational influences noted, several types of influence exist external to organizations.

External and Extraorganizational Sources of Influence

While many of the sources of influence found within organizations have been identified as salient to street-level bureaucrats, others argue that external sources have a similarly substantial bearing on front-line behavior. Sources of influence external to the organization include situational variables, clients, individuals from other organizations, political principals, the media, and the community as a whole (Vinzant & Crothers, 1998, pp. 15-16). Situational variables, such as the environment in which the service is being performed, the actions of other street-level bureaucrats, as well as client-specific factors, can influence the behavior of street-level bureaucrats by altering the both the decision-making process and the desired outcomes of the incident.

Clients, and specifically the street-level bureaucrat’s perception of the client’s identity, have been found to significantly impact front-line worker behavior. Front-line workers provide a service, and in doing so must “... first reduce that citizen and his or her demands into a simple and patterned package of processable attributes” (Prottas, 1978). Street-level bureaucrats must assess the client’s needs and determine how the agency can or cannot assist the individual. Prottas (1978) noted that “[i]n this sense, the clients of a public service bureaucracy play the role of the organization’s raw materials; the real work of the employees is remolding clients to define their relationship to the agency as consumers” (p. 289). Thus, perceived client identity is linked to the street-level
bureaucrat’s evaluation of the client’s worthiness to receive certain types of service provided by the agency (Maynard-Moody & Musheno, 2003). This may, to some extent, be related to an intrinsic desire to reduce the cognitive load that would be required if interactions with other individuals in difficult situations had to be examined anew with every new situation. As van Ryn and Burke (2000) noted, “[a]ll humans share the generally adaptive strategy of making the world more manageable by using categorizing and generalizing techniques to simplify the massive amounts of complex information and stimuli to which they are exposed” (p. 814).

The categorization of a client determines the types of assistance he or she will receive, as well as the responsibilities of the organization in assisting the individual. As the principal component in the categorization process, the street-level bureaucrat wields substantial power (Prottas, 1978). They “… can dominate the client by controlling the alternatives and information coming from the bureaucracy, s/he can influence the bureaucracy by controlling the alternatives and information coming from the client” (Prottas, 1978, p. 294). Thus, these interactions between street-level bureaucrats and clients are meaningful in that they have an effect on both the client and the organization. The interactions essentially embody a “… duality…. They label a citizen so as to define what treatment the citizen is to receive from the bureaucracy. At the same time, they bind the bureaucracy to do a specific series of tasks and to expend specific resources” (Prottas, 1978, p. 291). Though street-level bureaucrats are required to provide some services, the control of information creates an unbalanced relationship between the client and bureaucrat, placing the client in a potentially unfavorable position. “Having a need for
services for which alternatives are often unavailable, clients are taught how to behave” (Hupe & Hill, 2007, p. 283).

To accomplish this evaluation of the client, street-level workers, according to Maynard-Moody and Musheno (2003) “… want to get a sense of who citizen-clients are, get a fix on people, to decide how to handle them” (p. 78). “In figuring out who a person is, they … [assign] them to a social identity or social belonging that carries with it significant meaning and consequence …” (Maynard-Moody & Musheno, 2003, p. 78). Thus, in this discussion, client identity is the assignment of clients to a social identity or to a social group based on an observation of ascribed characteristics such as gender, race or ethnicity, age, socio-economic status, or attribution of membership in some other type of social or cultural grouping.

The influence of clients on bureaucratic discretion at the front lines was found to be significant in the experimental study of welfare eligibility workers conducted by Scott (1997). The study used to multiple cases to depict clients with differing levels of need to evoke varying levels of compassion for the client’s situation. The results showed that, on average, those clients who evoked a higher need for compassion received higher levels of assistance (Scott, 1997). Interestingly, the clients used in this laboratory study were presented to participants in the form of a scenario, a method that allows for control over client characteristics and manipulation of variables of interest. This method includes a rather obvious weakness of reducing a complex set of traits and characteristics to a simple description of a person, something that does not allow for the full face-to-face interaction that is the hallmark of street-level work. Limitations aside, this example
further supports the concept that there may be a relationship between client characteristics and street-level bureaucratic behavior.

In a study of street-level workers in a police department, vocational rehabilitation center, and school counseling office, Maynard-Moody and Musheno (2003) found that four dimensions are important to shaping perceptions of client identity and worthiness. The first is an evaluation of the client’s responsibility for their need for the services provided by the agency. “If clients are responsible for their disabilities – driving drunk and causing a car crash, for example – they are deemed less worthy than someone disabled by birth, disease, or accident” (Maynard-Moody & Musheno, 2003, p. 103). However, Maynard-Moody and Musheno find that client motivation to improve their situation, the second dimension of worthiness, is more important to the services provided than the initiating reason or reasons for their need (2003, p. 104). Indeed, the “…motivated citizen-client is nonetheless deemed morally superior to the unmotivated. Conversely, the unmotivated, regardless of their need or circumstance, are deemed unworthy…” (Maynard-Moody & Musheno, 2003, p. 104).

A third dimension is the presence or lack of virtuous intent of the client. The “…morally worthy citizen-clients do not try to con or scam workers in the system” (Maynard-Moody & Musheno, 2003, p. 104). Thus, the intent to manipulate the system is an important defining trait. The final dimension of worthiness deals with the distribution of time, effort, services, and funds, all of which can be expressed as a material investment in the client. Maynard-Moody and Musheno noted that “[t]his material dimension of worth is a summative judgment: if citizen-clients have genuine needs, are of good character, and are motivated to respond to treatment, then they are likely to repay society
for street-level workers’ investment of time, effort, and money” (2003, p. 106). This points to the importance of street-level bureaucrats in the context of a democratic system of governance (Meyers & Vorsanger, 2007). At the most basic level they “… are making normative judgments about who gets what from government: they are simultaneously fusing the performance of the state with the construction of the social order” (Maynard-Moody & Musheno, 2003, p. 106).

These issues highlight the difficulties of front-line service, where “… identity and moral judgments are bound up with the quotidian work of the state” (Maynard-Moody & Musheno, 2003, p. 8). This process of evaluating client worthiness also serves to temporally locate the exercise of discretion for street-level bureaucrats. Specifically, as Maynard-Moody and Musheno (2003) noted, “[s]treet-level judgment lies more in the nature and extent of the services delivered and less in the intake decision” (p. 102). This is especially true for services such as EMS in which the choice to serve a client is nonexistent. Street-level EMS workers can only choose the method and extent of the services they provide.

These perspectives of discretion, perceived client worthiness, and disparities in treatment have been tested empirically in a type of natural experiment. Wenger and Wilkins (2008) studied the impact of automation of claims processing on the approval of unemployment claims for women. The authors, using Maynard-Moody and Musheno’s (2003) conceptions of street-level bureaucrats as state-agents, citizen-agents, or rogue agents, hypothesized that the implementation of automated procedures may help clients by reducing the impact of rogue agents looking to disentitle the client, hurt clients by reducing the number of citizen-agents looking to provide assistance when it is not due, or
may have no effect on policy outcomes (Wenger & Wilkins, 2008, p. 315). The results of
the study show that women, often the target of discrimination in the unemployment
insurance process, benefitted from automation and loss of discretionary power by front-
line workers (Wenger & Wilkins, 2008, p. 327).

Given these findings, the authors concluded that the introduction of technology
has reduced bureaucratic control over the information submitted by clients and has
increased the ability of supervisors or managers to access the data submitted by front-line
workers (Wenger & Wilkins, 2008, p. 326). And, by virtue of the fact that cases are no
longer handled by a single individual, the authors noted that more agents will be able to
access a clients information and thus provide a check against improper bureaucratic
action (Wenger & Wilkins, 2008, p. 326). These findings, although compelling, are based
in suppositions about individual-level behavior that are then tested using state-level data.
Thus, the mechanisms through which “rogue” bureaucrats would disentitle potential
recipients were presumed to be at work were not directly observed or discussed with
those engaging in direct service provision. Despite this limitation, this study points to
potentially important relationships between assessment of client identity and the
distribution of public goods and services.

Though not explicitly linked to client identity, other empirical investigations have
sought to examine how service provision changes when street-level bureaucrats, and their
discretionary decisions, are removed from the equation through the adoption of new
technologies for providing the same types of services. Bovens and Zouridis (2002)
asserted that street-level bureaucracy and the amount of discretion front-line workers
exert is undergoing a transformation based in the improvements to, and wide distribution
of information and communication technology (ICT). Where street-level bureaucrats used to exercise discretion, Bovens and Zouridis argued that computers removed that discretion through use of electronic data processing (2002, p. 178).

To illustrate this phenomenon, the authors provide an example involving the enforcement of speeding laws. With a switch to traffic camera enforcement, infractions are electronically recorded, computers process the data, and fees are collected electronically from the citizens. This example outlined a case in which the multiple street-level bureaucrats who would have participated in the monitoring, enforcement, and other related activities are removed from the process, and therefore cannot make discretionary decisions. Though applicable to some areas of direct service provision to the public, this automation has limited applicability in many classic front-line positions, and is dependent to a great extent on the tasks of street-level bureaucrats (Bovens & Zouridis, 2002; Hupe & Hill, 2007).

Client identity has been found to shape treatment in other sectors of the healthcare system (Cain & Kington, 2003). In 2004 Todd, Samaroo, and Hoffman found ethnicity to be a strong predictor of the administration of pain medications to patients presenting with similar types of injuries. Specifically, the authors compared the rates of administration of analgesics to Hispanic patients and non-Hispanic white patients visiting an emergency department with long-bone fractures. The authors found that 74% of non-Hispanic white patients received pain medication whereas only 45% of Hispanics with the same type of injury received pain medication (Todd, Samaroo, & Hoffman, 2004, p. 1538). In a similar study, Todd et al. (2000) found that 74% of Caucasians received pain medication whereas only 57% of African-American patients with the same type of injury
received pain medication. Interestingly, this study did not account for many of the sources of influence found to be important in studies of street-level bureaucrats, including the cultural sources, individuals such as patient advocates, or situational factors that may have prevented administration of analgesics. Despite these shortcomings, this study brings to the light the potential significance of identity in the provision of a humane therapy for individuals in a great deal of pain.

These disparities exist beyond the administration of pain medication. Indeed, empirical evidence suggests that “… patient sociodemographic characteristics have an impact on both physician behavior during medical encounters … and on the diagnosis and treatments patients receive (van Ryn & Burke, 2000, p. 813). In a study of 618 post-angiogram patients and their treating physicians, van Ryn and Burke (2000) found that patient race was associated with “… physician’s assessment of patient intelligence, feelings of affiliation toward the patient, and beliefs about the patient’s likelihood of risk behavior and adherence with medical advice; patient SES was associated with physician’s perceptions of patient’s personality, abilities, behavioral tendencies, and role demands” (p. 813). Though these effects are notable, these associations are not direct and easily measured. Rather they are most likely the product of “… complex interaction in patient, provider, and structural factors” (Fiscella, 2004, p. 939). Thus, the effect of patient identity on street-level bureaucratic behavior must also be examined through other means that serve to connect these disparate inputs.

The very personal nature of the street-level public service places an additional burden on front line employees, namely that they “… must deal with clients’ personal reactions to their decisions” (Lipsky, 1980, p. 9). Newman, Guy, and Mastracci (2009)
noted, in a study of the affective leadership in public service, the importance of emotional resilience for street-level bureaucrats. The authors argue for the necessity of understanding and appreciating the importance of an emotive aspect to leadership, and do so in part by examining the highly emotional world of front-line workers. The authors, through interviews and focus groups with street-level bureaucrats working in a public advocacy organization, a state department of corrections, and a 911 dispatch center, “…reveal the centrality of emotion work in the service exchange …” (Newman, Guy, & Mastracci, 2009, p. 9). A street-level bureaucrat, in delivering positive or negative news to a client, must be prepared to deal with the client’s reaction. In the words of Maynard-Moody and Musheno (2003), they “…deal with faces” (p. 8).

The constraints placed on front-line bureaucratic action by political principals have also been found to be influential. First, executive agencies at the federal, state, and local levels can influence front-line worker behavior by promulgating operating rules and standards for training and education for these positions (Vinzant & Crothers, 1998). For example, in Pennsylvania the Bureau of Emergency Medical Services (BEMS), located within the Department of Health, has the statutory authority to set the scope of practice for EMS providers, essentially a list of allowed procedures that certified or licensed individuals can perform (28 Pa. Code § 1003). Direct influence on street-level bureaucratic behavior can be exerted through changes to the scope of practice for front-line EMS positions. Likewise, studies of front-line welfare providers have found that “…street-level bureaucracies also seem to respond to political pressure. Democratic states seem to be more lenient in the granting of disability claims than are Republican
states” (Keiser, 1999, p. 101). In this case, local political pressures from an elected executive may directly or indirectly influence the tendency to approve claims.

Legislative bodies can influence the behavior of street-level bureaucrats through both the enactment of laws and more informal means of influence (Gilboy, 1992). Enacted legislation can, through indirect, mandated changes to organizational functioning, alter front-line bureaucrat behavior. For example, the Health Insurance Portability and Accountability Act of 1996 (HIPAA) changed the manner in which personally identifiable patient information (i.e., name, date of birth, social security number) could be created, transmitted, and stored by EMS providers. Through laws concerning patient confidentiality already existed in many states, the substantial attention drawn to HIPAA by the Centers for Medicare and Medicaid Services focused attention on the issue and shaped day-to-day provider behavior.

Gilboy (1992), through observations of service interactions and informal interviews of front-line officials, examined “casework” as a form of indirect influence on front-line officials working in the Immigration and Naturalization Service. Perhaps the most important contribution of this work is the link between anticipated behavior of legislators and the actions (or inaction) of front-line bureaucrats (Gilboy, 1992, p. 276). Within the INS front-line officials have discretion in determining the threshold of proof for the individual’s reason for entry to the United States (Gilboy, 1992, p. 279). In certain situations, the U.S. citizens sponsoring individuals entering the country may complain to their legislators about problems of admittance for foreign nationals. In these cases, the legislator may choose to ask agency officials why front-line workers made a decision to allow or disallow entry for foreign nationals. These inquiries can travel the organizational
chain-of-command down to the INS official who made the decision to allow or disallow entry. Though these legislators are several steps removed from front-line workers, their influence can be felt quite strongly by front-line workers through organizational mechanisms involving their superiors.

However, this indirect influence through the organization is not the only method of indirect influence. Indeed, the *anticipation* of the potential consequences of their actions can be particularly salient for street-level bureaucrats in the INS. Street-level bureaucrats make decisions that are “… fundamentally shaped by their understandings of how superiors have responded or are likely to respond in matters involving casework intervention” (Gilboy, 1992, p. 277). This anticipation is the result of a “working knowledge” of the consequences of making certain decisions (Gilboy, 1992, p. 277). These findings are interesting in their emergence from data collection methods that placed the researcher close to the subject of the research allowing for a depth of understanding that may not have otherwise been possible. However, the depth of this research, and resultant specificity of the findings, may not be applicable to other federal agencies or to other types of street-level bureaucracies. The signature aspect of this case, the substantive interest in casework by legislators, may not be a frequent or common occurrence within other street-level services. This is especially true for those street-level bureaucrats rooted in programs serving lower socioeconomic strata, a group that inevitably receives less attention from elected officials.

Judicial influence on the behavior of front-line workers, though less frequently exerted and potentially less palpable than other forms of influence, can be found in an example of recent case law. Legal action against an ambulance service can result from a
service interaction that a client or client’s family member felt was insufficient or inappropriate. A recent judicial decision in Pennsylvania on this matter, Christy v. Cranberry Volunteer Ambulance Corps (856 A.2d 43 [Pa. 2004]) found that ambulance services, if meeting certain criteria, can be considered a “local agency,” thus falling under the Political Subdivisions Tort Claims Act (PSTCA) (Subchapter C of Chapter 85 of the Judicial Code, 42 Pa. C.S. §§8541-8564). Qualification of an organization as a “local agency” under the PSTCA renders the employees of that organization immune from liability with certain exceptions (as found in 42 Pa. C.S. §8542). Street-level bureaucrats, with knowledge of their organization’s qualification or disqualification for immunity under the PSTCA, may behave with more or less care while rendering aid the course of a service interaction. Likewise, knowledge of the exceptions from the PSTCA, specifically the exception regarding the operation of vehicles, may motivate front-line EMS providers to exercise additional care when providing services.

Responding to Multiple Sources of Influence

The decision-making process at the front lines often requires considering each of these types of pressures, each of which can “… have greater or lesser influence in different circumstances” (Vinzant & Crothers, 1998, p. 17). Though many of the empirical studies described previously considered one or several of these sources of influence, a more complete understanding of the nature of street-level behavior and exercise of discretion must be open to multiple sources of influence (Meyers & Vorsanger, 2007). Additionally, the situational nature of influence must not be taken lightly. Indeed, the relative impact of the multitude of sources of influence may be
different not only on an occupation-by-occupation basis, but also based in the nature of the incident. Discussing a particularly difficult case presented to a police officer, Vinzant and Crothers determined that “[u]ltimately, in making the choices he made, the officer, in effect, interpreted a mix of laws, rules, preferences, and values and decided how they ought to be applied in this particular case” (1998, p.19). In summary, “[w]hat workers often do is balance multiple and sometimes conflicting standards and expectations in making judgments about what to do in specific cases” (emphasis in original, Vinzant & Crothers, 1998, p. 19).

**Summary**

The literature reviewed in this chapter illustrates the myriad sources of influence on street-level bureaucrats as they enact rules and employ discretionary latitude in providing public services. Some factors have been found to be particularly salient for specific occupations, whereas others are found across a wide variety of tasks and organizations. Many of these factors are variably influential over time as street-level bureaucrats gain experience working with clients, socializing into occupations, and learning to operate within specific organizations. Though a substantive body of knowledge has been developed, additional energy must be devoted to further testing and refining of established connections and exploration of new areas of interest.

Future research on street-level bureaucrats will also need to employ both qualitative and quantitative data collection methods. The former is necessitated by the complexity intrinsic to the character of street-level service provision. Street-level bureaucrats must follow complex sets of rules while situated in unique organizations
employing highly differential peers and leaders. These organizations, located in potentially heterogeneous and shifting political and task environments, must serve citizens who have highly varying needs and circumstances. The contingencies created by this complexity must be acknowledged and examined using qualitative methods. Knowledge built upon this firm foundation can then be generalized to larger populations through rigorous quantitative research aimed at gaining a better understanding of the commonalities across both organizations and occupations at the street-level.

Perhaps most important, the types of services receiving scholarly attention must be expanded. The importance of those services already studied is certainly not in question; core public services like law enforcement, teaching, and the provision of social services are critically important and worthy of substantial attention through empirical research. However, other services, many of which have not been subject to widespread and rigorous scholarly attention, are just as worthy. One public function in particular, emergency medical services, is one such example. Although EMS is a relatively nascent service, with roots in the middle of the twentieth century, it is a service that has grown to occupy a key position as a public safety function and key figure in the national health care system.

Like other front-line occupations, EMS providers are governed by a substantial body of rules, must work in complex situations, and must respond to the unique needs of the patients they encounter. Thus, like other street-level professions, EMS providers must also respond to multiple sources of influence as they implement policies meant to govern their actions. The next chapter will detail EMS systems, organizations, roles, and rules to provide foundational knowledge necessary for this study.
A thorough understanding of behavior in street-level EMS requires knowledge of the historical and legal development of this core public service, as well as the current state of EMS systems, organizations, and the individual roles that characterize these services. As previously outlined, this study examines only the prehospital component of EMS systems, focusing on the assessment, treatment, and transportation of critically ill and injured patients to more comprehensive care. Thus, the discussion will be limited to pertinent information on this aspect of the EMS system. However, where necessary, the development and current state of these services will be linked to the larger EMS system. This will serve, as indicated in Chapter 1, to place EMS within a governance context as opposed to isolating EMS agencies and providers from the greater political, social, and economic environment.

**Overview of Emergency Medical Services**

Emergency medical services organizations provide increasingly critical services. The IOM report on the state of EMS noted that these services are the “… initial stages of the emergency care continuum,” and are tasked with ensuring that “… each patient is directed to the most appropriate setting based on his or her condition” (2007, pp. 1-2). These objectives, emphasizing the needs of patients as well as the appropriateness of destination facilities, are deceptively simple. In reality, the situations and decisions faced by EMS providers are fraught with uncertainty and risk. The impact of EMS providers’ response to these complex situations extends beyond their actual contact with the patient.
As the front-line of the health care system, EMS can have a substantial impact on the care patients receive when they reach these higher levels of medical care. Indeed, as Prottas (1978) noted, “… errors or bottlenecks in the early stages of client processing ripple through the organization” (p. 296).

As previously noted, there are approximately 16 million patients transported by EMS providers every year, an average of more than 30 patients transported every minute. Among the several million patients who are transported, there is great variation in the nature and severity of the injuries or illnesses, with differing types of emergencies resulting in transportation to generalized (community hospitals) or specialized care facilities (trauma centers with advanced capabilities of diagnosis and interventional surgery). However, in considering this volume of service and the potential for complexity and need for street-level provider discretion, it is important to note that the actual volume of calls for service is higher as not every call for service results in transportation of an individual to a hospital. Indeed, the need for EMS provider discretion can be greater, and the problems more complex, in those cases where a patient is not transported to a hospital.

This chapter will review the development of EMS at the federal state, and local levels and the basic functions of these vital public services within the larger emergency medical care system. Next, the most common roles found in the EMS organizations, and similarities and differences between EMS and other street-level occupations, will be discussed with a specific focus on nature of patient needs and how they differ from most street-level professions studied to date. This section will conclude with a review of
empirical research in EMS from diverse academic fields, including medicine, health care economics, operations research, and public administration.

**Historical and Legal Development of EMS in the United States**

The need to provide comprehensive emergency medical care came to the fore in the mid-1960s with the publication of *Accidental Death and Disability: The Neglected Disease of Modern Society* by the National Academy of Sciences and the National Research Council (NHTSA, 2001, p. 13). This report noted the deficiencies in the provision of EMS and suggested numerous courses of action that would begin to improve prehospital care. These included improvement to first-aid techniques, formalization of education for emergency medical care providers, improvement to the design and manufacture of ambulances and durable medical equipment, improvements to the management of public safety agencies, creation of state level policies and regulations for emergency medical care, and improvements to communication systems (National Academy of Sciences – National Research Council, 1966, pp. 12–18). These suggestions, and the abundance of energy and funding that it created, were responsible for much of the initial development of EMS systems in the United States.

After the release of *Accidental Death and Disability*, Congress passed the Highway Safety Act in 1966, establishing the National Highway Traffic Safety Administration (NHTSA). The NHTSA was vested with “… improving EMS systems by administering grants for ambulance purchases, communications systems, training programs, … supporting other traffic-related system improvements, … [and] developing national standard curricula for the education of EMS personnel …” (NHTSA, 2001, p.
13. Though an important step in the process of improving front-line emergency medical care, this nascent stage of the development was characterized by substantial amounts of grant funding for very loosely framed goals. Adding complexity to goal ambiguity, it was the individual states who were charged with developing and implementing these programs as they saw fit, introducing substantial differentiation in the established programs.

In 1973, Congress enacted the Emergency Medical Services Systems Act (P.L. 93-154, 1973), which served to strengthen the role of the federal government through disbursement of grants funds. Specifically, this legislation provided the framework for funding of the feasibility studies and planning, establishment, and development of EMS “systems,” defined as “. . . the arrangement of personnel, facilities, and equipment for the effective and coordinated delivery in an appropriate geographical area of health care services under emergency conditions . . . and which is administered by a public or nonprofit private entity which has the authority and the resources to provide effective administration of the system” (P.L. 95-154, 1973). A total of 15 system requirements were outlined, including topics such as personnel, training, equipment (both vehicles and communication), creation of appropriate facilities to handle patients, ensured access to the right level of care to allow for transfer between facilities, creation of disaster plans, access to care, and provision of mutual aid services (P.L. 95-154, 1973). The goals of this law were lofty; the desired result was a single organization designed to implement and oversee an integrated, collaborative network of organizations and individuals tasked with providing several types of both health care and public safety services. Though it had potentially unrealistic goals, the EMS Act of 1973 did serve to provide increasingly
specific goals to guide state governments as they improved coordination, education, and development of EMS providers and networks of agencies to serve the emergent health needs of the public.

The EMS Act of 1973 also created an administrative unit within the Department of Health, Education, and Welfare (now Department of Health and Human Services) for the purpose of “… collecting, analyzing, cataloging, and disseminating all data useful in the development and operation of emergency medical services systems …” (P.L. 95-154, 1973). The centralization of data on EMS systems and training, combined with the control over funding for EMS research and operations, provided federal government agencies with substantial power and authority to determine the function of EMS.

Improved clinical education for EMS providers was also a target of improvement in this legislation, with substantial funding made available to schools of medicine, dentistry, nursing, and other educational bodies that could assist in providing improved training in “. . . techniques and methods of providing emergency medical services (including the skills required in connection with the provision of ambulance service) …” (P.L. 95-154, 1973). Legal aspects of emergency medical care were also eligible for funding under the EMS Act, with a focus on necessary rules and regulations for effective service provision (P.L. 95-154, 1973). Additionally, the Interagency Committee on Emergency Medical Services was formed to spur coordination among the already numerous federal entities involved in funding or assisting EMS research or direct EMS provision. This body would later be formally vested with authority to regulate EMS planning and assessment at the federal level, and with assisting state governments in the evaluation and implementation of EMS systems (IOM, 2007, p. 6).
Federal EMS funding under the 1973 legislation ended with the Omnibus Budget Reconciliation Act of 1981, and was merged with block grants to states under generalized health programs (NHTSA, 2001, p. 13). This transfer in funding produced a shift in the locus of EMS program regulation from the federal government to the states, with a GAO report from 1984 noting that this “… [gave] states great discretion, within certain legislated limitations, to determine programmatic needs, set priorities, allocate funds, and establish oversight mechanisms” (p. 1). This move to state control of funds and regulatory authority is noticeable in the current organizational arrangements at the state, regional, and local levels, in the creation and enforcement of rules concerning standards for service provision and licensure, and in educational and certification standards for street-level bureaucrats in EMS organizations. This shift from federal to state oversight of EMS has resulted in sometimes wide disparities among states in the EMS provision.

**Historical and Legal Development EMS in Pennsylvania**

The legislative development of EMS in Pennsylvania reflected many of the changes occurring at the federal level. Act 264 of 1976 (P.L. 1205, No. 264) defined roles of “emergency medical technician” and “emergency medical technician-paramedic,” and exempted these EMS providers and any physicians providing them with medical direction from civil liability unless grossly negligent. The Emergency Medical Services Systems Act of 1976 (Act 265) (P.L. 1207, No. 265) established “Emergency Health Services Councils,” non-profit organizations formed to provide oversight in the creation of EMS systems, and adopted standards for distributing grant funding for the establishment of these systems. This funding was renewed by the Pennsylvania General
Assembly in 1979 (P.L. 107, No. 44), including amendments to tighten financial reporting of regional councils to the state and increase funding to rural areas. Subsequent renewals of Act 265 in 1982, 1983, and 1984 were for 1 year or less. Act 209 of 1984 (P.L. 1061, No. 209) renewed Act 265 and formed the Pennsylvania Trauma Systems Foundation, charged with setting specific standards for recognizing and accrediting hospitals to treat severely injured patients.

The need to create more comprehensive EMS legislation became apparent after funding shifted from the federal to the state level in 1981. The Emergency Medical Services Act of 1985 (Act 45) (P.L. 164, No. 45), the first legislation in Pennsylvania written to provide comprehensive prehospital EMS, was created to “... establish and maintain an effective and efficient emergency medical services system which is accessible on a uniform basis to all Pennsylvania residents and to visitors...” in a “prompt” and “unimpeded” manner (P.L. 164, No. 45, 2009). Act 45 gave lead authority to the Department of Health to regulate EMS, established the formal aspects of the EMS “system,” including personnel, facilities, and methods of communication, created standards for licensing EMS organizations and providers, established roles for EMS providers, set standards for collection of data regarding patient care and outcomes, and established the system of regional councils to implement the provisions of the act (P.L. 164, No. 45, 2009). Act 45 also incorporated more specific language regarding the duties of the Pennsylvania Trauma Systems Foundation, as well as a state advisory council made up of representatives of EMS organizations, training institutes, professional associations, and other public safety organizations charged with advising the Department of Health on EMS issues (P.L. 164, No. 45, 2009).
The Pennsylvania General Assembly amended Act 45 in the fall of 1988 to further elaborate on several issues found to be important. These amendments included the establishment of minimum standards for staffing of ambulances, ensuring that private ambulance services were also subject to the regulatory authority of regional councils, added the requirement that regional councils create “bypass protocols” to address the manner in which decisions are made to transport patients to certain specialized medical facilities, added the requirement that mechanisms be instituted to allow input from EMS organizations in governance of regional councils, and increased financial support for EMS organizations through grants funded by fines on traffic violations and rehabilitation programs for individuals convicted of driving under the influence of intoxicants (P.L. 1055, No. 121, 1988). Further amendments were passed in 1994 (P.L. 557, No. 82, 1994) that clarified the certification and sanction of EMS providers, provided definitions and functions of physicians acting with EMS services, and provided for a Commonwealth EMS physician.

In 1998 the Pennsylvania Department of Health and other in-state agencies began a review of Act 45 to determine how it fit the needs of EMS system and how it could be improved (PA DOH, 2009). Substantial discussion both within state government and with EMS agencies and other public safety organizations resulted in the Emergency Medical Services Systems Act of 2009 (P.L. 308, No. 37, 2009). The EMS Systems Act established the broad framework for the provision of emergency medical care in Pennsylvania, and included substantial amounts of revised content found in Acts 45, 121, and 82. Notably, Act 37 clarified the titles of responders, added new certifications for EMS vehicle operators, ensured new quality assurance measures for EMS, and allowed
for regulatory flexibility in several of these areas. Though several portions of Act 37 were
effective immediately, including changes to the Vehicle Code and the general
introductory language setting the framework for EMS in Pennsylvania, many of the
major changes implemented with the passage of Act 37 will not go into effect until
February 2012.

The EMS System Act, like the amended legislation it replaced, gives the
Pennsylvania Department of Health Bureau of Emergency Medical Services (BEMS) the
authority to create administrative rules and regulations to enforce the law. Title 28 of the
Pennsylvania Code (§§ 1001–1051, October 14, 2000), which contains the official rules
and regulations promulgated under the authority of Act 45 of 1985, was created to “. . .
plan, guide, assist and coordinate the development of regional EMS systems into a
unified Statewide system and to coordinate the system with similar systems in
neighboring states, and to otherwise implement the Department’s responsibilities under
the act consistent with the Department’s rulemaking authority” (28 Pa.C. § 1001.1). These
rules and regulations provide substantial clarifications and specific procedures for the
roles and functions of EMS providers, EMS organizational leadership and operational
and clinical supervision, licensing of services, certification of individuals, training and
accreditation of educational institutions, and necessary ongoing training for personnel (28
Pa.C. §§ 1001-1051). These rules and regulations, authored by the BEMS, are subject to
notice-and-comment periods to allow public participation. Public commentary, and
resulting reaction from BEMS, are published in the Pennsylvania Bulletin, the official
register for rulemaking in the state (30 Pa.B. 5363). Similar administrative rules and
regulations emerging under the authority of Act 37 will be developed collaboratively


between the BEMS, regional councils, EMS providers, and other parties prior to full implementation of the act in 2012.

Additional regulations created by the BEMS appear in the *Pennsylvania Bulletin*, and include topics such as change to the prehospital scope of practice (38 Pa.B. 6565), changes to required equipment and supplies (39 Pa.B. 6290), standards on data gathering (39 Pa.B. 68) and adoption of national standards on data collection, and changes to allowable medications that can be used in patient care (38 Pa.B. 6564). In addition to their appearance in the *Pennsylvania Bulletin*, these changes to scope of practice, required equipment, and other system-wide issues are periodically published as “EMS Informational Bulletins” that serve to clarify the Bureau’s stance on a particular issue or set of issues in a manner that is accessible for EMS organizations and providers. From August 2003 to March 2011, the BEMS issued more than 80 informational bulletins to address new problems facing EMS providers in the state, or to announce changes to the scope of practice for EMS providers, allowable types of medications, changes to required EMS equipment, or other issues of importance (PA DOH, 2011).

**Rules, Policies, and Procedures in Emergency Medical Services**

In addition to the state EMS Systems Act and administrative rules and regulations, EMS providers in Pennsylvania must abide by other rules, policies, and procedures created by the state, regional councils, and organizations. The preceding discussion established that much of the EMS system is regulated by a substantial body of legislation and administrative rules which, by extension, serve to influence street-level bureaucrats in EMS organizations. However, certain rules, policies, and procedures are
more salient to EMS providers as they engage in the provision of services. Specifically, the state-level clinical protocols and scope of practice, regional clinical protocols, and organizational documents that are purposefully created to shape the behavior of EMS providers during interactions with patients factor more prominently than the federal and state laws that set the framework for EMS systems and service provision.

EMS providers in Pennsylvania, as in other states, are guided by clinical protocols that dictate specific clinical treatments that are appropriate for patients presenting with specific medical conditions. State-level clinical protocols in Pennsylvania take the form of individual rules that use both text and algorithms, or flow charts that outline important aspects of the patient’s condition and the required treatment or treatments to alleviate the particular illness or injury.

Prior to 2004 clinical protocols in Pennsylvania were developed and maintained by the regional governing bodies. The change to the use of state-wide protocols, motivated in part by a desire to create uniform, evidenced-based protocols, easier integration with other policy documents, and allow for easier modifications (PA DOH, 2008), resulted in substantial review and input from state medical directors, EMS providers, and interested organizations. As a result, the first Pennsylvania state-level basic life support (BLS) protocols were implemented in September 2004, and the first state-level advanced life support (ALS) protocols were implemented in July 2007. Both documents were subsequently revised, with the most recent edition dated November 2008.

By statute, authority for drafting these protocols now lies with the Department of Health (35 Pa.C. §7205), with input from the Commonwealth emergency medical
director, regional EMS medical directors, medical command physicians, and medical directors for single EMS organizations (28 Pa.C. §. 1003.1-5). Pennsylvania has two types of EMS protocols that correspond to the two tiers of service, BLS and ALS (PA DOH, 2008). These state-level protocols may be amended by EMS regions at the direction of region-wide medical advisory committees, but amendments cannot conflict with state-level rules. Likewise, organizations may also make amendments to the protocols as long as amendments do not conflict with regional- or state-level protocols. Thus, a substantial body of clinical rules exists to guide front-line EMS provider behavior, including state-wide, regional-, and organizational-level protocols.

The Pennsylvania state protocols explicitly recognize the complexity of front-line EMS and the need for street-level judgment. An introductory document to the 2004 Pennsylvania Statewide Basic Life Support Protocols notes that the “… protocols should guide patient care, but the Department recognizes that situations will arise when the condition of a patient will not precisely meet the intent of a protocol” (PA DOH, 2008). The introductory letter to the November 2008 revision of the statewide BLS protocols, authored by the Director of the Bureau of EMS and the Commonwealth Medical Director, altered the language slightly to indicate that “… the Department expects EMS personnel to use their training and judgment regarding any protocol-driven care that would be harmful to a patient. When the practitioner believes that following a protocol is not in the best interest of the patient, the EMS practitioner should contact a medical command physician if possible” (PA DOH, 2008, emphasis in original). Though subtle, the language indicates a shift in focus and in the relationship between the rules and front-line EMS providers. The former focuses on an inability to match protocols to every
situation, requiring some amount of provider discretion in patient treatment and rule-following. The latter focuses on only identifying those situations in which the strict interpretation of a protocol is not in the patient’s best interest and institutes the requirement to subsequently contact a medical command physician for input into patient treatment. The second perspectives, although more conservative, potentially serves to diminish the judgment of EMS provides.

The use of EMS protocols to guide patient care also reduces the ability of service providers to respond to other sources of influence. In cases where a patient’s condition is severe and life-threatening, treatment for severe medical conditions is set forth explicitly and the range of medically acceptable treatments is increasingly narrow, thus potentially reducing salience of other sources of influence on provider behavior. Essentially, the range of acceptable treatment modalities for these severe conditions is increasingly limited, reducing the amount of discretion that EMS providers have in providing care to a citizen. Importantly, while discretion may be increasingly limited in more serious cases, paramedic skill does play an important role in the actual provision of care. The ability or inability to perform complex skills may serve to expand or reduce discretionary abilities depending on the necessity of those skills for appropriate patient care. Conversely, in those situations where a patient’s condition is less dire, EMS protocols may not dictate all aspects or steps of patient treatment, potentially increasing the salience of other sources of influence on the behavior of EMS providers.

As guides for providing clinical care, protocols are not without flaws. First, as Heightman (2010) noted, protocols can be incomplete guides for decision-making. Specifically, algorithms may not account for situational factors unique to an emergency
incident, especially in resources-limited situations (e.g., rural disasters and triaging in mass casualty situations). Additionally, the effectiveness of these protocols depends on correct patient assessment by the EMS provider. Raynovich (2010) noted the importance of communication with patients in assessing clinical condition and appropriate treatment. The nature of the questions asked, the verbal and non-verbal signals that are communicated to the patient, and vice-versa, can influence the direction that an assessment, and diagnosis, can take (Raynovich, 2010, p. 24).

Though state-based clinical protocols are the officially established body of rules by which individuals and organizations must adhere, other rule sets can serve to influence front-line EMS workers. For example, many EMS organizations may require or encourage paramedics to attend annual training on more complex clinical topics including “Advanced Cardiovascular Life Support” (ACLS), and “Pediatric Advanced Life Support” (PALS) (American Heart Association, 2011). Though, in many cases, the clinical protocols presented in the literature used for these courses match those of state protocols, there are occasions for conflict. Interestingly, this disconnect can serve to send mixed signals to providers, especially if courses are required as a condition of initial or continuing employment.

In addition to clinical protocols, organizations often promulgate standard operating procedures or guidelines to manage the nonclinical aspects of a service encounter and other operational aspects of organizational functioning. These documents often address issues such as use of safety equipment, control of large, complex incidents, documentation of patient encounters, and training beyond state and regional minimums. While often not as specific as clinical protocols, many of the clinical skills used in
complex situations can depended to a great extent on the nature of the operational rules created to guide behavior.

For the most part these rule sets are supported or promulgated with the force of state law. Though without this legal standing, the standards created by the National Fire Protection Association (NFPA) may in some cases be applicable to EMS units. NFPA 1710, a standard addressing the “organization and deployment” of emergency services units by career fire departments, outlines specific standards for EMS operations (NFPA, 2010). While EMS training and treatment, staffing, deployment, and quality management are addressed, these components of the standard in most cases refer to the determinations of the “authority having jurisdiction” or to state or regional law for the appropriate levels or qualities necessary. One item addressed specifically is that of response times by emergency services units (NFPA, 2010). The standard states that “first responder” services must be able to respond with 4 minutes of dispatch 90% of the time, while ALS level services must be able to arrive on scene within a 6-minute period 90% of the time (NFPA, 2010). A 2009 survey of the 200 largest cities in the United States found that only 63.4% used the NFPA 1710 standard, while only 27.7% were in compliance (Williams & Rangone, 2010, p. 38). Again, while NFPA standards do not have the force of law, they are considered “best practices” to which emergency services organizations should adhere. Through their acceptance as consensus standards, they become important to both EMS agencies and to the local government entities they are serving.
The Current State of EMS Organizations

The evolution of EMS systems since 1966 has been dramatic. Standards for education of EMS providers have been continually developed and refined, regulations regarding the type and characteristics of EMS vehicles and portable medical equipment have been promulgated, and relationships with both the public safety and medical communities have been formed. The regulation of EMS services, though, is still predominantly based at the state and local level. This results in significant variation in the scopes of practice for basic- and advanced-level EMS providers, organizational arrangements for proving EMS services, and differing systems of communication and coordination among public safety organizations. Differences external to EMS organizations are also significant. These can include the geography and demographics of the population in the primary response area, influences from other public safety organizations (including other EMS and fire and police departments) in the same primary response area, the expectations of the local public officials, and locally available resources. The collective effects of these differences are substantial. As the IOM report noted, “[t]he transport of patients to available emergency care facilities is often fragmented and disorganized, and the quality of emergency medical services (EMS) is highly inconsistent from one town, city, or region to the next” (IOM, 2007, p. xiii).

There is also a great deal of variation in the organizational arrangements that have been established for providing prehospital EMS (David & Harrington, 2010; Fleischer & Lindstrom, 1987). As stated in the IOM report, “[n]early half of these systems are fire-based, meant that EMS care is organized and delivered through the local fire department. Other systems are operated by municipal or county governments or may be delivered by
private companies, including for-profit ambulance providers and hospital-based systems” (2007, p. 2). These differing arrangements are interesting for several reasons. First, the sectoral “home” of the EMS organization may impact behavior of leaders and street-level bureaucrats. For-profit or hospital-managed EMS organizations may emphasize different values, beliefs, norms, and assumptions than those housed in a municipal or not-for-profit setting. Likewise, the classification of a service as consisting primarily of volunteer or paid staff members, or a mix thereof, is important in understanding the motivations that individuals have for joining and remaining as members of the organization, and may be important in explaining behavior. In the end, these different organizational arrangements may impact the provision of services and behavior of both leaders and front-line personnel in both manifest and latent cultural characteristics.

Despite these differences, there are several relatively common types of challenges facing prehospital EMS organizations. The IOM (2007) noted one challenge that is particularly germane to this proposed research, specifically the divided organizational and professional identities of EMS organizations and front-line workers as both providers of medical care and as public safety institutions. The IOM report noted that EMS is a unique profession, one that straddles both medical care and public safety. Among public safety agencies, however, EMS is often recognized as a secondary service, with police and fire taking more prominent roles; within medicine, EMS personnel often lack the respect accorded other professionals, such as physicians and nurses … In addition, there is a cultural divide among EMS, public safety, and medical care workers that contributes to the fragmentation of these services. (IOM, 2007, p. 4)

As previously noted, this duality stems largely from the historical development of EMS organizations from both public safety institutions and hospital systems. Though certainly not universal, many EMS organizations were created as an answer to a
community need and were born as an extension of another agency, such as a fire
department or hospital. The continued operation of the EMS service within the parent
organization context may lead to a differing focus on those occupational cultural traits
that are paramount.

Additionally, as Trice and Beyer (1993) noted, occupational culture is a type of
subculture that must exist and interact with other occupational subcultures in an
organization (p. 223). When considering the nature of EMS services based in hospital
systems and fire departments, the interaction of the EMS occupational subculture and
those of other occupations found in that organization must be considered. When situated
in larger agencies, these interactions can come in the form of negotiations. They noted
that “… seeing organizations as constellations of separate occupational subcultures
focuses attention on the processes of accommodation that permit coordination of effort
and joint decisions making despite differences in objectives and preferences and strong
desires by occupations to control their own work” (Trice & Beyer, 1993, p. 223).

Thus, EMS agencies situated within a fire department or hospital system may be
forced to make accommodations to survive in that environment, and, as such, it can be
said that EMS has multiple occupational cultures, shaped in part by parent organizations,
that may alter the behavior of street-level bureaucrats. Indeed, peer relationships,
including those relationships with street-level bureaucrats that provide different services,
have been found to be influential (Hupe & Hill, 2007, p. 286). This idea of multiple
occupational subcultures with organizations providing front-line public services is not
surprising. Paoline (2004), in a study of occupational culture of police departments, noted
that, in practice, there is no single, monolithic occupational culture that shapes the
behavior of police officers. Gaining a better understanding of how research into the variables of occupational culture and client identity fits into broader inquiry into EMS requires an examination of recent empirical research on the topic.

This argument can also be framed in the context of organizational identity, defined as “… an organization's members' collective understanding of the features presumed to be central and relatively permanent, and that distinguish the organization from other organizations” (Gioia, Schultz, & Corley, 2000, p. 65). Thus, an occupational culture in an EMS organization with an intense focus on clinical care may attract and retain individuals who behave in accordance with this ideal. Likewise, a culture grounded in a public safety perspective may focus more intently on disaster and emergency preparedness, availability of resources, support of other public safety institutions, such as police and fire departments, and the provision of other predominantly nonclinical services. Drawing on social identity theory, the Dutton, Dukerich, and Harquail noted that, “[t]he psychology of [identification with the organization] is powerful because it implies that members may change their behavior by merely thinking differently about their employing organization” (1994, p. 256). The behavior of EMS providers may differ based on the organization’s focus on the task as primarily one of clinical care or as an institution of public safety.

In addition to variations in organizational arrangements, EMS organizations must be responsive to the particular geographical and community needs. These differences, according to Halseth and Rosenberg (1991), can be significant in both EMS system planning and execution when examined in the context of urbanization. As the authors noted, there are differences in issues of resource deployment, increased potential for
misallocation of units based on the severity of the incident, and substantial difficulty in jointly addressing both issues due to the rural setting of particular EMS organizations (Halseth & Rosenberg, 991, pp. 303-304).

Functions and Roles Within EMS Organizations

Within the EMS systems there are several common roles of street-level providers. Specifically, these include the roles of emergency medical technician-basic ("EMT") and emergency medical technician-paramedic ("paramedic"). Though titles may be relatively consistent, there is state-by-state variation in scope of practice and education, with resulting differences in level of preparation for handling critical emergencies (IOM, 2007, p. 9). There are two corresponding levels of emergency medical service: basic life support (BLS) and advanced life support (ALS), each corresponding to the highest level of provider (EMT or paramedic) rendering care in the ambulance.

BLS services include first-aid and cardiopulmonary resuscitation (CPR), and, in some states, more advanced procedures including assisted administration of medications and use of respiratory therapies such as continuous positive airway pressure (CPAP). ALS services include administration of a wider variety of medications including those for cardiac resuscitation and palliative care, as well as airway management and correction for cardiac problems through defibrillation, cardioversion, and cardiac pacing. The level of services provided by an organization at any point in time is determined by the highest certified provider working on the unit. Ambulances capable of transporting patients require at least two individuals, certified at the BLS or ALS level, to be on duty at all
times. Although only one ALS-level provider is needed to perform advanced skills, in some cases organizations will staff ambulances with two paramedics both to reduce provider fatigue and to ensure that “… multiple [complex] interventions can be done simultaneously” (David & Harrington, 2010, p. 606).

The clinical skills of front-line EMS providers are managed through their interactions with physicians. All EMS organizations are required to have physicians, certified by the state as “service medical directors,” that provide general direction in the form of periodic training and evaluation of providers. Particularly difficult emergency and patient-specific clinical questions are generally be handled by “medical command physicians” at the hospital or other destination facility. As will be discussed later, physicians often provide guidance and direction to front-line EMS providers during the course of an emergency. As they begin patient assessment and protocol-based care, EMTs or paramedics may find that a patient presents with a complicated set of symptoms not addressed by clinical protocols and standing orders, may be located within a complex situation that does not allow for standard care, or requires treatment that is within the EMT’s or paramedic’s scope of care but requires permission from a physician before engaging the specific treatment. In these cases physicians, deriving their authority from training and expertise, directly and tangibly influence street-level EMS workers.

There is, however, substantial variation among states in training for these physicians and in their relationship to EMS organizations and providers. In some cases, physicians involved in prehospital care are highly specialized, receiving training and experience in directing field providers through rotations during their medical residency (Ray & Sole, 2007). In others, training for physicians in the unique nature of prehospital
EMS is found wanting, with some physicians receiving “… little or no training and experience in out-of-hospital medical care …” (IOM, 2007, p. 9).

**EMS as a Street-Level Occupation**

The essential tasks of front-line EMS providers share certain similarities and display important differences from those of police officers, welfare workers, teachers, and other street-level bureaucrats. Though EMS providers share many of the same occupational freedoms and constraints exhibited in other street-level occupations, the nature of the specific tasks of EMS, providing acute medical care, may shape the use of discretion in service interactions. First, as with other street-level jobs, EMS providers must follow a substantial body of rules and regulations. These include state laws regarding scope of practice and protocols for clinical treatment of patients, other state and local regulations regarding aspects of emergency response pertaining to the general public safety (i.e., regulations governing how to operate emergency vehicles), and organizational rules governing both operational and administrative procedures.

Second, like most other street-level jobs, EMS providers are faced with substantial situational complexity. Patients present with complex physiological conditions that require a multifaceted treatment approach that relies on proper patient assessment and difficult, high-risk clinical skills. Underlying these physiological conditions may be problems that are created or exacerbated by psychological, social, or economic causes that cannot be directly observed and measured. For example, a clinical presentation of shortness of breath may be the result at least five different physiological causes, each of which has varying approaches for patient management, and each of which
can be potentially more complex in a prehospital setting (Lightner, Brywczynski, McKinney, & Slovis, 2010, p. 57).

The physical location of the service interaction can be hazardous, including scenes such as auto accidents, hazardous materials incidents, or other dangerous situations. Street-level providers must not only assess the patient’s condition after arriving on an emergency scene, but they must also ensure that the environment is safe, that responders themselves will not be harmed in the process of rendering care, and the patient will not be subject to further harm. This scenario stands in contrast to the largely ordered environment of classrooms and welfare offices, where client-bureaucrat interaction is often predictable and scheduled.

Third, there is potentially substantial uncertainty and lack of information pertaining to the patient’s condition. Though in most cases EMS personnel know the general reason for the emergency call through data collected in the 9-1-1 dispatching process, this information is not always accurate and actual need for services is not always easily discerned. Thus, EMS providers are tasked with reducing uncertainty and gathering information as part of patient assessment. Additionally, the events leading up to the need for EMS are often not immediately discernable, which contributes to a potentially questionable level of situational stability. Fourth, like other street-level occupations, EMS providers exercise discretion in carrying out their duties. This discretion can come in the form of “within-rule” discretion that is built in to clinical protocols, organizational documents, or other rule-sets, or through areas of action that are left unregulated due to an inability to specify all activities of EMS providers.
Additionally, due to the substantial rule complexity, EMS providers may deviate from rules, policies, and procedures, thus creating additional areas open to discretionary action.

Fifth, EMS providers can be influenced as they exercise discretion. These sources of influence, as discussed in Chapter 2, include organizational factors such as managers and leaders, organizational characteristics, organizational and occupational culture, and peers, as well as environmental factors, such as the patient, partner agencies, political principals, and situational variables. Finally, as with most street-level jobs, EMS providers serve all sectors of the populace, from urban to rural, poor to wealthy. By law, EMS providers do not control the intake process, and cannot choose to serve specific patients or specific segments of the population.

There are, however, some important differences between the primary tasks of street-level EMS providers, specifically due to both the temporal immediacy and differences in patient needs. First, the nature of EMS work is intrinsically urgent. Though not universally true, in many cases individuals requesting the services of EMS providers are in need of emergent services; the patient’s condition is such that immediate, or at least rapid, interventional care is necessary. Though clients of other public service agencies may require services of an emergent nature, response to those services can often be handled in hours or days as opposed to seconds and minutes. In the case of certain police services, the initial situation may call for urgent action, however, once controlled, the situation is then characterized by significantly reduced urgency. The most severe EMS case, in contrast, can be urgent from beginning to end, a period of time that is substantially longer than other street-level professions. Thus, the urgency of EMS may contribute to differences in the use of discretion and the saliency of various sources of
influence. Indeed, situational stresses resulting from the immediacy of a severe medical condition may reduce the likelihood that an EMS provider can fully recognize or consider other sources of influence in making decisions.

Second, the reason for client need, though difficult but possible to observe in other street-level positions, is in many cases unobservable in EMS. In the most severe cases, the needs of those requesting EMS services are primarily physiological, thus differentiating this street-level occupation from other commonly studied jobs in which client needs are primarily legal, economic, social, or psychological. As previously noted, these secondary factors may play a part in the overall situation; however the primary consideration is medical, shifting the focus to the biological and chemical as opposed to the social, economic, or legal.

Finally, client-provider interactions in the context of emergency medical care are in many cases singular and non-repetitive events. Many individuals using emergency medical services only have a single or very infrequent need for this particular kind of medical care. This stands in contrast to teaching and counseling services in which more continual client-provider interaction is the norm. This does not, however, rule out the possibility of repetition in EMS interactions with patients. In some cases individuals may have chronic conditions that may require repetitive emergency care.

An example of situational and rule complexity in EMS can help to illustrate the stressful and uncertain nature of decision-making in EMS. Hall (1997) discusses the ethical dilemmas presented by do-not-resuscitate (DNR) orders in a prehospital setting. The purpose of the DNR, according to Hall, is to “… remedy the shortcomings other advance directives present in prehospital decision making by providing a simple and
rapid means of identifying those individuals who do not wish to be resuscitated” (1997, p. 109). Individuals electing to draft and sign a DNR generally wish to avoid what Hall described as “… complex hospital resuscitation and stay in the intensive care unit …” (1997, p. 110).

The problem is then made apparent when an individual with a DNR order experiences a “sudden catastrophic … event” or makes an unsuccessful attempt at committing suicide (Hall, 1997, p. 110). The clinical response in these two scenarios can be a “… brief, simple life-saving procedure …,” one that a reasonable person would not refuse (Hall, 1997, p. 110). Front-line EMS providers are then faced with the decision of respecting the spirit of the advanced directive, a document purposefully executed by the patient that makes it clear that they do not want any life-saving interventions, and with the provider’s clinical knowledge that the life-threatening situation is one that is accidentally created and easily reversible. They are constrained both by the law, through the power of the DNR order and suspension of potentially life-saving activities, and the occupational norm of helping all individuals who are in need of assistance. The complicating factor in this case is the intention of the patient when signing the DNR order. In the end, Hall argued for the necessity of proceeding with life-saving clinical interventions, and noted that “[i]ntervention is not only ethically permissible but required in the context of a sudden catastrophic, yet easily reversible event (1997, p. 110).

Past Empirical Research in EMS

The National EMS Research Agenda, a prospective view of the research efforts needed in the EMS field, identified three “domains” of EMS research, including clinical,
systems, and education (NHTSA, 2001, p. 17). This report defined these realms, noting that clinical research “… involves the study of direct patient care activities,” systems research “… explores the effects of varying EMS system designs and operational methods on resource utilization,” and educational research “… examines the appropriate methods for preparing prehospital care providers” (NHTSA, 2001, p. 17). Questions of street-level discretion and influence span all three of these realms.

A substantial amount of clinical research in EMS has been conducted in a wide variety of geographical areas, with the majority focusing on heart attacks, cardiac arrest, and trauma (see NHTSA, 2001, pp. 38–46). Brazier et al. (1999) noted the importance of clinical research in EMS: “[t]he potential for significant reductions in mortality (33%) and morbidity through improved pre-hospital care, especially basic airway and circulatory management, is widely acknowledged” (p. 18). Other related research includes topics such as ambulance response times to trauma cases and the resulting patient outcomes (Pons & Markovchick, 2002). Though much of this clinical research is beyond the scope of this study, one important piece, investigating the protocol deviation among paramedics, is worthy of discussion.

In considering the importance of rules, policies, and procedures in prehospital emergency care, it is important to determine whether and how individuals adhere to or deviate from these formal policy documents. In a study of 1,246 patients who required advanced life support services, Salerno, Wrenn, and Slovis (1991) found that EMS providers deviated from written clinical protocols in 199 (16%) of the cases (p. 1319). Deviations from protocols were categorized using a Medicare/Medicaid issues severity level system. Those protocol deviations that did not pose any significant threat to the
patient were categorized as “minor errors,” while those that potentially could cause “significant adverse effects” or were likely to cause significant adverse effects for the patient were categorized as “serious” and “very serious,” respectively (Salerno, Wrenn, & Slovis, 1991, p. 1320). Of the 16% of deviations, the authors found that 55% were “minor,” 38% were “serious,” and 7% were categorized as “very serious” (Salerno et al., 1991, p. 1321).

Responsibility for the deviation was also found to vary across cases. In 69% of the cases of deviation, the EMS provider was found to be responsible and did so without contacting a medical command physician, in 18% of the cases the medical command physician ordered the deviation, and in 13% of the cases both the EMS provider and the medical command physician were found to be responsible for the deviation from protocols (Salerno et al., 1991, p. 1321).

Importantly, patient outcomes play an important part in the study by Salerno, Wrenn, and Slovis. In only 6% of cases of deviations did the patient suffer negative consequences of the disregard for rules, whereas 5% of patients actually showed some improvement (Salerno et al., 1991, p. 1321). Of note, to guard against being “overly critical,” the authors categorized those deviations that occurred when the patient was in cardiac arrest as “no effect” (Salerno et al., 1991, p. 1321). Though avoiding potentially sticky issues of causality, the authors seem to dismiss the tough questions of effect in the most severe cases. Interestingly, this study may not fully illustrate the nature of the problem of protocol deviations. The authors noted, almost casually, that “… if two or more errors were noted, only the most serious error was recorded” (Salerno et al., 1991,
p. 1320). This indicates that the full volume of protocol deviations were not counted, and that it may be a more significant issue than was noted in the study.

EMS education has also been a focus of empirical research. David and Brachet (2009) studied the relationship between the volume of EMS skills performed, a form of experiential education, and improved patient outcomes. The authors found that increased exposure to prehospital skills, in the form of greater volume of calls, is robustly related to reduced out-of-hospital time as well as reduced time at the trauma scene (David & Branchet, 2009, p. 919). The observed that paramedic tenure played a role in this relationship, with larger decreases in out-of-hospital and trauma scene time attributed to paramedics with greater than median tenure (David & Branchet, 2009, p. 919). The authors concluded that, while concentrating the number of calls for service on fewer paramedics to increase exposure to skills and decrease time would be beneficial, the inability to predict accurately the distribution of calls both geographically and temporally, as well as the unintended consequences of increased paramedic burnout, are prohibitive (David & Branchet, 2009, p. 920). Instead, the solution they identified was to increase paramedic career duration through improved retention measures (David & Branchet, 2009, p. 920). This research is limited, however, by the use of the proxy measure for patient outcomes. Use of dependent variables such as total time for treatment and transport serves to greatly diminish the importance of the behaviors of paramedic during the actual service interaction. Though the authors cited numerous studies that show that reductions in on-scene and transport times are “potentially” important to patient outcomes, the strength of this relationship is certainly not definitive. While use of proxy
variables this blunt is satisfactory for an exploratory study, future research should measure patient outcomes more closely.

Theoretical and empirical research on interorganizational and system-level concerns in EMS is common, spanning several disparate scholarly disciplines including operations research, healthcare economics, community planning, and public administration. Narad (1998a) discussed the difficulties of coordination of autonomous organizations within EMS systems, as defined previously, through the lens of organization theory. The necessity of interorganizational cooperation in EMS systems, first espoused in the 1966 Highway Safety Act, is apparent in the benefits of coordinated response: established standards of care and allocation of resources in a manner that is more efficient and effective. However, the roles of the organizations within EMS systems are often ambiguous or poorly defined (Narad, 1998a, p. 146). The solution, according to Narad, is to view both the autonomous EMS organizations and the system management agencies as a “multicratic” organization (1998a, p. 148). In this type of coordinating structure the system lead agencies would have the authority to manage the relationships between the autonomous organizations and implement system-wide policies, while allowing latitude for within-organization management (Narad, 1998a, pp. 149–151).

The management of standards of performance through regulatory mechanisms has been examined in the context of California (Narad, 1998b). In a survey of counties in California, Narad (1998b) found that regulatory authority is shared by both “local EMS agencies,” the organizations with whom counties contract to provide oversight for EMS agencies, and the counties themselves, with 98% using either ordinances, contracts, exclusive operating areas, or a combination thereof (p. 51). More populous counties
located in single-county systems were more likely to have enacted an ordinance or to have formally granted local operating franchises to regulate EMS operations, whereas less populous counties located in multi-county systems were more likely to establish contracts with EMS agencies (Narad, 1998b, p. 54). According to survey of EMS administrators and operational managers in the top 200 cities in the United States, there was significant variation in the collection of performance measures, such as intubation success (77.3%); identification and time-to-intervention for S-T elevation myocardial infarction (STEMI) (68.7% and 60.0% respectively); success rate for resuscitation of cardiac arrest patients; time-to-emergency department for stroke patients (60.0%); and compliance rates for use of medical helicopters (20.7%) (Williams & Rangone, 2010, p. 41).

Previous research has also addressed the creation of performance measurement regulations for EMS agencies at the system level (Narad & Driesbock, 1999). One such common measure, ambulance response time, is widely used but often differentially defined. Common definitions include the “out-of-chute time,” defined as the amount of time elapsed from the initial dispatch of EMS services to the initial indication that the ambulance is responding to the emergency or, in some cases, as the “system response time”, defined as the elapsed time from the initial dispatch of the EMS to the arrival of the ambulance at the scene (Narad & Driesbock, 1999). In a survey of counties in California, Narad and Driesbock found that 33 counties (57%) use one of the two response time measures defined here (1999, p. 131). Of those 33, approximately 85% use the “system response time” whereas 6% use the “out-of-chute” measure (Narad & Driesbock, 1999, p. 133).
Additionally, the use of these measures varied by the coordinating structures in place. Counties in California contract with “local EMS agencies” (LEMSAs) that serve as the implementation arm of the EMS system (Narad & Driesbock, 1999). Some LEMSAs represent one county, usually in more populous areas, whereas other LEMSAs serve multiple counties typified by smaller populations. A higher proportion of the single-county LEMSAs had some sort of response time regulation (88%), and a much lower proportion of multi-county LEMSAs regulated response times (33%) (Narad & Driesbock, 1999, p. 133). Mechanisms for monitoring compliance and enforcing these standards also differed between systems (Narad & Driesbock, 1999, p. 134).

Performance measures have also been used in empirical research as proxy measures for service quality. Using data on approximately 120,000 cardiac emergencies in the state of Mississippi from 1995-2004, David and Harrington (2010) examined the possibility of racial disparities in the design of EMS systems using measures of population density, patient race, EMS response times, and level of services provided. The authors used multiple estimators to examine the effects of these numerous independent variables on the two dependent variables of response time and the training level of responding providers, and found no disparities in services provided. Indeed, they noted that “… the estimates indicate faster response times for African-Americans …” when accounting for standard control measures like population density, call location, patient destination, and time of day (David & Harrington, p. 613). The authors concluded that there is “… little or no evidence of race-related disparities in EMS response time or in human capital of the responders …” (David & Harrington, 2010, p. 613). Though interesting, this research fails to account for some important realities of EMS systems.
Perhaps most importantly, the authors failed to realize that the distances traveled by EMS units, the configuration of response territories, unit availability, and other important geographic and resource allocation issues do not allow for static response patterns from stations and to scenes. EMS units, especially in larger cities, are in some cases not geographically anchored and frequently respond to districts other than their “first due” territory. Given this reality, and the geographical basis for several of the variables in this study, questions emerge. At the very least, the validity of a key dependent variable, response times to a scene, is challenged.

Past inquiries into EMS have also focused on theoretical discussion and empirical investigation of public versus private provision of EMS (David & Chiang, 2009; Narad & Gillespie, 1998). Narad and Gillespie (1998) proposed a theoretical argument for the need for a “rational” and “value-free” decision on the public versus private provision of EMS services. A “rational model” of providing EMS service would eliminate consideration for the “emotional” and value-laden aspects of a public service provision, and would focus only on those the comparative levels of efficiency and effectiveness of these services for each individual community (Narad & Gillespie, 1998). In making their argument, however, Narad and Gillespie ignored that fact that the promotion of efficiency as the most important factor is, in and of itself, a value statement, and only define efficiency in financial terms as the ratio of inputs to outputs. This serves to reduce the salient historical aspects of community provision of services, which the authors acknowledged is a factor, to a mere afterthought. This argument also lacks insight into the central role that community nonprofit agencies, such as volunteer fire departments and EMS services,
play in supporting community cohesion through cooperative provision of a public service.

David and Chiang (2009) modeled and empirically tested the local government choice of a public versus private provision of EMS as a function of city characteristics including population, population density, proximity to hospitals, crime rate, and unionization. The authors found that smaller city population, reduced access to hospitals, and close proximity to other cities increases the probability that a city will choose to privatize EMS services (David & Chiang, 2009, p. 318). However, in creating their model, the authors made two crucial assumptions that diminished the contributions of their work, namely the artificial simplification of the typology of service arrangements possible, and the assumption that “. . . local government ultimately chooses the provider type(s) which result in levels of infrastructure and quality that yield the highest benefit to the community” (David & Chiang, 2009, p. 314). The first assumption ignores the possibilities of mixed service provision in the transport phase of EMS, and the second point assumes that local government officials, on a consistent basis, actively choose EMS services. In reality, the choice to change from public to private provision or vice versa may only arise in times of fiscal stress or scandal.

For several decades predicting EMS call volume, a method of determining need and distribution of resources, has been a focus of empirical research using a number of different estimators. Early quantitative models were created using simple ordinary least squares regression, which was generally accurate for predicting call volume for a given city or county. These early models then progressed to more complex models seeking to predict calls for service within narrower time frames (Setzler, Saydam, & Park, 2009).
Brown et al. (2007) provided a compelling example of more complex call volume prediction in their comparison of three methods of call volume prediction for a single set of participating agencies. The authors collected data over a 73-week period and found that average peak demand estimation (calculating the average of the highest number of calls for service for each hour of each day), smoothed average peak demand (calculating average hourly peak demand and then assigning a weight to the hour of interest and for the hour before and hour after the hour of interest), and 90th percentile ranked demand (calculating the 90th percentile for call volume for each hour of each day) were all similarly accurate, only underestimating the number of calls 4%, 4%, and 7% of the time, respectively, and overestimated demand by a “reasonable” margin (Brown et al., 2007, pp. 201–202).

Methods of prediction continue to evolve, with researchers attempting to achieve accuracy in call predictions both spatially and temporally. Setzler, Saydam, and Park (2009) created a model to predict call volume for the City of Charlotte, North Carolina through the use of “adaptive neural networks” (p. 1843). This method of prediction results in an impressive ability to predict calls for service both spatially (using a grid with 4-mile by 4-mile blocks) and temporally (predictions based on 1-hour increments) (Setzler, Saydam, & Park, 2009, p. 1850). However, the authors noted that the current system in place in Charlotte, which employs moving averages for a 4-year period, matches the accuracy of the adaptive neural networks model and is significantly more parsimonious (Setzler, Saydam, & Park, 2009, p. 1850).
**Recognition of the Need for Street-Level Research in EMS**

Though not found in academic literature, the broader realm of EMS practitioners has noted the importance of investigating nonclinical behavioral aspects of front-line EMS behavior. Sullivan and Chumbley (2010) noted the complexity inherent to both situations and decision-making processes in EMS. In their efforts to navigate this substantial complexity, the authors noted that “. . . we often make decisions using past experiences, protocols and medical consultation to guide us through ‘mazes’” (Sullivan & Chumbley, 2010, p. 49). To improve performance, they suggested that EMS practitioners become familiar with two models of decision-making that may allow front-line service providers to provide more comprehensive and effective patient care. Although these models are intrinsically different – one is descriptive and temporally located in the incident; the second is prescriptive and takes place largely before an incident – it nonetheless highlights the importance of this strain of research from both an academic and practical perspective. And, perhaps more importantly, both models stress many of the same topics, including knowledge-building and the importance of experience in reacting to complex situations and patient presentation (Sullivan & Chumbley, 2010, pp. 50–51).

Likewise, Maggiore (2008) noted the potential for bias in patient assessment and resultant treatments in EMS. Specifically, the author noted the saliency of a heuristics in EMS service provision, calling them “. . . indispensible shortcuts and rules of thumb” (Maggiore, 2008, p. 120). But, there is an opportunity for these decision heuristics to move paramedics toward inappropriate or unnecessary treatments. She noted that “[w]e make errors when we assess patients with the understanding that they’ll fall into certain categories, and their presentations will be typical for patients in those categories”
(Maggiore, 2008, p. 120). Thus, the same mechanisms created by repeated exposures to a certain set of causal observations, or perceived causal observations, can also blind front-line EMS providers to the actual cause of a condition or injury. Interestingly, this focus may in fact be the end result of the initial training for EMS providers. She noted that “… instead of focusing our training on honing our assessment, critical thinking and critical reasoning skills, EMS training tends to focus on manual skills performed according to algorithmic protocols” (Maggiore, 2008, p. 117).

When considered in tandem, these two points of view – one stating the necessity of critical thinking and naturalistic decision-making, and the other noting the difficulties intrinsic to experience and biases – provide substantive motivation for scholarly research into EMS behavior, influence, and discretion. These unique research questions must be approached from multiple, varying perspectives. The National EMS Research Agenda (2001) pointed to the need to explore issues in emergency medical services from several vantage points, and discuss the necessity of collaborative, working relationships “… between EMS researchers and social scientists, economists, health services researchers, epidemiologists, operations experts, clinical scientists, basic scientists, and researchers from other disciplines (NHTSA, 2001, p. 7). Thus, this research strives to add to the vital discussion on the state of emergency medical services. Chapter 4 will discuss the research methodology and methods in greater depth.

Summary

The impressive empirical research already conducted on EMS systems and front-line workers does much to advance our understanding of how this core public service
works. Clinical studies allow for the evaluation of the efficacy of specific therapies on the treatment of critical, life-threatening medical conditions. Studies of paramedic education refine the methods and goals employed in the pre-service preparation of paramedics to better prepare them to enter a demanding and high-impact job. Systems-level research examines broader questions of resource allocation and the analysis of aggregated performance data to better understand how individual organizations or collaborative endeavors can best serve the public.

An important perspective, however, is noticeably absent. Other foci and methods in EMS research neglect perhaps the most important individual in the emergency medical care process: the front-line EMS worker. Clinical studies aim to achieve better prescriptive rules for service provision. Studies in education are temporally located prior to the emergency and focused on preparation and not execution. Systems studies are located at a level several times removed from the actual act of service provision. Thus, research that employs a specific focus on the subjective feelings of influence by street-level EMS providers and their subsequent decisions is not only important, it is vital. This study is aimed at initiating this line of research through a specific focus on EMS providers faced with actual emergencies, experiencing the impact of innumerable variables on their assessment and treatment of patients, and making decisions that have an immediate and potentially life-saving impact on their patients. The present study will begin to fill a palpable and important gap in scholarly research on emergency medical services.
CHAPTER 4: RESEARCH DESIGN, METHODS, AND HYPOTHESES

The study of street-level bureaucracy has been, since the outset, characterized by methodological diversity (Goodsell, 1981). Past research in the behavior of front-line workers has used both qualitative (Gilboy, 1992; Maynard-Moody & Musheno, 2003; Newman, Guy, & Mastracci, 2009; Sandfort, 2000; Skolnick, 1966; Vinzant & Crothers, 1998), mixed methods (Oberfield, 2010; Riccucci, 2005), and quantitative experimental studies (Scott, 1997), and have focused on several distinct occupational areas, including law enforcement, nursing, front-line welfare workers, and teachers. These sophisticated empirical studies have made significant contributions to the theory of street-level bureaucracy and illuminated the unique impact of varying types of influence on the discretionary actions of street-level providers. Concepts such as organizational and occupational culture, managerial influence, political principals, and client characteristics were shown to have a substantive impact on the behaviors of those bureaucrats distributing public goods and services.

There is, however, a noticeable absence of research into the behavior of EMS providers at the front lines, generally, and a lack of understanding of discretion and the internal and external sources of influence on these unique types of street-level bureaucrats. As noted previously, these providers work in an increasingly urgent environment, and they frequently provide services based in the physiological and psychological needs of a client rather than those that are based in social, economic, or legal problems. This research seeks to fill the gap in knowledge that surrounds street-
level EMS providers through use of multiple case studies employing qualitative and quantitative methods.

This research will add to the vital discussion on street-level bureaucrats through several avenues. First, it will examine the nature of discretion in a street-level occupation that is intrinsically different from other core public functions in its primary focus on the physiological and psychological as opposed to the social, economic, or legal needs of clients. Second, it will examine EMS provider conceptions influence, discretion, and rule-abidance and deviation at the front-lines of EMS work, an area of EMS research that has not yet been subject to empirical investigation. Finally, it will examine the impact of organizational, environmental, and situational sources of influence on street-level provider behavior during emergencies.

Of note, the principal investigator (PI) for this study was actively employed as both an EMS provider and an administrator of a nonprofit ALS ambulance service for more than a decade. In considering the nature of academic research, these experiences and their direct relationship to this study can be viewed from multiple perspectives. First, they serve to enhance the PI’s understanding of the nuances of service provision, language employed by the study subjects, structure of EMS organizations, and situations with which EMS providers are routinely faced. Second, both access to organizations and the establishment of trust with study subjects may have been facilitated through the communication of these previous experiences. Thus, several common difficulties of empirical research are minimized or reduced as a result of direct service experiences and membership in the community being studied.
Experience, though, also enables the creation of individually-held theories of behavior and preliminary propositions about many of the organizations, individuals, and situations described in this research. Thus, it is crucial that the PI guard against the imposition of individually held propositions about EMS provider behavior through concentrated and direct efforts to reduce or eliminate potential biases. Though complete objectivity is an impossibility, the PI made every attempt to remain as objective as possible through the entirety of the research process.

Profiles of Participating Organizations

Organization A: Fire Department-Based Emergency Medical Services

Organization A ("FDEMS") is a fire department-based municipal EMS agency serving a population of approximately 70,000 citizens in an area of almost 20 square miles. FDEMS operates six ALS vehicles staffed by approximately 25 full-time and 30 part-time employees. A total of three ambulances are in service at any given time, generally staffed by two paramedics. Paramedics employed by FDEMS respond to approximately 10,000 calls for service annually, averaging nearly 27 calls per day. The primary service area of FDEMS is within the official city limits, though mutual aid services are provided to surrounding municipalities on an as-needed basis. In addition to providing emergency medical services, FDEMS routinely provides “standby” services for local sporting events, large festivals, and other events in which EMS are potentially needed. FDEMS represents an ideal case study for the purposes of this research because service demand is high, resulting in providers who have substantive experiential
knowledge, and it represents a major forms of organizational arrangements found in the provision of EMS, namely the fire department-based EMS organization.

FDEMS is managed by a single chief administrative officer who reports directly to the city Fire Commissioner. Other administrative staff members include an assistant director reporting to the EMS director, two EMS supervisors, and an administrative assistant. Clinical guidance is provided to FDEMS by an emergency department physician from a local hospital who has served FDEMS for nearly 3 decades.

FDEMS staff members interact on a consistent basis with members of other municipal public safety departments. The city communications center, operating under police department management, provides dispatch services to the entire city for all public safety services. Police units are dispatched on all FDEMS medical calls, and, when necessary, fire department units also respond to assist EMS units. Though organizationally based in the fire department, EMS units in FDEMS are not colocated with firefighters or fire apparatus. While FDEMS is a subunit of the fire department, fire officers do not have the authority to override the decision of staff paramedics or EMS officers unless the nature of the incident is one in which the fire department has overall authority.

FDEMS has substantial ties to outside agencies for both operational and educational purposes. Staff paramedics at FDEMS frequently serve as preceptors for paramedic students from local hospital-based EMS education programs, and emergency medicine residents and emergency department nurses often “ride along” with FDEMS paramedics to gain experience in a prehospital setting. Additionally, FDEMS is situated in a multi-county state EMS region, one of several nonprofit entities legally vested with
enforcement of state laws and administrative rules in Pennsylvania. This regional entity consists of a network of geographically distributed EMS organizations, with members of constituent organizations working collaboratively to manage and assess general regional issues of EMS provision.

**Organization B: Hospital System-Based Emergency Medical Services**

Founded just over 2 decades ago, Organization B (“HSEMS”) is one of four EMS agencies based in a larger hospital system composed of five hospitals and several outpatient facilities. Originally based in a single hospital, HSEMS was integrated into the broader health system when several hospitals merged. Despite the mergers, HSEMS continues to operate under the auspices of its “home” hospital as it has since its inception. Based in a 501(c) 3 health system, HSEMS is distinct in that it is the only non-municipal service in this study.

HSEMS operates four ambulances at any given time, employing approximately 20 full-time and 10 part-time paramedics, and several part-time EMTs. These health care providers respond to approximately 11,000 calls per year, an average of almost 30 calls per day, covering three municipalities totaling over nine square miles and 90,000 residents. HSEMS supervisory staff includes a department chief, an assistant chief who also acts as a clinical care supervisor, three lieutenants, and a community outreach coordinator who also serves as a full time staff paramedic.

In addition to emergency medical services, HSEMS paramedics are trained to provide support to fire department personnel in the case of fires, hazardous materials incidents, or other large-scale emergencies. HSEMS represents an ideal participating
organization for the purposes of this research as demand for services is high, resulting in providers who have substantive experiential knowledge, and because HSEMS represents a third major form of organizational arrangements found in the provision of EMS, namely the hospital-based EMS organization.

HSEMS has frequent interactions with other local public safety organizations and the surrounding community. Of note, HSEMS routinely participates in community health events and provides CPR and first aid education to the local community and school-aged children. Local police departments are dispatched on every EMS call for service, and one of several local fire departments may also respond on specific types of incidents in which specific skills, tools, or additional personnel are necessary. Links to the fire departments are notably high for this organization, and several individuals interviewed for this study indicated that they volunteer or work for other public safety organizations in the immediate surrounding area. Unlike the other participating agencies, HSEMS is dispatched by a county communication center that serves a larger geographical region. And, distinct from the other organizations selected for this study, HSEMS is situated in a single-county state-designated EMS region.

Organization C: Police Department-Based Emergency Medical Services

Organization C (“PDEMS”) employs approximately 50 paramedics and responds to more than 14,000 calls per year, an average of approximately 40 calls per day. PDEMS units are dispatched by a central communications center that is shared with the police and fire departments, and EMS units are dispatched on an as-needed basis from four locations in the city. Though organizationally based in the city police department,
EMS units are colocated with fire department personnel and apparatus. Due to substantial increases in call volume for city public safety services, fire department units are dispatched to assist EMS units on every call, and police no longer respond unless the nature of the emergency requires their services or they are specifically requested. PDEMS is involved in numerous others special-service teams, including technical and urban search and rescue, hazardous materials, police emergency response team, water rescue, and dive and bike teams. Community outreach and education in CPR/AED and first aid instruction are provided to city residents by staff members of PDEMS.

Major divisions within PDEMS reflect common divisions in EMS services, and include a chief administrative officer, an operational division, training and patient care coordinators, administrative support staff who handle human resources and patient billing issues, and a city medical director. The city in which PDEMS is located is one the most populous in Pennsylvania, with more than 100,000 residents living in an approximately 21 square mile area (U.S. Census, 2000).

PDEMS represents an ideal case study for the purposes of this research for several reasons. First, service demand is substantial, resulting in providers who have had a number of routine and unique interactions with clients that will allow them to speak authoritatively on the nature of their experiences. Second, PDEMS represents one of the interesting types of organizational arrangements found in the provision of EMS, namely the police department-based EMS organization that is not located within a fire department or hospital system. As with FDEMS, PDEMS is based in a multi-county state-designated EMS region in Pennsylvania.
Methodology

This research uses content analysis, focus groups, semi-structured interviews, and a web-based self-administered survey to uncover the interrelationship between street-level bureaucratic behavior and concepts of discretion and influence, each of which are inherently personal and subjective. As Salmon (1998) noted, “… it is sometimes said that any adequate understanding of human behavior must involve interpretation of meaning. The reason is that many acts are performed because of their meanings” (pp. 7–8). Meaning and understanding, concepts that are essential to all human behavior, become a firm foundation for understanding behavior (Bernstein, 1983, pp. 144–145). Thus, an interpretive / heuristic methodology is appropriate for these reasons (Ricciucci, 2010, p. 47).

Examining the intentions of this study more closely, several distinct reasons for the appropriateness of an interpretive methodology are evident. First, influence is subjectively experienced, and thus individuals may perceive the effect of different kinds of influence as being more or less powerful. Likewise, the exercise of discretion is subjectively experienced and individuals will assign meaning to, and cultivate beliefs about, their discretionary actions. Third, the decision-processes that are used in making patient care decisions are complex, and individual judgments are made that can only be viewed from the subjective perspectives of the front-line EMS providers. Fourth, the variables included in this research, including discretion, influence, authority, rules, and patient needs are all complex constructs. The challenges of uncovering the nature of these complex concepts and the subjectively held meaning and beliefs assigned to them make qualitative methods the most appropriate place to begin this avenue of research. Perhaps
most important, the strength of using qualitative methods for the study of these phenomena comes from the ability to draw out the causal mechanisms that are at work among these interrelated constructs (George & Bennett, 2005, p. 137).

The use of quantitative methods for testing the interrelationships between the major constructs considered in this research is inappropriate for several reasons. First, the ability to construct appropriate measures for the complex concepts of influence, discretion, and EMS provider behavior is limited (George & Bennett, 2005, p. 43). As Meyers and Vorsanger (2007) noted, quantitative measures “… provide, at best, an indirect measure of activities at the front lines. They are particularly likely to miss the critical and less easily observed discretionary decisions that give street-level bureaucrats such influence over policy. These studies have also been limited by the use of sometimes blunt proxies for explanatory variables … it does not tell us much about mechanism …” (pp. 159-160). Second, as George and Bennett (2005) pointed out, “… statistical methods are not well suited to testing causal mechanism in the context of particular cases. These methods are optimized for assessing correlations across cases or among data points within a case, rather than for testing whether every aspect of a case is consistent with a hypothesized causal process” (p. 44). Though within-case model specification could be accomplished through use of path analysis or structural equation modeling, the issues of conceptual measurement are prohibitive.

**Research Questions**

Recent research into the behavior of street-level bureaucrats points to the multiple sources of influence at work shaping discretionary action in street-level interactions with
clients. This research has shown how these multiple sources shape behavior in complex ways dependent to a great extent on the rules, policies, and procedures meant to guide the actions of front-line workers, situational and client-specific factors, and other direct and indirect sources of influence as noted previously. However, given fundamental differences in the tasks of EMS providers, conceptions of discretion and influence in EMS organizations are worthy of additional empirical investigation. This exploratory research asks several questions to begin to explore how these variables impact behavior in street-level EMS providers.

1. What is the relative impact of conventional sources of influence on the behavior of street-level bureaucrats in EMS organizations?

2. In what ways do street-level bureaucrats in EMS organizations adhere to or deviate from written rules, policies, and procedures during service interactions?

3. How does organizational form shape the behavior of street-level bureaucrats in EMS organizations?

These research questions seek to investigate some foundational areas of interest that are necessary in understanding the behavior of front-line EMS workers.

**Research Design**

This study will employ a multiple-method exploratory sequential research design (Creswell & Plano Clark, 2011, p. 86) that will use results derived from qualitative data to design instruments to be used in complementary quantitative research. As outlined by Creswell and Clark (2011), this design includes four distinct stages (p. 88). The first stage features development of research questions, complementary qualitative methods to
collect data sufficient to address the specific questions posed, data analysis, and development of themes emerging for data collected. These themes are then used to inform the development of hypotheses, design of survey instruments, or other methods of data collection implemented in the third stage. The final stage consists of mixed interpretation of both qualitative and quantitative data. This phased research design allows for triangulation of data with a specific focus on evaluating, to the extent possible given the weakness discussed next, the generalizability of information collected in the qualitative phase to a larger population of EMS providers. Use of multiple methods serves to employ both “… complementary parts of the whole intellectual task” (Lasswell, 1961, p. 103).

Multi-methods research (MMR) is not, however, without weaknesses. Indeed, MMR still suffers from the same limitations intrinsic to both qualitative and quantitative methods and their ontological and epistemological foundations, which are not alleviated when combined with other methodological traditions. Indeed, Creswell and Plano-Clark (2011) note that “… worldviews shift from one phase to the other phase” (p. 87). Similarly, Riccucci (2010) notes that the mixed methods approach “… blends together the underlying assumptions of divergent epistemic traditions” (p. 108). Pertinent to the research design used in this study, Ahmed and Sil (2009) noted that “[s]tatistical analysis can validate the relationship between hypothesized causal effects and generalize it across cases, but it cannot show that the causal mechanism found in the original case study analysis operates in the same manner and produces the same effect …” (p. 3). Thus, although the quantitative methods will be used in this study to support and validate the results of the qualitative data collection and analysis, it will not assume definitive
confirmation that the causal mechanisms identified are fully generalizable. Despite these weaknesses, this study will employ both methods in an exploratory manner while noting the strengths and weakness of combining research from both traditions.

**Qualitative Methods, Sampling, Data Collection, and Analysis**

*Research Methods*

The qualitative phase of the research uses a case study method as outlined by George and Bennett (2005). Ragin (2004) described cases as “… meaningful but complex configurations of events and structures” (p. 125). As this study is exploratory in nature and includes several interrelated, complex concepts, the case study method is appropriate. George and Bennett noted that the logic of the case study method is very straightforward in that it is “structured,” meaning the “… researcher writes general questions that reflect the research objective and that these questions are asked of each case under study to guide and standardize data collection …,” and “focused” in that it “… deals with only certain aspects of the historical cases examined” (2005, p. 67). In this study the unit of analysis is the individual street-level bureaucrat working in an EMS organization. These front-line workers each constitute a “case” in and of themselves, allowing for the examination of different types of discretion, rule abidance and deviation, and influence as they are enacted by individuals. Given the nature of the research questions posed, examination of the key issues of individual-level is critical in that it allows for an appraisal of “… how much discretion individual administrators perceive themselves as having in the operation of their duties” (Sowa & Selden, 2003, p. 703).
The use of a comparative case study method is appropriate for several reasons. First, as noted previously, the importance of organizational characteristics including culture, relationships, and environment, each of which may have a potentially important impact on EMS provider behavior, must be considered in designing this study. Second, a multiple-case-study method allows for the investigation of the impact of variation in organizational arrangements (i.e., whether an organization is based in a fire department, hospital system, or only provides emergency medical services) on EMS provider behavior (Maynard-Moody, Musheno, & Palumbo, 1990). Finally, this research is necessarily multi-level, and allows for contextual influence from the state, community, organizational, and individual levels, thus requiring a design that could account for all of these types of influence (Yin, 1994).

The use of a multiple-case-study research design also has several advantages. First, the case study method is appropriate for this research as the relationship between the variables is not fully known or understood, and allows for the identification of additional variables and generating additional hypotheses (George & Bennett, 2005). Additionally, the complex nature of the concepts involved can be better accommodated by the case study method because “. . . they do not require numerous cases or a restricted number of variables” (George & Bennett, 2005, p. 45). Second, the case study method allows for what George and Bennett call “process-tracing,” or the identification of the possible causal mechanisms at work for a given relationship between variables (George & Bennett, 2005). Finally, the results of case study research can be used to create practical, useful typologies to explain different combinations of the dependent and independent variables.
The case study method is, however, not without potential pitfalls. A first caveat comes in the form of researcher selection bias in the identification of cases to be studied. As George and Bennett (2005) noted, this could result from researchers’ “… commitments to certain theoretical propositions will lead them to select cases that over-confirm their favorite hypotheses …” (p. 51). However, proponents of qualitative research methods argue that constraining research design to account for this totally would distract from a major, alternative priority of examining theoretically crucial cases (Brady & Collier, 2004). It is important, then, to acknowledge the potential for bias, and to make an explicit statement of the selection methods to reduce the chance of encountering this problem. Second, differing interpretations of the causal mechanisms at work in cases may be identified if one or more researchers engage in multiple studies of the same cases (George & Bennett, 2005, p. 52). This second pitfall can be avoided through consistent efforts to identify factual errors or misunderstandings in interpretation, systematic and thorough identification of variables and hypotheses, and use of various theoretical perspectives to study the same cases and confirm findings (George & Bennett, 2005, p. 53). In essence, researches seek to use knowledge gained in the course of the case study to “… carefully rule out alternative explanations until they come to one that stands up to scrutiny” (Brady, Collier, & Seawright, 2004, p. 249).

This study focuses on full-time, career EMS providers working in organizations that provide emergency medical transportation services, as opposed to nonemergent transport services. These clarifications are not meant to diminish the importance of the substantial number of volunteer EMS providers in the United States, but rather focus on those full-time EMS providers who have accumulated a rich body of experience in the
field. Additionally, through nonemergency transports constitute an important type of service, this study will concentrate on emergency services.

*Operational Definitions*

For the purposes of this study, *street-level bureaucrats* are defined as “… those who are directly responsible for service delivery to the public and who exercise a significant level of discretion in carrying out their responsibilities” (Vinzant and Crothers, 1998, p. 12). This definition is preferable to others presented here in that it includes the necessary component of discretion, and does not limit this discretion to the execution of duties. Thus, the dependent variable, the behavior of street-level bureaucrats, is defined as the activities in which these individuals are engaged during the daily accomplishment of short and long-term organizational goals.

*Discretion* is defined as “… workers’ adaptations of laws, rules, and procedures to the circumstances of the cases” (Maynard-Moody & Musheno, 2003, p. 10). For this study, the concept of discretion is operationalized to embody the dimensions outlined by Vinzant and Crothers (1998). Specifically, discretion is the making of a choice by a street-level EMS provider within certain potentially variable constraints about the process or outcome of a job (Vinzant & Crothers, 1998).

*Influence* is operationalized as any of the sources of influence mentioned previously, including sources within the organization (supervisors, peers, organizational structure and culture, rules, policies, and procedures), sources external to the organization (other agencies, political principals, organizational environment and the community, situational factors, clients), and the boundary-spanning concept of occupational culture.
These myriad sources of influence can serve, as Simon (1945) noted, to “… control … the premises of decision” (p. 308).

Selection of Research Organizations and Sampling

The three organizations examined in this study were selected from a single state in order to keep the political and regulatory context constant across organizations. Pennsylvania was chosen as the state of interest for several reasons. First, according to the U.S. Department of Labor, Pennsylvania is tied with California for the third highest number of career emergency medical technicians and paramedics with only New York and Texas having higher total employment (DOL, 2009). Additionally, Pennsylvania has the fourth highest concentration of EMTs and paramedics in the country as measured by total percent of state employment (DOL, 2009). Pennsylvania also has a substantial call volume: approximately 1.8 million calls for service in 2008 according to the Pennsylvania Department of Health Bureau of Emergency Medical Services (BEMS)(2009, p. 1). Of those calls for service resulting in the transport of an individual to a community hospital or trauma center, approximately 73% of these responses were to medical emergencies, and 27% were responses to traumatic injuries (BEMS, 2009, p. 5). More than 53,000 providers (including both volunteer and career EMS providers) responded to this substantial call volume, staffing 1,014 certified quick response service, BLS, and ALS units (BEMS, 2009, pp. 1–2).

Important to this research is the assumption that the individuals participating in the focus groups and interviews will have had substantial experience providing emergency medical care, and would have engaged in enough service interactions to be
able to authoritatively discuss their experiences. As such, it is important to choose organizations that have a call volume high enough to enable EMS providers to aggregate such experiences. Although this conscious choice to seek out paramedics with substantial experiences is necessary for this exploratory study, it is important to note that paramedics with less substantial experiences are a critical population worthy of scholarly attention.

As Kamenetzky, Shuman, and Wolfe, (1982) noted, population is a key independent variable in predicting calls for service. Those municipalities with larger populations will, on average, have a higher demand for EMS services resulting in employees with substantively more experiences at the front lines. Data on Pennsylvania municipalities from the 2000 U.S. Census were used as a sampling frame to choose municipalities with a population large enough to produce a demand for service that would allow for this substantial level of front-line worker experience.

An additional consideration for selection of organizations in this study is the specific combination of certain organizational characteristics. EMS organizations, as noted previously, can be public or private, for-profit or nonprofit, and can be located within other public safety or health organizations, most commonly fire departments and hospital systems. It is possible that these organizational arrangements could impact EMS provider discretion or the nature of influence. Thus, structured variation between organizations was incorporated by choosing cases that matched the most disparate organizational arrangements (West, 2001). Three organizations were chosen, each displaying one of the following combinations: fire department-based; police department-based; and hospital-based service.
Other service arrangements exist for providing EMS services that are not included in the list above, including stand-alone EMS organizations; private, nonprofit fire department-based services; private, nonprofit stand-alone EMS organizations; and private for-profit EMS only organizations. Interestingly, the private, nonprofit fire-department based, and private, non-profit stand-alone organizational forms are important in that they represent a substantial portion of the organizations serving the suburban and rural portions of Pennsylvania. However, these organizational forms do not differ substantially from their municipal counterparts in those organizational characteristics of interest. A by-product of using population and organizational form to select cases is that primarily volunteer organizations are excluded in favor of larger career EMS organizations. Additionally, for-profit organizations are not included in this sample as there are only a few of these organizations providing services in Pennsylvania.

A list of Pennsylvania municipalities derived from the 2000 U.S. Census was sorted by population size, and the organizational characteristics for the official municipal emergency medical service were determined through review of municipal websites. Organizations were selected to represent each of the primary organizational arrangements while simultaneously remaining similar in demographic and geographic characteristics to control for this variation. Although exact matching of these characteristics was not possible, the selected organizations display important similarities. Population and total square miles vary substantially, though the proportions of total population to housing units are almost identical suggesting similarities in residential density. Detailed descriptions of these organizations are provided in Table 4.1.
TABLE 4.1

Characteristics of Selected Organizations

<table>
<thead>
<tr>
<th>Organization</th>
<th>Calls / Yr. (2009)</th>
<th>Total Emp.</th>
<th>Total Pop.</th>
<th>Area (sq. mi.)</th>
<th>Pop. / HU</th>
<th>Median HHI (dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDEMS</td>
<td>10,000</td>
<td>20 FT, 30 PT</td>
<td>70,000</td>
<td>19.00</td>
<td>3700</td>
<td>2.54</td>
</tr>
<tr>
<td>HSEMS</td>
<td>11,000</td>
<td>20 FT, 14 PT</td>
<td>90,000</td>
<td>9.00</td>
<td>10500</td>
<td>2.52</td>
</tr>
<tr>
<td>PDEMS</td>
<td>14,000</td>
<td>29 FT, 20 PT</td>
<td>100,000</td>
<td>18.00</td>
<td>6000</td>
<td>2.54</td>
</tr>
</tbody>
</table>

Source: U.S. Census, 2000, figures are rounded to avoid identifying participating organizations; FT, full-time employees; PT, part-time employees; HU, housing units; HHI, household income.

Qualitative Data Collection

Data collection included three distinct methods, including content analysis of organizational documents, semi-structured interviews, and focus groups. Specifically, documents pertaining directly to the behavior of front-line EMS providers, such as state and regional clinical protocols and other statements of procedures or guidelines, were examined. Additionally, organizational documents were reviewed including statements of formal policies and other relevant policy documents pertaining to the exercise of discretion in EMS. Review of these documents allows for a deeper understanding of the formal rules that enable or constrain individual action. The content of these documents was examined in parallel with interviews of key agency personnel to gain a better understanding of individual behavior.

Semi-structured interviews were conducted to examine the nature of influence and the exercise of discretion in emergency medical services. Interviewing, according to Fontana and Frey, can be considered “… the basic method of data gathering whether the purpose is to obtain a rich, in-depth experiential account of an event or episode in the life of the respondent …” (2005, p. 699). Data gathered from interviews can move beyond simple description and can “… encompass the hows of people’s lives (the constructive work involved in producing order in everyday life) as well as the traditional whats (the
activities of everyday life)” (emphasis in original, Fontana & Frey, 2005, p. 698). In addition to verbal data gathered through the interview process, other nonverbal aspects of the interaction should be considered important (Berg, 2007; Chase, 2005; Fontana & Frey, 2005).

Gaining the trust of respondents will ensure that their responses reflect their actual feelings, beliefs, and perspectives as closely as possible (Berg, 2007; Fontana & Frey, 2005). The strengths of interviewing as a research method hinge on the depth of information gleaned from the discussion. These strengths are minimized if the responses of individuals are not true to their experiences. Establishing rapport with interviewees is equally important, as “. . . the researcher must be able to take the role of the respondents and attempt to see the situation from their viewpoint rather than superimpose his or her world of academia and preconceptions on them” (Fontana & Frey, 2005, p. 708).

The process of interviewing cannot be considered a neutral interaction between the interviewer and interview. Rather, the interviewer “. . . is a person, historically and contextually located, carrying unavoidable conscious and unconscious motives, desires, feelings, and biases – hardly a neutral tool” (Fontana & Frey, 2005, p. 696). Minimizing interviewer biases and reducing the conscious and unconscious filters that may exist is essential to gathering the most accurate lived experiences of the participants.

All attempts were made to reduce the possibility of two common sources of response effects from the interview process, including altered respondent behavior in an effort to produce a “socially desirable” response, and any possible effect created by the construction of the protocol or follow-up questions (Fontana & Frey, 2005, p. 702; Maynard-Moody & Musheno, 2003). Participants were primed to provide truthful, honest
answers that reflect an accurate recollection of their experiences, and participating paramedics were made aware of the PI’s past experiences as an EMS provider thus potentially reducing the chances of less truthful responses. Additionally, interview protocol questions were constructed in a nonleading manner.

This study uses an interview method in a manner similar to Maynard-Moody and Musheno (2003) and Kelly (1994). Participants were asked to relate stories about their experiences working at the front-lines of EMS, with a specific focus on service interactions that were particularly memorable, complex, challenging, or involved a nonroutine situation. As Maynard-Moody and Musheno noted, questions that dealt with “… not how much or how many but rather how do people … comprehend and act in their work lives, then stories are perhaps our most powerful research instrument” (2003, p. 26). Stories serve to bring to life complex, emotional, and volatile incidents in which the consequences are substantial or dire. Standard interviewing techniques probing for beliefs about rule adherence or deviation and discretionary decision-making would lack both depth and the situation in a unique context that can be brought out by stories. These narratives of action are important to street-level providers in that they reflect an intrinsic need to “… give guidance and coherence to our confusing world” (Maynard-Moody & Musheno, 2003, p. 30).

Using storytelling as a method of social science research has several potentially unique strengths for the study of front-line work (Bailey & Tilley, 2002; Connelly & Clandinin, 2006; Kelly, 1994; Maynard-Moody & Musheno, 2003). First, the researchers’ working propositions are less obvious to the storyteller. Other research methods, such as surveys or more structured interviewing techniques, can provide cues to
the participants about the variables at under consideration, thus potentially prompting them to provide socially or organizationally acceptable answers (Maynard-Moody & Musheno, 2003). Second, as noted before, stories can depict complex interactions between multiple variables, and localize these within certain situations. They can show “. . . what situations call for certain routines and how the specifics of a case do or do not fit standard practices” and can show the consequences of the actions of street-level EMS providers (Maynard-Moody & Musheno, 2003, p. 29). In essence, stories are “… cultural artifacts in compact form …,” and “… reveal the norms and beliefs that guide action” (Maynard-Moody & Musheno, 2003, p. 31). Perhaps most importantly, rigorous narrative research serves to elevate the position of those being studied from mere “research subject” to an individual sharing meaningful, tangible, and lived experiences. As Chase (2005) noted, “[t]o think of an interviewee as a narrator is to make a conceptual shift away from the idea that interviewees have answers to researchers’ questions and toward the idea that interviewees are narrators with stories to tell and voices of their own” (p. 660).

This method of narrative analysis is, however, not with weaknesses. Maynard-Moody and Musheno (2003) noted that “[s]tories are not facts or evidence waiting for interpretation; from the moment they are conceived through the many telling and retellings, they are the embodiment of the story-tellers interpretation” (p. 26). These interpretations of events by story-tellers are “… both enabled and constrained by a range of social resources and circumstances” (Chase, 2005, p. 657). Stories that are told by street-level bureaucrats are inevitably going to be those that are more severe, more complex, and more likely to reify their image as heroic public servants. They are the
stories that front-line workers want to tell. However, this does not pose a problem with this specific research because we are most interested in these types of incidents; though EMS providers more routinely engage in less severe incidents, they have an increasingly important role in those that are more severe. Finally, often important data will never be revealed to organizational or occupational outsiders, thus “… perpetuat[ing] the conspiracy of silence” (Maynard-Moody & Musheno, 2003, p. 32). These stories are in essence “… socially situated interactive performances – as produced in this particular setting, for this particular audience, for these particular purposes” (Chase, 2005, p. 657). Stories that are embarrassing, depict actions that are not legally, socially, or culturally acceptable, or may elicit some sort of negative reaction will not be revealed.

Additionally, there are differences between solicited stories and those that arise naturally in conversation, thus making the interview process less natural and more manufactured (Chase, 2005; Maynard-Moody & Musheno, 2003). In most cases, stories are told for a reason. They are a method of bringing to light information that is interesting or important that, for some reason or another, fits into a larger discourse. Stories that are solicited may also be told to relate something to the listener, but the reasons for telling the story are not immediately apparent. While unsolicited stories may potentially better illuminate some of the more complex and nuanced aspects of service interactions, data collection in this fashion would be extraordinarily time consuming. Thus, while soliciting stories may be slightly less preferable, it is the most pragmatic means of data collection. It is important to note that although Gladden (1972) described public administration as “inherently pedestrian” and “not a very exciting activity at best,” the stories related by these front-line public servants paint a very different picture (pp. vii–viii).
Participants were given of a set of instructions in advance to aid in the outlining of stories prior to their interview. These instructions can be found in Appendix C. If not initially offered by the participant, probing questions were asked to determine the agents involved in the story, the problems that those individuals were attempting to solve, the methods of solving those problems and actions taken, resources used, the effects of individual or group efforts, and the potentially unintended consequences of the actions of agents (Klein, 1998, pp. 177–178). Every attempt was made to interrupt interviewees as little as possible, through clarification questions were posed in certain circumstances, and more substantive questions were posed when the interviewee had completed his or her narrative.

In addition, EMS providers were presented with a case scenario and asked to treat a hypothetical patient based on the information outlined. Two case scenarios were developed that involved the possible treatment with an analgesic pain medication. In both cases the type and method of injury were the same, the patient’s chief complaint and visible injury were identical, and the patient vital signs were identical. However, in the second case several pieces of information were inserted to cue the providers to the possibility that the patient was a “drug seeker,” or a patient that feigns injury when none exists for the purpose of getting legal, physician-prescribed access to pain medications. Though both patients, based on the visible nature of their injury and complaints of severe pain, would be eligible for analgesia, the decision to provide a pain medication in the second case was made more complex by the patient’s potentially perceived past history of drug use. These scenarios were written to examine the nature of discretionary decision-
making by EMS providers as they follow a clinical protocol that allows for significant within-rule discretion.

Though an ideal situation would have all participants “treat” both kinds of simulated patients to determine differences in treatment from one patient to the other, this was not possible in the short amount of time allotted to this research. Instead, half of the interview participants were randomly assigned to treat the “case” patient (the patient that potentially may be a drug-seeker), and half to the “control” patient (the non-drug seeking patient). This method follows that of Klingman et al. (1986), who examined “defensive” medicine through the use of clinical scenarios. These clinical scenarios were created by the PI with input from several in-service paramedics, an attending emergency physician, and an emergency medicine resident physician. Interviewees were asked to read the scenario, and to present a plan for treating the patient in a step-by-step manner, outlining the specific palliative care and reasons for each type of treatment.

Participants for the open-ended interviews were randomly chosen from a population of on-duty paramedics over a 2- to 3-day interview period at each location. Though random and purposive sampling methods were considered, organizational restraints on funding to provide coverage for on-duty paramedics and collective bargaining rules covering off-duty compensation precluded the use of these sampling methods. This method of sampling is not without benefits, though, as it allows for random availability of paramedics according to calls for service. Paramedics were only available when not treating patients, thus introducing some amount of randomness into the sampling. A total of 10 front-line workers were interviewed from each organization. Staffing in EMS organizations regularly relies on sets of two crew members per
ambulance shift, however this study will not attempt to interview full sets of ambulance crews. Rather, 10 individual street-level bureaucrats were selected for each case regardless of assignment. All interviews were audio-recorded and transcribed. The interview process outlined here was pilot tested with paramedics from two agencies not involved in the research.

Focus groups were conducted to examine concepts of rule adherence and deviation and methods of referencing rules in EMS. Focus groups can be an effective method of primary or secondary data collection for striving to “… learn through discussion about conscious, semiconscious, and unconscious psychological and sociocultural characteristics and processes …” (Berg, 2007, p. 144). As a method of data collection, focus groups are “… little more than the quasi-formal or formal instances of many of the kinds of everyday speech acts that are the part and parcel of … social life …” (Kamberelis & Dimitriadis, 2005, p. 887). Among other advantages of using focus group interviews for data gathering, Berg noted that they are logistically and topically flexible, and allow for the gathering of large amounts of data (2007, p. 148). Perhaps the most notable reason for employing focus groups as a data collection method is that it allows for contact with numerous individuals in a relatively short period of time and allows the “… critical interactional dynamics that constitute much of social practice and collective meaning making” to emerge, something that is generally “stripped away” in one-on-one interviews (Kamberelis & Dimitriadis, 2005, p. 902). These collective conversations carry some inherent risk associated with the shaping of responses by participants to match those of other respondents instead of their own individually held
conceptions of the topic at hand, but such a risk is tolerable given the benefits of this data collection method.

It is for this final reason, the ability to contact a large number of EMS providers in a relatively short period of time and to bring out collectively held perceptions about rules, that this method of data collection is specifically employed in this research. Though Berg (2007) noted that focus group interviewing allows for data gathering only at the group level, this methodological shortcoming is worth the strengths provided by the contact with a larger number of participants. The focus group protocol consists of questions assessing the nature of rules, policies, and procedures that shape behavior in EMS organizations. As with the one-on-one interviews, participants were primed to provide truthful, honest answers that reflect an accurate recollection of their experiences, and all were informed of the PI’s past experiences in EMS. Also in line with interview data collection, focus group protocol questions were constructed in a nonleading manner. All focus groups were audio-recorded and transcribed. Prior to use in the case organizations, focus group questions were pilot tested with EMS providers from an organization not involved in other aspects of the research. One focus group was conducted for each organization and participation was open to all employees of the participating organizations. A total of 19 individuals from all three organizations self-selected into the research based on availability.

Qualitative Data Analysis: Grounded Theory

Data from the open-ended interviews, focus groups, and organizational documents were analyzed using a grounded theory approach. In the words of Charmaz
grounded theory methods “. . . are a set of flexible guidelines that enable researchers to focus their data collection and to build inductive middle-range theories through successive levels of data analysis and conceptual development” (p. 507). Grounded theory methods are a form of inductive research that “… encourages researchers to remain close to their studied worlds and to develop an integrated set of theoretical concepts from their empirical materials that not only synthesize and interpret them but also show processual relationship” (Charmaz, 2005, p. 508). The grounded theory process is iterative, consisting of the data collection and frequently analysis even during the process of data gathering.

Grounded theory is appropriate for this research in that it is allows for exploration of the data in a manner that brings out the processes that, combined, create the total package of patient treatment. Charmaz (2005) notes that this is a particular strength of grounded theory, and is brings to light the “… enacted processes, made real through actions performed again and again” (emphasis in original, p. 508). Thus, grounded theory analysis will bring to the fore the assessment and treatment processes that EMS providers use on a daily basis.

The entirety of the interviews and focus groups were transcribed including verbal utterances. Analysis began with line-by-line coding, with specific attention to people, actions, settings, and both “implicit concerns” and “explicit statements” (Charmaz, 2006, p. 50). Following the initial coding, “focused coding” was used to identify categories and related subcategories of data (Charmaz, 2006, p. 57). Glaser (1978, as cited in Charmaz, 2006), notes that focused codes are “… more directed, selective, and conceptual than word-by-word, line-by-line, and incident-by-incident coding” (p. 57).
Themes Emerging from Qualitative Data

Though the results and discussion of the qualitative data analysis will be detailed in subsequent chapters, it is important to provide adequate foundational information for the development of the survey instrument, data collection, variables, and estimators used. Two important concepts emerged from the qualitative phase of the study. The first is that of rule-bending behavior in the treatment of patients who would clearly benefit from this behavior. Several stories relating the assessment and treatment of critical patients noted that a paramedic consciously ignored a rule, such as contacting a medical command physician for permission to administer a certain medication or perform a specific advanced skill, if there was an immediate and palpable need. When asked about the reasons for bending rules, many paramedics noted their experiences with similar types of emergencies. Previous encounters with patients displaying similar characteristics allowed the paramedic to better grasp the basic underlying issues, appropriate treatments for that type of presentation, and expected outcome. Thus, the first model examines the relationship between experience, in this case measured using both years of service as a paramedic and years of service to an organization, and a paramedic’s rule-bending tendencies.

A second result of interest stemming from the qualitative study is that of the attitudes of paramedics toward patients who were deemed to be less than worthy of emergency medical services. Several paramedics noted their assessment of specific types of patients who, through their assessment, were found to be without a palpable need for EMS. A majority of paramedics described at least one type of patient who was not deserving of emergency medical care, though only a fraction of those individuals were
able to see the patient’s condition from the patient’s point of view, to essentially understand the request for services from their perspective. In many cases, these paramedics did not express feelings toward these patients that were as strongly negative. Thus, the second model seeks to examine the relationship between a paramedic’s perspective-taking abilities and his or her assessments of patient worthiness for only those types of patients identified as “less than worthy.” Worthiness is important in that it may substantively affect attitude towards treatment of patients and motivation to provide a rigorous and substantial assessment of patient conditions.

*Dependent Variables*

The first model examines tendencies to bend rules when there is a potential benefit to the patient. The dependent variable is adapted from a single item from DeHart-Davis’ (2009) rule abidance scale, and asks respondents to indicate if they “strongly disagree” (1), “disagree” (2), “agree” (3), or “strongly agree” (4) with the following statement: “I will bend a rule if it helps me improve a patient’s outcome” (DeHart-Davis, 2009). Though there are drawbacks to using single-item dependent variables, including possible measurement error that could be reduced using multiple measures, there are also strengths of such measures including a reduction in the possibility of creating scale variables with high inter-item correlations due to common method variance (Moynihan & Pandey, 2010, p. 857).

The dependent variable for the second model, EMS provider feelings of patient worthiness for services, was assessed using the following statement: “Given the general characteristics below, please rate the following patients based on how deserving they are
of emergency medical services.” The patient characteristics were detailed in the following statements: “A patient who presents with minor symptoms”; “A patient who feigns illness for personal benefit”; and “A patient who you know is responsible for his or her condition, but is not motivated to improve their condition” (Cronbach’s $\alpha = 0.6810$). Though the internal consistency for this variable is below the recommended level, it is sufficient for exploratory research (Nunnally & Bernstein, 1994).

These statements were created using three dimensions of Maynard-Moody and Musheno’s (2003) concept of client worthiness. These dimensions include the client’s responsibility for his or her need for services, motivation to improve his or her situation, and whether or not the client is attempting to “scam” the system (Maynard-Moody & Musheno, 2003, p. 103). As noted by the authors, these traits come bundled in packages, with individuals exhibiting some combination of the measures. Each type of patient received a score on a 5-point semantic differential scale ranging from a response of “not at all deserving” (1) to “very deserving” (5). A scale variable was created by summing responses to all three types of patients to create a measure of general feelings of patient worthiness. The three measures used here assess worthiness for patients who will be considered less deserving of services.

**Quantitative Data: Hypotheses, Sampling, Variables, and Methods**

*Independent Variables*

Independent variables for the first model were self-reported years of service as a paramedic and years of service to the organization. Length of certification as a paramedic, one measure of experience, may be related to the paramedic’s level of
comfort in providing care in the field of EMS. As paramedics become accustomed to acting in the specific role of an ALS provider, they may develop more nuanced understandings of rules and norms that govern behavior and the match, or mismatch, between rules and patient condition. Thus, paramedics who have been certified for a longer period may have a more favorable view of rule bending behavior.

**H1:** A paramedic’s likelihood of engaging in rule-bending behavior will increase with his or her tenure as a certified paramedic.

Length of tenure with an EMS agency may be related to an EMS provider’s comfort with rule bending though organizational variables such as familiarity with rules, comfort and interpersonal relationships with both operational and clinical managers, and relationships with coworkers and hospitals in the service territory. Thus, as paramedics gain experience working with specific individuals in a comfortable context, they may be more likely to bend or deviate from rules with less fear of repercussions.

**H2:** A paramedic’s likelihood of engaging in rule-bending behavior will increase with his or her tenure in organization.

This model includes three additional control variables. The first is self-reported educational attainment. The second, conformity, is adapted from DeHart-Davis (2009). Changes in an individual’s general preferences for conformity may alter his or her abilities to adhere to or deviate from rules. Four questions are posed asking for respondents to rate themselves between four pairs of opposites including “going along” and “arguing”; “accepting the system” and “questioning the system”; “accepting
authority” and “questioning authority”; and “conforming” and “rebelling.” Responses to these four questions are reverse-scored and summed to create a scale (Cronbach’s α = 0.7848) to measure individual conformity.

The third, risk propensity, is commonly employed as a control variable in numerous studies of examining tendencies to adhere to or deviate from rules (DeHart-Davis, 2009). Paramedics who are more likely to take risks may be increasingly comfortable with bending or deviating from rules. This variable is adapted from Sitkin and Weingart (1995) and asks respondents to indicate whether they would choose a “less risky alternative” (1) or “more risky alternative” (5) based on five different statements about a patient’s circumstances (e.g., “When I am aware that the patient assessment was done while missing several pieces of information”). Responses to the five statements were averaged to create a variable measuring overall risk propensity (Cronbach’s α = 0.8229). Dummy variables for membership in participating organizations were included. Though other control variables, including age, gender, and salary, would be logical inclusions, sample size is prohibitive.

To assess and EMS provider’s ability to view patients needs from the patient’s point of view, Davis’ (1980) “perspective-taking” subscale from the Individual Reactivity Index was used. This scale includes measures to “… assess spontaneous attempts to adopt the perspectives of other people and see things from their point of view” (Davis, 1980, p. 2). A street-level health care provider’s assessment of patient worthiness, a variant of Maynard-Moody and Musheno’s (2003) concept of client worthiness, may be related to his or her ability to view the patient’s medical condition or other situational factors from the perspective of the patient. Differences in perceptions of what warrants an emergency
response and emergency transport to a hospital may differ markedly between paramedics, who routinely respond to a wide variety of calls, and patients who generally have limited experiences with the use of EMS. Thus, a paramedic who is able to view a service interaction from the perspective of the patient may have an increased perception of the patient’s worthiness for services.

**H3:** A paramedic’s perception of patient worthiness will increase with his or her willingness and ability to adopt the patient’s perspective.

This scale contains seven statements to which respondents indicated that the item “does not describe me well” (0) or “describes me very well” (7). Five of the items are forward-scored statements (e.g., “Before criticizing somebody, I try to imagine how I would feel if I were in their place”) and two reverse-scored statements (e.g., “I sometimes find it difficult to see things from the ‘other guy’s’ point of view”). Following Davis (1980), responses were reversed where indicated and summed to create an index variable (Cronbach’s $\alpha = 0.6989$). Control variables include years as a paramedic, years in current position, educational attainment, salary, and dummy variables for membership in participating organizations. EMS provider race was not included in the model as 97% of respondents were white. Though other control variables, including age and gender, would be logical inclusions for both models, sample size is prohibitive.

_Sampling and Data Collection_

All full- and part-time paramedics employed by the research organizations ($N = 115$) were asked to complete a web-based survey focusing on the nature of street-level work in EMS as it relates to commonly held ideas about street-level bureaucrats. The
survey used likert-type, semantic differential, and standard demographic questions to assess concepts of perspective-taking (Davis, 1980) and client worthiness (Maynard-Moody & Musheno, 2003), each of which emerged as important concepts in the qualitative portion of the study. Participants completing the survey were asked to read an informed assent web page and were then given the opportunity to exit the survey if they do not wish to participate or choose to participate by clicking “next” and beginning the survey. The survey was administered after the semi-structured interviews so that participant responses to the interview questions will not be influenced by those posed in the survey. A prenotification was sent via email by a supervisor within each organization introducing both the PI and the nature of the survey. Shortly thereafter an email with the survey URL was sent by the organizational supervisor with an explanatory letter from the PI. Two reminder emails were sent in 1-week intervals. Examples of all documents are included in Appendix G.

A total of 64 paramedics responded, yielding a response rate of 55.7%. PDEMS and HSEMS were overrepresented with 43.8% and 35.9% of the responses respectively, while FDEMS was underrepresented with 20.3% of all responses.

Method

Because both dependent variables are measured at the ordinal level of measurement and the distances between responses is unknown, ordered probit is the appropriate estimator (Long, 1997). Ordered probit regression, one type of maximum likelihood estimator (MLE), determines the likelihood that the observed dependent variables will be produced by the given set of independent variables (Long & Freese,
2006, p. 76). Ordinary least square (OLS) regression is inappropriate in this instance, as an ordered dependent variable violates assumptions about the distribution of the error term implicit in OLS. Though this small sample size does not meet general recommendations of 100 observations for MLEs, Long (1997) indicated that at least 10 observations per independent variable may be sufficient.

**Ethical Considerations**

Interaction with participants for this project is limited to face-to-face, semi-structured interviews and focus groups. As a form of qualitative social science research, interviewing and focus groups present few risks of harm to participants. One possible risk is that of increased participant anxiety or other emotional response to the topic of the research (Coontz, 2008, p. 134). Smith (2000), noting this same potential risk, stated that “[p]sychological research that deals with central and sensitive personal issues, such as people’s inner conflicts and their private victories and defeats, aspirations and regrets, inherently risks harming or offending …” (p. 3). Though this research is subject to these risks, the nature of the interactions, which largely allows paramedics to set the pace and content of the conversation greatly reduces the possibility that any of these research methods will result in any amount of participant anxiety. Additionally, interviews were conducted in private, and neither supervisors nor coworkers were permitted to observe any aspect of the conversation. This serves to avoid any issues of privacy that may have resulted from either group participating (Sieber, 2000).

Other risks include the release of private information about participants to coworkers, supervisors, or the general public that may damage their reputations or
produce some form of other undesirable social or physical repercussion (Coontz, 2008, p. 134). This risk will be eliminated during interviews through strict controls on the methods of data collection an inability to link personally identifiable data to the individual participants. Within the focus group setting, participants were be instructed at the beginning to only share information that they are comfortable sharing in a group setting and respect the contributions of other group members. Additionally, this research did not involve any interaction with providers during their interactions with patients, nor did it prevent participants from engaging in their assigned job duties of patient care, and thus will not create any risk to other individuals.

This research adheres strictly to established standards for ethical practices in social science research. With protection of human subjects placed at the fore, several measures of protection are used. First, each interview and focus group participant was provided with a consent form explaining the topic and purpose of the research, the nature and consequences of participation, and that participation is entirely voluntary. Those completing the web-based survey completed an informed assent form with identical information on topic, purpose, the benefits and burdens of participation, and the voluntary nature of the research. Additionally, personally identifying participant information was and will continue to remain confidential. Audio recordings were assigned a randomly chosen identification number that cannot in any way be connected back to the participant. The Internet Protocol (IP) addresses of survey respondents was not collected, nor was any other personally identifying information. A list of participants was generated for each organization agreeing to participate, however, this list was not
created in a manner that will allow for matching to participant responses to any of the
data collected.

Interview and focus group protocols, survey instruments, data management
techniques, participant recruitment, and all other required aspects of the study were
approved by the Institutional Review Board for the Protection of Human Subjects at
Rutgers, The State University of New Jersey. Initial approval was sought for qualitative
components, and quantitative components of the study were subsequently approved via
an amendment to the initial research protocol.

Software Assistance

Qualitative data were analyzed using the qualitative software program NVivo 9.
This software allows for coding of data, analysis of the relationships between codes,
allows for the creation of visual “models” to represent these relationships, and allows for
the integration of researcher memos and other supporting documents into the analysis
(QSR, 2009, p. 1). As Sandfort (2000) noted, use of software can valuable in that it
“…does not require coding categories to be determined a priori … and [allows] for
continued modification of the coding system” (p. 734). This is of great utility in that it
allows for “… systematic exploration of emerging hypotheses with reference to the entire
database …” and allow for the analysis of a large amounts of data (Sandfort, 2000, p.
734). Quantitative data collected through the web-based survey were analyzed using
STATA (version 10), a statistical software package for social sciences.
CHAPTER 5: RULE COMPLEXITY IN EMS: CONSTRAINTS ON DISCRETION

This chapter will focus on the rules, broadly construed, that can influence front-line EMS providers. These rules include state, regional, and organizational rules pertaining to clinical treatment of patients, and operational procedures used on a daily basis in the provision of care by EMS workers. These documents serve to create the formal, legal foundation upon which all care provided by street-level bureaucrats in EMS organizations is based. It is important, then, to examine these rules and regulations closely to determine, with as much specificity as possible, both the manner in which discretion is formally recognized and specific areas of behavior or action that are not addressed.

This review will begin with a discussion on the structure and content of the Pennsylvania Statewide clinical protocols, followed by a specific focus on those protocols that allow for the establishment or granting of authority at the front lines. Regional and organizational documents will then be reviewed, concentrating on those policies that further restrict discretionary action beyond those of state-level documents, and those that allow for discretionary action at the front lines. Table 5.1 outlines the major rule sets employed by front-line paramedics in Pennsylvania.

**Pennsylvania Statewide Basic Life Support Protocols**

The Pennsylvania Statewide Basic Life Support Protocols (“BLS protocols”) provide both EMTs and paramedics with specific clinical rules and procedures to govern
patient care, as well as a set of more general rules to govern particularly common non-clinical aspects of service interactions that may have an impact on patient care.

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**TABLE 5.1**

Rules, Policies, and Procedures in Emergency Medical Services

<table>
<thead>
<tr>
<th>Level</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>Pennsylvania Statewide Basic Life Support Protocols</td>
</tr>
<tr>
<td></td>
<td>Pennsylvania Statewide Advanced Life Support Protocols</td>
</tr>
<tr>
<td>Regional</td>
<td>Regional Protocol or Guideline Addenda</td>
</tr>
<tr>
<td>Organizational</td>
<td>Organizational Protocol or Guideline Addenda</td>
</tr>
<tr>
<td></td>
<td>Standard Operating Procedures/Guidelines</td>
</tr>
<tr>
<td>Other</td>
<td>Advanced Cardiac Life Support (ACLS) - AHA</td>
</tr>
<tr>
<td></td>
<td>Pediatric Advanced Life Support (PALS) - AHA</td>
</tr>
</tbody>
</table>

*Note: AHA, American Heart Association ®*

According to the Pennsylvania Bureau of Emergency Medical Services (PABEMS), these protocols help to accomplish these goals through both initial and continuing EMS provider education meant to “reinforce” standards of care, as well as actual application during patient care (PABEMS, 2008b, preface). These protocols were developed iteratively at the state level through substantial cooperation of state employees, regional councils, representatives of EMS organizations, and physicians, and are designed “. . . taking into consideration evidence-based treatments…” and “. . . the best thinking of expert practitioners. . .” (PABEMS, 2008b, preface). Though the practitioners participating in the present study are all ALS-level EMS providers, they are still bound by the rules of the Pennsylvania BLS protocols.
Both the inability to legislate every aspect of the patient care process and the need for discretion and judgment by EMTs and paramedics are explicitly noted in the introductory letter from the state Director of the Bureau of Emergency Medical Services and Commonwealth EMS Medical Director:

Since written protocols cannot feasibly address all patient care situations that may develop, the Department expects EMS personnel to use their training and judgment regarding any protocol-driven care that would be harmful to a patient. **When the practitioner believes that following a protocol is not in the best interest of the patient, the EMS practitioner should contact a medical command physician if possible.** Cases where deviation from the protocol is justified are rare. The reason for any deviation should be documented. All deviations are subject to investigation to determine whether or not they were appropriate. In all cases, EMS personnel are expected to deliver care within the scope of practice for their level of certification. (emphasis in original, PABEMS, 2008b, preface)

Though this introduction specifically mentions the use of EMS provider training and judgment, this endorsement of discretionary behavior is limited to those deviations from protocols that would harm or provide no benefit to the patient. Discussion or guidance on other aspects of discretionary action, especially those items not guided by the protocols, is absent from the general introduction. Additional guidance on the use of judgment is provided within individual protocols addressing treatment of specific conditions.

The BLS protocols consist of 44 distinct topic-specific procedures divided into nine sections. The first section titled “Operations” covers general procedures that are to be followed for all incidents, including topics such as assessing the safety of the incident scene, use of measures to protect from blood-borne pathogens, use of lights and sirens while transporting patients, and refusal of treatment or transport by the patient (PABEMS, 2008b, pp. 102-1 – 192-2). The second section outlines patient assessment procedures, indications for requesting ALS services to assist with severely ill or injured
patients, skills that an EMT may use to assist a paramedic while treating a patient, and procedures for common BLS skills, such as oxygen administration and spinal immobilization (PABEMS, 2008b, pp. 201-1 – 263-1). Six sections outline condition- or incident-specific protocols for major types of patient illnesses, including cardiac arrest, respiratory illnesses, cardiac illnesses, trauma, general medical problems, and behavioral emergencies or poisoning (PABEMS, 2008b, pp. 322-1 – 831-2). The final section covers “special considerations,” including situations that may occur frequently but do not fit into those categories. Examples include contact with medical command physicians or situations that may not occur often but warrant formal guidance, including transportation of service animals or crime scene preservation, (PABEMS, 2008b, pp. 901-1 – 921-2).

Each individual protocol contains several core sections meant to address both the applicability of the protocol to the needs of the patient, the specific procedures that should be used to treat the patient, and any other information that is pertinent to the procedures or specific patient condition. The first section, noted throughout as “Criteria,” outlines the specific signs, symptoms, or conditions that must exist for the patient to fall under or qualify for that protocol, and is followed by “Exclusion Criteria,” outlining those factors that would disqualify a patient from treatment under a specific protocol. The “Systems Requirement” section puts forth the necessary requirements that both EMS personnel and EMS organizations must meet in order to treat the patient under a specific protocol. For example, EMTs can assist those patients who take nitroglycerin for cardiac ailments or use an inhaler for respiratory illnesses in taking their prescribed medication, however only those who have completed required training for that specific treatment provide this help (PABEMS, 2008b, 421-1, 501-1). Following are the specific procedures
or equipment that should be used in treating the patient, listed as a step-by-step list of varying specificity. Five of the 44 protocols, including trauma triage, cardiac arrest, maternity, control of bleeding, and contact with a medical command physician, contain an additional algorithm in diagram form that is to be followed in treating patients. Finally, a notes section lists any additional information in the form of clarifications, contraindications to certain therapies, and other data not included in the previous sections or algorithms.

Several protocols are labeled as “guidelines,” indicating that there is some latitude intrinsic to the content of these rule sets, with each noting explicitly that “[t]hese guidelines do not comprehensively cover all possible situations, and EMS practitioner’s judgment should be used when the ambulance service’s policy does not provide specific direction” (PABEMS, 2008b, p. 103-1). These guidelines allow for flexibility in implementation though the use of words like “consider” and “suggested,” followed by recommendations for specific behaviors that may be appropriate for a given incident. Protocols listed as guidelines include those that address scene safety, infection control and the use of body substance isolation equipment, use of lights and sirens, air ambulance safety considerations, crime scene preservation, and transportation of service animals (PABEMS, 2008b, p. i). Notably, these protocols involve policy areas in which other state laws provide more strict guidance and are subject to change, or in cases that organizations will generally set more specific and comprehensive guidelines than could be adopted at the state level due to variation in local agency capabilities, geography, or other factors. This need to tailor policies to those of the local agency is noted explicitly, with each guideline noting that they “… are not designed to supersede an ambulance
service’s policy regarding management of personnel safety … but this general information may augment the service’s policy” (PABEMS, 2008b, p. 102-1)

The state protocols also explicitly include several “optional” protocols that allow state-established regions to develop and implement rules that are more comprehensive than the state protocols, or allow for increased care for patients. One such example includes the option for regions to require EMTs and paramedics to contact a medical command physician before allowing patients to refuse treatment or transportation to a hospital (PABEMS, 2008, p. 111-1). The same protocol specifies that organizations may require EMS providers to complete a patient care report (PCR) checklist prior to allowing a patient to refuse treatment. Other optional protocols include those referencing pulse oximetry as a diagnostic technique, and use of other optional types of equipment. Several BLS protocols specifically recognize that BLS providers frequently assist ALS providers in rendering care, and indicate the extent and manner in which these individuals with lower level certifications can assist. Examples include helping with ventilating patients through endotracheal tubes and other airway devices, and set up of electrocardiogram monitoring equipment (PABEMS, 2008b, p. i).

The first protocol in the statewide BLS protocols outlines the most basic assessment procedures for every patient encountered by EMS providers. Entitled the “Initial Patient Contact” protocol, it begins by referring to guidelines on ensuring scene safety and the use of proper body substance isolation procedures, performance of an initial assessment by asking a series of probing questions based on the nature of the call, determining the need for additional BLS or ALS resources, and then refers to other illness- or injury-specific protocols for specific treatment and transportation (PABEMS,
2008b, 201-1). Of all of the rules contained in the Pennsylvania BLS protocols, excluding those marked as “guidelines,” this is the only protocol that applies to every patient without exception. Thus, any patients who do not automatically qualify for another protocol based on the illness or injury will fall under this minimum level of care contained in this protocol.

Several BLS protocols explicitly refer to discretion or judgment on the part of EMS providers at all levels. The first, a protocol addressing the medical command system in Pennsylvania, notes that “[p]rotocols cannot adequately address every possible patient scenario. The Pennsylvania EMS System provides a structured Medical Command system so that EMS personnel can contact a Medical Command Physician when the personnel are confronted with a situation that is not addressed by the protocols or when the EMS personnel have any doubt about the appropriate care for a patient” (PABEMS, 2008b, p. 901-2). This statement, echoing the introductory paragraph from state leaders, adds the requirement that individuals contact a medical command physician for guidance in specific situations. Though limited in probability given improvement in communication technology, there are occasions in which an EMS provider may not be able to contact a medical command physician for assistance in making a decision. The protocol notes in these cases that “[p]rocedures or treatments listed … may be considered and performed at the discretion of the ALS practitioner if unable to contact medical command if the ALS practitioner believes that these treatments are appropriate and necessary” (PABEMS, 2008b, p. 901-3). The second addresses the ability of an EMS crew member to allow a registered nurse (RN) to perform clinical skills within the scope of practice of an RN on the scene of an EMS call with approval of a medical command
physician (PABEMS, 2008b, p. 904-1). Though potentially a low-incidence situation, the discretionary authority is nevertheless available to EMTs and paramedics as they provide emergency medical services.

Other areas of discretionary abilities are less explicit, but noteworthy. One BLS protocol, addressing methods of transporting patients to trauma centers, notes that paramedics should “[c]onsider air transport if … [it] will deliver the patient to the trauma center sooner than ground transport…” (PABEMS, 2008b, p. 180-1). Though seemingly straightforward, assessments of transport times, availability and location of air medical transport services, and other geographical factors become important in making this type of decision. None are wholly objective, perfectly measurable, and reliable. Several protocols note that BLS providers should “consider” calling for a paramedic or other ALS-level practitioner if they believe that a patient’s condition is worthy of a higher level of care given the circumstances of illness or injury or other situational factors. While in some cases the need for advanced level care is obvious, other cases may not be so clear and may rely on provider judgment. Additionally, patient assessment skills can be highly variable among BLS providers, with some providers more able to detect nuanced patient presentation cues that would aid in making this decision.

One aforementioned “guideline” protocol that addresses use of warning lights and sirens allows for one type of nonclinical discretionary action. The protocol notes that “[e]mergent transport should be used in any situation in which the most highly trained EMS practitioner believes that the patient’s condition will be worsened by a delay equivalent to the time that can be gained by emergent transport” (PABEMS, 2008b, p. 123-1). The protocol outlines specific clinical criteria that a patient must meet to require
transport using lights and sirens, however exceptions are included that would allow EMS providers to disregard this protocol. While this decision may seem somewhat innocuous, it should be noted that a majority of ambulance-involved motor vehicle accidents occur when lights and sirens are in use (Kahn, Pirrallo, & Kuhn, 2001).

Complexity is evident throughout the statewide BLS protocols. In and of themselves, the protocols often contain numerous and specific inclusion and exclusion criteria, multi-item treatment schemes, and notations providing more specific information on which a treatment decision must be based. Additionally, many of the protocols also contain references to other protocols that may also be appropriate or necessary given the patient’s condition. These protocols are meant to work in conjunction with other rule sets created to guide patient treatment including “… EMT and First Responder curricula, scope of practice notices for EMS personnel, and BLS skills sheets, to provide a uniform, consistent, and high-quality foundation for prehospital care” (PABEMS, 2008b, preface). Though some amount of unregulated behavior and latitude is contained in the BLS protocols, the statewide ALS protocols include substantially more discretion due in part to the complex interrelationship between patient presentation, assessment, and rule created to govern appropriate responses.

**Pennsylvania Statewide Advanced Life Support Protocols**

The Pennsylvania Statewide Advanced Life Support Protocols (“ALS protocols”) provide both paramedics and other individuals certified at the ALS level, including state certified prehospital registered nurses and “health professionals” (e.g., physicians acting in a prehospital setting) with specific clinical rules and procedures to govern patient care
beyond those found in the BLS protocols. These ALS protocols, first adopted in 2007, replaced regionally based ALS protocols developed and maintained independently by the 16 non-profit organizations that act as the enforcement arm of the Pennsylvania Bureau of Emergency Medical Services.

The preface to the 2008 version of the statewide ALS protocols notes four specific reasons for this centralization of statewide clinical policies. The first reason, uniformity, recognized that “… many ALS practitioners provide EMS for multiple services in more than one region …,” thus allowing for substantially less rule complexity for paramedics working within multiple areas than the previous regionally based protocols (PABEMS, 2008a, preface). The second reason, a desire to create evidenced-based protocols, recognizes that the illnesses and injuries occur and are treated in the same manner across the Commonwealth, thus making the adoption of statewide protocols more appropriate (PABEMS, 2008a, preface). The final reasons include both ease of updating rules across numerous regions and agencies, and ease of integrating the scopes of practice, training and education, and other written rules for various levels of BLS and ALS providers (PABEMS, 2008a, preface).

The importance of EMS practitioner judgment is evident throughout the ALS protocols. Of note, the first protocol addressing the “General Protocol Principles” states that the protocols “… do not specify when to initiate packaging or transportation of most patients. Patient condition and paramedic judgment of the utility of on-scene treatment should determine where packaging and initiation of transport are done” (PABEMS, 2008a, p. 1000-2). Thus, one of the most important decisions in patient care, to treat a patient on the scene of their illness or injury or to move on and treat the patient in the
ambulance while transporting to the hospital, is left largely to paramedic judgment.

Second, EMS practitioners, are “… not required to follow every step within a protocol if a step is deemed to be inappropriate for a particular patient” (PABEMS, 2008a, p. 1000-2). This process of assessing the appropriateness of certain aspects of the EMS protocols may be determined by paramedic experience, education, and other situational variables including peer input. Third, issues of medication dosing require some amount of discretionary action. This protocol notes that “EMS personnel must use their training and knowledge to assure that doses given are appropriate for the patient’s age and weight” (PABEMS, 2008a, p. 1000-3). Though in many cases relatively obvious or clear, the assessment of patient age and weight may vary significant from one paramedic to another. Finally, the means of administering certain types of medications can, in some cases, require discretion. The protocols note that “… access should be determined by service policy or by the ALS practitioner’s judgment based upon the condition of the patient” (PABEMS, 2008a, p. 1000-4).

The structure of the Pennsylvania ALS protocols mirrors statewide BLS protocols. A total of 43 specific protocols divided into nine sections addressing general operations for all incidents, assessment and procedures, and injury- or illness-specific topics of resuscitation, respiratory emergencies, cardiac, trauma and environmental injuries, medical and obstetrics/gynecological emergencies, behavioral and poisoning emergencies, and special considerations are included (PABEMS, 2008a, p. i). These protocols differ from the statewide BLS protocols in the complexity of their clinical content. The recognition of specific injuries or illnesses are more nuanced, the skills
employed to treat patients are more precise to execute, and the tools used to improve a patient’s condition or reduce pain, including medications, are more difficult to deploy.

The ALS protocols include one “guideline” that addresses out-of-hospital termination of resuscitation efforts. This protocol notes the complexity and weight of the situations in which it may be appropriate for paramedics to cease attempts to resuscitate patients, and includes a comment about the need of agencies to both get input from organizational medical command physicians and to create rules specific to these kinds of situations (PABEMS, 2008a, p. 3091-1 to 3091-2). The ALS protocols also include one “optional” protocol that addresses sedation-assisted intubation, or the placement of devices to ensure that a patient can be ventilated with the help of a medication intended to make the procedure possible (PABEMS, 2008a, p. 4002-1). The requirements of this protocol, including a dual-paramedic crew, extensive training and confirmation of skills by the organization’s medical command director, additional necessary equipment, as well as potential complications or failure to properly execute the skill, require some amount of variation by organization in adoption and implementation.

Several ALS protocols note the ability of paramedics to choose to attempt a procedure, or the methods with which a procedure is completed. For example, the general protocol for airway management notes that “[t]he need for airway management is based upon the practitioner’s judgment after a rapid global assessment of the patient …” (PABEMS, 2008a, p. 4001-2). Other protocols addressing specific illnesses or injuries note some amount of flexibility in this decision. The state protocol on treating burn patients notes that medics should “[c]onsider early intubation in patients with respiratory distress …” (PABEMS, 2008a, p. 6071-2). Protocols aimed at treating other conditions
note some caution in intubating individuals when the transport time to a hospital is short. Several of these protocols aimed at treating severely ill pediatric patients note that “[v]entilation with BVM [bag valve mask] may be as effective as endotracheal intubation in children when transport times are short” (PABEMS. 2008a, p. 3041P-2). Less complex and invasive methods that “may” achieve the same results grants some amount of discretionary authority in making this critical decision.

In addition to the need for paramedic judgment about the need for airway management, flexibility is noted in the methods used to achieve the intended outcomes. This flexibility includes the use of special tools, use of sedatives, and the use of alternative airway management methods requiring less skill (PABEMS, 2008a, p. 4001-2). For example, the protocol on traumatic cardiac arrest indicates that paramedics should establish an airway early on in the process, noting specifically that this could be an “ETT [endotracheal tube] or alternative airway ...” (PABEMS, 2008a, pp. 3032-1). Though practice may dictate a preferred method, this protocol indicates at the outset that paramedics can indeed make a choice between the more standard endotracheal tube (ETT) or an alternative airway device for these types of patients. Later clarification in the protocol notes that “[i]f unable to intubate on up to 3 attempts, consider alternative/rescue airway device” (PABEMS, 2008a, pp. 3032-2). In those cases that attempts at a more difficult ETT are not successful, paramedics then may choose to attempt the equally effective yet less technical deployment of an alternative airway device, an alternative that is noted in nine other protocols.

The statewide protocols allow for some flexibility in the decision to administer a medication, the route of administration, or choice of medication to treat specific illnesses
or injuries. An example of the discretionary area involving the choice to administer a drug includes those patients falling under the protocol for agitated behavior or psychiatric disorders. These individuals may be sedated if the patient is “… is at imminent risk of self-injury or is a threat to others” (PABEMS, 2008a, p. 8001-2). The determination of “imminent risk” is not, however, defined to any extent. Likewise, in the treatment of children with narrow or wide complex tachycardia, a specific kind of heart rhythm, note that “[i]n borderline unstable patients, adenosine may be tried and conscious patients should be sedated before cardioversion” (PABEMS, 2008a, p. 5022P-2; 5023P-2). Though some effort is made to define “borderline” for the purposes of inclusion or exclusion, it is not without some amount of interpretation on the part of the paramedic.

The protocol for bradycardia, or an abnormally slow heartbeat, notes that bradycardic adults who also show showing signs or symptoms of poor circulation can be treated with Atropine while simultaneously preparing for cardiac pacing, or may skip drug administration and proceed to cardiac pacing and sedation (PABEMS, 2008a, p. 5021A-1). This same protocol notes that the aforementioned sedatives should be “considered” for “… patients [who] may not tolerate the pacing stimulus to the skin and chest wall …” (PABEMS, 2008a, p. 5021A-1). While this aspect of the protocol seems rather straightforward, what constitutes “tolerance” is not discussed, and the identification of an “intolerant” patient would occur after the treatment had started. Though some paramedics may default to the use of sedatives in anticipation of the potential pain associated with this procedure, it is not specified as a necessity in every case.
Examples of discretion in the administration of medication include the state protocol covering adult and pediatric patients with an altered level of consciousness give options for the intravenous (IV), intraosseous (IO), intranasal (IN), or intramuscular (IM) administration of medications to reverse low blood sugar or an overdose on opiates (PABEMS, 2008a, p. 7002A-1; 7002P-2). Though in some cases paramedics may default to a standard practice of establishing access via one route, in other cases there is some amount of judgment involved in considering rapidity of administration, skill level, and patient outcomes. Other protocols give latitude on the route of administration of epinephrine to newborns or neonates in need of resuscitation (PABEMS, 2008a, p. 3033-1). Though in some cases the route of administration may not have a substantial effect on patient outcomes, in others this decision is crucial. For example, in some cases the administration of a drug and its effectiveness are thoroughly intertwined. The statewide protocols for pulseless patients notes that “[e]ndotracheal medications are not very effective, but if IV/IO is unsuccessful, epinephrine, atropine, and Lidocaine may be administered via endotracheal tube at twice the IV dose” (PABEMS, 2008a, p. 3042A-2).

Medications given to patients via an ETT are much less effective than those given through other routes.

Other rules indicate that paramedics have a choice in the type of medication to give a patient to relieve his or her symptoms, reduce pain, or improve future outcomes. For example, protocols addressing treatments for certain kinds of heart rhythms or post-resuscitation care in adults and children allow for either weight-based dose of lidocaine or a fixed amount of amiodarone (PABEMS, 2008a, p. 3041A-1; 3041P-1; 3080-1; 5023A-1; 5023P-1). Protocols addressing the treatment of allergic reactions, asthma, or
other respiratory ailment allow for the choice of three different medications that dilate portions of the respiratory system that may constrict for one reason or another (PABEMS, 2008a, p. 4011-1; 4022-1). Treatment of seizure patients can include one of two possible medications that counteract the effects of low blood sugar (PABEMS, 2008a, p. 7007-1). Treatment of patients with an abnormally fast, yet regular, heart rhythm can include either of two medications used to slow the heart, adenosine or diltiazem (PABEMS, 2008a, p. 5022A-1).

The statewide protocols allow for discretion in the use of sedatives or narcotics for the treatment of varying conditions. For example, the protocol on post-resuscitation care allows paramedics to administer a sedative from among three options if the patient becomes “agitated” after being revived (PABEMS, 2008a, p. 3080-1). The option to give the same three medications, midazolam, diazepam, or lorazepam, is noted in nine other protocols covering sedation-assisted intubation, treatment of bradycardia (slow heartbeat), narrow or wide complex tachycardia (rapid heartbeat) in adults or children, nausea or vomiting, psychiatric disorders, and treatment of exposure to nerve agents or pesticides (PABEMS, 2008a). Likewise, choice is evident in the administration of types of narcotics for patients presenting with severe burns. These patients may be given weigh-based doses of either fentanyl or morphine, or nitrous oxide (PABEMS, 2008a, p. 6071-1). The same discretionary area is allowed in the treatment of patients with suspected acute coronary syndrome, who can be given weight-based doses of either fentanyl or morphine (PABEMS, 2008a, p. 5001-1).

Of the protocols dealing with medication administration, one is deserving of added attention. The protocol for extremity trauma notes that patients may be offered
several types of analgesics, including fentanyl, morphine, or nitrous oxide, to ease their pain (PABEMS, 2008a, p. 6003-1). The only criteria that patients must meet to fall under this protocol include having a suspected fracture or some amount of pain after trauma. Clarification on pain administration in the notes section of the protocol only addresses those situations in which the analgesic should not be given, thus in essence failing to specify when it should be provided to the patient other than the general criteria mentioned here (PABEMS, 2008a, p. 6003-2).

Several protocols addressing perhaps the most critical decision – whether to attempt to revive a patient – contain some amount of discretionary area. The statewide protocol addressing termination of resuscitation efforts notes in the “exclusion criteria” section that paramedics should “[c]onsider continuing resuscitation and transporting patients …” with certain conditions (PABEMS, 2008a, p. 3091-1). These include cardiac arrests that occur due to several types of conditions that could have a “… better than average outcome …,” cardiac arrests that happen in public, infants and children, or “… where the bystanders do not accept the idea of ceasing efforts in the field” (PABEMS, 2008a, p. 3091-1). The protocol addressing resuscitation of newborns or neonates states that “[r]esuscitation may not be appropriate in rare cases where gestational age… or fatal birth defects…are consistently associated with certain early death” (PABEMS, 2008a, p. 3033-2). While these decisions would be made with the assistance of a medical command physician, other types of decisions may not allow for such consultation with clinically advanced practitioners.

Finally, the last protocol establishes the appropriate interactions with medical command physicians and grants some amount of discretionary authority to paramedics in
the case that they cannot make contact with a physician. The protocol notes that
“[p]rocedures or treatments listed after the medical command box may be considered and
performed at the discretion of the ALS practitioner if unable to contact medical command
if the ALS practitioner believes that these treatments are appropriate and necessary”
(PABEMS, 2008a, p. 9001-3). In this case, the absence of appropriate guidance from a
more clinically advanced health care provider grants some amount of discretion to the
paramedic to provide predetermined services that may be appropriate for a patient.

**Regional Policy Documents**

EMS regions occupy the area between the state and front-line EMS organizations. In this position, they serve as both the regulatory arm of the state and may also promulgate their own rules concerning patient treatment. Thus, regions play an important role in shaping the behaviors of EMS practitioners. Both FDEMS and PDEMS are situated in regions that have adopted clinical protocols to augment the statewide rules. A review of these regional protocols does not indicate the recognition or granting of any additional discretionary leeway for street-level paramedics, though the rules created at this level do serve to provide increasingly strict guidance on how certain procedures are to be executed. Examples of protocols created at the regional level include use of specific procedures for treating syncope (fainting) patients without any additional complaints; use of specific treatments like continuous positive airway pressure (CPAP) and bilevel positive airway pressure (BiPAP); both orotracheal and nasotracheal intubation as well as use of alternative airway management devices; intravenous and intraosseous access; and use of aeromedical transport for non-trauma patients. Situated just below the regional
level are the agencies that actually provide emergency medical services. The physicians under whom paramedics work may also “… set requirements for options, treatments, or medications that apply to all ALS practitioners within the service. (PABEMS, 2008a, p. 1000-1). Thus, organizational documents, which will now be discussed, are critical to understanding street-level bureaucratic behavior in EMS organizations.

**Organizational Policy Documents**

Organizational documents reviewed included policies and procedures manuals, formally titled “Standard Operating Procedures” (SOPs) for FDEMS and PDEMS, and the “Policy and Procedure” manual for HSEMS. Each of these documents contained sets of rules addressing personnel policies, operational procedures (nonclinical procedures for response, treatment, and transport of patients), and additional clinical guidance on patient care in specific situations beyond those of the state-wide and regional clinical documents. All policies were reviewed for explicit contributions to discretionary behavior by paramedics, though only those policies in which discretionary behavior is described are discussed.

Organizational policy manuals all included specific rules that outline administrative or nonoperational policies that did not directly address or contribute to street-level bureaucratic discretion. All three organizations had officially promulgated policies that outlined human resources areas such as vacation, holiday, and sick time, scheduling, and work uniforms. As municipal organizations, both FDEMS and PDEMS personnel policies were contained in the SOPs, though HSEMS employees, as part of a both a hospital and a larger health system, were also subject to compliance with certain
policies from the hospital and health-system levels. While personnel policies related to benefits and compensation may be directly related to job satisfaction, work motivation, and relationships with peers and supervisors, none contained language that expressed or allowed for any specific discretionary action.

Other policies that could be indirectly related to discretionary action include those addressing reimbursement for continuing education and training; use and security of vehicles; general personnel safety and use of protective gear; equipment repair and replacement; use of radios, cell phones, and other communications equipment; documentation of non patient-care work incidents; and confidentiality of patient information. In some cases equipment availability, functioning, paramedic safety, and additional training may contribute to differences in decision-making. However, none of these policies contained language explicitly granting additional authority to front-line workers.

Though also potentially indirectly related to the exercise of discretionary behavior, policies addressing post-incident documentation and completion of patient care charts were noted throughout all three organizational policy manuals. Whereas some paramedics have noted that the documentation process contributes to the learning process, none of these charting policies contained any language that would directly allow for additional discretion during an actual incident. Other notable operational and clinical rules created by organizations did explicitly mention “judgment,” “discretion,” or other similar language recognizing the agency of street-level workers. These will now be discussed in the context of each organization.
The FDEMS standard operating procedures consists of 65 policies divided into seven sections including administration and administrative procedures, staff responsibilities, delivery of patient care, communications, personnel safety, and special events and operations. The preface to the SOPs notes specifically that these policies are intended to supplement, and not contradict, state and regional laws, thus recognizing the hierarchical position of the front-line agency within an intergovernmental context. Importantly, some of these organizational policies explicitly recognize or grant some amount of discretionary latitude to paramedics. Four policies, including a general policy addressing the nature of the SOPs, a general policy that discusses paramedic autonomy, a policy concerning one type of scenario that may occur during the response to an emergency incident, and a patient care documentation policy contain language that discusses or grants some latitude to street-level EMS workers.

The first, a policy describing the general “administration” of the standard operating procedures notes that “[d]ependent upon the situation, deviation from the prescribed procedures may be necessary.” In noting this, however, the policy does not include specific situational factors that may require some amount of deviation from procedures, nor does it provide examples of deviations. The policy does state that “…personnel should use sound judgment and good common sense to recognize when a situation requires deviation from prescribed procedures.” The need for some amount of judgment, discretion, and deviation, then, are central aspects of this policy manual. According to this policy, any deviations must be formally justified after the fact, and will be subject to official review by organizational managers.
A second general policy outlines situations in which paramedics, in the enactment of the standard operating procedures, need permission to take action or should consider permission to be granted to act. The policy states generally that paramedics should follow “… accepted standards of practice …,” serving to place professional norms, both formal and informal, at the fore in enacting policies. The policy notes specifically that “[p]artners should allow one another to practice in their own style if it complies with current SOPs, Regional, and Pennsylvania Statewide Protocols. Partners should interrupt or question the actions of their coworkers if it violates SOPs, or Regional Protocols, or if the actions could be possible be detrimental to the patient.” Although there exists a substantial body of rules at all levels for EMS, there is some acknowledged leeway for enacting rules in one’s “own style.” The preface to the SOPs notes similarly that “… the employee should act as he/she believes his/her peers would act in a similar situation, keeping appropriate patient care as the main guideline for action.” This highlights the importance of norms and standards for appropriate behavior that permeate any professional activity.

FDEMS’ standard operating procedures contain a provision for how paramedics are to deal with a patient encountered while responding to another emergency incident. The policy states that “… the crew should determine the [severity] of the patient and determine which call is most life-threatening and handle that call …” The determination of which patient is more severe, presumably with incomplete information on the original gathered from communication center personnel, is one scenario potentially requiring judgment and discretion from the crew members as they decide to treat a patient that is in
the immediately proximity, or to continue on and treat the potentially more seriously ill or injured patient.

Finally, the FDEMS policy on creating post-incident patient care reports includes several items that serve to reduce paramedic discretionary action. The first is a general statement that indicates the authority of the organizations supervisors and medical director to add policies and procedures, of an administrative, operational, or clinical nature, which will allow the organization to “… remain current with statewide policies and protocols …” Though the purpose of these additional rules is clear – to maintain compliance with mandates from state and regional agencies in terms of direct patient care – it serves to add to general rule complexity. This policy also notes the important role that quality assurance and audit processes play in the review of patient care reports. In the event that a paramedic deviates from clinical protocols or operational procedures, he or she will be notified of this deviation and must justify his or her actions. This requirement serves, in essence, to both reify the potential need for “legitimate” deviations and to act as a deterrent in the case of in appropriate deviations. Interestingly, this policy notes the importance of having two paramedics available to treat “unstable” patients, and the required documentation of the individual assisting the crew by driving the ambulance to the hospital. The codification of this practice of using non-agency personnel to improve resources during difficult emergencies allows for more comprehensive care to be provided and increases the scope and availability of care received for critical patients.

Additional SOPs serve as supplementary guidance to statewide BLS and ALS protocols. These include additional guidance on spinal immobilization of patients, oxygen administration and cardiac monitoring, response to calls in which a patient may
be deceased, choice of destination hospitals, refusals, and documentation requirements for all types of calls. As with some of the SOPs previously mentioned, each of these policies serve to narrow discretionary behavior of paramedics through increasing the number and complexity of rules created to fit factors specific to the context or circumstances faced by the particular organization.

Hospital System-Based EMS (HSEMS) Policy Documents

The HSEMS policy and procedure manual contains 59 individual policies divided into “departmental” and “clinical” sections. The former includes personnel policies, communications, orientation and mentoring, truck assignments and shift requirements, medical records and documentation, and uniforms and equipment. The latter provides additional guidance on clinical protocols promulgated by the state and includes topics like patient restraint, quality improvement, pain management, and controlled substances. Other policy documents provided by the HSEMS managerial staff include state-wide clinical protocols with addendums by the organizational medical director and clinical care committee, a copy of the department mentoring program, and a guide to patient charting. Interestingly, the HSEMS policy and procedure manual notes the importance of links with other health care organizations and professionals. The mission statement notes that services will be provided “[t]hrough a seamless, user-friendly continuum of quality health services,” and that HSEMS will work “… in partnership with other health professionals, … to forge new alliances with our community and health organizations.”

Of the policies listed in the HSEMS policy manual, only one discusses questions of decision making in front-line EMS in the context of rules and authority. The HSEMS
policy on communication with hospitals recognizes that, in some cases, paramedics may not be able to contact a medical command physician to provide guidance. Specifically, the policy notes that “[i]f no communication can be made for medical command due to the condition of the patient or communication equipment failure, the Pennsylvania Advanced Life Support Protocols ([HSEMS] version) should be followed.” This reinforces the statewide protocols, which note the same permission to proceed with items that follow the indicators that paramedics should contact a physician for additional commands, but includes the additional items added by HSEMS. Notably, HSEMS was the only organization participating that made significant changes to the statewide clinical protocols at the organizational level. These changes included the addition of clarifying information or in reduction in discretionary abilities. Whereas only two of the state BLS protocols were amended with additional content, a total of 32 of the ALS protocols were amended to a varying extent.

In several cases, organizational-level addendums to the clinical protocols give additional guidance or clarifying information. For example, several additions address the choice of hospital destination. One such addendum to the BLS protocols notes that some patients, specifically those meeting certain criteria that may complicate their condition when combined with traumatic injury (e.g., age, burns, pregnancy, bleeding disorder), “… do not always require transport to a trauma center [and that] they should be considered in relation to the mechanism and patient’s injuries.” A second clarification is made in the protocol addressing potential stroke patients. The protocol notes that it may be appropriate to transport patients to hospital specifically able to assist patients having a stroke, while the HSEMS addendum to the protocol is more specific and states that
patients with onset of symptoms less than 6 hours from contact with EMS should be transported to a certified stroke center.

Other protocol additions meant to clarify statewide rules address specific skills and treatments for given clinical presentations. An addendum to the protocol on acute coronary syndrome (ACS) notes that the specific treatments in the protocol should be employed “… for ACS symptoms, not just chest pain.” Though chest pain is a symptom of ACS, the addition makes it clear that assessment and use of this protocol must rely on more than just a chief complaint of chest pain. Three protocols specifically note that a patient’s exhaled carbon dioxide content (“end-tidal carbon dioxide” content, ETCO₂) measured in millimeters of mercury or percentage of carbon dioxide, should be kept above 34 or between 35-45 for specific kinds of patients, including patients who are in shock, those that require airway management, those needing sedation for airway management, and those that are post-resuscitation. Protocols addressing adults and children with altered levels of consciousness note that Narcan, a drug used to counter the effects of opioid drugs, should only be given if the patient is “… hypoxic, hypoventilating, or not controlling their airway,” and that in specific situations effective use of intranasal administration routes may not require additional means of intravenous access. The same protocols note that paramedics can “consider” other means of assisting diabetic patients with low blood sugar, such as food or oral glucose, if the patient is conscious and able to swallow.

Clarifications to specific types of patient treatment include changes to statewide rules governing treatment of nausea and vomiting. These protocols are amended to indicate that use of a medication used to counter nausea can be safely used in patients as
young as six months old, and that a patient with related or unrelated vertigo can be treated with a sedative. The latter amendment first urges caution, though, and states that the paramedic “… must be confident that [they] are addressing other possible causes of nausea, vomiting, and dizziness.” The treatment protocol for patients with agitated behavior or psychiatric disorders is annotated to include the intranasal administration of sedatives in addition to intravenous, intramuscular, and intraosseous administration. An organizational addition to the statewide protocol on traumatic cardiac arrest notes that paramedics should “[o]nly give epinephrine or atropine if there is a possibility that the cardiac arrest is medical in etiology.” Finally, the protocol on termination of resuscitation efforts is amended to include “any pulseless rhythm” to the list of criteria for a patient to be considered “appropriate” for ceasing efforts to revive the patient.

Other protocol addendums reduce paramedic discretionary behavior by creating narrow or increasingly specific rules. For example, the HSEMS addition to the statewide protocol on airway management notes that additional equipment and verification of proper completion of a complex skill is necessary, with “[w]aveform capnography required for confirmation of all advanced airways.” Another example again addresses hospital destination for a certain type of patient. Though similar to the clarifying protocol additions noted here, the language used in two protocols pertaining to hypothermic patients is stronger. It notes that if patients are severely hypothermic, the next step is “…transport to a facility capable of bypass warming.” Similar language is used when addressing the appropriate destination facility for patients with suspected STEMIs, with appropriateness determined by hospital abilities to perform cardiac catheterization.
One common type of within-rule discretion noted throughout the statewide ALS protocols is the ability for paramedics to choose the sedative or other type of medication used to treat certain types of patients. Though this may already be limited by the resources of the service (e.g., an organization may only choose to stock some of the allowable drugs and only those which are deemed necessary), in several protocol amendments created by the HSEMS medical director and department leadership a “first line” drug is specifically noted. For example, this includes 10 cases in which midazolam was noted to be the primary sedative, and one case (ACS) in which morphine is the first-line medication. At least eight other protocols note similar preferences indicating that medications like enalapril, adenosine, amiodarone, or lorazepam should be used first over other options for treating varying conditions.

Organizational amendments involving medications can also limit the total amount of a medication given to a patient or create standing orders to give a medication for certain conditions not specifically addressed in the statewide protocols. For example, the protocol addressing the use of sedatives in airway management limits the amount of a sedative that can be given to facilitate intubation of patients more strictly than the amount in the statewide protocols. Another protocol serves to create a standing order for two medications used in treatment of allergic reactions involving the mouth, tongue, airway, patient respiratory distress, or hypotension. Though both medications, epinephrine and methylprednisolone, are indicated as appropriate later in the protocol, the statewide protocols indicate that a medical command physician should be contacted before administration. The protocol addressing the treatment of patients with asthma, chronic obstructive pulmonary disease, or any type of bronchospasm simultaneously reduces the
threshold for administration of certain drugs, restricts the use of others, and expands the use of specific equipment to help patients, each of which restricts paramedic discretionary behavior.

A final addendum to the statewide protocol on contacting medical command notes that paramedics should follow a hospital-specific “medical command directive.” This directive, which serves as an additional general statement on paramedic discretion, addresses expected behavior and notes how and when paramedics should contact medical command physicians for assistance. The directives state specifically that “[p]aramedics shall function independently with the parameters established for practice within a given setting . . .,” that they will “… intervene appropriately at appropriate times” and will “… demonstrate sound clinical judgment and skill performance in autonomous practice.” In addition, the directive notes that “[m]odification and deviation from standard protocols will be documented with supporting data and Paramedics will initiate reporting as soon as possible.” This policy does have several notable exceptions for which paramedics must contact a medical command physician, including “do not resuscitate” (DNR) orders, ALS patient refusals, field termination of resuscitation, and any instance in which a paramedic feels that assistance is needed in determining the appropriate patient care. Though the statewide protocols create a procedure for contacting medical command, the added directive serves to promote the importance of paramedic judgment and discretion.

One completely new protocol was created by the HSEMS service medical direction and other organizational leaders addressing procedures for the administration of pain medication. This protocol outlines the organizational “non-cardiac pain management procedure” which provides additional guidance on the provision of pain medications for
those patients not experiencing some sort of cardiac emergency. Perhaps most importantly, this organizational protocol notes that “[a]dult and pediatric patients describing moderate to severe pain that is not cardiac in nature [and are in] moderate to severe distress” and those patients “… who have difficulty communicating their pain …” may be administered pain medications. This protocol, then, provides guidance as to when pain medication should be given, guidance that is noticeably absent from the state protocols, which only note when pain medications should not be given. Though several contraindications are included, these are in most cases the same exclusionary criteria that exist in other protocols discussing pain management. Addendums to the statewide clinical protocols addressing extremity trauma and burns both reference this pain management procedure (PABEMS, 2008a, pp. 6003-1, 6071-1).

In addition to the policy and procedure manual, HSEMS has a developed mentoring program used to initiate new employees and familiarize them with both operational and clinical procedures specific to the organization. This program is divided into three sections, two of which address operational topics including driving and navigation, use of communications equipment, and hospital locations, while the third section provides an introduction to clinical activities as an employee of HSEMS. This third section is the most time intensive, lasting between 3 months and 1 year depending on individual paramedic progress. During this time frame paramedics will progress from observing calls to verification of skills and limited autonomy, and to the final step of greater autonomy with periodic reviews. Throughout the mentoring program, employees will be formally rated by their mentors on their “scene management” abilities, a category that describes the EMS provider’s ability to coordinate the resources, patient needs, and
situational factors; their ability to build rapport with the patient and family members through verbal and nonverbal communication; and their clinical assessment, diagnosis, and intervention skills.

Finally, the policy documents provided by HSEMS leadership included standards for documentation and on the organizational quality improvement process. A total of 44 checklists are used to ensure that all components of patient care reports are included on a condition-by-condition basis. These checklists are used to evaluate charts that have been completed by crew members, and in cases of deviation or some departure from the norm a “quality improvement action form” is prepared. This form is completed by a member of the organization’s clinical standards committee and reviewed with the paramedic who has in some way departed from the protocols or organizational policies.

*Police Department-Based EMS (PDEMS) Policy Documents*

The PDEMS standard operating procedures consists of 49 policies addressing topics such as personnel policies and benefits, use of vehicles and equipment, documentation and patient confidentiality, standard duties for each shift, station locations and response areas, and response to special events. Two policies in the PDEMS SOPs serve to recognize or increase discretion, and two serve to place additional restrictions on paramedic behavior. An example of the first, relating to the use of emergency lights and audible warning devices responding to incidents, notes that these will be used “… at the discretion of the EMS crew …” and that “… the crew will first take into account their safety and the safety of others on and near the roadway.” Though not as complex as the
decision to transport a patient to a hospital using these same warning devices, discretionary authority is explicitly noted in this policy.

A second policy granting discretionary authority addresses the decision to accept a call for service or to allow a mutual aid company from a surrounding municipality to accept the call. In the case that PDEMS units are at the hospital but not yet available the city communication center will contact those units to determine if they can accept a call for service. The policy notes that “[w]hen determining whether or not to handle a call, crews shall take into consideration the average response time by a mutual aid provider responding into the city …” as well as “[w]eather conditions, first responder response, multiple mutual aid calls ….” All of these will are to be assessed relative to the severity of the call as evaluated by codes established collaboratively by PDEMS and the city communication center.

Several policies serve to reduce paramedic discretionary behavior through the addition or specification of rules for patient presentation or other situational variables. For example, paramedics at PDEMS are required to transport patients to the closest appropriate emergency department in severely inclement weather even though patients might initially desire transport to another facility. Though the use of “… powers of persuasion …,” the paramedics must help the patient understand that this restriction of destination hospital is “… for their safety as well as [that of the EMS crew].” The policy explicitly excludes those situations in which hospital appropriateness is a factor, including those patients requiring transport to a trauma facility or a stroke or cardiac catheterization center. A second example includes the PDEMS policy outlining the proper procedures for those instances in which a patient refuses service. In addition to
requirements established in statewide protocols, PDEMSS staff members must invest extra
effort in certain situations to thoroughly explain the risks of refusing treatment to patients
and family members, and must work with patients to complete additional paperwork
attesting to the patient’s decision to refuse treatment and transport. In essence, this policy
further reduces paramedic discretionary behavior by adding specific procedures for
refusals beyond those of the state protocol.

The PDEMSS policy on “system performance parameters” also reduces paramedic
discretionary behavior through the creation of norms of action pertaining to the temporal
aspects of service provision. Using past performance as a guide, the PDEMSS policy sets a
standard of 2 minutes or less for time from dispatch to response, on-scene times of 3
minutes or less for critical gunshot or stabbing victims, and a total time of 15 minutes or
less for patient transfer at the hospital until the unit is available. Interestingly, the policy
does not set a benchmark time for travel time to the patient, though a practice of “… safe
travel, using emergency warnings appropriately, and exercising due regard for others
while traveling to the call” is stressed. Similarly, the target time spent on-scene treating a
patient is not specified, though the policy stresses the need to “… reduce any delays in
reaching the patient with the tools necessary to begin immediate treatment.” Given this
flexibility, however, the policy notes that “… paramedics shall continue to keep on-scene
times to the bare, safe minimum.”

Of the three agencies participating in this study, PDEMSS was the only
organization to have an official “Patient Bill of Rights.” Of this 10-item list of patient
rights, only one seems to limit paramedic’s discretionary behavior. This item notes that
PDEMSS employees will “… never use any method to discourage you from seeking
further medical treatment at the closest appropriate hospital if you wish to be transported.” Though at the outset this seems rather innocuous, some methods of dissuasion from use of services, notably those that are nonverbal, attitudinal, or involved body language, can all serve to communicate some amount of disagreement with a patient’s desire to utilize EMS resources. Although not specifically related to clinical assessment, diagnosis, treatment, or transportation, the nonclinical behaviors of paramedics, and the restriction thereof, can be important to the patient’s experience of a service interaction. Echoing the importance of the patient experience, and of a paramedic’s verbal and nonverbal communication with a patient, the Patient Bill of Rights states that “[a] patient of our service is one who believes they need emergency medical attention regardless of actual presentation or situation.”

**Rule Familiarity in EMS**

The processes through which legislators and EMS administrators ensure that EMTs and paramedics become familiar with clinical and organizational rules are to some degree standardized across the state. According to the Pennsylvania Emergency Health Services Council (PEHSC), an official advisory body to the PABEMS, courses that lead to certification as an EMT require approximately 140 hours of instruction and those leading to the paramedic certification are between 14 months and 2 years in duration (PEHSC, 2010). Variation in length of time to complete the paramedic certification is in most cases dependent on the nature of the program; all lead to certification by the State of Pennsylvania, and some include additional courses that lead to an Associate’s degree. Courses leading to the EMT and paramedic certifications include both classroom and
practical, hands-on components, and paramedic courses also require both “… in-hospital clinical experiences and a field internship” (PEHSC, 2010).

Recertification requirements are established in state-level statutes that describe both the general certification process and specific time frames and instructional load necessary to maintain certification. Emergency medical technicians are required to sit for 24 hours of instruction every 3 years and complete a CPR course annually, and paramedics are required to sit for 18 hours of instruction on an annual basis with additional CPR certification (28 Pa.C. § 1003.29). Paramedics are also required to receive formal approval on an initial and ongoing basis from the EMS agency’s service medical director to practice as a paramedic (28 Pa.C. § 1003.28). This authorization requires that the service medical director “… verify that the individual can competently perform each of the services set forth within the scope of practice authorized by the individual’s certification or recognition” a process that may require direct observation of assessment and skills, contact with previous supervisors, or review of patient care records from previous service (28 Pa.C. § 1003.28). In many cases, the annual medical command approval process includes organizationally designed skills review courses that introduce new procedures, equipment, or medications (PABEMS, 2010). Individual EMS agencies may also impose other standards for annual training for both volunteer and paid personnel (PABEMS, 2010).

There is, however, some amount of variation at the organizational level. This includes both the annual training requirements previously mentioned, as well as the use of a formal or informal mentoring system that serves to indoctrinate new paramedics into service or introduce veteran paramedics to the norms of the specific agency. Formal
programs, including that of HSEMS, include a step-wise progression that provides gradually increasing levels of responsibility for the paramedic while also preparing the individual to work within a specific geographical region. Informal programs, including practices described by PDEMS paramedics, focus on pairing newer paramedics with organizational veterans to transition the individual into service.

**Summary**

Review of state, regional, and organizational policies, both clinical and nonclinical, reveals common themes to street-level work; myriad, complex rules constrain behavior, yet still make varying amounts of discretion available to front-line EMS providers as they provide services. The nature of prehospital emergency medicine, focused in the treatment and transport of ill and injured patients with potentially complex clinical needs, lends itself to the creation of a substantial body of rules to address all possible conditions. Individual rules contain complex inclusion and exclusion criteria used in the process of determining appropriateness for individual patients, as well as step-by-step procedures for patient treatment. However, in many cases multiple, intricate rules must be used concurrently to treat patients presenting with serious conditions. Additionally, the layering of rules creates additional constraints on front-line behavior. When combined with organizational standard operating procedures, front-line EMS providers find themselves working under rigid constraints.

Yet there is still notable discretion available to these street-level EMS workers. Areas of within-rule discretion are notable, including choices regarding types and routes of medication administration or use of specific procedures like intubation. Other areas of
are left unregulated, including decisions on patient packaging and transport, provision of pain medication, and order that rules are enacted in the case that multiple clinical protocols are applicable to a single patient. Though this chapter served to review many of these areas open to discretion, it is important to note that they do not establish or fully illustrate discretionary behavior. Indeed, the full nature of discretionary action in front-line EMS cannot be understood without an understanding of the subjective experiences of those actively engaging in the provision of the service. It is only through direct experiences, or through the relation of those experiences, that one might fully grasp the entirety of the areas that are left open to discretion and those that are not. It is for this reason that the perspectives of active service providers are incorporated in subsequent chapters.
CHAPTER 6: RULE ADHERENCE AND UNREGULATED DISCRETIONARY BEHAVIOR: FUNDAMENTALS OF FRONT-LINE EMS

Despite the complexity found in both the rules and situations faced by street-level bureaucrats, there are many cases in which rule-following behavior and patient needs are aligned. This close matching of rules and needs serves as the general unifying theme of this chapter. Building upon the key rules, policies, and procedures reviewed in the previous chapter, this discussion will provide an increasingly comprehensive understanding of how these rules are enacted using insight from paramedics who have actively provided these services. Importantly, this does not imply that the rules fully address the comprehensive needs of either the patient or the situation, but only that there is a lack of tension between the rules and patient needs. With this distinction in mind, other sources of influence that shape unregulated discretionary behavior will also be addressed here. This chapter, and the two subsequent chapters, report on the direct experiences of front-line EMS workers gathered through one-on-one interviews and focus groups. The former were focused on paramedic’s experiences during service provision, asking for accounts of complex, memorable, or challenging emergencies to which they had responded. The latter concentrated on more general perspectives held by paramedics regarding rules, policies, and procedures and their implementation during emergency incidents.

This chapter will begin with a general discussion on clinical protocols and operational rules in EMS. First, use of rules during emergency incidents will be presented, including the ways in which rules are referenced and the frequency of occasions in which multiple rules must be used. Next, an incident in which close rule-
following was evident will be discussed with a focus on the relatively easy matching of patient needs, rules, and norms of behavior. Topics of paramedic experience and professional norms, both of which were important in the story about rule-adherence, will follow. Perspectives from key individuals in the process of learning these rules and norms, both peer paramedics and organizational supervisors will then be reviewed with attention to the importance of socialization in the profession of EMS.

The discussion will then shift to other sources of influence on discretionary behavior that may be present in service interactions. As previously noted, this use of discretionary latitude does not imply that rules are inappropriate or broken by front-line providers, but that rules may not exist to address particular situations that are then open to each paramedic’s judgment. These influences include both the role of other street-level bureaucrats and the crucial role of medical command physicians and their interactions with front-line EMS workers. The latter will focus on the relationships between paramedics and physicians in the consultation process, followed an account of an incident in which a physician played a crucial role in restricting paramedic behavior during an incident.

Concepts of patient identity and rule following will then be discussed, focusing on those situations in which paramedics followed rules closely and either provided more comprehensive service due to patient identity or followed rules closely despite their evaluations of identity or patient characteristic. The discussion will then shift to related concepts of patient need and worthiness for services, followed by a review of incidents in which situational complexity is an important influence. This chapter will conclude with findings regarding paramedic perceptions of standard operating procedures and the use of
rules, policies, and procedures outside of emergency incidents. Importantly, as noted previously, there is a lack of tension throughout this chapter between the rules used by paramedics and patient need; instead, the discretionary behavior noted here is found in those areas left unregulated by rules, policies, and procedures. Before addressing the main content of this chapter, an overview of focus group and interview participants will be provided, as well as a brief discussion on the nature of the substantive examples provided by participants.

**Overview of Interview and Focus Group Participants**

Before presenting findings, a general overview of the characteristics of interview and focus group participants is in order. Thirty semi-structured interviews were conducted in the three participating organizations. Of these interviewees, 26 were male, four were female, and all were Caucasian. The relative homogeneity of study participants was not entirely surprising; a majority of staff members at all three participating organizations were male and the populations of all three organizations were overwhelmingly Caucasian. The median age for these subjects was 35.5, with a range of 25 to 57. The median years of service as a paramedic was 10, with a range of 6 months to 31 years, and the median years of service to respective organization was 6 with a range of 6 months to 30 years.

Interview settings varied by organization. Interviews of FDEMS personnel took place in their single-use station, which houses several ambulance crews, administrative offices, and also shares property with other township services. PDEMS interviews took place in a city fire station that houses administrative EMS staff, several EMS crews, and
fire apparatus. HSEMS interviews occurred in a dedicated EMS facility located on hospital property. Interviews with PDEMS and HSEMS personnel required interactions with paramedics from multiple stations, so EMS crews frequently rotated from one station to another to ensure that a variety of individuals were contacted. All interviews were conducted in private offices in each participating location to ensure confidentiality for each participant. In some cases this space was a supervisor’s office vacated for the purposes of the research, unused office space, or a conference room setting.

Focus group participants totaled 19, with five representing FDEMS, six from HSEMS, and eight from PDEMS. Just over 26% of the participants were female, and all were Caucasian. The median number of years as a paramedic was 6 for both FDEMS and HSEMS participants, and 11 for PDEMS participants. Focus groups were conducted in varying settings. As the FDEMS focus group could only be scheduled during duty hours, the session was conducted at the station on a weekend morning to reduce the chances of interruption by emergency calls. The HSEMS focus group was conducted at a county public safety training facility during a lunch break from a hazardous materials course. The PDEMS focus group was conducted at a local restaurant with off-duty personnel. Focus group discussion ranged from 45 minutes to 70 minutes in length.

The rules, policies, and procedures paramedics follow in providing prehospital emergency care are both complex and numerous, requiring substantive investigation of their use from the viewpoint of those actually using them. Given this, and the discretionary latitude available to street-level EMS providers outlined in Chapter 5, it is important to explore perceptions of the rules and their use from the perspective of those personnel employing them on a daily basis.
Characteristics of the Stories Used in This Study

As with other empirical research employing stories as a data collection method, there was wide variation in the type and number of stories related, depth of information provided, and storytelling abilities of participants. The vast majority of participants were able to skillfully relate the intricate details of the emergencies they found complex, memorable, challenging, or otherwise interesting. However, on occasion additional questions were posed to clarify a statement or probe for information not provided during the initial telling. Participants were not in any way limited in the number or type of stories they told, and many opted to tell more than the three to four stories they had prepared for the interview. Several interviewees also found that discussion of incidents triggered memories of other incidents, both similar and dissimilar. Interviews ranged from 27 minutes long to 95 minutes long, with a median length of 55 minutes.

The types of stories relayed by study participants also varied widely. Some were hopeful, detailing the delivery of a healthy baby, the successful resuscitation of a cardiac arrest patient, or efficient and effective treatments for life-threatening or painful conditions. Others were not. Stories of fatal car accidents, neglected or abused children, and unsuccessful attempts to help patients both in the short and long-term were told. In most cases, including all of the stories described in this study, the paramedic telling the story was a primary care provider, meaning he or she was one of two paramedics who responded to the incident and treated the patient. In all, the 30 participants told more than one hundred stories from their careers.

Also of note is the utility of stories shared by the paramedics who were interviewed for this research. Before relating stories for this study, one paramedic noted
the importance of stories in educating new paramedics. He stated that “I’ll teach advanced cardiac life support and rather than use the pre-scripted book stuff that everybody knows, I’ll actually cover the same material using calls that I’ve had. And it’s kind of fun, it makes people think.” Thus, in practice these stories do more than simply relay a gripping tale; they serve as methods of passing on knowledge to new paramedics that was gained through direct experience.

In this chapter, and the two subsequent chapters, several stories will be presented in their entirety as an exemplar of one or more types of influence on the behavior of street-level bureaucrats in EMS organizations. Many of the influences discussed in the literature review were evident, including those located within organizations like peers, supervisors, organizational characteristics and culture; those located externally like patients, situational variables, and bystanders; and boundary-spanning concepts like occupational culture. For each type of influence, these accounts of incidents will be followed by supporting accounts in which similar sources of influence were felt by EMS providers. Though some information used to communicate meaning during a story is lost, including gestures, intonation, and emotion, the words themselves are perhaps the most important aspect, elaborately conveying meaning and subjective experience. Stories are presented here without verbal utterances or information presented by the interviewee that were unrelated to the story. Following Maynard-Moody and Musheno (2003), transcripts of stories were occasionally slightly reordered to provide a more coherent narrative flow to the incident (p. 170).
Use of Rules, Policies, and Procedures

Paramedics were asked several questions about the use of clinical protocols during emergency incidents, including methods of referencing clinical protocols, protocols most frequently used, and frequency of using multiple protocols during emergencies. Despite the use of myriad complex rules, paramedics were unanimous in noting that “… it’s all memory during a call.” In all three organizations the statewide, regional, and clinical protocols were memorized and enacted generally without any need to reference paper copies of rules to guide behavior. An FDEMS paramedic noted his general reasons for this: “First of all, it makes you look bad looking something up in front of a patient. And second of all, if you have someone who’s really sick you should know your protocol and know what you’re supposed to do.” Thus, both the rapid implementation of rules at the front-lines of EMS was important, as was the cultivation of the perception that paramedics were knowledgeable in patient care and did not require guidance in decision-making. This response was also somewhat pragmatic, with a medic asking “[h]ave you had a chance to review the ALS protocols? They’re ridiculous and cumbersome. Because you’ve got all these annotated notes on one side you’ve gotta go six pages to find them, and it’s not appropriately indexed so it’s one of those things where it’s difficult to reference.”

Several medics did, however, note that there were a few cases in which written hard copies of rules were referenced. These included instances such as the introduction of new medications or amendments to protocols, in which medics sometimes created their own “cheat sheets” to remember specific details, such as contraindications or medication dosages. Generally these individualized notes were “… kind of a work in progress” with
frequent revisions that would allow them to keep the new information both current and close at hand should it be needed.

A majority of paramedics also noted that they would often reference dosages for medication specifically when treating pediatric patients. Clarifying this point, one HSEMS medic noted that “[m]ost of the adults you know off the top of your head, but the peds…You just don’t do as many calls, as many kids.” Echoing this point, a paramedic noted that “… I mean all the other medication doses we should know … top of our head.” The broad agreement on this topic seemed to signal that it was somewhat acceptable to have to look up medication dosages and other treatment related information for pediatric calls, while more common adult dosages should be memorized. Similarly, an FDEMS medic noted that “… for as much as you know all the adult protocols, the pediatric doses and everything and the special protocols that come for the … there is just no way I don’t think any of us really know every one of those. So, I would think if we going to look up anything on a call it would be something like that.” Whereas the frequency of working with adult patients contributed to ease of treating them according to rules, “… when it comes to pediatric stuff it’s like a brain freeze almost.” The relatively low frequency of serious pediatric emergencies in which these rules were used contributed to less familiarity and an increasing need to review these rules, even potentially during emergencies.

Clarifying the actual use of rules during emergencies, a PDEMS paramedic noted that he “… [doesn’t] like to characterize what we do is working a protocol because you’re treating a patient.” Rules were the basis for behavior, but the paramedic makes it clear that the patient is the focus, not the protocol. This clarification enhances the work of
paramedics, distancing their tasks from simple rule-following and moving their core occupational tasks towards holistic patient care. Another PDEMS medic noted in response that strict use of protocols would be like “… scripted medicine … ‘If it’s this then you’re going to do this.’” Echoing this, another medic noted that simple step-by-step following of protocols would serve to “…[t]reat a problem not the patient.” Others noted that patient care moves beyond rule following in that medics often have to “… hop back and forth where they’re not appropriate for a person.”

When asked about their feelings on the adequacy of these protocols given their experiences, several PDEMS medics expressed some amount of frustration, noting that “… the protocols are tailored to the least common denominator.” Continuing, one medic noted that “… the protocols aren’t written … for us in [PDEMS]. They’re written for the guy that went to medic class and hasn’t worked a code in like 6 years and then gets one. They’re written to the people that don’t know how to do their job, and that’s why they’re so restrictive.” Another paramedic noted the differences in call volume as a result of population density and geography, and their impact on experience and skills.

… [P]eople … in the central part of the state … do a hundred calls over the course of a year. We’re doing that in a month. So is it right or is it wrong? I think what really should happen is there should be more of an education influx to teach those people that don’t see the volume that we do. Why hurt the masses? Cause what ends up happening is you affect the medics that are in the most dense population in parts of the state. And you’re saying now you can’t do these things anymore. But we affect, technically the majority of the state being one of the densest populated areas. So why are you telling me I can’t do much for the citizens that I’m taking care of because some knuckle head doesn’t want to pay attention and read up on things that he should be reading up on and being more aggressive with his hands-on remediation. I think that’s where we kind of need that.
Although uniformity of protocols made for easier statewide implementation, this particular medic, and many of his colleagues who agreed with his comments, felt that the rules were too restrictive in part because they had to be created in a manner that accounted for less experienced paramedics in other part of the state.

In the case of PDEMS, the restrictive nature of the rules was relaxed through the relationships created with medical command physicians. Noting an appreciation of this flexibility, a PDEMS medic noted that they are “… given great freedom to go ahead and do good medicine here … They trust us here very well to go out and just do good medicine.” Another responded that “[w]e’re given pretty much carte blanche. That’s one of the reasons why I’m here.” Responding to these comments, another PDEMS noted that he was “… not oblivious to the fact that there are protocols or what they are. Other places there’s pressure to follow a specific protocol per patient. Pressure is not here to follow a specific protocol for a patient.” Importantly, several participating medics linked flexibility in rule-following to appropriateness of patient care, specifically stating that this allows for “… the best outcome for the patient.” Others agreed, describing clinical protocols more as “guidelines,” which was a more appropriate description in their opinion because “[n]ot every patient presents the same way.” To treat patients appropriately, a PDEMS medic noted that they are “… allowed to go beyond it … work with it …. We can think outside the box a little bit.”

This feeling of relative freedom to treat patients without strict adherence to protocols allowed them to develop an enhanced perspective of their ability to make a difference for patients. A PDEMS medic noted that “… rules, in general, have relaxed to allow paramedics to be paramedics and not primates. I’ve always been told I can teach a
monkey to intubate. I can teach a monkey to start an IV. I can’t teach a monkey to assess a patient and make a determination on where to go from there. So somewhere along the line we stopped being monkeys and they’re letting us be paramedics.” This latitude given reinforced feelings of agency among the paramedics, allowing them to feel that they were not just following rules. Instead, they were treating patients.

This freedom or flexibility was not universal. In discussing the use of clinical protocols, rule-adherence, and enforcement at the organizational level, several paramedics noted striking differences between organizations. A newer paramedic with just over 6 months of experience noted that these can change “[f]rom one side of [a major road] to another.” Continuing, he notes that he works at two neighboring departments, and “[t]hings I can get away with at one place doesn’t fly at another.” Contrasting these organizations, the medic notes that HSEMS is “… a lot more involved in care and protocols, and what you should be doing, and the other place is kinda… ‘here’s your protocols, do what you need to do, don’t screw up.’ …[T]here’s nothing, just do whatever you want.” An FDEMS medic noted the same climate, stating that “[t]his organization is extremely strict with following the protocol to the letter. There are other organizations that are more worried about treating the patient correctly and not hitting every protocol and every step exactly the way it’s written.” Thus, there exists some seeming tension-created strict rule abidance and treatment plans that may be appropriate for patients.

As noted previously, other factors, such as characteristics of the response territory played a part in the relationships medics cultivated with rules. Noting the generally short transport times, a PDEMS medic stated that “[w]e have less time to treat the patient so we have to do things a little more quickly. We don’t have a twenty-five minute transport
to the hospital. So if you’re going to switch around you’re going to do it then call the doctor. Not waste the time calling ‘Mother, may I.’ We just kind of do it. It’s very fast-paced here.” In this case standard limitations in the amount of time available to treat a patient created additional pressures that contributed to decisions to provide a treatment or specific therapy without permission.

The development of clinical protocols by state-level committees was also mentioned as a point of contention among participating medics. One noted specifically that he questioned the impetus for implementing several specific protocols, and that he would have liked the opportunity to ask several specific questions of the regulatory body to this end: Well, what’s the evidence-based medicine behind that? Where are they using it now? Where is it successful? What study was done to show that’s effective?” Citing an example, the medic noted that “… Etomidate is a perfect example … I don’t know where Etomidate has ever been studied as a sole induction agent for intubation. But yet that’s the primary reason why we have it. It’s never been studied and it’s never been used that way, but they said go forth and tube. But it’s not the right way.” Thus, paramedics were critical of both rule development and universal implementation of rules without considerations for the appropriateness for individual patients. Patients presenting with complex illness or injuries often required more specialized care, which often necessitated the use of multiple clinical protocols.

**Protocol Switching and Use of Multiple Rules**

Several paramedics in this study noted the frequency with which they switch between multiple sets of protocols while providing care. Most examples they provided
outlined patients with more serious conditions, with patients presenting with one or more life-threatening problems. In one example provided, a paramedic initially began treating the patient for a seizure based on the family’s description of the incident. After beginning treatment and engaging in a more thorough assessment, the medic realized that it was actually a patient with a hemorrhaging blood vessel in the brain. This necessitated a change in the treatment plans, as “… the patient’s stability has changed. They’ve become unstable, you now have to change protocol because you’re changing from treating the seizing patient to now treating the head injury, unconscious patient.” In this case, it was the addition of both increasingly clear information from family member and more thorough assessment of the patient’s condition that necessitated alterations in treatment and use of protocols. The change in the patient’s diagnosis not only led to a change in perceived stability, but it also resulted in an altered course of action as the underlying causes of the patient’s condition were different.

Other scenarios detailed even more rapid and frequent changes to the use of protocols, such as an example given by HSEMS medics that included cardiac arrest calls in which “…you can bounce between five different protocols.” Citing an example from the previous night’s shift, a medic related an incident in which a patient was in arrest upon arrival, was resuscitated, treated using a hypothermia protocol, and then went into cardiac arrest again. Simplifying her point, the medic noted that “… every time the rhythm changes in a cardiac arrest you now change your protocol.” Echoing this, another medic mentioned that “… as many times as that rhythm changes is as many times as you’re now going to change your protocol. And you need to know them because you don’t have time to reference them back when you’re on the call.” The type of patient
discussed in this scenario was in cardiac arrest, the most critical condition during which paramedics must treat patients appropriately and without hesitation, often with rapidly changing sets of rules that must be followed.

In a third example, a medic outlined what has become a typical response to a patient experiencing a STEMI, one type of heart attack. She noted that “…STEMIs are the big one where you … may start off with the STEMI [protocol], then you may move to the nausea and vomiting protocol mixed in with the STEMI, and then you may move to the hypotension protocols. So, I mean it’s just ever shifting.” Noting the potentially changing use of very complex rules, several paramedics stated that they were expected to have a complete and thorough understanding of the clinical protocols from both the state and the organization. In one medic’s words “…we’re supposed to know our protocols.” Despite the complexity evident in the presentations of these patients, their treatment was relatively uncontroversial. In other cases, paramedics noted instances of differences on interpretation of protocols or conflicts between protocols themselves.

**Matched Patient Needs and Clinical Rules: Strict Rule-Abidance in EMS**

Throughout the in-depth interviews, a common theme emerged regarding the influence of rules on the behavior of paramedics. Regardless of patient presentation, situational factors, influence from organizational and environmental sources, or other variables, participants stated in many cases that they followed rules, specifically clinical protocols, very closely. One study subject, relating a story about the successful resuscitation of a patient in cardiac arrest, specifically noted the role that rules played in treating this patient.
Story 6.1: “Cut and Dry Cardiac Arrest”

[T]he stars were aligned for that dude, we were like around the corner when it came in. We had shift change at 6:45 in the a.m. [His] girlfriend … was saying, “I don’t know what just happened. I thought he was joking, coughing, whatever, and just went out.” And she called right away, and we happened to be right around the corner.

So we start running the code… and get spontaneous pulses back, starts breathing again…So we start running our new hypothermia protocol, just to see. I guess his downtime was probably 15 minutes, so we started the hypothermia [protocol], just started flooding him with the cold saline and just packing him everywhere else with it. And he walked out five or six days later. Had a massive MI but he came down to thank us … that was pretty cool. Not a whole lot of decision-making, just running the gamut of an asystolic code. I guess it was a v-tach code, then it was asystolic, and then we fixed it.

He had a downtime of under four minutes… we got pulses back within seven or eight, long enough to get him one round of med in, and intubated and shocked once. So we had pulses back, and we never lost him again. So [he] went up … to the ICU. Did the rest of the cold fluid stuff there, so I guess he was down for probably 24-48 hours, and I was talking to him in the ICU two or three days later. Went up to … say hi to him, and reached up and then shook my hand. And that was cool, that was the first that had ever happened. Warm fuzzy feeling about this job, I guess. And he [had] like 99% blockage across every major artery in his heart, and still managed to come away from it.

The paramedic began the story by noting that several factors contributed to the successful resuscitation of this patient. The crew, and a supervisor who accompanied the crew, were at shift change and happened to be geographically close to the patient’s residence. These factors greatly reduced the amount of time consumed by response, shortened the total time between the patient’s cardiac event and intervention using both medication and cardioversion, and allowed extra personnel to respond to assist. While these factors are not generally controllable – reduction of response times and increased personnel to attend to all patients in such a short period of time would require
extraordinary alterations to EMS systems and would most likely incur costs that the public may not bear – in this case, they may have contributed to the patient’s positive outcome.

The medic continued by describing the actions of the crew, noting that they proceeded by “running the code.” Though a seemingly simple statement, this phrase serves to outline a specific procedure, a prepackaged set of actions appropriate for treating patients meeting certain criteria under the protocols specified for several types of patients who lack cardiac functioning. These very specific rules note particular steps to be taken and appropriate responses to the patient’s reactions to treatments. In employing these rules to treat this cardiac arrest patient, the paramedic noted that there was not “… a whole lot of decision-making” that went into treating this patient. Thus, the rules serve as decision-making schema to guide behavior with little interpretation or judgment necessary. In addition to the cardiac arrest protocols the paramedics followed, an additional protocol outlining therapeutic cooling was enacted to reduce the chances of cognitive deficits for the patient after resuscitation.

When asked to clarify this statement about decision-making, the paramedic stated that “[i]t wasn’t anything really difficult, it was so cut and dry with what it was it was. … so you’re running with a v-tach code, and you start your CPR, you shock, you run down your protocol list for whatever you see. … [M]onitor said v-tach … so I’m going to treat it. See codes are so … there’s certain things that are just so protocol oriented that it’s not … there isn’t a whole lot of thinking involved.” Beyond the strict adherence to clinical rules for treating this specific type of patient, the subject goes on to note the cognitive ease with which he enacted these rules. Despite the critical nature of a patient in cardiac
arrest, the paramedic found the situation to be relatively unchallenging given the rule-bound nature of the interventions required.

Discussing a similar incident, another paramedic noted the same, indicating that “… ultimately codes are not difficult calls because it has very little to do with clinical judgment. I think I could teach my 9 year-old son the decision-making on almost, on the vast majority of cardiac arrests … I mean they do a little bit in skill, but they don’t in terms of knowing what treatments to give.” The reduced or nearly eliminated clinical judgment necessary to appropriately treat cardiac arrest patients comes from direct and specific rules outlining diagnostic techniques and appropriate treatments. The skills noted as important come, in the words of another paramedic, from actually engaging the active provision of care. He notes that “… cardiac arrests are actually fairly simple, straightforward calls that, to me now, are much lower stress. That is because I have so many under my belt and I have just experienced so many that I know what to expect and I know how it goes.”

The same simplicity of diagnostic techniques and appropriateness of treatment is noted for traumatically injured patients. In a discussion of treating multiple patients following a gang fight, one paramedic noted that “… trauma is one of the easier things to deal with. Most of the time you can see where they’re injured. If they’re bleeding, stop the bleeding, support their blood pressure with IV fluids. Trauma is kind of cut and dry.” Though this is a simple explanation of what may amount to terribly complex situations in which great skill is required to treat patients appropriately, the statement is telling. Traumatic injuries may indeed be more obvious to those treating in the field, and appropriate, comprehensive treatment for these injuries requires resources beyond those
of the paramedic. Thus, both diagnosis and treatment in traumatic situations is aimed at moving patients to facilities with these resources.

Importantly, the seeming simplicity of rule enactment for these two types of extreme scenarios, cardiac arrest patients and those with traumatic injuries, was identified as experience-based. The frequency with which paramedics actually treated these types of patients, employing very specific rules, contributed to the ease and efficiency of treatment. This brings to the fore the importance of the next type of influence, occupational culture, on paramedic behavior.

**Experience, Professional Norms, and Discretionary Behavior**

The role of experience was important in the story about close rule-following outlined here. Interestingly, experiences were also notably important in situations in which discretionary behavior was necessary. Though not in the context of a story one paramedic did note the importance of experience with particular decisions and patient presentations in the exercise of discretion. In discussing the administration of Epinephrine to patients in severe respiratory distress due to asthma, a last-line treatment for this condition, the paramedic noted that his decisions have much to do with “… previous patients that I have that are extremely critical …” Though not necessary in all asthma patients, those that are critically ill may benefit from epinephrine in addition to other treatments. But, determining the criteria that patients must meet to require this medication is difficult. He went on to say that “[w]ithout previously seeing that, that is a very tough decision to make. How far do you go?… [I]s this presentation just ‘sick’ or is it close to death? Without seeing it before that is incredibly hard to do.” In essence, this
paramedic is describing the establishment of norms of appropriate action for a particular patient presentation – cues derived from the patient’s condition that signal to the paramedic that a specific type of treatment is correct and necessary to achieve desired patient outcomes. Given his experiences with these types of patients, he noted that he “… probably give[s] Epi to asthma [patients] more easily now. I don’t give it all the time, but I quickly realize whether you are getting better from what I am doing or not, and if you are going the other way and you are very sick. That is a very easy thing for me to identify now.”

A second discretionary area deals with a decision to intubate a patient, a procedure that establishes a reliable and effective airway for a patient guaranteeing that respiration can occur. The process of intubation includes the insertion of a flexible plastic tube into a patient’s trachea, a procedure requiring knowledge of anatomy and physiology and skill in recognizing and removing potential barriers to effective placement. The same medic quoted previously noted that the experience of treating a patient requiring this skill serves to hone the recognition of when this procedure is necessary. “I think it is the same with the decision to intubate or not. That is a very difficult decision to make unless you have seen a bunch of patients that you have watched them get to the point where they need to be intubated.” These two examples indicate the clear link between patient need, experiences, and appropriateness of treatments, a connection that is consistent with the patient-centered nature of EMS work.

Discussing several decisions on his reaction to patient hospital choices, one paramedic noted the importance of considering what was the “… right thing to do” in acquiescing to a patient or family member’s request. A specific case involved a patient
with a previous cardiac condition treated at a hospital that was further away than those most frequently visited by the EMS agency. Though it was not the closest hospital, the medic took account of the patient’s request, her noncritical condition, and the “foregone conclusion” that she would eventually end up being transferred from a closer hospital to her chosen hospital. He added that “… it a little bit on the painful side, you know because now I have to sit here for an hour … but in the long run was it the right thing to do for her? Absolutely.” Likewise, the same medic discussed a choice to transport a child to a trauma center chosen by the patient’s mother. While both hospitals were equidistant from the scene, the requested hospital at which the patient had been seen previously was in the opposite direction from the EMS station. His decision in this case was to transport to the requested hospital because it was “… the right thing to do for this kid.”

In the former case the patient’s specialty physicians and records were at a more distant hospital. Though the medic could have opted to take the patient to a closer hospital, he instead adhered to his view that EMS providers should “… try or attempt to do the right thing for the patient …” The latter case similarly described a choice to take a child to a pediatric specialty hospital. The norm to which the paramedic was referring in both cases was one of transporting the patient to the most appropriate treatment and access to specialized care given his or her particular condition. In his concluding thoughts, he noted that “[y]ou do it because it’s what you’d expect someone to do for your family or you.”

Task-based norms, beliefs, and values are not static. Changes to rules governing appropriate methods of treatment for patients like the one noted here may be met with hesitancy by providers with significant previous experiences. And, these changes are
often subject to scrutiny by other professionals who are later responsible for clinical care. A medic at HSEMS described both of changes these while outlining the general prehospital use of nitroglycerin and ace inhibitors. Addressing the potentially hesitancy of paramedics to change their treatment of congestive heart failure (CHF) patients, the medic noted that “[o]nce people have good experiences and share those good experiences, then new people are much more likely to [follow the new rules]…. [As high-dose Nitro] became the predominant culture in the way people were treated it became obvious that we almost don’t intubate failure patients anymore.” As more and more individuals employed a specific treatment with positive outcomes, the acceptable norms changed as well.

Intergroup differences in appropriateness of treatment were, however, more difficult to address. Though the statewide protocols allow for the use of a certain type of medication in treating CHF patients — ace inhibitors — physicians from other specialties within the HSEMS home hospital were not as accepting of these changes. Specifically, the medic noted that after implementing the use of ace inhibitors the cardiology department took strong exception to this intervention. After consulting the research available on the use of this medication for certain types of patients and discussing differences between research findings and prehospital use, an accord was reached. The medic noted that “… we had to justify it, too… ultimately they supported it but … I think having people involved in the processes is a better thing. Not just, ‘we do what we want.’”

Through experiences, paramedics create very specific guides or rules for behavior that are both clinically appropriate and meet standards of appropriateness for the
profession. These guides, essentially bundled sets of causal theories concerning patient presentation, treatment, and expected outcome, weighed heavily on their decisions during future emergencies.

**Peer and Supervisory Influence in Rule Application**

Peer and supervisory influence was also noted as an important part of the broader socialization into the field of EMS and implementation of rules. These factors were important in both the initial learning process that occurs after paramedics are certified as well as the continued interactions during and after emergencies. One paramedic, an employee of HSEMS, noted the importance of the organizational mentoring program on the development of paramedic assessment and treatment skills. As part of this mentor program, new paramedics must “… run your course of treatment by your mentor, your senior people and we have clear standards. He added that “[w]e track new medics, we track for almost a year, … [a]ll this kind of stuff to make sure that you are gaining the clinical judgment that you need and that you’re progressing in your ability to run calls.” When asked about his assessment of the success of this program in preparing medics to work independently, he noted that “[w]e have medics that have worked here for a year that are far above where I was at three years … [W]hen you work with other medics and have clear direction and career guidance and clinical judgment guidance for teaching, you progress … so much faster.” Peer interactions, in this case through formal mentoring during emergencies, contributed to more rapid development of clinical judgment. The experiences of more seasoned medics allowed newer paramedics to grasp the importance of condition-specific variables and assessment skills to recognize their presence.
In other cases, influence was felt informally through interactions with a supervisory paramedic working on the ambulance with a front-line, nonsupervisory employee. One paramedic, a supervisor and member of the organizational quality assurance team, noted that “… in my position because the guys will … generally do what I’m leaning towards …” He went on to explain that in many cases, if he is working on the ambulance his partner will generally defer to his clinical judgment and, in some cases, exert more effort to assess and treat the patient than he would working with another non-supervisory partner. The medic gives an example of an elderly patient exhibiting flu-like symptoms, noting that he would “work up” the patient – essentially providing a more thorough assessment through use of probing questions and advanced diagnostic equipment - for other possible causes. He continued, stating that the partner he will be working with on the next shift “… knows I’m going to probably work that patient up. Would he do that with his own partner? I can tell you ‘no’ because I read it.” In his experience reviewing patient care reports, he was able to view patterns of behavior and compare them to instances in which he replaces a paramedic’s steady partner, noticing differences in depth of assessment and types of treatments offered when is working.

While a paramedic who does not more aggressively “work up” the patient may still be following the rules, the presence of the supervisor in this case may prompt a paramedic to provide a more thorough assessment of the patient’s needs.

**Collaborative Service Provision: Assistance from Other Street-Level Bureaucrats**

Influence also came in the form of assistance from other types of street-level bureaucrats who may be present at an emergency incident. Responding to a car accident
with an unknown number of victims, one paramedic described rapid work on the part of police officers to identify the local bar from which the accident victims has just departed. Police dispatchers then reviewed video surveillance of the parking lot at the location and identified the number of individuals who had been in the car just prior to the crash. This assistance led to key information that the driver of the vehicle, who may have been critically injured, was missing. The medic noted that he felt the “… police did a great job about finding all that information out and finding out who the people were, getting family members on the way to the hospital so that the hospital could get information.” Critical time was saved and necessary information gathered through investigative work of the responding police officers.

In another case, paramedics were faced with a patient in severe pain from double hip fractures. The patient was unable to tolerate the vertical positioning needed to get him down a tight staircase, which left paramedics with a choice to either subject the patient to severe pain or find alternative means. The narrator of this incident recalls that they “… finally just got to the point …we’re out of options, so what do we have? And that’s when … the lieutenant of the fire truck said, ‘we can set the aerial up right outside this window. There’s no wires in the way.’” By implementing the suggested removal of the patient from a second story window via a fire department ladder truck, crews were able to avoid causing the patient significant, prolonged pain. Although the problem was situational in nature, an inability to maneuver the patient through the residence due to his clinical presentation, it was the suggestion of a fire department officer that allowed for a solution that was acceptable to both patient and street-level bureaucrats.
In numerous other stories, including some already outlined, police officers or firefighters were asked or volunteered to drive the ambulance to the hospital so both paramedics could attend to a seriously injured patient. Others stories also included firefighters providing a preliminary assessment of the patient’s condition and relaying that information to the medics before arrival. Though in a few cases this early assessment was not clinically refined, it was certainly valuable to the paramedics. Noting this specifically, one medic stated that “… it’s stuff like that where the wheels start turning before we get there … sometimes, you know, it really makes a difference.” Any information, regardless of clinical specificity, was helpful in preparing paramedics to treat potential conditions before arrival. Other cases highlighted firefighters or police officers with additional training, including former paramedics who had switched professions to become police officers or firefighters, assisting with treatment during the transport as well. These close links between public safety professions allowed for increasingly efficacious treatment.

Though predominantly positive, some interviewees noted differences in the type and quality of assistance provided by other first responders. Describing a recent change that shifted responsibilities for assisting paramedics from the police department to the fire department, one medic noted that “[s]ome of them hate them. It comes with the territory. They weren’t doing them up until a year and a half ago. Others embraced it and if I let them, they’d get in my ambulance and drive away. ‘We got this one, we’ll see you later.’” Many of the firefighters were eager to assist with initial care before paramedics arrived and supportive assistance after the ambulance had arrived. Some were not so eager. When asked for further clarification, the same medic noted that
…on our platoon, we know the one engine doesn’t like… doing them. And they’re in a position where they are always going to beat you to the good call. Even if the closest station the ambulance is sent, that engine is going to beat them because they’re deep east. And they’ll be like “it’s in there.” And then you go west, and the crew in the west, you get there and they’ll be on O2, and they’ll have a set of vitals for you, and they will figure out how to get out of the house, and they will have everything written down. If they had more equipment, they would have him all bundled up ready to go.

The former scenario illustrates a minimal level of assistance: the firefighters on-scene have provided nominal effort in assessing the patient and are generally disengaged from the process of ensuring rapid movement from the scene to the hospital. In the latter scenario, the firefighters have assessed the patient’s vital signs, placed the patient on oxygen, and have determined the most effective method of getting the patient from their residence to the ambulance.

When asked for his thoughts on how these disparate approaches to assisting on ambulance calls develop, he noted that the “… guys that worked out there said ‘if we’re going to do it, we might as well get good at it.’ And went with it.” In a few cases, this comfort level is related to proximity and frequency of interactions. One medic noted that “I’ve pretty much lived with the same platoon downstairs, so we all get along well.” Outlining a specific call in which a fire lieutenant and firefighter assisted paramedics with a critical patient, the same medic outlined a cultural distinction between those engine companies that are more likely to provide extra assistance and those that are not. The crew assisting had been one that sought additional training on a regular basis form paramedics on methods and types of assistance they could provide on a medical emergency. He noted that “… these were the guys that would say ‘hey, I can’t remember
this, or I can’t remember that. Can we review blood pressures?”… You ask for help, and I will do whatever I can to help you.”

In other cases, assistance from other agencies contributed to incident complexity. One paramedic noted this in his telling of an incident in which an intoxicated college student was burned after a small explosion. He stated that “… by the time I got to the truck, they added the fire department on to the alarm … [a]nd I remember hearing, the dispatcher’s telling me it’s a major burn, and then the cops were saying it’s a major burn, and fire’s like ‘yeah, it’s just minor burns.’ So you’re getting three different stories from three different resources.” The assessment of the patient’s condition by these various other street-level bureaucrats then caused confusion about the seriousness of the call, the types of resources needed, and the procedures necessary to appropriately treat the patient.

Moving beyond these street-level providers who were on the scene of the actual incident, individual-level influences from another type of actor in the EMS system, medical command physicians, were found to be just as influential. These individuals, removed from the scene and located in hospital emergency departments, were frequently noted as important arbiters in difficult situations.

**Medical Command Physicians**

State-certified medical command physicians, working in recognized medical command facilities, are legally empowered in Pennsylvania to provide guidance to paramedics as they engage in patient assessment and treatment. These physicians may direct paramedics to act both in accordance with the statewide clinical protocols or may
give providers orders deviating from the protocols with good cause. Thus, these individuals have routine and substantial effects on paramedic behavior.

In discussing the interactions between medical command physicians and protocols, paramedics outlined varying relationships, many of which were shifting and variable based on both the nature of the emergency and the organization in which they worked. Putting this relationship in broader context, a PDEMS medic stated that “… we hardly ever call for command,” and if they do it means that they “… have a really sick patient and I need help or I need something.” Several HSEMS medics noted that they “… don’t call command often,” adding that their protocols are “… thorough enough … that we don’t have to.” In both cases, medics found that they were given latitude to act without contacting medical command physicians at specific times to provide specific treatments or therapies. This discretionary latitude serves not as a deviation from rules, but simply the enactment of informally created standing orders to engage in specific behaviors.

Several paramedics participating in semi-structured interviews noted that they valued their interactions with medical command physicians and enjoy the trust they routinely felt. One PDEMS medic participating in a focus group noted specifically that “I think a lot has to do with the fact that the medics in … our service have gained a trust with the various doctors.” Adding clarity, one medic noted that “… you are trusted to be part of that team.” When asked for an example of that trust, the same medic noted that “… the protocol says that you can give up to five more milligrams of morphine [but] you’ve got the call the doc for the next dose. We may give that second dose without having to call the doc because the docs know that they can trust us in that particular area.
So we don’t really break the protocol, but we got kind of a carte blanche from the doctors saying, ‘it’s okay for you to do that. We understand that that’s in the protocol but we trust you.’’” Importantly, this discretionary latitude allowed by medical command physicians is specifically addressing those medications or procedures that require permission before they are deployed and not any type of deviation from a clinical protocol.

This freedom, several interviewees noted, comes from the volume of interactions between medics and physicians. Stating this more specifically, a PDEMS medic noted that “[w]hen they see you bringing the same thing with the appropriate treatment all the time, they’re, okay, these people know what they’re doing because we see them day in and day out ten times more there than someone who works at the county. So we build trust even with new physicians relatively quickly because of that.” The sheer volume of patients that are brought to emergency departments and the consistent interactions served to build trust. Speaking generally, one medic hypothesized that these frequent interactions “… has a lot to do with it. I think maybe like confidence level, maybe. They don’t want to put everything they’ve worked for on the line for a medic they don’t know versus a medic they do know.” And, those medics calling in for command orders from a busier organization, one with an established record of positive interactions, “… get them, usually.” In other words, paramedics working for organizations handling a higher call volume and treating more seriously ill or injured patients are more likely to enjoy high trust and approval for the procedures or skills they request. This trust was also developed through supportive behavior of the paramedics when hospital staff members were in need. A PDEMS medic mentioned that “… if we go into an ER … and they need help, they know that we will jump in and help them and assist them without them even asking.
We’ll just go in there and we’ll say ‘hey, you need some help? We’ll do this and then we’ll help you with this. And that goes a long way too.’”

Others noted that the trust built due to volume of interactions may extend to their home organizations once a positive reputation is reified. One medic noted that he works for another EMS agency that responds to fewer calls and serves a more rural population. He states that when he gets “… treated differently, even though I work for [a busier organization], some of these people may not … see my face. But when you wear their colors or their uniform they treat you differently. And I’ve definitely noticed it.” Though he enjoys a higher level of trust when working for an organization with closer ties to ED staff, he finds that interactions noticeably change if he is working for another less connected organization.

HSEMS focus group participants linked this high level of trust to the detailed *ex post* review of performance during emergency calls. Explaining his thoughts on the causes of these disparities between thresholds for calling physicians for permission to administer certain medications or employ specific tools, a medic felt that they are given latitude by the organizational medical command director “… because we’re QI’d constantly. We’re constantly doing skills reviews that are a lot more involved than other hospital systems. So we have that freedom. I mean it is nice to not have to talk to command.” The frequency with which paramedic behavior is reviewed, and the volume of training in which HSEMS medics are engaged, both lead to perceptible differences in freedom of action for these medics. Responding to this observation, several HSEMS colleagues mentioned that they felt this “… reflects on what they think of their employees.” They “… instill some sort of trust that we’re out there doing what they
would do. ‘I trust him to be my eyes, do what I would do in that situation, and then bring them here.’” And, many noted that they would not be comfortable moving to a less permissive system.

Interestingly, this carte blanche was not permanent and irrevocable. A PDEMS medic urged caution, stating that “… there have been situations in [our city] where certain medics have fallen out of the group and it becomes known to the docs.” Echoing this, another PDEMS medic stated that “… it’s because we do good work. If we did bad work we wouldn’t have that card.”

Still other paramedics mentioned that frequent observations that placed resident physicians on the ambulance with the provider allowed them to gain a sense of the challenges of the job and created trust between physicians and paramedics. One paramedic noted that these physicians gain a better perspective of EMS work and an appreciation for the situations in which they must often act. The physicians might say, in the words of one medic, “I’ve watched this guy work and I know what he can do. If he’s saying that this guy needs to be sedated and intubated, then this guy does need it.” Likewise, those physicians who had served as paramedics prior to becoming a doctor were more likely, in the opinion of the medics interviewed, to understand the difficulties of prehospital EMS. Both of these types of first-hand experience were notable in saliently demonstrating the characteristics of prehospital EMS to medical command physicians.

The development of this relationship between paramedic and medical command physician was mentioned as particularly important by a veteran medic. He noted, with some amount of pride, that “[w]e’ve come a long way that the docs really trust us to say, ‘Do whatever you have to do, and we’ll back you up.’” When asked to elaborate, he adds:
I remember days early on when we couldn't do anything without calling the doctor and waiting for him to come to the radio, and if he was busy, he wouldn't come, and you didn't do anything … We met a lot of resistance from citizens who didn't understand why we were playing doctor in their living rooms. We had a lot of physicians who simply didn't want us to do anything. They weren't going to take our word for it. More often than not we did not get orders from physicians. We'd just bring them in, and they'd evaluate them when we got there. It was important to me just because I remember those days. Now we're to the point, especially with the city medics, they trust us incredibly. Now they're just saying, "Go ahead and practice medicine. Do what you have to do, and we will back you up." I don't even know that they would say that to their own residents. Yet, they're trusting us to do it.

Although both the public receiving care from paramedics and the physicians directing that care were initially skeptical about the abilities of prehospital providers to effectively assess patients and execute complex treatments, this skepticism has eased iteratively in the intervening years.

In some cases the perceived trust of physicians served to embolden paramedics in their decision-making. An account of a decision to call for a helicopter for a patient in a rural area having a heart attack, something that explicitly requires permission from a medical command physician, was treated by one paramedic as *pro forma*. He stated that:

… we got her flown down [to a hospital capable of cardiac catheterization] and I forget what, it was something like a real short, outrageous amount of time…. I kind of cheated a little bit as I was telling the doctor what I was seeing … I had already called for the helicopter. I mean she was going for the ride one way or the other … I was going to make sure it was going to happen, even if I got in trouble. I mean she needed to go because she was still … I mean even though she was like in her seventies, she was still a rather “healthy seventy.” And it’s one of those where it’s like “Got to go, got to get here somewhere where they can do something.”

Though patient need played a part in his decision, the medic’s frequent interactions with the physician did as well. He noted shortly thereafter that he was a known entity to the medical command physicians as an employee of the ED. Adding
further clarity, he noted that “[u]nless I asked for something totally off-the-wall, they will probably let me do it. So it was more-or-less a formality.” The outcome for this particular patient was positive; the time saved in calling for the helicopter early allowed the crew to transport the patient to advanced care in time to save the patient’s life.

However, not all interactions with medical command physicians were universally synergistic and productive. A PDEMS medic noted that in some cases newer ED physicians required some amount of education about the nature of EMS work, pointing out that these physicians may not fully grasp the nature of EMS protocols and may not provide the necessary support. More succinctly, the medic stated that “… early on in coming here the ER docs had to be educated to what we can and cannot do because we’re asking them for help and they don’t know the protocol.” Although medical command physicians were highly trained and specifically certified to guide paramedics as they provided care, expertise in the abilities and limitations of paramedic’s scope of practice was in some cases absent.

Paramedics also noted that protocol differences in some cases created conflict with medical command physicians at receiving hospitals. Noting this, one medic stated that “… I know for a fact that [HSEMS] medics have taken patients to [a local hospital] and have treated the patients by our protocols. And then the [local hospital] medical command director says ‘whoa, whoa, whoa … you’ve completely been with outside of your protocol.’ But no, per [HSEMS] protocols we were 100%. So then you get that conflict between the two health systems.” Thus, tension can be apparent when there are differences between the expectations of medical command physicians working at
receiving hospitals and the rules, sometimes organizationally specific, that guide behavior.

Several situations were encountered in which paramedics felt it was necessary to contact medical command physicians for assistance in solving a particularly difficult problem or for permission to use a specific medication or tool. Several HSEMS focus group participants noted that the only cases in which they felt it necessary to call medical command were those in which patients had to be pronounced dead on-scene, or particularly difficult situations involving patient refusals. One added that the “… only times I’ve had to call is for refusals. Like ‘I think you should go to the hospital, you shouldn’t refuse, you’re sick. How about you talk to a doctor …’” This particular paramedic sought assistance from a physician to leverage their standing and expertise in convincing an obviously sick patient that they required additional care at a hospital. This practice of refraining from calling medical command seemed to be common enough that it spurred humorous responses. A medic, noted that she called command on a call that morning, asked for a physician to which the nurse answering the phone responded “really?” Echoing earlier comments about differences between organizations, one medic noted that “It all depends on where you work … [s]ome places you gotta call for everything.”

In other cases, a physician contacted for assistance may deny a request for specific therapy or medication. When probed for an example, a medic described an incident in which he requested a sedative to allow for an easier intubation on a combative patient with a possible head injury. Despite the paramedic’s assessment of need, the medical command physician at the receiving denied the request. The medic relating this
story noted that “[i]t’s a safety problem too. Not just for patient care. They’re getting the
[expletive] beat out of them in the back of ambulance, and it clearly didn’t have to
happen that you look at it from a clinical standpoint as this patient’s flailing around and
they’re worried about head injury; they’re exacerbating the head injury while they’re
flailing around.” The reaction was to improvise and provide another sedative to the
patient using a different, somewhat related, one that did not require authorization.

In discussing this example, and previous comments, a PDEMS medic noted that
“… we have those misses every once in a while, but it’s not often. But when they miss it
seems like they’re big misses …” In those cases where there is some amount of
disagreement, the next step was generally to have a frank discussion with the medical
command physician. The medic went on to explain:

We’re not ones to take it either. If we think a doc did us wrong or something like
that, we’re going to hunt him down and ask him. I mean we’re nice about, polite
about it. What gives? You know what I mean, I have this, I don’t have that, I
could have done this, why didn’t you let me? I always tell them…was there
something you’re thinking about that I wasn’t seeing? And that kind of makes
them feel good because I think the whole aspect of having a two-year trained
paramedic come up to a doctor that does … I don’t know how many years they do
anymore, but I mean and sit there and say … “hey you dropped the ball on this
one.” It’s kind of demeaning. So you just come up to them and use a little tact
and you get them talking and stuff like that, and then the next time around it’s a
lot easier.

The desired outcome of these conversations was constructive in nature, with one
participant noting that “[o]ur job is to make sure that we take back these misses and
noncommunicative situations and fix them.” And, in many cases these post-incident
discussions led to improved relations in later interactions. Though in the this particular
example a solution was found through use of different rules, several medics noted
alternative means of doing what they felt was necessary after permission was denied by a
medical command physician. Examples included calling another medical command facility to “… circumvent the system,” or claiming some sort of radio or phone failure that would allow the medic to provide certain therapies that were listed in the protocols as only available with physician approval.

An example of this type of influence comes through a decision made by a medical command physician in the treatment of a traumatically injured fall victim. The medical command physician in this story acted within the rules by allowing paramedics to employ a certain amount of the requested medication, but the desired short-term patient outcome was not achieved.

**Story 6.2: “Uncontrolled Airway”**

We had a trauma, … a construction worker who was leaning out of a second story window installing a window frame when he lost his balance. Fell, hit the scaffolding, fell off the scaffolding, and fell onto the concrete. We were dispatched for a guy who’s unresponsive after a fall. We get there, the guy’s … you can tell the guy's not good just the way he's breathing. It's deep, labored breathing. He's probably … got a head injury. So, we do the whole the backboard thing, c-collar just because again, the head injury, mechanism of injury. Get him into the truck, I get him hooked up to the monitor … he's not controlling his airway at all.

My partner starts the IV. At that point I'm already on the line with the hospital, talking to medical command just because the guy's jaw was clenched, and we need to get something to intubate the guy. I talked to the doctor, and he gave me orders for 20 mg Etomidate … I knew in the back of my mind probably wasn’t going to do much. Doctor says, “try 20 mg Etomidate, if that doesn't work, the just bag him, and we'll see you at the hospital.” We pushed the Etomidate, opened his airway up, and there was blood in there. We suctioned the airway, and tried to go back in with a blade. At that point he was already clenching down again. What do I do? Well, the doctor already said if can't do it, just bag him and bring him to the hospital. Got him to the hospital - of course, they have better paralytics that’s going to put someone down a lot longer than what we can do. They get the guy intubated, they do everything they have to do. The guy had a major head bleed and died two days later.
...[I]f we could have given more, I would have had more time, and probably could have intubated him. I came to find out after that call our bosses went to talked to our medical director. The doctor that I called was our medical director. So, everybody was already involved already. It just happened to be that he was the doctor that picked up the radio. Now our standing orders are 30 mg Etomidate. So, it went up 10 mg. Hopefully next time...

It was clear immediately after arriving on location that the patient was in critical condition with a serious head injury. Because the patient was not able to control his airway, the medics decide that he needed to be intubated, a skill that is complicated by the patient’s clenched jaw. The use of Etomidate to sedate the patient would make the process much easier, however the medical command physician approved only the use of 20 milligrams of the drug, which the narrator felt was inadequate. The dosage was effective for only a short period of time and did not allow him a sufficient window to effectively execute the skill. He states that “… if we could have given more, I would have had more time, and probably could have intubated him.” A post-incident review and discussion between organizational leaders, the medical command physician who fielded the call during the incident, and the responding medics result in a decision to set standing orders for the medication at the maximum allowable dose of 30 milligrams in the statewide protocols. While the reasoning behind the medical command physician’s decision to limit the Etomidate to two-thirds of the allowable dose is not known, his decision nonetheless served to limit the decision-making abilities of the medics responding to this incident.

A similar incident, in this case told by a supervisor, illustrates the intricacies of the paramedic-physician relationship involved a combative patient requiring sedation. While the administration of the medication was approved by the medical command
physician in this case, it was the method of administration that made the paramedics uneasy. Relating the details, the supervisor noted that “… this physician had ordered [the medic] to give Ativan at 1 milligram injections twice to a combative person.” Rather than give both doses of the medication at the same time, which would have had the same efficacy and would have reduced the chances of the combative patient injuring the paramedics, the physician ordered two separate doses to be given. When asked about the best way to handle that call, the supervisor noted the paramedic’s response after the patient had been transferred: “Can we get [the physician] out here and see what we do?”

Medical command physicians play an important role in the behavior of EMS providers, serving to guide paramedics at the sometimes complex and difficult intersection of rules, patient need, and situational factors. In some cases the informal relationships between paramedics and physicians allowed for greater discretionary behavior in providing routine care. Other cases called for close working relationships during an incident with specific guidance from a physician. The results of these consultations were varied; in some cases paramedics were granted subsequent trust in determining appropriateness of care and given approval without question. In other cases physicians were not as quick to provide such approval, resulting in varying approval or denial of requests.

**Patient Identity, Worthiness, and Rule-Following**

Other incidents related by paramedics point to the influence of patient identity on discretionary behavior and concepts of worthiness of services. Describing a similar call for an unconscious person, a paramedic recounted the administration of Narcan, which
successfully counteracted the effects of the opiates the patient had consumed. At the beginning of his story, the medic noted with specificity the location of the emergency. It was in “… one of housing developments, the housing projects here in the city … we were accustomed to dealing with a lot of that sort of thing over there, there is a lot of heroin overdoses, a lot of drug overdoses, alcohol intoxication, things like that.” The location of the call – in an area in which drug and alcohol overdoses were common – in conjunction with the patient’s presentation signaled to the paramedic that this could be the cause.

Perhaps most interesting, though, is the paramedic’s subsequent description of the juxtaposition of the patient’s identity with the location of the call. He noted that “… she didn’t seem like the typical patient that we would find in the housing development. She was Caucasian, she was a younger female, she was well-dressed. She drove there. When I asked her where she lived, she gave me her home address, which was … in a very nice neighborhood.” He added that she “… just didn’t seem to fit the bill … we see a lot of people that have addiction and problems like that and she just wasn’t that type.” After treating the patient with Narcan, they crew transported the patient to the hospital. In the intervening time between departing the scene and arriving at the hospital, the medic exerted additional effort to help this particular patient. He stated he “… really reached out to her … I remember going out of my way to talk to her. To find out ‘What are you doing here? What happened? What’s going on? … Is there something we can do to get you help?’” In this case the patient was seen as an individual worthy of extra attention, potentially as a result of her identity as someone who didn’t “fit the bill.” In this case, the patient’s identity was linked to her perceived worthiness to receive more than the standard services.
Whether or not this paramedic would go to the same lengths to assist another individual experiencing a drug overdose in the same apartment in the same housing complex is not readily known. But, in this case his remarks on the seemingly mismatch of patient characteristics, condition, and incident location resulted in his added attempts to provide assistance. In concluding his story, the medic noted that he was later approached by this patient at a public event. The subsequent conversation revealed that the patient appreciated his intervention and, in the narrator’s words “[s]he recognized her problem, she got the help that she needed, and she said that she had been clean since that day.”

In other cases paramedics noted with great clarity that the patient’s identity did not alter or modify the type of care they provided. A story about a multiple-alarm house fire that resulted in severe injuries to several residents is one such example. Through both standard patient assessment questions and information volunteered by the patient the treating paramedic was led to believe that a resident was responsible for setting a fire that killed her two children. The medic noted that “[i]t was tough treating her with these thoughts in the back of my mind that, hey, you know, maybe mom did this.” He followed this statement by noting that he treated her without altering his behavior. He said that he “… did it, it's what I'm trained to do, but it was very difficult.” Another paramedic, treating an “associate” of a man who had allegedly shot a police officer, noted that he was “… trying to treat him as objectively as you can and as unbiased as you can …” He provided further explanation for this stance, noting that “… you have to be the better person. If you don’t treat them, then you are no better than him. You know, you have to do your job, that’s what you are there for … I still have an obligation to treat them, no matter who they are…” Similarly, a paramedic treating a patient who had allegedly shot
another police officer made it clear that despite any feelings about the patient’s alleged actions, “I’m not there to judge him, I’m there to do my job.”

**Patient Need and Worthiness**

In other cases, clinical need for services was noted as a key source of influence on paramedic behavior. Describing his treatment of a patient with an obvious hip fracture who had no desire to be transported to the hospital for treatment, one paramedic noted the extra energy and time spent on convincing the patient that she needed advanced treatment. The elderly patient, living alone and without any family in the immediate area to attend to her, was obviously in need of advanced medical care but adamantly refused to be fully evaluated or transported by EMS. The responding crew noted that they “obviously … couldn’t leave her there in the situation,” recognizing that it was unacceptable to leave the injured patient at home with a serious injury and without any attention or assistance from family. In total, the crew spent more than an hour attempting to convince her that it was necessary to seek care at the hospital. The arrival of family members and their continued insistence finally persuaded the patient to seek additional care. The paramedics in this case were acutely aware of the patient’s need for medical help and exerted substantially more effort than usual in convincing the patient to seek treatment.

Patient need, like identity, is related to concepts of patient worthiness. Several types of patients were noted by paramedics when identifying this relationship between medical condition or identified reason for calling an ambulance and ideas about how deserving of services these individuals were. The first includes those patients exhibiting
or expressing a specific need that the paramedic felt was not generally worthy of EMS. Describing a patient who called an ambulance for tooth pain, the medic noted that the patient had “… already seen the dentist, she was already diagnosed, she already had the medications, there’s not much else anybody’s going to do for her at that point … The emergency room … didn’t do anything for her either because it was already a treated problem.” Numerous paramedics also indicated displeasure with those patients who called EMS in order to gain entry into the ED and see treating physicians more rapidly. Though only general accounts were provided, several medics indicated that patients would not hesitate to offer up this reason for using ambulance services.

In other cases the patient did not initiate the call for ambulance service for a condition which was deemed unworthy. A medic related a story in which EMS was called to a nursing home for low oxygen saturation. The arriving first responders – firefighters from the city fire department – were greeted by nurses stating that the patient’s oxygen tubing had slipped off, and that her oxygen saturation rose to a normal level once it was repositioned. Though the nursing home staff and paramedics all felt that this was not worthy of transport to a hospital by EMS, the nursing home physician, who was not located at the facility, demanded that the patient be transported to an emergency room for evaluation.

In discussing other types of patients and subjective feelings on need for EMS, one medic brought up the subject of “drug-seekers.” He recalls several incidents in which patients will claim to have severe pain in order to get a prescription for pain reducing medications. He stated explicitly that “[y]ou can tell when someone's in serious pain … you can tell when somebody's trying to fake the pain.” Many of these individuals, he
noted, may not display symptoms consistent with their stated level of pain, or can be
easily distracted and forget to feign symptoms that would indicated severe pain.

The most frequently stated reason for the negative perception of these types of
patients stems from an inability to be available for a more “worthy” patient. The medic
treating the patient with tooth pain made this point clearly: “… it goes back to the same
thing: Why are you calling at 2 o’clock in the morning for a problem that already had
been treated and medicated when somebody else may be having a heart attack, or may go
-crash their car and need the medics?” Patients with more serious conditions – in no fewer
than four cases the example given was a heart attack – were deemed more worthy of
EMS given the emergent and life-threatening nature of their clinical conditions.

In one interview, a paramedic describing his feelings on “system abusers”
introduced patient race into the conversation. The medic noted that he had experienced
situations in which patients had said to him “‘[w]ell if I was white, you would carry me
down the stairs’ … or ‘I bet you if I was white you would have checked me before …’”
Perhaps most interesting about this discussion was that race had not been a topic of the
interview, and that the paramedic’s connection between less needy patients and non-
white characteristics was spontaneous and unprovoked. These comments, while not
creating a causal relationship between patient race and assessment of worthiness or
patient race and behavior, does serve to bring this topic to the forefront as a key topic to
explore in discussions of patient need, worthiness, and emergency medical services.

Despite these varying perceptions of worthiness, each of the medics discussing
patients they felt were not in need of EMS all noted with particular vigor that their
perceptions of lack of need did not mean that they were going to provide inferior service,
withhold diagnostic efforts, or refrain from treating a patient. One medic made this point explicitly: “Is it going to change the way that I treat the patient? No. The patient still gets a blood pressure, the patient still get a pulse, still gets a respiration, still gets a SAMPLE history … I’m not gonna withhold treatment from anybody … The day that I think that I think about withholding treatment is the day that I go next door [to the supervisor’s office] and say ‘you know what, I can’t do this anymore.’” And, in most cases they also noted that this minimum level of service was necessary to rule out more serious conditions that may not be manifestly observable in the patient’s outward presentation.

While expressing frustration with some of these types of patients, other medics noted that in some cases EMS crews are the only resource upon which these patients can rely. One paramedic outlined a frequent occurrence in which a patient would routinely call 911 for chest pain and request to be taken to a specific hospital. He noted that “… the dialysis place was right up the street from the hospital, so she would call the ambulance at 9 am… We’d go down there with lights, bring her to the ER. We’d put her in the waiting room because staff was used to her. She’d walk out the ER doors right up the street to the dialysis center.” When asked about his reaction to this frequent occurrence, he noted that “… there’s probably no other way for her to get here.” Though the paramedic expressed his own displeasure with this particularly use of ambulance services, he also recognized that EMS was the only option that the patient had to get to her dialysis treatments. Describing a similar situation, a medic from another organization said that sometimes “… you’re the only thing they’ve really got that’s going for them.” Another medic noted that “… for them it’s an emergency … [T]his person probably can’t
make it to their doctors’ appointments, can’t do anything like that, because there’s no family to take them. And they can’t drive, they might not have a driver’s license.”

Patient need, and the resulting reaction from a paramedic, can also extend beyond the bounds of the emergency incident. Relating a story about a young child whose family left her alone for an extended period of time, one paramedic recounted her discussion about patient need with the responding police officers and Children and Youth Services social worker. The paramedic, discussing options with the caseworker, said “you know what, if you can’t find her family let me know what I need to do, I’ll fill out paperwork. I’ll take her home with me.” Though the paramedic began the process of becoming an emergency foster parent, a grandparent was eventually contacted within a few hours and the child was placed in the care of family members. The paramedic noticed a situation in which the toddler was in need of more care than would typically be provided by a paramedic and, while this additional assistance was outside her duties as a paramedic, she was undoubtedly responding directly to the influence of individual need.

Although the influences noted thus far have been grounded in the practice of EMS, key individuals who may be on hand to assist with care, organizational superiors, or those tasked with providing clinical guidance, in other cases more general situational factors were directly influential on the behavior of paramedics.

The Influence of Situational Factors in Prehospital Care

A relatively short story about the treatment of a child struck by a car illustrates the influence that situational factors can have on paramedic decision-making. Situational factors can be defined as those environmental variables that may impact the act of
providing services, such as the physical setting in which the service is being provided, or may impact the emotional state of the paramedic through manipulation or pressure. Examples include weather, time of day, the potentially dangerous circumstances that created the need for services in the first place, geographic considerations or large crowds gathering around an incident scene. Whereas several influential factors are evident in the paramedic’s description of the following incident, those primarily responsible for the medic’s choices were situational in nature.

**Story 6.3: “People Were Yelling”**

I had a kid that was hit by a car … There were parked cars on both sides and you could barely squeeze a car through, so I can’t imagine anybody would be going too fast. He was complaining midline thigh pain. I think he was about 10 or 12. And I palpated his leg and didn’t feel any deformity. He wasn’t crying or anything … Somebody hit somebody, everybody gathers around and watches. And people were yelling and I was like, “I just want to get into my truck and get out of here.” So we move the kid, and when we were moving him, he started to get very upset, but his leg just, it was barely red, there was no bruising. The car had left the scene, so I couldn’t evaluate the car. … [J]ust from what I saw visibly on the injury or externally, from where he was hit, I didn’t think there was enough force to have broken his femur …

And I put him on the bed and we took him out, and he had a femur fracture. I was very upset that I didn’t take the time to give him fentanyl before I moved him. But since that call, that was the turning … that was when I decided I’d rather take the time with people yelling around me … or neighbors yelling at what car it was or who it was, I would rather take the time now to give the fentanyl, and then just rather put up with all of that in the interest of the patient, rather than moving them first and then giving them the fentanyl …That was a bad judgment call on my part.

The medic noted at the beginning that the scene of the incident was a narrow street lined with cars down which cars would not being going “too fast,” an indication that the patient’s injuries may not be that serious. Additionally, the patient’s presentation
is relatively calm, not crying, and without any obvious injuries even upon after a close assessment by the narrator. Perhaps most important is the paramedic’s description of the crowd that had gathered because of the incident. The medic noted that this crowd began to get excited, adding another level of stress on the paramedic while treating the patient. This stress prompted the medic to move an injured child into the ambulance before providing medication to ease his pain. This, according to the medic, was a “… bad judgment call …” Without the pain medication the patient, suffering from a broken femur, experienced considerable pain. Because of this decision, the paramedic noted that if placed in a similar situation, the crowd would be tolerated and the patient would be medicated first “… in the interest of the patient.”

The individuals in this case are important for different reasons than those noted in the discussion on the influence of bystanders. Though also technically “bystanders” to the incident and witnesses to patient treatment, the individuals in this story are influential for a different reason. In this case, the presence of a large crowd spurred the paramedic to move the patient to the ambulance before providing pain medication, thus causing the patient some amount of unnecessary pain. The individuals, then are important not for their individual actions, identities, or assistance provided, but collectively placed pressure on the paramedic. Thus, the medic’s location in a tense, stressful situation was the influential factor on the decision to move the patient to a more secure setting for further treatment. This decision was particularly troubling for the narrator as a parent. Near the end of the story the medic stated that “… thinking as a [parent], I was upset about that call for a couple days … I wouldn’t want to see my kid in pain if there was something that could be done …”
In other cases, the injuries or illnesses of the patient, individuals involved, or nature of the treatment were less important. Instead, the situation that created the need for emergency medical care was salient to the treating paramedics. Describing a jealousy-fueled double stabbing, a paramedic made it clear that the crime scene and two traumatically injured patients were not in and of themselves shocking to the paramedic. What was disturbing to the paramedic was the story behind the incident. The medic noted that “… it was just creepy. Like, ‘that happens?’ That’s some stuff that you read in a book, that’s not something that actually happens. And that kind of bothers me, that people can actually do that to each other. And when you see it actually happening it’s a huge reality check.” The paramedic was able to effectively treat the patients despite the extreme situation that brought her service to the scene, but still noted the difficulty of dealing with that type of a situation.

Organizational Standard Operating Procedures in EMS

Thus far, concepts of rule following and implementation have been grounded in the use of clinical rules. However, as discussed in Chapter 5, operational rules are also created to shape behavior. Interestingly, across all three organizations the discussions on standard operating procedures were rather short, with many medics noting some amount of ambivalence toward these rules sets. Discussing organizational standard operating procedures (SOPs), several medics noted that they “… don’t need to reference them often…” as “… most of them are common sense anyway. A PDEMS medic noted that SOPs are generally referenced, and revised, “… when a problem arises …” In most cases these rules are “reactionary,” and that “[s]omebody [made a mistake] and they had to
write a policy about it.” Another PDEMS medic echoed this, noting that specific SOPs “… have certain people’s names on it …” When asked about the overall adequacy of these rules, several PDEMS medics noted that they were, in general, open enough to allow them to do their jobs in an unrestricted manner. In the words of one medic, they “… are fairly catered to conducting business as usual. There’s no SOP that if you’re doing your job the way you’re supposed to do your job makes you change the way you do things.” While organizational SOPs were drafted and approved as formal policy within all three study organizations, in each they seemed to play a relatively minor role in the process of providing emergency medical services.

**Use of Clinical Protocols Outside Of Emergency Incidents**

Focus group participants also commented on the use of rules outside of emergency situations. When asked about their use of rules outside the context of an actual emergency incident, many interviewees noted that it was common to look at clinical protocols at the conclusion of an incident with the intent of ensuring that clinical documentation of the incident was correct. One paramedic noted that he would review clinical protocols “… if we missed a step. When we were writing the chart we have to figure out why we [missed] it in the first place.” Others noted that this explicit and careful review was in some cases employed to avoid any possible ramifications of inclusion or exclusion of treatment that may raise red flags during the quality assurance process. In the words of one medic, it is important to review the protocols during charting to “… make sure everything’s in correctly for our QI process.” Supporting this, another medic noted that it’s important “[s]o you can either say why you did something or note
why you did not do something,” essentially allowing a paramedic to explicitly state in the chart or in discussions with supervisors that “I know this is part of the protocol, but I didn’t do it because of this.”

Explaining one difficulty of the quality assurance process, an HSEMS medic noted the tendency for supervisors reviewing patient care reports to question paramedic treatment very carefully. The medic stated that “… sometimes the problem with some of the QI that we do in relationship to protocols is, ‘you weren’t there. You weren’t on the call so you don’t know what happened.’ So it’s real easy for you to look at these protocols and then come and look at me and say ‘you didn’t do this, this, this, this, and this.’ You weren’t there…” Also noting the seeming limitations and incompleteness of rule and their disjuncture with practice, one HSEMS paramedic noted that “[a] lot of what we do is so, I guess, driven by … what you’re seeing, and your own best judgment that it can’t really be justified by the protocols. And yet you have to operate within the protocols themselves. So, by looking at the protocols after you’re finished it’s easy then to say ‘ok, well I justified it and this is why, and if you look during these 15 pages of written, you know, annotated notes, usually you are justified ….’ So, again, a lot of it is proving number one to yourself that you did the right thing, and number two so frankly you don’t get in trouble.” Adding to this, another medic noted a weakness of documenting complex emergency incidents in a text-based, narrative form, stating that “…you could never truly document that chart the way that call was.”

Beyond ensuring that all steps in a protocol were followed, one medic indicated that review during documentation could serve as “… a learning [experience] for the next time, just in case.” A veteran HSEMS medic identified those portions of the rules that she
was most likely to review after a call were those that caused her to “… have to think about something” during patient treatment. In those cases, she noted that she would review the clinical protocols in order to maintain her own perceptions of her expertise. A PDEMS medic noted that he felt that “… sometimes we may get a call where everything just kind of went wrong,” using that motivation to say “[a]lright, well let me look and see what other options we have out there in the book.” Failure in this case, or a potential perceived weakness in patient care, resulted in a learning experience.

Specifically noting the complexity of HSEMS organizational amendments to the Pennsylvania clinical protocols, one medic noted that “[w]e do things so differently that you just have to pay attention to it … I can tell you on a weekly basis if not shift basis I’m looking at HSEMS protocols and what they want us to do within those protocols.” And, several medics noted that these differences were widespread. HSEMS medics noted specifically that EMS departments located at other hospitals in the same health system had organizational clinical protocols different from HSEMS. Summing up these comments, a medic noted that “I reference them for where I work. Not my state, but where I work.” While state protocols were used frequently enough to become part of the paramedic’s routine, organizationally located protocols were more complex and less familiar.

In other contexts, familiarity with protocols was noted as a means of both instructing new paramedics and keeping veteran paramedics current and expert in the content of rules. Noting specifically the mentoring of new paramedics near the end of their education, one FDEMS medic added that “[w]e need to be able to make sure that they know what they’re doing. So we have to be on our ‘A’ game.” Noting a similar
perspective, a PDEMS medic stated that when teaching students you want “…to make sure you’re teaching them the right things.” A PDEMS medic noted that there are benefits to working with students who are “… coming out in a lot of cases with much more current information and they have to know it cause it’s on their test. So we’ve got to kind of bone up for the students to come in. And I think that’s a good thing for all of us to do …” Similarly, another medics noted that working with students was a direct benefit to the mentoring paramedic, with one stating that “[t]hey keep you fresh.” Echoing this, an HSEMS paramedic noted that students “… help me, I think, be a better medic by helping [them].” Whereas the statewide, regional, and clinical protocols created a substantial depth of discussion and engendered great interest in the discussion, organizational standard operating procedures tended to be relatively uncontroversial.

Summary

Street-level EMS providers enact myriad, complex rules on a daily basis. In many cases, rules — often memorized and rarely referenced in hard copy format — are relatively easily matched to patient need, a process subject to some amount of routinization through experience and reinforcement of professional norms of behavior. Some types of patient presentations, including those of cardiac arrest or traumatically injured patients, rule-following may be relatively simple and, despite the serious nature of these situations, enacted with little difficulty or cognitive effort. Importantly, the process of internalizing these complex rules and associated standards for treatment can be influenced by both peers and supervisors on both an initial and on-going basis.
In other cases rules, were followed by EMS providers yet some aspect of the situation was present that may not have been addressed by rules, policies, and procedures. In these instances other sources of influence were present to help front-line EMS providers overcome some type of difficulty or challenge. The influential input of other street-level bureaucrats, primarily police officers and firefighters, was crucial in several cases, with fellow public servants either providing information that improved knowledge of the patient’s condition or aided in making difficult decisions regarding the other fundamental tasks of patient treatment. The frequent and sustained interactions between paramedics and medical command physicians also influenced behavior. Numerous interview and focus group participants noted the strong trust established between medical professionals created through frequent interactions that served to create informal approval for certain therapies somewhat akin to standing orders. In those cases where paramedics did feel that it was necessary to contact medical command physicians for assistance, in many cases their requests to deploy specific medications or other tools were granted due to the aforementioned trust. This approval was not, however, universal. Instances of denial for orders were notable, in a few cases causing some amount of frustration among front-line EMS providers.

Concepts of patient identity and patient need were also influential. While technically the paramedic’s behavior in the example of the drug overdose story retold in this chapter was rule-abiding, the paramedic actually went above and beyond the rules to assist a patient. Conversely, paramedics assessing patients who may be perceived as less worthy of services also followed rules put forth to guide basic patient assessment, but may not employ an additional amount of caring, compassionate behavior towards these
patients. In still other cases, situational factors, such as a potentially hostile crowd, were also influential in shaping behavior. Although in the cited example the paramedic followed all applicable rules for patient treatment, she felt that her treatment was not, in retrospect, the best for the patient.

The lack of tension between rules and patient need is not, however, always evident in EMS. In many cases, paramedics described instances in which the interpretation of protocols or application of one or more clinical rules to a patient’s condition was made difficult for a number of reasons. The next chapter will discuss several examples of difficulty in this process, as well as the responses of several paramedics to a clinical scenario testing the impact of patient identity on patient treatment.
CHAPTER 7: PATIENT ASSESSMENT IN EMS: DIFFICULTY IN STREET-LEVEL PATIENT PROCESSING

Although patient condition, situational factors, and clinical rules were aligned in some cases, other cases presented some amount of difficulty in determining appropriate courses of treatment. This difficulty is attributable to both the nature of EMS – with tasks based in less directly observable physiological or psychological needs of patients – and to other sources of influence that shaped paramedic perceptions of patient needs. In the former, paramedic communication skills are key in discovering important aspects of a patient’s past medical history, aspects of the current incident that give clues that may aid in sorting through differential diagnoses, and other contributing factors that may serve to make the process of selecting the right medications and procedures for a particular patient. Importantly, the skill and vigor employed by paramedics in assessing patients are not comprehensively addressed in the various clinical protocols or organizational rules created to shape behavior. Though proper methods of assessment and appropriate types of questions are outlined specifically, in some cases even these methods of determining need may not be enough to develop a clear and unambiguous picture of patient need.

In yet other cases, outside sources of influence may serve to make this process of determining patient need more difficult. These can include a paramedic’s assessment of the patient’s identity, essentially his or her evaluation of need or worthiness for services based on a collection of ascribed characteristics. Alternatively, the assessment or treatment process can be influenced by individuals with specific information or relationships to the patient. Those with intimate knowledge of the patient’s medical
history may influence the assessment process or may react to the situation in a manner that causes some amount of stress for responding front-line EMS workers.

Both of these sources of difficulty figure prominently in gaining a better understanding of street-level EMS behavior due to their centrality in the key process of matching patient needs to appropriate treatment: the foundational act of patient processing. Findings presented in this chapter include both discussion of protocol interpretation and conflict surrounding protocols, as well as examples of those sources of influence noted as important by paramedics during the semi-structured interviews. Paramedic communication skills will be discussed first, followed by a review of the impact of both occupational culture and patient identity on patient assessment and care. This will be followed by the results of the clinical scenarios presented to each of the paramedics participating in the interview portion of data collection. Next, influence from bystanders or pertinent others will be outlined. In all of the examples provided, some difficulty in determining specific patient condition was noted, resulting in some varying amount of difficulty in creating a patient treatment plan. Importantly, there may or may not be initial rule-patient mismatch involved in these stories. In some cases, the difficulty in diagnosing the patient led to changes in the clinical rules were being followed. There was, however, no purposeful deviation from clinical or organizational rules.

**Protocol Interpretation and Conflict**

During focus group discussions, the topic of interpretation of protocols was addressed, with several medics noting the importance of these interpretative activities and the various levels of regulatory authority. In the words of one paramedic, “[w]hen you get
in to a state protocol, well those have been interpreted. And then you get into a county protocol, or, you know, specifically referencing [HSEMS], I mean, it’s been interpreted by six different people … the truth is that it’s been interpreted to frankly a preference in many cases, where you have people who can argue for Ativan and argue for Versed on two separate sides, and it all comes down to, it’s been the protocol has been interpreted by one or two people and that’s the preference that we function off of.” The myriad interpretive activities that occur before paramedics even treat the patient can cause some tension, especially in those cases where a paramedic feels that the interpretation is based on a “preference.”

Despite the interpretive activities that occur, paramedics may still differ on their assessment of patient need for specific therapies, causing some amount of conflict. One medic noted that “… pain management is the biggest one. Everybody reads pain management differently. Everybody sees pain differently.” Differences in assessment of pain can lead to drastic differences in decisions to provide pain medication to patients. Another medic followed, noting the same differences in the administration of medications to combat nausea. “Zofran’s a good one. You can tell me you’re nauseous but if you’re not doing the dry heaves in front of me, you’re not going to get it.” A PDEMS medic stated that he believed that “… we all develop what I would say is our treatment of giving certain meds like for pain management or for like nausea.” These assessments, and the cues needed for a paramedic to judge need as legitimate or illegitimate, were generally individually generated.

Paramedics also noted conflicts between clinical protocols, indicating that patients presenting with particularly complex illnesses or injuries may fall under more than one
protocol. In some cases, these protocols may contain inconsistencies in patient treatments and appropriate procedures. One HSEMS paramedic noted an example of a patient with congestive heart failure also presenting with a low blood pressure. She noted that “… one of the first things that they tell you to do with a hypotensive patient is … fluid challenge them. Well, obviously you’re not going to do that if you have severe pulmonary edema. So, then you’re faced with severely conflicting protocols.” The example she provided illustrates a case in which the proscribed treatment for one condition would exacerbate the other, potentially causing harm to the patient.

Another paramedic added an example from current experiences, noting conflict between statewide protocols and a special protocol addressing an experimental therapy for successfully resuscitated cardiac arrest patients. In treating this patient, who also presented with fluid-filled lungs, the medic noted they were “… pumping him full of fluids for the hypothermia protocols.” Following the supplemental hypothermia protocol, which included providing extra fluids, may have been harmful to the patient. The treating medic, speaking with the supervisor on-scene, asked “… at what point does it become a fluid overload?” The response reflected substantial uncertainty, with the supervisor noting “I don’t know where we draw the line.” Both paramedics providing these examples noted that the protocols allow paramedics to make judgments about the appropriateness of individual steps in the protocols to allow for the proper treatment to be rendered. In doing so, however, they also noted that this judgment call requires some amount of experience in order to choose wisely. This experience then allowed paramedics to determine those cases in which the specific protocols were not appropriate for the patient’s particular needs, resulting in their decisions to deviate from the protocol.
Paramedic Communication Skills and Patient Assessment

A core function of any street-level role is that of determining client need, a process of variable complexity given the primary functions of the service in question or the particular citizen’s needs. Whereas in some cases determining patient need in street-level EMS may be relatively simple, other cases may present substantial complexity. In those cases in which patient need is not relatively obvious to responding paramedics, the process of collecting data about the patient, critical to determining the appropriateness of patient care techniques, may be dependent on the paramedic’s individual communication skills. The dyadic patient-paramedic communication that occurs during an EMS call includes both the initial patient assessment and determination of need as well as the continual reassessment of the patient after clinically appropriate medications and procedures have been performed. Both verbal communication skills, specifically the language used to convey meaning, and non and nonverbal communication skills (e.g., affect, body language) of responding paramedics may allow for more efficient or effective methods of determining patient need. Importantly, this type of influence on paramedic behavior is very much paramedic-centered and may be less dependent on patient or situational variables.

Discussing an incident in which the patient was not able to effectively communicate the nature of her chief compliant, one medic noted that he overcame this obstacle not through changing the topic of this diagnostic questioning but by altering the wording of the questions he asked. Though the standard set of questions he asked had been effective in previous patient assessment efforts, he found that he had to alter his approach to better communicate with the patient to determine need.
Story 7.1: “There’s Gotta Be More To This”

… [T]his was a call, it was an old lady. And it was one that made you think. And it was actually one comment that made me put my ear up, because she’s complaining of all non-specific stuff, and this and that. And you’re going through, and you’re like, “What’s going on? … There’s gotta be something more to this. What’s going on?” And you go through and she’s going “I feel washed out, and I feel this, and I feel that.” And she’s just complaining, “I just feel weak, I just … I’m washed out. This is that.” And it’s just one that you’re sitting there going, “There’s got to be something going on.” “And this is what I felt like when I was in the hospital before.” “When’s before?” “Well before, it was like last week. They did one of those things on me, where they go in though your vein.” She had an MI [myocardial infarction]. She was in the middle of another one, again. But it … just didn’t show up in a 12 lead, it wasn’t a STEMI, but you call in and you say to the doc, “This is what she’s telling me, and she’s telling me this is how she felt last week, and this is what you wound up doing.” And the doc met us at the back of the ambulance and said, “is this Miss so and so? Because that was bad last week.” And it was one of those where you had to just keep digging. They just don’t present themselves…

Yeah, it was all the standard questions I was asking, but some of it was…some of it’s in the way you have to reword your standard questions. I can ask anybody, “How don’t you feel well today?” And I’ll get an answer from “Well, I’m having pain in my chest” to “I just don’t feel good” to “I don’t know, something’s not right.” Depending on the answers they’re giving you, you have to try to … sometimes you have to phrase something in a different way. Like I probably asked seven or eight times about trying to figure out why she was weak. “What did they tell you the last time?” Until I finally said it in a way that it dawned on her that that’s what she should tell me. But some guys would have just wrote it off as “Well, she doesn’t feel good.”

In this situation the paramedic was faced with a patient expressing her feelings of distress in very general terms. Despite this, some aspect of the patient’s presentation spurred him to make further inquiries about the nature of her complaints, which resulted in further information about her recent medical history. The medic noted that “… it was all the standard questions I was asking, but some of it was … some of it’s in the way you have to reword your standard questions.” After making several attempts to gather pertinent information, the medic was able to ascertain that the patient had a recent history
of a heart attack and interventional cardiac catheterization. This additional information, and the diagnostic testing that was spurred by the information, allowed the paramedic to conduct a more focused assessment and find that the patient was indeed having another heart attack. Additionally, the field diagnosis of this condition allowed for more rapid treatment of the patient once she arrived at the ED.

Not all incidents relayed by paramedics indicated the same depth of patient interviewing. Perhaps the most frequently cited reason for misdirected treatment was that of paramedic communication skills. Describing a call in which a patient was not correctly diagnosed in the field, a medic noted that “[t]here’s times when patients have fooled me. I’ve worked stuff up for one thing, and it turns out after you get the story it’s completely different.” A patient, presenting with some type of chief compliant or reason for calling EMS, will display certain signs and symptoms that collectively signal the appropriate course of action to the paramedic. As this medic noted, in some cases initial discussion with the patient may not lead to a correct impression, something that is key to the assessment process. His story, though relatively short, says much about this situation.

I worked up somebody for chest pain … she was complaining of feeling short of breath and chest pain. And I went through the whole check … [and determined] this is an ACS [acute coronary syndrome] case. Ok. So we work it up like ACS. Line, Nitro, aspirin, fine. Listen to lungs, lungs sound great. Get her to the hospital,…[and she] tells a completely different story. “I’ve got pain my right lung,” or “in the right part of my back …” She has chills, now she’s warm, which I didn’t feel, she didn’t feel warm to the touch, and now she’s got a fever. So now she’s being worked up for pneumonia. I’m like “did I bring the twin?” And I’m just listening to the nurse, and I’m watching the nurse do the assessment. And I’ve done 12 leads and everything … on that one I would have just started a line and hung fluids had I even suspected. And I was like “this is killing me, I don’t get what happened with this, how did the call completely change?”
Though he stated he “went through the whole check,” it later became apparent that the medic did not probe for specific information from the patient that would have changed the course of his treatment. The patient’s chief complaint of both chest pain and difficulty breathing indicated that several different conditions could be the cause. With the information gathered, the paramedic’s impression of the patient’s condition was that it was a cardiac event, one in which specific types of procedures were appropriate. Upon arrival at the ED, however, the patient described very different condition when assessed by the ED nurse. The specific complaints and qualities of the chest pain outlined by the patient in response to the nurse’s questions indicated that her condition might not have been cardiac in nature, information that was not gathered before arrival at the hospital. This incomplete patient assessment was aided in part by the paramedic’s failure to use other diagnostic tools, including one as simple as taking the patient’s temperature. Though the patient did not feel warm to the touch, the medic did not fully assess the patient for a fever, an indication that the patient may have some type of infection and not cardiac-related chest pain.

When asked about what kind of paramedic is good at communicating with patients, a medic described it as being “… able to engage somebody enough to be able to get the accurate story out of them. Not just ask questions but … have follow-up questions to get the correct answer to the question you are asking. When they don’t add up, explore enough so you know you have gotten the correct answer.” Patient assessment skills, then, become important in determining patient need and related appropriate treatments. Another medic noted that “… the information gathering is the real art, which I think some people do well and some don’t. I think that personally makes a good medic is
the good listener, the person who knows what questions to ask and listens to the answers.”

Those medics who are unable to probe for information relating to past medical history, the nature of the incident and progression of the patient’s current condition, or other key variables such as prescribed medications or environmental factors may miss key information that would aid in determining appropriate treatment. After consciously working on his own perceived shortcomings in patient assessment, including communication skills, the same medic noted that he found himself in fewer situations like the story above. In reflecting on his past experiences, he noted that felt he often “… didn’t do a good job getting their story.” The medic who previously defined good communication skills also noted pointedly that “[t]here is almost [no organization] that will hold up somebody’s command because they can’t communicate with the patient.” Organizations may not allow a paramedic with poorly developed intubation skills to advance to independent care and treat patients without supervision; however, paramedics with poor communication skills, which are inherently much harder to assess, are not as closely evaluated and may not be prevented from unsupervised practice.

Communication skills in this example are linked directly to an assessment of a particular patient’s specific needs. Thus, the importance of communication comes not only from the synchronous and ongoing interactions, but from the paramedic’s abilities to determine the cause of the patient’s condition and his or her need for specific types of clinical and nonclinical care. However, in other instances paramedics derived information from other areas that influenced their decisions. Specifically, paramedic assessments of patient identity served to communicate information on probable patient condition and
appropriateness of therapies. Although the accuracy of these more shallow judgments was potentially questionable, this type of guidance is important to discuss in considering the full range of influences on paramedic behavior.

**Occupational Culture and Patient Diagnosis**

Closely related, other cases detailed instances in which occupational culture, the practices shaped through everyday experiences and behavior, was potentially detrimental to the patient assessment process. In one particular instance a paramedic misdiagnosed a patient complaining of respiratory distress. Although the patient noted during the initial assessment that he had fallen just before experiencing the distress, the medic did not factor that information into his treatment, proceeding as if the patient was experiencing a relatively common case of respiratory difficulty of a medical nature. The cause of the respiratory distress, a punctured lung resulting from the fall, was not considered to be important in the paramedic’s assessment and treatment. In this case, it was noted that they “… get shortness of breath calls ten times a day; just another one of them …”

Continuing, it was noted that “[t]he routine, the mundane, the constant makes you very cookie-cutterish. ‘This is just like the other ten I had.’ It’s a fine line. You can’t approach every call as if it’s your first-ever call, but you have to certainly have some degree of skepticism.” In this situation, previous experiences, frequently encountered, may have contributed to the misdiagnosis of a critically ill patient.
The Impact of Patient Identity on Treatment

An example of the influence of patient need on paramedic behavior comes in the form of a paramedic’s recognition of a particular patient’s identity. Patient identity in this case refers to the ascribed characteristics perceived by a paramedic as important during a service interaction, including some combination of race, gender, socioeconomic status, and potentially other variables. This package of variables, and the resulting assessment of the patient in light of perceived patient identity, serves to communicate to the paramedic the appropriateness or inappropriateness of specific therapies based on their conceptions of probable patient need. In essence, the translation of an identity into a set of possible causes for clinical presentation may result in differences in treatment options and paramedic behavior.

Describing a situation in which identity was a factor in patient assessment, one paramedic noted that the patient’s age was influential in causing him to rule out one specific cause of the patient’s condition. Though the paramedic conducted an in-depth assessment of the patient and evaluated several potential causes for her unconscious state, the correct cause and appropriate treatment were ruled out due to the patient’s age.

Story 7.2: “Never in My Wildest Imagination”

[We had] a lady who was in her 60s who was unresponsive. I remember it was a holiday, because I remember the fact that the whole family was in the house, and everyone was really upset about essentially grandma. And the family’s frantic. It was in the holidays, so we did an unresponsive check of sugar … And we ran the call for the unresponsive, we bagged her, did all of the stuff that you would do for unresponsive. The family said she went to the bathroom and collapsed.

And I remember getting to the hospital, and the nurse - who was very good - looks at her, and runs through it all and goes, “Did you try Narcan?” And [the patient is] 65 years old … Two [milligrams] of Narcan, she sits up in the bed. It was a heroin overdose. Never in my wildest imagination. Tunneled vision’d on
the problem has to be from the diabetic, renal, something, that line, [maybe a] stroke. Forgot the basics … open her eyes, and take a really decent look. You probably would have saw it. I was fairly young when that happened.

She probably shot the heroin in the bathroom, family cleaned it up before we got there. They knew it. People tend to be extremely secretive on that kind of stuff, especially in here. We get a lot of people that just “pass out in the bathroom,” … they’ll clean everything up before you get there.

Just feeling [foolish] when that was all done. Stick to your basics, do what you should have done, which was to roll them all out. Had I really thought a little bit more about it, the fact that she had a liver problem from Hep C, which was probably from the habit. I just didn’t draw all of the dots together. Probably same call, 30 year old, I would have dumped the Narcan second without thinking twice about it. Instead, I’m thinking old lady with a lot of problems. Could be an ammonia level, could be all kinds of stuff. None of the above, it was the easiest thing.

The treating paramedic’s initial impression of the patient’s condition was that it was potentially caused by a handful of clinical presentations, including holiday-induced excessive food intake resulting in low blood sugar, renal failure, or a stroke. A condition not considered, that of a drug overdose, was eventually identified as the cause upon arrival at the hospital. In relating the story, the paramedic was particularly disappointed with his diagnostic skills and lack of attention to all possible causes of the patient’s condition. He noted that he “[f]orgot the basics …” and should have simply checked the patient’s pupillary response, and indicator of a possible overdose. The medic also notes, rather quickly, that he was a “younger medic,” thus potentially indicating that his assessment techniques were not as refined and his experience treating unconscious patients. His treatment should have been, in his words, to “… roll them all out,” meaning that he would have employed all possible skills and resources to treat the condition.
Perhaps the most important aspect of this story is the medic’s retrospective statement about how he would treat a much younger patient with the same clinical presentation. He states confidently that on the “… same call, [with a] 30-year-old, I would have dumped the Narcan second without thinking twice about it.” After assessing the patient’s blood sugar, a 30-year-old unconscious patient would have received Narcan regardless of other indicators. Instead, because the patient was of an advanced age, his considerations for the probable causes of unconsciousness were different. Thus, the patient’s age, and various assumptions about the patient’s identity wrapped up in the paramedic’s assessment of age, resulted in an inappropriate course of treatment.

Interestingly, the paramedic’s flawed assessment and difficulty in ascertaining the cause of her unconsciousness may have been compounded by the actions of bystanders. He speculates that family members were aware of the cause of the patient’s condition and acted to dispose of any drug paraphernalia prior to the EMS crews or other responders arriving on-scene.

In other cases paramedics found patient identity to be potentially difficult through similarities with loved ones. One medic, telling the story of the first pediatric cardiac arrest patient he treated, noted that “… at the time, my son was two. I’m taking care of an 18-month old … this could be my kid.” Though the paramedic described in this case that the similarities between the patient and his son did not substantially impact patient assessment or treatment, he did note that the comparison was both immediately evident and momentarily disconcerting. Relating a story about a multi-patient car accident, another paramedic realized several minutes into the emergency that his partner was treating a child that was the same age and shared physical attributes with the treating
paramedic’s son. In retrospect he “… would have never let him go there. I would have pulled him back and left him to take care of somebody else and I would have dealt with [the child].” The paramedic relating the details of this particular event felt that even the process of assessing and treating a critical patient similar to a family member could have potentially been traumatic for his partner causing difficulties during or after the emergency. Yet other medics noted that these experiences were difficult for them to process after the actual call for service. In one case, a paramedic recounting treatment of a child in cardiac arrest during a night shift noted that he remembered “… following the school bus because I missed my daughter at the bus stop.” The experience was profound enough said he needed to “… hug my daughter at that point, and make sure she was fine.”

**Clinical Scenarios**

To gain a better understanding of the potential impact of patient identity on paramedic assessment behavior, all paramedics participating in the semi-structured interviews were asked to treat one of two hypothetical patients presented in a scenario format. In Scenario 1, the hypothetical patient was experiencing substantial pain after a fall on ice. In Scenario 2, the history of the incident, patient demographics, description of pain, and vital signs were identical, though an additional note is included indicating that the patient also had track marks, an indication that the patient may be an intravenous drug user. In addition to listing procedures, paramedics were asked to provide succinct explanations for each specific aspect of their treatment plans. The focal point of this exercise was to determine whether paramedics would provide the hypothetical patients
with analgesia to relieve the substantial pain they were experiencing, a therapy allowed by the Pennsylvania Statewide Advanced Life Support Protocols. Although a majority of paramedic’s choose to either administer or withhold medication, others indicated that they would provide the analgesia given additional information on other confirmatory signs of pain, an absence of signs of drug use, or would call a medical command physician for permission. All five types of responses and corresponding frequencies and percentages are included in Table 6.1.

Because study participants only treated one of the two patients, changes in the frequency of providing a pain medication cannot be directly attributed to the introduction of the additional patient information contained in the second scenario. Despite this limitation in determining causality, the responses provided by paramedics in their treatment plans are indicative of the need for further research. In all three organizations, paramedics were less likely to provide pain medication for those patients with track marks and more likely to outline a treatment plan that did not include analgesia. These changes were, in most cases, channeled towards caution rather than outright withholding of pain medication.

A substantial portion of paramedics from all three organizations, more than 73%, indicated that they would provide pain medication to the patient in the first scenario. Beyond just providing an initial dose, several mentioned that a second dose might be necessary. Others noted that they would administer the medication before moving the patient to reduce the potential pain caused by movement while transferring to the stretcher. Only one paramedic treating the Scenario-1 patient wanted to “make sure his bases were covered” by calling a medical command physician for permission to
administer pain medication. He noted that he “... wouldn’t necessarily... think that swelling would justify pain management. I would ... ask the doc and let them decide whether they want me to provide any pain management or not.”

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<td><strong>Paramedic Treatment of Clinical Scenario Patients</strong></td>
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Interestingly, in treating the Scenario-1 patient with a pain medication two paramedics noted specifically that they have colleagues that may not have acted in the
same manner. Contrasting his tendency to provide pain medication, one noted specifically that he is “… an aggressive medic. If I can give this guy pain meds, I’ll give it. And some people will just say, ‘look it’s an isolated ankle, be a big boy, I’m taking you to the hospital.’” Another noted that he knows “… about five or six other paramedics … that would probably just stand him up, sit him on the bed, and let the EMT take care of him. And that’s … not appropriate, because I like to take care of my people a little bit more than that.” Echoing this sentiment, one medic commented on the subjective nature of paramedic’s assessment of patient pain. Despite having a relatively strong organizational policy for providing pain medication, one with a lower threshold than the state protocols, the medic noted that “… even within a relatively protocol-based QI-ensured system, like the program we have developed here, there is still quite a bit [of variation].”

Those medics opting to provide pain medication to the Scenario-2 patient indicated that they would do so because of the patient’s obvious and severe pain, essentially matching their perception of the patient’s pain with the reported severity listed in the scenario. Elaborating on this, one paramedic noted that he would medicate the patient “… if he tells a good story, and has a reasonable enough presentation for moderate to severe pain …” After noting this, one medic continued, stating that “… hopefully a hundred [micrograms of fentanyl] touches him. If not, you call in, you get orders for a repeat dose …,” indicating a strong assumption on the paramedic’s part that the patient was a drug addict and that alternative explanations were not plausible.
Treating the same patient, several paramedics made it clear that factors other than the patient’s complaint of severe pain were important given the patient’s potential history of drug use. One medic, urging caution, made representative comments to this effect.

How does he look? Does he look in pain? Does he look like he’s in distress, or is he saying I’m in 10 out of 10 pain? Well if he looks like he’s in distress…. I used to be much more liberal with who I medicated, and then I got burnt one too many times with that, and now I’m careful. Not that it really makes a difference to me, or its goings to come back on me, but you know, like giving seekers medicine … People in pain look like they’re in pain. I can sit here right now and tell you that my ankle hurts, or my back hurts, and I’m in 10 out of 10 pain. And if you medicate me, you’re an idiot … So if the guy’s in pain, he’s got a swollen ankle…. Breaking bones hurts. There’s no question about it, and especially if you can see it, whether it’s deformed, or swollen. But the decision whether or not to manage his pain is going to come truly on his level of distress. If he looks like he’s in pain, then I’m going to give him some medicine.

The paramedic’s overall assessment of the patient included visual conformation of pain, including an assessment of distress beyond a simple pain rating provided in the scenario. It was the combinations of these factors, necessitated by past experiences with “seeking” patients, were necessary in making a final determination.

Noting similar concerns, a paramedic opting to treat this patient stated that “… even though if I see track marks and it throws up red flags this guy could be a drug seeker, or whatever … if I see deformity of the ankle, he's probably going to be getting some pain management. If I don't see deformity of the ankle then he's probably not going to be getting any.” He continues, noting that in the latter case he would contact a medical command physician for additional guidance. The additional validating factors were key in making this decision. In another case, the medic noted that “[i]f he looks kind of skuzzy looking, and he’s loaded with track marks, I would probably hold off giving him any kind
of pain medication.” The decision to medicate or not is dependent in this case on other visual cues that speak to the patients hygiene, socioeconomic status, or both.

In a similar vein, those expressing hesitancy made it clear that other concerns must be considered. Several medics noted alternative explanations for the track marks, including “… somebody who has frequent blood draws because of leukemia, cancer, or something else …,” whereas others were concerned about providing narcotics to a patient who may be in recovery from a drug addiction. One medic noted that “[i]f he’s trying to recover I don’t want to give him any narcotics … Most of the time is he’s trying to recover and he’s got a head on his shoulders, he wouldn’t want anything anyways. “

Several paramedics opting not to provide pain medication to the Scenario-2 patient, including one medic who based his decision on the patient’s vital signs, noting that they were not consistent with the patient’s expressed level of pain. He stated that “[i]f that was someone else, their heart rate was in the 130s and their blood pressure was a little higher, I would absolutely consider giving them pain medication …” In discussing his decision not to medicate the same patient, one medic puts his feelings rather clearly: “If he has track marks you know he's a doper …. An ankle fracture ain't going to kill you, so my whole thing is, if I think you're a drug addict, I'm not going to give you any pain medication, and I'll just let the doctor deal with you.”

In his concluding thoughts on the scenario, one medic made his feelings on pain management clear. His goal, and his conception of the organization’s goal, was that patients clearly needing pain medication should get it, patient’s clearly not needing pain medication should not, and that medics need to “… shoot for it in the middle and kind of allow whatever on either side.” In essence, his comments fill the grey area in between
those patients legitimately needing analgesia and those who do not. While working in this grey area, he noted that it is O.K. to allow for some error. He continued, noting that “… if we try to make sure that the only people who get pain management are the people who absolutely deserve it and need it, then there are a whole bunch of people we are going to miss.” Paramedics who attempt to be too restrictive in giving pain medication may end up denying medication to those who may need it.

Beyond patients, other actors played a part in shaping how paramedics employed both rule-following and discretionary behavior. Some are more frequently encountered, such as a patient’s family members, while others are relatively infrequently encountered and may happen to be present for an incident in which they make some sort of difference in patient assessment or treatment.

The Effects of Bystanders on Patient Assessment and Treatment

Bystanders — family members, witnesses to an incident, or other individuals — were also found to be important in patient assessment and treatment decisions. The behavior, information, or reactions of these individuals may be influential on paramedics as they attempt to determine patient need and therapies best matched to the patient’s condition. Patient past medical history, accounts of the immediate situation and moments leading up to the request for EMS, and specialized knowledge or skills may aid paramedics as they assess patients or determine the appropriateness of treatments. An example of this type of influence was evident in a story about the rescue of a roofer experiencing a medical emergency on the roof of a four-story building. In this case, family members provided information about the patient’s past medical history of
congestive heart failure (CHF) to responding paramedics, which then altered their perceptions about the possible causes of the patient’s distress.

**Story 7.3: “He Can’t Breathe, He’s Got CHF.”**

I remember one that was really complicated … We got called for respiratory distress … We had to get the fire department there because this guy is up on the roof. He was a big, big guy and he was roofer and he was tarring this roof or something … [H]is son is there with him working on the roof and … [he’s] is yelling down, “He can’t breathe, he’s got CHF.” … So a ladder truck gets there and sets up a ladder and we go up to the top of this four-story building. This guy is pale, diaphoretic. He is breathing very labored but at the same time, he is not following our commands. He is just kind of flailing and pushing us away and not cooperating at all. It is hot … up there. It is like 90 degrees with the sun coming down, much less what is radiating off the roof that they were just tarring. It was so uncomfortable. You have a bunch of us up there. … Everyone is screaming that he was just seen for CHF in the hospital last week and all this sort of stuff. Everything is just like, CHF, CHF, CHF, respiratory distress. That is all that is in my brain. I am trying to listen to this guy’s lungs in this hectic atmosphere. He is a big guy. He is moving around. He is pushing away from me. He breathes out and I can hear some crackling in his lungs kind of but in retrospect it probably was not a very accurate. I probably did hear crackling but it was not as big of a deal as I made it out to be. I was like “he is acting this way because he is hypoxic and he can’t breathe so that is why he is like flailing.”

His breathing is all labored so we slap on an oxygen mask and we try to take his blood pressure but he is uncooperative. It comes up kind of high, like 200s, something like that. Automatically I was thinking he is in respiratory distress and hypoxia and all this stuff. Let’s put some nitro paste on him and we try to get IV access to give him captopril and ace inhibitors. His blood pressure is up, his respiratory rate is up and labored. He has some crackles in his bases. But, something just wasn’t sitting right. We started down the CHF route and we started treating him for respiratory… trying to get the fluid off of his lungs and get his work of breathing down and all this sort of stuff.

From the outset, the narrator noted that this is a “complicated” call. Not only is the patient experiencing a serious medical condition – difficulty breathing according to the family members on-scene working with the patient – but the patient was also four stories above ground on a roof in the middle of the summer and surrounded by excited bystanders. Assisting the paramedics is a fire department ladder truck that allows for easy
access to the patient and firefighters able to assist in lowering the patient down the ladder, both of which accelerated the rescue of the patient. Upon arriving on-scene, and after reaching the roof, the patient’s son made it clear that the patient has a medical history of CHF, and that he was recently released from the hospital after treatment for this condition.

A rapid assessment of the patient’s lungs produces some evidence that this could indeed be the reason for his respiratory distress. The medic theorized that the respiratory distress is resulting in hypoxia, a systemic lack of oxygen, which could then be explaining the patient’s somewhat agitated interactions with medics. With this potential diagnosis in mind, the medics began to treat the patient according to the protocol for CHF. However, something was not “sitting right” with the more experienced paramedic on the crew.

But something was not sitting right with … my partner. He was just more seasoned than I was. He was like, “I don’t think this is CHF.” He has CHF, you could tell but that is not what is problem is right now. Something in [my partner’s] head said “I think he’s got a brain bleed.” His breathing is labored and all that but he is … pushing us away, he is exerting a lot of energy and that is why he is diaphoretic. He’s confused. He is not responding to our instructions very well. He is answering our questions but only kind of.

So, we switched …. I remember we take off the nitro paste and we wipe it off. We started treating as like a stroke or a brain bleed kind of thing instead … By the time we got to the hospital, it is way more evident now that he is strapped down and he is off of the roof and he is in a controlled atmosphere in the back of the ambulance. He’s acting goofy. He’s acting confused. That is more of the issue than the breathing thing …

If it was really his breathing, he would not be like pushing me away when I tried to give him oxygen. That is not normal behavior for someone in respiratory distress. But that is something that is consistent with somebody who has a brain bleed or a stroke or something like that, some sort of altered mental status. So, we were able to change our course of action.
Recognizing some dissonance between the patient’s exertion of energy to push the medics away during the assessment and the standard presentation of patients with CHF, the seasoned medic proposed an alternative diagnosis of a brain hemorrhage. Other signs, including poor response to questioning by paramedics and an inability to follow commands, leads the experienced medic to redirect the treatment toward this alternative diagnosis. Those therapies that were initially appropriate for a CHF patient but inappropriate for a potential brain bleed were discontinued, and other protocol-driven care for the new diagnosis were started.

The narrator, who noted that he “… been a medic at that time not even 12 months … [and] was still relatively new,” reflected on those things that were initially influential and his performance on the call.

Everyone in the world is screaming at me that he just was seen in the hospital for his CHF and he has labored breathing. He looks like crap and you start thinking, okay, I think I hear some crackles but I was not sure but we just started going down that route and then you don’t take into account the other things that you see. It is easy to get tunnel vision. You’ve gotta be able to step back sometimes.

He emphasized several times throughout his telling of the story that the patient’s history of CHF thoroughly saturated the messages coming from family members and bystanders. This consistent exposure to this hypothesized reason for the patient’s distress, as well as some objective verification in this assessment of the patient’s lungs, was the primary reason that the medic did not consider other possible causes. Reflecting on this, he emphasized that sometimes you have to “step back” to get a better picture of the whole situation. Other signs that the first diagnosis was incorrect were initially ignored, minimized, or explained through other possible causal processes. Important in this case was the need to “… trust your clinical findings …” and incorporate those findings with
information provided by bystanders. In the end, the patient did have a brain hemorrhage and, in the words of the narrator, “…made it. He walked out of the hospital.”

Other paramedics expressly noted the influence of bystanders on either their behavior or on their perceptions of the incident. A paramedic commenting on the generally difficult nature of pediatric emergencies noted that difficult often does not rest in the assessment or treatment of the patient. Rather, “… the thing that is subsequently difficult dealing with kids is not actually working the pediatric arrest or a 10-year-old head injury kid that we are tubing. It is seeing the parent’s reaction and dealing with the parent about it.” In another case, the importance of aggressive treatment and resuscitation of a pediatric cardiac arrest despite the poor long-term prognosis for the child were evident to one medic during the actual resuscitation. He noted appreciation of the fact that the family would have some time with their child before she died, allowing for some closure in a tragic situation. In yet another similar case, the medics chose to resuscitate the patient despite the odds that the child would not survive. Relating this particular story, the medic noted that “… it was a grab and go for the family more than it was [for the patient].”

The presence of other medical professionals also influenced paramedic discretionary behavior. One particular case highlighted involved a child with a severely broken arm, a condition that prevented the crew from even attempting to move the patient. The medic noted that “[w]e were on scene for a little bit discussing because we didn’t want to move him without medicating him. You moved this kid’s arm and he would just scream in terror.” Normally pain medication would have been administered to this child without hesitation, however the patient suffered from a disorder that restricted
the type of medications he was able to receive. In most cases the paramedic on-scene would call a medical command physician for assistance in making a decision to provide pain medication for this type of patient. But, in this case a neighbor on-scene was also an anesthesiologist at a local pediatric specialty hospital and friend of the family. Given the individual’s expertise with both pharmacology and pediatric patients, both the paramedics and family were felt it was acceptable to administer the pain medication and provide the child some relief.

Two clarifying points are necessary in outlining the importance of bystanders on paramedic behavior. First, in some cases, bystanders were specific individuals with either access to information about the patient or some other knowledge about the patient’s condition that was helpful to paramedics to make informed decisions. These individuals were influential in either the information they brought to light or the nature of the means of communicating that information to paramedics. Second, bystanders were influential through the paramedic’s assessment of their relationship to the patient. Parents of a critically ill pediatric patient, specifically their reaction to the patient’s condition, made an impression on the responders and spurred an alteration in their behavior.

**Summary**

The accounts of service interactions in this chapter are illustrative of the potential difficulties in matching actual patient need with the clinical rules created to shape front-line EMS behavior. In each of the stories related, some aspect of the service interaction either caused the paramedic difficulty in determining which treatments were appropriate or provided cues that pointed the paramedics in the wrong clinical direction. Paramedic communication skills, an essential part of the process of determining patient need, are
increasingly important in cases in which need was not immediately obvious. Although not all EMS calls are plagued by this difficulty, in some cases — including the story of the elderly woman having an MI relayed in this chapter — this inability to immediately recognize specific patient needs was crucial to patient outcome. A more thorough assessment of the patient’s past medical history, information about the current incident, or other critical information allowed for positive patient outcomes. The paramedic’s motivation to continue pressing the patient for more information about her specific symptoms until the crucial information emerged allowed both the most appropriate treatment to be provided to the patient and early hospital notification to occur.

Interestingly, the aforementioned motivation is, in and of itself, discretionary behavior. Paramedics may follow rules closely, ask standard diagnostic questions, and still not gain the proper information necessary for the most appropriate patient treatment.

Both occupational culture and patient identity also complicated the matching of clinical rules to actual patient needs. In the story relayed in this chapter about the unconscious elderly woman it was clear that the paramedic’s assessment of the patient’s identity was a driving force in the establishment of a clinical diagnosis. Perceived patient identity also became a key factor in the treatment of hypothetical patients in two clinical scenarios. Paramedics were less likely to provide analgesia for those Scenario-2 patients presenting with possible indications of drug use, and were generally more cautious about those types of patients opting instead to look for verifying information or guidance from medical command physicians. Similarly, information provided directly by family members served to encourage paramedics toward a specific diagnosis in the story about the patient with difficulty breathing. In both cases specific cues, either perceived by the
paramedic as part of the assessment or directly and explicitly stated by key individuals on scene, served to complicate the process of determining appropriateness of treatment.

All of these sources of influence serve to complicate the key street-level function of patient processing. Given the importance of EMS as a core public service, and the potential magnitude of the decisions made at the street-level, clarity in this process of determining patient need is a crucial issue. Other stories relayed by paramedics communicated different problems in this same process of a similarly important nature. Specifically, some amount of dissonance was noted between clinical rules and patient need. This dissonance can lead, in some cases, to deviation from these rules, the focus of the next chapter.
CHAPTER 8: DEVIATION AT THE FRONT LINES: PARAMEDIC DISCRETIONARY BEHAVIOR AND DIVERGENCE FROM RULES

Preceding chapters outlined instances in which clinical rules and patient needs are well matched, or instances in which some amount of difficulty is evident in the matching process. In contrast, other situations existed in which paramedics determined that some deviation from rules was necessary and appropriate in treating patients. The reasons for these deviations are found a mismatch or discord at the intersection of rules, patient, and the specific situation in which rules are applied. This chapter will begin with focus group findings that outline front-line EMS providers’ perspectives of deviation from clinical protocols or standard operating procedures including those situations in which a medical command physician plays a role in the rule deviation.

Next, the direct and palpable tension found between patient need and clinical rules will be discussed, with a focus on two stories of deviation in which the specific reason for the deviation is rooted in patient need. The first case deals specifically with a deviation from the clinical protocol setting limitations for the amount of a medication were ignored, while the second outlines a deviation from an order given to a front-line paramedic by a direct supervisor. Two additional stories will outline cases in which occupational culture – the norms, values, and beliefs surrounding the tasks of street-level EMS providers – were of primary importance in spurring deviation from rules. In both of these cases the primary impetus for deviating was that of a task-based norm of behavior that may have been influenced by patient need. Finally, peer influences that result in rule deviation will be discussed with a focus on the interrelationships between paramedics in caring for patients. An incident will be presented in which the clinical judgment of a peer
paramedic was of particular importance in treating a critically ill victim of a car accident. Importantly, although the behavior of the paramedics outlined in this chapter is situated in deviation from rules, these actions are framed in a context of some type of patient benefit.

**Deviation from Clinical Protocols**

Several medics participating in focus groups made it clear that they felt that deviations from the statewide clinical protocols were normal and appropriate in certain situations, adding that protocols served more as “guidelines.” In several cases paramedics noted that deviations were required to effectively perform their duties. Many focus group participants agreed that justifying a deviation was crucial both during the emergency and in documenting patient care. An FDEMS medic noted that “[e]ssentially if you do deviate you’re supposed to clearly document why you did that ... obviously there are things that fall in-between and there are cases where you might not want to follow the protocol completely through because you have a good reason for not doing so. I don’t think it happens every day, but it does happen.” Echoing this, another FDEMS medic stated that “… you try to do the best you can for the patient regardless of what you have to do. Sometimes you may have to go outside the box a little bit to do that … I know for a fact I’ve done it, … I’m sure everybody at one point has done something like that.” Deviation from rules, then, can be viewed both appropriate and acceptable in those cases where it is justifiable to help a patient.

Two examples, both involving the administration of either a sedative or narcotic, were cited as technical deviations based on patient assessment. In the first, a call
involving a patient with a significant history of EMS use was described as complaining of seizures, but not acting in a manner that would be consistent with patients actively seizing or post-seizure. The medic explained that “[s]o this particular instance, yes, my protocol says I should give him Ativan because he’s having fasciculations that appear to be a grand mal seizure. However, in this particular instance I will deviate from protocol and not give him Ativan because he’s not [exhibiting legitimate signs attributable to a seizure]. So yes, I deviated from protocol. Yes, I can justify my reasoning behind why I did not give him drugs.” The patient, though exhibiting signs similar to seizure activity, was assessed and diagnosed as not genuinely having a seizure, resulting in a deviation with which the paramedic was comfortable. Similarly, a second example addresses the administration of pain medication. One paramedic outlined a general situation in which a patient will claim severe pain, rating it 10/10 on a pain scale, however the patient does not appear to be in legitimate distress. In this case, the medic noted that he would not administer pain medication given that his assessment of distress indicates that the pain is not genuine. Several medics made it clear that although deviations from protocols were acceptable, more serious deviations from the paramedic scope of practice were not. Noting this succinctly, one medic stated that “I deviate from protocol, but I don’t know that I’ve ever gone outside of my scope of practice.”

In other examples, deviations from protocols were acceptable because they were ordered by a medical command physician. Taking this further, a medic noted that these physicians are “… there to deviate from protocols should we need it.” Participating medics from HSEMS generally called medical command physicians proactively when deviations were necessary, noting that “[u]sually we’re telling them what we want to do.”
Another medic noted that deviation from protocols was perhaps the only reason she felt it necessary to call command, indicating that in many cases, advice or assistance in making clinical decision was often unnecessary. Placing these in context, a medic stated that this happened rarely because “… 99.9% of the time they’re never asked so they never have to tell you.” These deviations are not, however, without limits. Many focus group participants also agreed that any deviations had to be within the paramedic scope of practice as set by state-level regulators. Those sources of influence that actually spurred some sort of deviation were numerous, including norms of behavior, peer paramedics, and patient need.

**Patient Need and Deviation**

Patient need is based in the paramedic’s assessment of the patient’s psychological or physiological requirement for specific types of treatment. Although patient need may in some incidents signal nothing more than the appropriateness of following specific clinical protocols, other cases may require some deviation from rules and critically important abilities to employ discretion. The following story outlines the care of a seriously injured patient who had been subject to an industrial accident that also took the life of his son. The paramedic’s assessment of the patient resulted in a determination to provide extra treatment based on the severity of his injuries and the emotional toll of the event.

**Story 8.1: “The Guy Was In So Much Pain”**

We had a call for an explosion … The fire department gets on the radio and they said it’s a propane explosion. It’s an underground … 1000 pound tank that was heating the house and the barn … There was a father and son working in that
general area. The father … [had] 2nd and 3rd degree burns, he was 90 percent body … surface. His son … ended up being class 5.

We get there … [the father has] 3rd degree burns, he’s got facial burns, he’s 3rd degree burns down his legs, he’s got genitalia burns, he’s got burns on his hands. So I called for a helicopter to take him to the burn center …

I actually went outside … the protocols, gave him a little extra narcotics than I’m actually supposed to. I did get the deviation form, but the guy was in so much pain, he knew his kid was dead. Like, he kept asking me “What about my son? … Are you a father? I need to know about my son. Why are you working on me and not my son? I’m 40 some years old, he’ll be 13 tomorrow.” And me being a new father, I’m like … now I’m getting emotional for the guy because I feel bad for him and he’s in so much pain.

So I was able, once I got the IV in, I gave him 400 of fentanyl. We’re only allowed to give 100 micrograms, and I ended up giving him 400 micrograms. Which I talked to the doctor, he signed off on the papers and said he was fine with it. The guy really needed it. So I gave him a fluid bolus before the helicopter got there.

I’ve actually gone to counseling for this call because it was pretty emotional. Something I thought I would never see in a thousand years. So I did some counseling for it, and it was tough. I think maybe if I was single and didn’t have a kid, maybe it would have been a little easier. But now having a son, maybe that made it a little bit harder.

The treating paramedic’s decision to deviate from the protocols that direct behavior on administration of pain management is evident. He notes both the physiologic pain from the severe burns and the emotional distress of a parent losing a child in a terrible accident. Additionally, he noted later that this call was particularly difficult for him as a father himself. His response to the patient’s pain was to provide more pain medication than the protocols allow for, serving both to ease the patient’s pain and provide comfort during an unimaginably difficult incident. While the medic received a notice from his organization outlining his deviation, later discussions with the service
medical director were supportive of his decision to deviate from the rules. The patient’s need in this extreme case was deserving of additional care.

In another story, a paramedic noted patient need as a key factor in a decision to disobey an order from a superior regarding the method of transport from the scene of a car accident to a trauma center. Although the accident seemed to be minor, the patient’s injuries were severe enough to require transportation to a specialty trauma center, a trip which had to occur under very controlled circumstances due to the nature of the injury.

**Story 8.2: “A Low Impact Accident”**

We got called to an accident up [at an intersection], and it’s a fairly busy intersection. It was a low-impact accident, and I get there and there’s a guy sitting, he was the driver of a Cadillac, and he was kind of leaning over between the two seats. And he’s complaining of neck pain. So I walked up and I went to do C-spine on him, and he tried to move his head, and I felt some grating … And during talking to him I asked him his name, and he told me, and I kind of looked down on the floor board of the car and there was a prescription pad laying there. He was a physician from here … And it turns out he had a fractured [cervical vertebra]. And again, it was just this low speed, he got rear ended, nothing significant. So here’s this physician that kinda I’m assuming knew what was going on, because he told me, “I think I might have broken my neck” and when he tried to move a little bit, I felt the grating of it, and I’m like, “I think you did too, don’t move.” And actually … we wanted to fly him to [a city trauma center], because it’s was a spinal injury. And my boss at the time … shot me down for it and he’s not on scene. And so we ended up flying him because I didn’t listen to what my boss said. We drove him three or four blocks until the landing zone. Holding him the whole time even though he was collared and had CIDs on, I was still just holding him the whole time. His outcome was actually pretty good. He was walking around with a walker for a little bit, but then he made a full recovery. That was one of the challenging calls, I think. When you know he’s a physician, you know he knows what’s going on, and you just don’t want to screw up.

… [T]hen I had to come back and deal with my boss for going against him. We’re seven minutes from trauma center by ground. And I was like, “yeah, you’re right. You’re absolutely right, but we have to go down bumpy [city] streets … and everything like that.” I just didn’t feel comfortable driving even though, yes, seven minutes away. And again, he wasn’t on scene to make that determination. He didn’t know what I knew. Knowing what the patient … potentially had, and what was the best for the patient, the best outcome for him. Because I knew if I
had driven him down, it would have taken longer than seven minutes because we
would have been doing like 10 mph.

The nature of the accident, a “low impact” one, gives the impression that the
resultant injuries would also be of a concomitantly minor order. However, upon arriving
at the scene, speaking with the patient, and assessing his injuries, it was immediately
clear that the situation was much more serious. Both the patient, a physician from a local
hospital, and the paramedic believed that the patient has sustained a broken neck, a
potentially devastating injury that could have led to paralysis or death. Given the serious
nature of this injury and the need to provide as much stability as possible during transport
to the hospital, the paramedic decided that the most appropriate method of transport was
to avoid bumpy city streets and fly the patient via an aeromedical helicopter to a nearby
trauma center.

This request was, however, “shot down” by the paramedic’s supervisor. Though
the supervisor was not on the scene of the accident, he made it clear to the paramedic that
the most appropriate method of transport was by ground, a trip of only 7 minutes. The
nature of the patient’s injuries and the dire consequences of mismanaging this specific
type of injury, as well as situational factor of bumpy streets, prompted the paramedic to
disobey the order from his supervisor and call for a helicopter to transport the patient
with less likely aggravation of the injury. And, as the medic notes at the end of the story,
transport by ground under normal conditions would have taken approximately 7 minutes.
A spinal cord injury, however, would require more careful driving at a slower speed, thus
negating the benefits of ground transport in this situation. Patient condition, with specific
attention to the patient’s need for smooth transport to an advanced care facility, were
major determining factors in deviating from a direct order from a supervisor.

**Occupational Culture and Deviation**

Another set of factors emerging from the data as influential were the norms,
beliefs, and values rooted in the tasks of street-level EMS providers. An example
provided by a paramedic treating a critical patient in near respiratory failure served to
illustrate the importance of occupational culture on front-line behavior. The patient in this
situation was exhibiting signs of a very serious medical condition, including associated
side effects of the condition, which did not allow for the standard types of patient
treatment based on clinical protocols. The decision faced by the paramedic, in this case,
was to treat the patient and ignore the clinical protocols or adhere strictly to those same
rules.

**Story 8.3 “Struggling to Breathe”**

It was a respiratory distress patient, and we get there and he was in congestive
heart failure badly. He was a class-1 patient and his blood pressure ... he was
going to the point where his blood pressure was actually dropping. Which,
normally they’re more on the high side of the blood pressure. So my partner and I
started treating him. There are some medications, like Lasix and nitroglycerin,
you’re not necessarily supposed to give when the blood pressure is low. And the
other crew heard that we had a class 1, and they were nearby so they came by to
give us a hand until we got in the truck. So I started to give the patient
Nitroglycerin because he was having chest pain, and my partner is … kicking me
in the leg because the guy’s blood pressure was low and I shouldn’t have been
giving it…

And I ended up giving it anyway because I was just so focused on that’s what the
guy needed. Like in my brain I omitted the blood pressure because he was a
critical patient … [A]t the time, we didn’t have CPAP … that would be really
great for that kind of thing, but we didn’t have that at the time. We were limited to
just whatever drugs we carried. And same with the Lasix. And the other crew came and they were asking “Why are they giving…. did you give Nitro and the blood pressure was low?” And the other guy who was a flight medic, was also so focused on how bad the patient was and that our choices were limited, he went and gave the Lasix ...

And it just kind of made me think as far as decision making … it’s frustrating when you know there’s things that can be done and you don’t have the means to do it. You see somebody struggling for the very essence of life, which their breath is. You know you have something that you can use, and I don’t regret giving him nitro and Lasix, because it was the only choice I had. And he was not going to make it to the hospital.

But I broke protocol, and … I’m sure it was reviewed. And ultimately we can break protocol, and as long as the physician signs off that we made the right choice, it’s all good. So that’s probably what happened, but in the case, it was just kind of funny, because here was a flight paramedic sitting next to me as a medic who’d only been a medic for a couple years. I made the first mistake, he questioned… and then he went and did the same thing. But we all really knew that we had stuff that could help this guy, and that’s all our brain tuned in to really. I think we overlooked the number of the blood pressures because there was nothing that we could do for this man.

The paramedic began by noting that the subject of the story is a critical patient, one who is in the advanced stages of respiratory decline and is struggling to breathe. Although this presentation of advanced congestive heart failure is frequently encountered and successfully treated in prehospital EMS, the patient’s low blood pressure — potentially an indication of poor cardiac function — complicated the treatment options available to the responding paramedics. Despite this complication, and the protests of another paramedic, the narrator administered nitroglycerin, a medication that could potentially lower the patient’s blood pressure to a dangerously low level.

The narrator was not alone in administering a medication that could potentially have had a deleterious effect on the patient. Given the critical nature of this patient,
multiple ambulances responded to provide extra care, including an additional crew member identified as a flight paramedic – an EMS provider with advanced training and substantive experiences. Slightly after questioning the actions of the narrator in providing the contraindicated medication, the flight paramedic administered another medication, Lasix, which could have a potentially negative effect on the patient, did the same with a second medication. The potentially negative effects of administering Lasix in a patient with low blood pressure are similar to those of Nitroglycerin.

In explaining the motivation to continue to give the medications despite risks to the patient, the medic noted that “I think we overlooked the number of the blood pressures because there was nothing that we could do for this man.” The primary complaints of the patient, severe respiratory distress and chest pain, are generally treated through use of these two medications. If the clinical protocols governing treatment of this type of patient had been followed strictly, the EMS providers would not have any available therapies with which to treat a critically sick patient. Given the potential lack of available treatments, the paramedics were faced with either deviating from a clinical protocol or simply transporting the patient without any type of clinical intervention. The treating medic noted that “… we all really knew that we had stuff that could help this guy, and that’s all our brain tuned in to really.” The medications available would have helped to achieve the desired effects, despite the potential risks.

Though the paramedics were aware of the patient’s low blood pressure, they opted to treat the patient because they believed it was “only choice” they had given the seriousness of the patient’s condition. The cultural norm of action was chosen in this case because the other option, inaction, was unacceptable. Seeing the patient struggle to
breathe, the “essence of life” in the words of the paramedic, prompted the crew to deviate from the rues and treat the patient. This intense desire to provide whatever assistance possible was noted be another medic who celebrated the virtues of “aggressive” paramedics. Interestingly, the narrator also notes that the same situation would not occur given the resources currently available to paramedics in Pennsylvania. Technology available for use would now employ mechanical instead of chemical means of achieving the same outcome of reducing respiratory distress. Whereas in this case technological advances have reduced the chances that this scenario would occur again, the cultural norms of action are likely to endure given the nature of these services.

The norm of action is supported in another story related by a paramedic from a different organization. In responding to another critically ill patient, this one a child in cardiac arrest, responding paramedics were faced with a situation in which the patient’s resuscitation was guided by multiple sets of rules, with advanced clinical guidance from a physician being a key component of one rule set.

**Story 8.4 “Unresponsive Nine-Year-Old”**

Maybe about a year ago I was working with a part timer, a very good part timer. She works at [a university] for their education department, for the EMS department ... We had a call for an unresponsive nine-year-old male out over on the west side of town here. He was outside playing with his friends in the backyard. I think they were playing football, and he just collapsed. We got there, and he was in cardiac arrest. We intubated him, started an IV on him. The police were there, [doing] CPR. They actually had their AED on before we got there. We put him on a backboard. He was outside playing, who knows what happened.

We started with the code drugs. We gave him epi and atropine. Nothing was working … Nine-year-old kids just don't drop over dead for nothing. So [my partner is] a PALS instructor, so all this stuff as I'm thinking about it, she's doing it. We went through, we checked everything that we could think of. We gave him dextrose, we gave him the epi, we gave him the atropine. We intubated him. His end-tidal CO2 was low; I think it was only about 13. We were bagging him; his lungs sounds were a little decreased. Again, it was a short ride to the hospital, it's
like four minutes. Especially when you have a cop driving. They have every … they call the boys, and they have every intersection blocked, and you’re not stopping for anything because the police have everything blocked for you. We decompressed his chest, just because he was outside playing and his end-tidal CO₂ was low, which could be from him be being down or could be, you know, a lung issue. So, we decompressed him, and we were pulling into [the hospital]. About a block away his end-tidal CO₂ came up to 34. Which, normal is 30-40. If you’re cardiac arrest, if you're low, when you come up to 20 or 30 you’ll start to get a pulse back, start breathing. And, that's what he did. We're pulling into the hospital and I’m like, I said to the cop, "Stop CPR for a second." We felt for a pulse, and he had a pulse. He had a blood pressure when we got to the hospital. You know, that's awesome. I said to my partner, "The stuff in the book actually worked for once."

There isn’t much … we do, and you do it to the “T” the way the book says and it works. And in that case, I was like “wow.” Even my partner, and she's been a PALS instructor probably for eight years, she's like, "This is one of the first ones that you go through every step in the algorithm and the end result was positive." That was good.

The patient in this case, a seemingly healthy child, was in cardiac arrest upon arrival of the paramedics. Prior to their arrival, first responders had started cardiopulmonary resuscitation (CPR) and applied a semi-automated external defibrillator (AED) to the patient, both contributing to the overall efficacy of treatment through early intervention. Upon arrival, the paramedics continued this treatment, with the narrator noting that “we checked everything we could think of.” The assessment of this patient for all potential causes of cardiac arrest, and the appropriate treatments to correct those myriad possible causes, included the consideration of multiple scenarios that could have produced the patient’s critical condition. Throughout the treatment the paramedic noted that his partner, a seasoned instructor in a course entitled “Pediatric Advanced Life Support” (PALS) was efficient in recognizing and treating many of these potential causes. Assistance throughout the call was provided by the local police department, which provided both a driver for the ambulance as well as strategically placed police cars
blocking traffic to reduce the total time necessary to transport the patient. The resultant patient outcome, successful resuscitation upon arrival at the hospital, came as a surprise to the narrator and to his partner.

The paramedic continued, noting that their aggressive treatment of the patient was not entirely well received by both organizational leaders and the service medical director. When asked the reasons for the adverse reaction to their methods of treating the patient, the medic outlined the differences between the statewide clinical protocols and PALS protocols, with emphasis on specific additional treatments included in the latter.

Our state protocol is something totally different. It's CPR, epinephrine and atropine, and transport to a hospital. [The PALS protocol] has the drugs and that stuff in it, but you check for hypothermia, hypotension, hypoglycemia. You check a lot more, like for hemothorax... There's some different things that you check for. We kinda got in trouble a little bit because we followed... We're trained in that — Pediatric Advanced Life Support — and it goes above what our state protocol says... So, we kinda got in trouble a little bit. "Why did you decompress him?" "Why did you give him glucose without calling and talking to a doctor?"

In this case the treating paramedics did not fulfill a required step called for in the statewide clinical protocols indicating that they must contact a medical command physician for permission to perform several of the skills included in the PALS protocols that go “... beyond the state protocols.” The paramedics’ reasoning for this was relatively simple: “We had a nine-year-old kid, not breathing. We know what to do. We're not going to take two minutes, and say, ‘Hey doc, I know what I have to do, am I allowed to do it?’ We just did it. We treated, and that was it.” Although the rules that govern clinical treatments stated specifically that the paramedics were required to consult a physician before performing the additional skills, the medics were confronted by a difficult decision. They were confident in their need to perform the additional skills that
extended beyond the state protocols, and also recognized that the critical nature of the patient’s condition would not allow for the time it would take to contact a physician for permission. Additionally, the receiving facility was relatively close to the incident scene, but far enough away that the treatments the patient required could not wait. Considering these factors, the paramedics opted to act; they treated the patient with every available skill and medication possible.

Given their deviation from the statewide protocols, the paramedics involved were required to undergo a post-incident review of this case with both organizational leaders and the service medical director. The results of this review indicated that although the service medical director understood the reasons for the deviation their decision was investigated. The narrator noted that “[a]fter we sat down and talked with our command doctor here, he was still a little upset but he knew why we did what we did … It’s ‘you do this now or two seconds later this patient is going to die.’ He understood that.” The deviation, and the paramedic’s discretionary behavior, was acceptable to the physician given the circumstances with which they were faced.

Other sources of influence were also apparent in this story. Beyond the selected methods of treatment for this patient and the decision to not contact a medical command physician, the paramedic also noted the challenges when treating critically ill pediatric patients.

You know, you think about … you know [kids] that age. It’s like wow, here's this little kid, outside, playing with his friends, and he falls over. The family was there, the neighbors are there. Everybody’s there crying. "Oh, please help my son." That's stressful. It's a little kid, they just don't die for no reason. The family they didn’t even know what was wrong with him. So I mean it was a big shock to them, they’re hysterical. It’s tough. Little kids are probably the toughest because everybody is upset. Then you start thinking if you have kids or young relatives or
whatever, this could be them. Then your mind starts going. At the same time, you're trying to keep yourself together so you can take care of the person.

The reaction of family members and bystanders witnessing the incident, one which was completely unexpected and uncommon for a patient this age, becomes an additional situational stressor. Additionally, the paramedic noted that in similar situations the patient’s characteristics — in this case, age — have prompted him to think of family members or other children that he knows being placed in a similar situation. Family members also figure prominently in the paramedic’s self-assessment of performance on the call. Though the patient was successfully resuscitated upon arrival to the hospital, his underlying condition that resulted in cardiac arrest was not able to be corrected. While the patient did pass away, the medic notes that the EMS crew’s interventions gave the family crucial time with the patient before succumbing to the disease. He noted that the patient “… lived for three or four days after that … he didn't live long, but it was enough time for the family.”

A similar case outlined by a paramedic detailed his treatment of a patient experiencing a severe allergic reaction. Arriving on-scene, the medic noted that the patient was “… getting a little bit more short of breath, [and] his tongue [was] swelling.” Reacting to these potentially life-threatening conditions, the paramedic followed protocol by administering two medications, epinephrine and Benadryl. In addition, he then administered two other medications to treat the reaction, which were not included in the protocol. Noting that he was required to call command before giving the second two drugs, the medic stated that he “… didn’t have time. I just gave them to him.” The patient’s condition was emergent enough to prompt the medic to act outside his protocols
— but within his scope of practice — to treat the patient in a manner as “… most people would.” He then detailed his discussion with the medical command physician. “Talked to the physician at the hospital when I was done and said, ‘listen, I understand that I needed to consult you with this, but this guy’s airway was starting to close fast … And he’s like ‘absolutely not, I would have given you the exact same order if you had called me anyway.’” The patient’s outcome was positive; the allergic reaction was controlled and the patient was transported to the hospital for further evaluation.

**Peer Emergency Medical Services Providers and Deviation**

Influence from other paramedics was also notable in some stories provided by study participants. One in particular, discussing a car accident in which the patient was seriously injured and displaying a substantial level of agitation due to the pain she was experiencing, includes evidence of this type of influence. The narrator of the story was dispatched to assist another ambulance crew who was in need of a specific medication, a sedative, which in this particular geographical area was only carried by the narrator’s EMS agency. Though all EMS agencies in the state are permitted to carry this sedative, etomidate, not all elect to carry it and only those with permission from the service medical director may do so. Resource restrictions are also in place for this mediation, with clinical protocols requiring two paramedics to be on-scene given the specific use of the medication in assisting with patient intubation in difficult cases. This story outlines the intersection of these variables

**Story 8.5: “We Decided Not to Intubate”**

[The] lady went across a yard and into a building and flipped her car. Leg was pinned between the dash and the console, and all but amputated her foot … [T]he
rescue team was having a devil of a time getting her cut of there. They had been on scene about 20 minutes before we got there, and we were on scene another 20 or 25 minutes before we got her out … probably a good 45 minutes getting her cut of there.

[The first responding paramedic from the other organization] had an IV going on her. She was otherwise stable, she really wasn’t, other than her leg, she wasn’t really hurt all that bad … [she was] awake and screaming. It was just such a catastrophic injury to her leg. But the rest of her was fine … her vitals were good, her lungs were clear, belly was soft, there was nothing obvious anywhere on her except for that ankle. The ankle was really about the only injury that she suffered. … her vitals stayed rock solid and stable.

We ended up giving the etomidate, thinking that we were going to tube and then [the other medic] backed out and decided, “well she’s calm and still breathing. I think we’ll just leave her the way she is.” Ultimately decided not to tube her, though … [the other medic] ultimately decided that she was managing her airway ok on her own, despite the etomidate, and they ended up not tubing her. Which, there was a lot of controversy about … giving Etomidate and not tubing somebody … it is a short acting, short duration sedative … usually it starts to wear off anywhere by like five minutes or so, five to ten minutes it starts to wear off and patients start to wake back up again … That is one nice thing about in a situation like that … it has very little to do with the respiratory depression effects. Patients will still keep breathing, it’s not like a paralytic, but at the same time they are unconscious. If they end up throwing up or something like that, they have no way of protecting their own airway.

Upon arriving at the scene to assist the initial ambulance crew from another organization, the narrator found the other crew faced with a very agitated patient in a great deal of pain, entrapped in an overturned car. The patient had a “catastrophic” leg injury, for which the first medic on-scene had already administered a pain medication, fentanyl. Despite the use of this analgesic, the patient was still in enough pain to display signs of agitation, potentially hindering treatment by paramedics, extrication efforts by the fire department, and possibly leading to potential injuries for any of the individuals working in her vicinity. Given her condition, the paramedic from the first responding
ambulance decided that sedation-assisted intubation was the most appropriate treatment at the time, and requested a crew with those capabilities. The protocol for this specific procedure allows for the administration of etomidate, subsequently followed by intubation and continued airway management. The etomidate was then administered to the patient, however the paramedic from the other organization then decided not to proceed with the actual intubation. This, according to the narrator, created some “controversy.”

When prompted to discuss the exchange had with the other paramedic, he noted that there was not “… a whole lot of conversation.”

He had done the initial assessment, as obviously it was his patient. So him being the first one on scene, and him doing the initial assessment, having initial control over treatment regimen that we were going to do with her. I ended up deferring to his judgment on that, mainly because … it was “his patient,” and he was first one on the scene … [W]e had gotten everything set up, he had a tube and a laryngoscope and everything ready in the car to tube her right then and there. And we ended up pushing the etomidate, thinking he was going to just tube her right then and there. And after the etomidate was pushed was when he then decided “well, no, she’s calm now, why don’t we just leave her alone.” Things were happening kind of quick …

Like I said the initial decision was he was going to intubate her, but after we gave the etomidate and really kind of finished putting … she was more or less sorta sedated at that point, but she was still kind of grabbing at stuff … Once she was out and not moving, he was more comfortable with her. The only issue at that point was just her ability to protect her airway was gone.

The narrator noted several times that he deferred to the other paramedic’s judgment on whether to proceed with the protocol-specific intubation. His reason, simply, was that he was the “… first one on scene, … [did] the initial assessment, [and had] initial control over treatment regimen …” Although the narrator could have stepped in
and intubated the patient after administering the sedative, he instead chose to rely on the judgment of his peer. Also contributing to his decision was the nature of the situation in which this story occurred. When considered in concert with the patient’s agitated state, the immediate environment placed additional stress on the treating paramedics.

They were actively cutting on the car, and using rams and stuff on the dashboard trying to get her leg out while we were doing all of this, so there was a lot going on. We were trying to keep her, and ourselves and her covered with blankets so that we weren’t getting hit by glass and metal and whatever. So, again, that whole adrenaline factor kind of kicks in. Didn’t have any other patients to keep track of, but at the same time, at least in my opinion, it does affect people’s ability to make sound, rational judgments, and not for the better. So I think a lot of that had a lot to do with the decisions that we made …

Everybody was I think wound up by her being wound up. She was not completely conscious, but enough that she was grabbing and pulling at stuff while we were trying to work with her. And just getting her under control to the fact where she was just flaccid, and not moving, and not causing us anxiety ourselves, it was just such a huge relief, I think, that it kind of put everybody back on their seat and took everybody’s guard down.

At the conclusion of the incident, the narrator, his partner, the chief of his agency, and their clinical care director sat down to discuss the incident and any recommend changes to departmental policy. The final result of the discussion was a policy that placed the full burden of the myriad decisions acted out in this particular story in the hands of the paramedic from the organization carrying the specialized medication. The narrator noted that the organization is still very much willing to respond and assist other departments, but “… the airway control and the decisions for the airway management become ours. We make our own assessment at that point, and decide whether or not were going to give etomidate, or whether or not the patients will get tubed or their airway is going to get managed some other way.” The difficulty of the immediate environment and
agitated patient were exacerbated by the peer interactions in providing care. The narrator stated that “… having different protocols, different ways of doing things, different personalities, and the fact that we don’t always work together. We don’t know how the other person wants to deal with things … Whether it’s a matter of not wanting to step on each others’ toes, or just being plain old hesitant, and I’m not sure what it is.” Thus, some of the key aspects of this story, including interactions with other paramedics in the enactment of the rules guiding clinical treatment, can illustrate how discretionary decisions can be shaped.

**Summary**

The substantive body of clinical and operational rules created to guide the behavior of paramedics as they engage in patient care are situated in an environment populated by complex situations, patients, and health care providers. As several of the paramedics noted in these focus groups, patient condition does not always match up to the rules perfectly, making simple rule enactment inappropriate without critical reflection on the matching of rules with the full set of patient needs. In many cases paramedics recognized this mismatch and treated patients in a manner that they felt is most beneficial for patient outcomes. In cases in which the benefit was obvious, there was broad consensus regarding many of these opinions on deviation, with a majority of paramedics in all three organizations noting that this was acceptable and even expected. In those cases in which deviation did occur, many paramedics felt a very strong need to justify those deviations based on a concrete patient need.

Several accounts of incidents presented in this chapter illustrate deviation as a result of different types of influence. Of those stories, two included situations in which
patient need was the directly stated cause of the deviation. In the first story the patient’s substantial physiological and psychological pain was the stated reason for administering a larger dose of pain medication than is allowed by the rules. In the second case the paramedic’s concerns about the appropriateness of the method of transport and specific patient needs were poorly matched with a supervisor’s direct orders. In both cases the deviation from rules was centered on a clear benefit to the patient.

Other notable influences on paramedic deviation from rules were rooted in other primary causes but were also directed at ensuring positive patient outcomes. These include both occupational culture, the norms, beliefs, and values of EMS providers, and the input of other peer paramedics. In both of the examples highlighting the impact of occupational culture, paramedics felt a duty to act in the face of rules that were restrictive. The key medications or procedures that the treating EMS providers felt were necessary were either contraindicated or required permission, which in both instances were not in the best interest of the patient. The norm of action, treating a critically ill patient, instead of inaction was prominent in both of these stories. The case describing peer influence was illustrative of a different reason for deviation. The case recounted a story in which a key procedure, intubation, was not completed after a sedative was provided to a patient for the specific purpose of facilitating the intubation process. The narrating paramedic in this case deferred to the judgment of another paramedic, who felt that the desired goal of calming the patient had satisfactorily defused the situation and that intubating the patient may have caused other problems.

Many of the themes presented in the last three chapters, all of which emerged from the in-depth discussions with paramedics and focus groups, can serve as the basis
for further deductive research examining relationships of interest. Quantitative research can be used to test formal hypotheses, providing additional support and allowing for added generalizability to larger populations. To this end, Chapter 9 will provide results from the quantitative analysis of data gathered through a web-based survey.
CHAPTER 9: RULE-BENDING AND PATIENT WORTHINESS IN EMS: BROADER TESTING OF SELECTED QUALITATIVE FINDINGS

This chapter will present quantitative analysis of survey data collected from front-line paramedics examining relationships that emerged as important in the qualitative phase of this study. Though several interesting relationships emerged in the first stage of the data collection, two were selected for further investigation in the second phase of the study. These models, the first examining paramedic rule-bending tendencies and the second examining perceptions of patient worthiness, are important given their potential impact on paramedic behavior in service interactions.

This chapter will first revisit the premises of the two quantitative models first outlined in Chapter 4, focusing on variables of interest and corresponding hypotheses. Next, descriptive statistics for participant demographics will be presented, followed by an overview of responses to several key questions about the use of rules, both clinical and nonclinical, for treating patients. These will allow for a better understanding of the types of individuals responding to the survey and of baseline behavior regarding the methods and frequency of paramedic interactions with clinical protocols and organizational SOPs. This will be followed by descriptive and inferential statistics pertaining to the two ordered probit models studying rule-bending tendencies and concepts of patient worthiness. Results of both models provide partial support for relationships initially reported in the qualitative findings. Paramedics with more experience are more likely to bend rules in those cases where there is some obvious patient benefit, and those paramedics with an increased ability to view situations from the perspective of patients are more likely to have a favorable view of patient worthiness for services.
**Hypotheses and Model Variables**

The first relationship of interest is notable in the results outlined in Chapter 8 regarding paramedic rule-bending behavior in light of some type of definitive benefit for the patient. A number of stories were recounted in which a paramedic consciously ignored or circumvented a rule if there was an immediate and palpable patient need. Perhaps the most frequently stated reason for this behavior was that the paramedic felt it was necessary given his or her experience with the same type of situation in the past. Previous encounters with patients displaying similar characteristics allowed the paramedic to better grasp the basic underlying physiological issues, appropriate treatments for that type of patient presentation, and expected outcomes. The first model discussed in this chapter examines the relationship between experience, in this case measured using both years of service as a paramedic and years of service to an organization, and a paramedic’s rule-bending tendencies. The dependent variable is adapted from a single item from DeHart-Davis’ (2009) rule abidance scale, and asks respondents to indicate if they “strongly disagree” (1), “disagree” (2), “agree” (3), or “strongly agree” (4) with the following statement: “I will bend a rule if it helps me improve a patient’s outcome” (DeHart-Davis, 2009).

Independent variables for the first model were self-reported years of service as a paramedic and years of service to the organization. As paramedics become accustomed to acting in the specific role of an advanced life support provider, they may develop more nuanced understandings of rules and norms that govern behavior and the match, or mismatch, between rules and patient condition. Additionally, length of tenure with an EMS agency may be related to an EMS provider’s comfort with rule-bending though
organizational variables such as familiarity with rules, comfort and interpersonal relationships with both operational and clinical managers, and relationships with coworkers and hospitals in the service territory.

\[ \textbf{H}_1: \quad \text{A paramedic’s likelihood of engaging in rule-bending behavior will increase with his or her tenure as a certified paramedic.} \]

\[ \textbf{H}_2: \quad \text{A paramedic’s likelihood of engaging in rule-bending behavior will increase with his or her tenure in organization.} \]

Control variables for this model include concepts of conformity and risk propensity, both of which have been found to have an effect on tendencies of individuals to adhere to or deviate from rules, policies, and procedures (DeHart-Davis, 2009). Dummy variables for organizational membership are also included to determine the possible impact of working in a specific organizational setting on values of the dependent variable.

A second result of interest emerging from the qualitative study is that of the attitudes of paramedics toward patients who were deemed to be less than worthy of emergency medical services. As reported in Chapter 6, several paramedics noted their assessment of specific types of patients who were found to be without a tangible need for EMS. Several of the paramedics interviewed noted that they were able to view the situation from the patient’s perspective, and reported some level of understanding for the patient’s need for services. The second model serves, then, to examine the relationship between a paramedic’s perspective-taking abilities and his or her assessments of patient worthiness for those patients identified as “less than worthy.” This concept of patient worthiness is important in that it may substantively alter a paramedic’s attitude toward
treatment of patients and motivation to provide a rigorous and substantial assessment of patient conditions.

Created using three dimensions of Maynard-Moody and Musheno’s (2003) concept of client worthiness were assessed using the following statement: “Given the general characteristics below, please rate the following patients based on how deserving they are of emergency medical services.” The patient characteristics were detailed in the following statements: “A patient who presents with minor symptoms”; “A patient who feigns illness for personal benefit”; and “A patient who you know is responsible for his or her condition, but is not motivated to improve their condition.”

The key independent variable, perspective-taking ability, was assessed using Davis’ (1980) “perspective-taking” subscale from his Individual Reactivity Index. A street-level health care provider’s assessment of patient worthiness may be related to the provider’s ability to view the patient’s medical condition or other situational factors from the perspective of the patient. Differences in perceptions of what warrants an emergency response and transport to a hospital may differ markedly between paramedics. A paramedic who is able to view the entirety of the service interaction from the perspective of the patient may have an increased perception of the patient’s worthiness for services.

**H₃:** A paramedic’s perception of patient worthiness will increase with his or her willingness and ability to adopt the patient’s perspective.

Control variables for this model include years as a certified paramedic, years in current position within an organization, self-reported educational attainment, and annual salary. As with the first model, dummy variables for organizational membership are also included.
Survey Respondents

A total of 64 paramedics completed the web-based survey from all three study organizations. The median age for survey respondents was 38. The median years as a paramedic was 12, and median years the participating agency was 6. The average number of responses to emergency calls per year was slightly more than 900. Respondent demographics displayed substantial homogeneity. More than 82% of respondents were male, and nearly 97% were Caucasian. Nearly 69% of respondents had a high school diploma or Associate’s degree, while just over 31% of respondents had a bachelor’s degree or higher. All respondents had completed some sort of additional annual training beyond the paramedic curriculum, with 92% completing a Pediatric Advanced Life Support Course and 100% completing an Advanced Cardiac Life Support course in the last year. Nearly 85% of respondents had completed some sort of additional training in treating traumatically injured patients, including Prehospital Trauma Life Support or Basic Trauma Life Support, with just over 23% completing both courses. Median annual income for medics was between $50,000 and $74,999, and 87.5% of respondents were front-line paramedics without any sort of supervisory responsibilities. Slightly more than 45% of the respondents were members of a union.

Analysis of Survey Responses

Study participants answered seven questions asking about the manner in which they reference rules during an emergency call, frequency with which they treat patients using more than one protocol, and frequency of deviations from rules. Many of these questions are pertinent given the complexity and volume of rules that paramedics must
follow on a daily basis. Nearly 80% of respondents indicated that they only reference the hard copy version of clinical protocols once every 2 weeks or less, while just over 82% responded they referred to rules from memory once a day or more frequently. A similar pattern emerged with organizational rules, as nearly 86% referenced paper versions of rules once every 2 weeks or less and 75% referencing the same rules from memory once a day or more frequently.

When asked about the frequency of using more than one protocol to treat a patient, more than 85% responded that they have done so two to three times a week or more, with more than 65% indicating that they use multiple protocols at least once a day. Responses to a question on deviation from protocols illustrated some interesting relationships with rules. Nearly a third of respondents indicated that they deviate from rules once a week or more, with slightly less than 10% indicating that they deviate one or more times a day. Slightly more than 67% responded that they deviate from protocols once every 2 weeks or less, with a large majority, more than 56%, indicating that they deviate from rules once a month or less.

Table 9.1 provides descriptive statistics for all variables included in this study. Values for the main dependent variables display interesting characteristics. The variable for patient worthiness, a scale variable created from three survey questions asking about worthiness for three theoretically less-worthy patients, has a mean of 7.33. Dividing the average score by the number of items in the scale yields an average item score of 2.44, indicating that the average rating for these types of patients was closer to the “not at all deserving” end of the scale. Although the stories and discussion of seriously injured patients outlined in Chapters 6, 7, and 8 indicated substantial concern for patients and an
intense desire to assist these patients, the substantially lower ratings of patient worthiness noted here may paint a fundamentally different picture of these types of patients. Lower ratings of patient worthiness could most certainly have an impact on both the motivation for paramedics to engage in in-depth assessments of patients and on the nonclinical aspects of patient treatment.

Table 9.1 displays correlations for all study variables. Several interesting correlations emerge from the survey data. First, a somewhat weak negative correlation

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<td>8.74</td>
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<td>35</td>
</tr>
<tr>
<td>Conformity</td>
<td>8.36</td>
<td>8.00</td>
<td>2.49</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Risk Propensity</td>
<td>2.63</td>
<td>2.60</td>
<td>0.87</td>
<td>1</td>
<td>4.6</td>
</tr>
<tr>
<td>Education</td>
<td>2.17</td>
<td>2.00</td>
<td>1.20</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Salary</td>
<td>3.28</td>
<td>3.00</td>
<td>0.80</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>FDEMS</td>
<td>0.20</td>
<td>0</td>
<td>0.41</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>HSEMS</td>
<td>0.36</td>
<td>0</td>
<td>0.48</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>PDEMS</td>
<td>0.44</td>
<td>0</td>
<td>0.50</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Note. *n* = 64 for all variables; SD, standard deviation

The second dependent variable, representing the paramedic’s attitude towards rule bending for the benefit of a patient, displays a mean situated firmly between “agree” and “strongly agree.” Mean participant scores on the conformity scale indicate a slight tendency toward conforming rather than rebelling, and the mean score for the risk propensity variable indicate that most providers tend to favor less-risky decisions.

Table 9.2 displays correlations for all study variables.
between rule-bending and patient worthiness is notable, suggesting an inverse
relationship between tendency toward bending rules and conceptions of patient
worthiness for those considered less deserving of assistance. Although these two
variables are employed separately as dependent variables later in this chapter, this
relationship is certainly worth noting. Paramedics who rate a patient more favorably on
the worthiness scale may be more willing to bend rules to assist the patient, while those
rating patients lower on the worthiness scale may be less inclined to bend any rules even
in those cases in which patient benefit is obvious. Given the interesting nature of this
relationship, further, more focused research is necessary on the intersection of these
concepts.

Second, as expected given the hypotheses presented, there is a weak but positive
correlation between patient worthiness and perspective-taking. In contrast, a weak,
negative correlation between years as a medic and rule bending is evident, an association
that is inconsistent with the hypothesized relationship. As expected, there is a positive
and strong correlation between the total number of years as a paramedic and number of
years in that a paramedic has been in their current position. Though not addressed as a
formal hypothesis, the moderately positive relationship between educational attainment
and perspective-taking is not surprising.

Finally, a weak but positive correlation between perspective-taking and risk
propensity is evident, suggesting that those paramedics with a better understanding of
others may be more willing to take risks in providing services.
### TABLE 9.2
Correlations for Dependent, Independent, and Control Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
<th>10.</th>
<th>11.</th>
<th>12.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Worthiness</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule Bending</td>
<td>-0.2572**</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perspective-Taking</td>
<td>0.2794**</td>
<td>0.0416</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years as a Paramedic</td>
<td>0.0091</td>
<td>-0.2248*</td>
<td>0.1681</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years in Position</td>
<td>-0.1359</td>
<td>0.0551</td>
<td>0.1176</td>
<td>0.7063****</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conformity</td>
<td>0.1691</td>
<td>-0.1407</td>
<td>0.1553</td>
<td>0.2889*</td>
<td>0.1703</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk Propensity</td>
<td>0.1225</td>
<td>-0.135</td>
<td>0.2242*</td>
<td>0.0187</td>
<td>-0.0112</td>
<td>-0.069</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>0.1447</td>
<td>0.001</td>
<td>0.3629***</td>
<td>-0.0227</td>
<td>0.0539</td>
<td>0.0002</td>
<td>0.1449</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salary</td>
<td>0.0518</td>
<td>-0.1465</td>
<td>-0.0115</td>
<td>0.0701</td>
<td>0.0294</td>
<td>0.0042</td>
<td>-0.0468</td>
<td>0.2113*</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDEMS</td>
<td>-0.2072</td>
<td>-0.1741</td>
<td>0.1133</td>
<td>0.3763***</td>
<td>0.288*</td>
<td>0.0837</td>
<td>0.1484</td>
<td>-0.1378</td>
<td>-0.0319</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HSEMS</td>
<td>-0.0503</td>
<td>0.0948</td>
<td>0.1357</td>
<td>-0.2464*</td>
<td>-0.2899**</td>
<td>-0.0694</td>
<td>-0.2053</td>
<td>0.1377</td>
<td>-0.0598</td>
<td>-0.3781***</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>PDEMS</td>
<td>0.2167*</td>
<td>0.0495</td>
<td>-0.2231*</td>
<td>-0.0669</td>
<td>0.0468</td>
<td>-0.0008</td>
<td>0.0781</td>
<td>-0.0214</td>
<td>0.0837</td>
<td>-0.4453****</td>
<td>-0.6605****</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Note. $n = 64$ for all variables; * = p < .1, ** = p <.05, *** = p <.01, **** = p <.001
Further investigation is necessary, though, to gain more insight into the relationships between these variables. To that end, the ordered probit models that make up the primary focus of this chapter will be presented.

Model 1: Ordered Probit Model for Rule-Bending Tendencies

The first ordered probit model examines paramedic rule-bending tendencies as a function of the effects of years of experience as a paramedic and tenure in organization. Figure 9.1 displays the distribution of the dependent variable for the first ordered probit model. The dashed reference line demarcates agreement versus disagreement. Responses in the area to the left indicate paramedics disagreeing with the statement about bending rules that will inevitably help a patient’s outcome, while the area to the right indicates those who either agreed with the statement or strongly agreed.

![Figure 9.1 Distribution of Rule-Bending Tendencies](image-url)
Table 9.3 presents the results of the first ordered probit regression model examining the impact of years of service as a medic and to the study organizations on tendencies towards rule-bending for patients who may benefit from such behavior. Overall model fit is moderately good, with a significant (p < .05) Wald $\chi^2$ of 14.18. The McKelvey and Zavonia’s $R^2$ of 0.22 indicates that the predictor and control variables included in this model account for 22% of the variance in the dependent variable. Variance inflation factor (VIF) scores were calculated for all independent variables to check for multicollinearity, with all scores well below the threshold of 10 (Kennedy, 2008). A test for the assumption of parallel regression return a nonsignificant likelihood-ratio test (Wolfe, 1997), indicating that coefficients are constant across response categories.

Both independent variables of interest contribute to variation in the dependent variable, but not necessarily in the hypothesized direction. Contrary to the hypothesized relationship, years of service as a paramedic is negative and highly significant ($b = -0.06$, $z = -3.08$, $p < .01$), with the fully standardized coefficient indicating that a one standard deviation increase in years as a paramedic reducing rule-bending tendencies by 0.52 standard deviations keeping all other variables constant. Alternatively, examining the $y$-standardized coefficients shows that a one-unit increase in years of service as a paramedic results in a 0.06 standard deviation decrease in rule-bending tendencies holding all other variables constant. Although contradictory to the hypothesized relationship, several clarifying notes are important in considering this relation. First, many individuals may have been certified as a paramedic but not actively practicing as a medic in a full-time capacity.
TABLE 9.3
Ordered Probit Model for Rule Bending

<table>
<thead>
<tr>
<th>Variables</th>
<th>Beta</th>
<th>St. Error</th>
<th>z</th>
<th>p(z)</th>
<th>B(y)</th>
<th>B(xy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years as a Paramedic</td>
<td>-0.06</td>
<td>0.02</td>
<td>-3.08</td>
<td>***</td>
<td>-0.06</td>
<td>-0.52</td>
</tr>
<tr>
<td>Years in Position</td>
<td>0.06</td>
<td>0.02</td>
<td>2.68</td>
<td>***</td>
<td>0.06</td>
<td>0.49</td>
</tr>
<tr>
<td>Education</td>
<td>-0.04</td>
<td>0.12</td>
<td>-0.36</td>
<td>0.72</td>
<td>0.04</td>
<td>-0.04</td>
</tr>
<tr>
<td>Conformity</td>
<td>-0.04</td>
<td>0.07</td>
<td>-0.55</td>
<td>0.58</td>
<td>0.03</td>
<td>-0.08</td>
</tr>
<tr>
<td>Risk Propensity</td>
<td>-0.14</td>
<td>0.18</td>
<td>-0.78</td>
<td>0.43</td>
<td>-0.13</td>
<td>-0.11</td>
</tr>
<tr>
<td>FDEMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(reference)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HSEMS</td>
<td>0.42</td>
<td>0.41</td>
<td>1.01</td>
<td>0.31</td>
<td>0.37</td>
<td>0.18</td>
</tr>
<tr>
<td>PDEMS</td>
<td>0.28</td>
<td>0.40</td>
<td>0.70</td>
<td>0.49</td>
<td>0.24</td>
<td>0.12</td>
</tr>
</tbody>
</table>

N 64
Wald $\chi^2$ (7) 14.18
Prob < $\chi^2$ **
McKelvey & Zavonia’s $R^2$ 0.22

Note. * = p < .1, ** = p < .05, *** = p < .01; standard errors are robust standard errors; p(z) are p-values for all independent variables; B(y) are y-standardized coefficients; B(xy) are fully standardized coefficients

Alternatively, examining the y-standardized coefficients shows that a one-unit increase in years of service as a paramedic results in a 0.06 standard deviation decrease in rule-bending tendencies holding all other variables constant. Although contradictory to the hypothesized relationship, several clarifying notes are important in considering this relation. First, many individuals may have been certified as a paramedic but not actively practicing as a medic in a full-time capacity. Variations in the intensity of practice and associated knowledge of service provision may render years as a certified paramedic as a poor proxy variable for overall experience. Second, while statistically significant, the magnitude of this change is relatively minor. It would take many additional years of
service as a paramedic to actually create substantial change in feelings about rule-bending.

Total years in current position was also found to be a statistically significant independent variable \( (b = 0.06, z = 2.68, p < .01) \), exhibiting a positive relationship with the dependent variable in the expected direction. A one standard deviation increase in years served with an EMS service created a 0.49 standard deviation increase in rule-bending tendencies keeping all other variables constant. Or, a one-unit increase in years in position with an EMS agency results in a 0.06 standard deviation increase in rule-bending tendencies. Interestingly, the magnitude of this effect was also relatively low, indicating that experience as measured by either variable may have a less substantive impact on rule-bending tendencies than initially expected.

For comparison purposes, predicted probabilities are calculated for paramedics with one and 10 years of service as a paramedic and to the participating organizations. These probabilities, listed in Table 9.4, show a lack of support for \( H_1 \) and support for \( H_2 \). As years of service as a certified paramedic increased, the probability that a paramedic would disagree with rule-bending increased by 2.59%, while those indicating they “agree” with the statement increased by just under 20% and those indicating they “strongly agree” dropped by more than 22%. Considered in isolation, these changes are dramatic, yet in both cases it is important to note that the percentage of respondents who indicated that they agreed, regardless of strength of that agreement, was between 97% and nearly 100%.

Predicated probabilities for rule-bending tendencies were much more dramatic when only considering years in position and keeping all other variables at their mean.
A change from one to 10 years of service to the organization saw a drop in disagreement with the rule-bending statement of 7.59%, a drop in the percentage indicating the “agree” with the statement, and a resultant increase of nearly 20% in those indicating that they “strongly agree.” When considered alone, years in position has a significant impact on rule-bending tendencies.

The key independent variables do not, however, exist in isolation from one another. To further examine the effects of these independent variables, Table 9.5 shows predicted probabilities calculated for key values of the main independent variables of years of service as a paramedic, matching years of service to the organization, and conformity while holding all other variables at their mean. Key values for conformity are also included in these calculated probabilities because a substantial body of paramedics noted experienced-based changes in attitudes toward the interrelationships between rules, authority, and their treatment of patients. Though the shifts in level of agreement or disagreement are not as dramatic as those listed previously, they are still noteworthy.

<table>
<thead>
<tr>
<th></th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Yr. as Paramedic</td>
<td>0.00%</td>
<td>30.14%</td>
<td>69.24%</td>
</tr>
<tr>
<td>10 Yrs. as Paramedic</td>
<td>2.59%</td>
<td>49.64%</td>
<td>47.77%</td>
</tr>
<tr>
<td>1 Yr. in Organization</td>
<td>11.38%</td>
<td>67.27%</td>
<td>21.35%</td>
</tr>
<tr>
<td>10 Yrs. in Organization</td>
<td>3.79%</td>
<td>55.12%</td>
<td>41.09%</td>
</tr>
</tbody>
</table>
As medics increase in organizational tenure and length of certification, and decrease to a median level of conformity, their disagreement with the statement about rule-bending decreases by just under 2% and responses of “agree” decrease by just under 9%. These decreases are matched by an increase of more than 10% in responses of “strongly agree.”

Illustrating this point more forcefully, a reduction in conformity score to the lowest level produces a concomitant further reduction in level disagreement by slightly more than 1%, a reduction in a responses of “agree” by more than 9%, and an additional increase in responses of “strongly agree” by slightly more than 10%. The progression from a new medic, one who may be more protocol-driven in clinical decision-making and more inclined to conform to rules and authority, to a more seasoned paramedic with a lower level of conformity displays substantial increases in strong agreement with rule-bending and matching decreases in responses of “disagree” or “agree.”
Model 2: Ordered Probit Model for Patient Worthiness

The second ordered probit model examines ratings of patient worthiness as a function of paramedic perspective-taking abilities. The distribution of the dependent variable for the second ordered probit model, a composite rating of patient worthiness created by summing measures for three types of distinctly different patients who may be considered “less than worthy” of services, is included in Figure 9.2. Though the distribution approaches normalcy, a slight positive skew is notable. A dashed reference line is included to demarcate the value for the dependent variable that corresponds to an average rating on the semantic differential scale between “not at all deserving” and “very deserving.” All of the responses falling to the left of this line are indicative of a rating for one or more measures that is closer to the “not at all deserving” end of the scale. Likewise, those to the right of the line indicated responses in which at least one rating of the three was closer to the “very deserving” end of the scale.
Table 9.6 presents the results of the second ordered probit regression model examining the impact of a paramedic’s perspective-taking abilities on his or her perceptions of patient worthiness. Overall model fit is moderately good, with a highly significant (p < .01) Wald $\chi^2$ of 18.67. The McKelvey and Zavonia’s $R^2$ of 0.226 indicates that the predictor and control variables included in this model account for 22.6% of the variance in the dependent variable. As with the previous model, VIF scores were well below 10 and assumptions of parallel regression were not violated.

The independent variable of interest, paramedic perspective-taking, is positive and significant as hypothesized ($b = 0.10$, $z = 2.52$, $p < .05$), with the fully standardized coefficient indicating that a one standard deviation increase in perspective-taking will result in a 0.33 standard deviation increase in patient worthiness keeping all other variables constant. Alternatively, a one-unit increase on the perspective-taking scale corresponds to a 0.08 standard deviation increase in perception of patient worthiness keeping all other variables constant. Also significant is the variable for years in current position ($b = -0.04$, $z = -2.20$, $p < .05$), exhibiting a negative relationship with the dependent variable. A one standard deviation increase in years of service to an organization decreased ratings of patient worthiness by 0.33 standard deviations keeping all other variables constant. Or, interpreting this relationship using the $y$-standardized coefficients, a one year increase in years of service to an EMS agency resulted in a decreased assessment of patient worthiness by 0.04 standard deviations. While the magnitude of this effect is small, it does potentially indicate a hardening of paramedics and reduction in levels of empathy or caring as their tenure increases.
TABLE 9.6
Ordered Probit Model for Patient Worthiness

<table>
<thead>
<tr>
<th>Variables</th>
<th>Beta</th>
<th>St. Error</th>
<th>z</th>
<th>p(z)</th>
<th>B(y)</th>
<th>B(xy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perspective-Taking</td>
<td>0.10</td>
<td>0.04</td>
<td>2.52</td>
<td>**</td>
<td>0.08</td>
<td>0.33</td>
</tr>
<tr>
<td>Years as a Paramedic</td>
<td>0.03</td>
<td>0.02</td>
<td>1.54</td>
<td>0.12</td>
<td>0.03</td>
<td>0.27</td>
</tr>
<tr>
<td>Years in Position</td>
<td>-0.04</td>
<td>0.02</td>
<td>-2.20</td>
<td>**</td>
<td>-0.04</td>
<td>-0.33</td>
</tr>
<tr>
<td>Education</td>
<td>0.01</td>
<td>0.11</td>
<td>0.11</td>
<td>0.91</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Salary</td>
<td>0.03</td>
<td>0.19</td>
<td>0.15</td>
<td>0.88</td>
<td>0.03</td>
<td>0.02</td>
</tr>
<tr>
<td>FDEMS (reference)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HSEMS</td>
<td>0.36</td>
<td>0.39</td>
<td>0.91</td>
<td>0.36</td>
<td>0.31</td>
<td>0.15</td>
</tr>
<tr>
<td>PDEMS</td>
<td>0.98</td>
<td>0.38</td>
<td>2.61</td>
<td>**</td>
<td>0.87</td>
<td>0.43</td>
</tr>
</tbody>
</table>

N 64
Wald $\chi^2$ (7) 18.67
Prob $< \chi^2$ ***
McKelvey & Zavonia’s R$^2$ 0.226

Note. * = p < .1, ** = p < .05, *** = p < .01; standard errors are robust standard errors; p(z) are p-values for all independent variables; B(y) are $y$-standardized coefficients; B(xy) are fully standardized coefficients.

This could be the result of increased experiences with specific types of patient conditions, routinization of their interactions with these patients, and decreased sensitivity to particular clinical presentations through frequency of exposure.

Finally, membership in PDEMS also displays a noteworthy positive and highly significant relationship on attitude toward patient worthiness ($b = 0.98, z = 2.61, p < .05$), resulting in a .87 standard deviation increase for PDEMS members. This last finding is interesting in that PDEMS is the only agency of the three involved in this study that has an officially recognized and widely distributed Patient Bill Of Rights. This document outlines specific nonclinical measures that paramedics will take during patient care interactions, including expressing empathy, respectful communication with patients,
prompt treatment, and other similar topics. The emphasis placed on this document by PDEMS managers and leaders may serve to enhance paramedic perceptions of patient worthiness.

To examine the effects of these independent variables, predicted probabilities were calculated for key values of the main independent variable of paramedic perspective-taking. Table 9.7 presents predicted probabilities for attitudes toward patient worthiness for the minimum and maximum levels of perspective taking, holding all other variables at their mean. A comparison of the columns in Table 9.7 show support for H3. When perspective-taking abilities are low the predicted probabilities for patient worthiness are closely clustered near the lower end of the scale.

<table>
<thead>
<tr>
<th>Patient Worthiness</th>
<th>Probability for Low P-T</th>
<th>Cumulative Prob.</th>
<th>Probability for High P-T</th>
<th>Cumulative Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pr(y=4x):</td>
<td>21.14%</td>
<td>21.14%</td>
<td>0.60%</td>
<td>0.60%</td>
</tr>
<tr>
<td>Pr(y=5x):</td>
<td>27.61%</td>
<td>48.75%</td>
<td>3.46%</td>
<td>4.06%</td>
</tr>
<tr>
<td>Pr(y=6x):</td>
<td>28.58%</td>
<td>77.33%</td>
<td>12.71%</td>
<td>16.77%</td>
</tr>
<tr>
<td>Pr(y=7x):</td>
<td>12.02%</td>
<td>89.35%</td>
<td>15.22%</td>
<td>31.99%</td>
</tr>
<tr>
<td>Pr(y=8x):</td>
<td>5.22%</td>
<td>94.57%</td>
<td>13.67%</td>
<td>45.66%</td>
</tr>
<tr>
<td>Pr(y=9x):</td>
<td>3.05%</td>
<td>97.62%</td>
<td>14.86%</td>
<td>60.52%</td>
</tr>
<tr>
<td>Pr(y=10x):</td>
<td>1.07%</td>
<td>98.69%</td>
<td>8.90%</td>
<td>69.42%</td>
</tr>
<tr>
<td>Pr(y=11x):</td>
<td>0.94%</td>
<td>99.63%</td>
<td>13.65%</td>
<td>83.07%</td>
</tr>
<tr>
<td>Pr(y=12x):</td>
<td>0.27%</td>
<td>99.90%</td>
<td>8.10%</td>
<td>91.17%</td>
</tr>
<tr>
<td>Pr(y=13x):</td>
<td>0.08%</td>
<td>99.98%</td>
<td>4.49%</td>
<td>95.66%</td>
</tr>
<tr>
<td>Pr(y=14x):</td>
<td>0.03%</td>
<td>100.01%</td>
<td>4.34%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Note: Total cumulative probabilities may not equal 100% due to rounding.
At this level of perspective-taking there is slightly more than a 77% probability that a paramedic will rate a patient as just barely above “not at all deserving” for all three measures used to create this scale, and an 89% chance that medics will fall just one point higher on this scale. Conversely, when perspective-taking is at the maximum end of the scale, paramedic ratings of patient worthiness are much more favorable. Though there is still a 16.8% probability that medics would rate the patient as barely above “not at all deserving,” there is a much increased chance, nearly 40%, that the three types of patient would rate in the middle of the scale between “not at all deserving” and “very deserving” or higher.

Figure 9.3 shows the changes in probabilities for the minimum (y = 4), neutral (y = 9), and maximum (y=14) values of patient worthiness based on changes in perspective-taking. These values represent ratings of patients who are rated just above
“not at all deserving,” a neutral rating of worthiness, and those rated just below the “very deserving” response. As perspective-taking abilities increase, a sharp decrease in the probability of a “not at all deserving” rating is notable, decreasing from more than 21% to nearly zero. Changes to the neutral rating are in the positive direction, with a notable increase from just less than 4% to just less than 15% as perspective-taking varies from minimum to maximum. An increase in the probability of a rating of “very deserving” is also notable as perspective-taking abilities vary, with an increase from 0% to just more than 4%. These changes in predicted probabilities indicate that a paramedic’s perspective-taking abilities may have a palpable impact on their perceptions of patient worthiness.

**Summary**

The results of the quantitative analysis of survey data presented in this chapter serve to reinforce qualitative data collected in early phases of this study. Qualitative findings from previous chapters found that paramedics felt that it was appropriate to bend or circumvent rules in those cases in which patients could derive some benefit from such behavior. In many cases, these paramedics were more experienced EMS providers, having been certified as paramedics and worked in their respective agencies for a longer period of time. These individuals most often noted that their experiences with specific types of patients, and the potential inapplicability of rules in those cases, were important in making the decision to bend the rules.

The first model presented in this chapter supported this relationship when studied in a broader context. Whereas overall paramedic tenure has a negative and statistically
significant relationship with rule bending-tendencies in the face of patient benefit – a finding contrary to the hypothesized relationship noted in H1 – tenure in the organization had a positive and significant relationship with rule-bending tendencies providing support for H2. Interestingly, when bundled together into realistic combinations of variables, increases in number of years certified, number of years of service to an EMS agency, and decreased level of conformity resulted in changes to rule-bending tendencies in the expected directions. Paramedics were less likely to disagree with bending rules in the face of some patient benefit, and were significantly more likely to strongly agree with such behavior. Though further research would be necessary to better specify these relationships, it appears that patients may benefit from both the abilities of paramedics to determine when rules are not in the best interests of patients and some amount of professional acceptance of such behavior. This also highlights to the potentially important impact of mentoring. More experienced paramedics may be able to hasten the progression of newer paramedics and contribute substantively to their abilities to understanding the applicability of rules.

Additional questions about the relationship between paramedics, rules, and patients become evident after reviewing this research. The overwhelming support for rule-bending suggests that this is not necessarily an infrequent phenomenon and that there may be some rules that are frequently inappropriate. In those cases in which rules are often incorrect some amount of revision by regulatory bodies is appropriate. This process could begin with additional research on those rules most frequently broken or avoided by paramedics, and the reasons for such behavior. Also, there are still paramedics who expressed disagreement with any rule-bending behavior despite patient benefit,
suggesting that additional research is needed to study those paramedics displaying a more rigid bureaucratic personality in EMS.

The second quantitative model presented in this chapter was also rooted in data collected in the qualitative phase of research. A substantial portion of paramedics provided commentary on those patients they felt were less worthy of services, including patients with exceedingly minor complaints. Although all participating paramedics noted that they would provide the same level of service to these patients regardless of their assessments of worth – most frequently noted as some minimal level of assessment – other aspects of the service interaction may still be affected by assessments of worthiness. Specifically, general demeanor, affect, and body language – all components of the service interaction, could be impacted. Additionally, an initial assessment of a patient as “less than worthy” for services may bias the paramedics’ continued assessment of the patient for potentially more serious conditions throughout the duration of the emergency call.

Results from this model supported the hypothesized relationship noted in H3. Ratings of patient worthiness for services and paramedic perspective-taking abilities were positive and statistically significant. Increases in a paramedic’s ability to see the situation from the patient’s perspective sharply decrease the probability that a medic would rate a patient as “not at all deserving,” and increased the probability that a patient would be rated closer to “very deserving.” Importantly, this model does not provide full explanation of constructs of interest. Although a substantial portion of the variance in the dependent variable is accounted for in this model, additional specification is necessary to determine other causes that impact ratings of patient worthiness. Though limitations of multi-method research do not allow for complete confirmation of both of these sets of
relationships, they serve to provide support from an alternative perspective. Tying these results in with those derived from the qualitative phase of the research, key findings will be discussed in the next chapter.
CHAPTER 10: FINDINGS, LIMITATIONS, AND FUTURE RESEARCH

The purpose of this chapter is to present a comprehensive discussion of the results presented in previous chapters. First, several key findings and propositions will be outlined with attention to the sources of influence in street-level EMS and their impacts on rule-following behavior, difficulties in patient processing, and deviation from rules. Next, these key findings will be linked to theories of street-level bureaucracy presented in Chapter 2 with emphasis on areas of support for previous theories and new contributions of this research. Following this discussion, the findings will be tied in to literature presented on EMS, focusing on the contributions of this study to bridging notable gaps in this body of scholarship and potential problems raised by this study. Next, specific connections between results and practice will be presented with a focus on possible methods of improving the provision of EMS. Limitations of this study will then be presented, including both weaknesses of data collection methods and means by which these limitations can be addressed. Future avenues of research will be presented with a focus on both specific research that emerges from this study as well as related service areas that are highlighted as important by some of the findings presented here, followed by concluding remarks.

Key Findings and Propositions

The results presented in the preceding chapters indicated that several sources of influence are particularly important in shaping the behavior of front-line EMS workers. These factors were variably influential, with some reinforcing rule-abidance, others complicating the process of applying rules, and others motivating street-level EMS
providers to deviate from rules. Importantly, there is a varying amount of concordance and synergy between the rules, people, and situations that compose these emergency incidents. For that reason it is critical to examine these components more closely to identify themes and interrelationships. This section will present each of these sources of influence individually, indicating how each impacted bureaucratic behavior.

**Rules, Policies, and Procedures in EMS**

In agreement with the common conceptualizations of street-level bureaucrats, EMS providers work face-to-face with clients and are empowered with some amount of discretion as they engage in the primary tasks of their occupation (Lipsky, 1980; Maynard-Moody & Musheno, 2003; Riccucci, 2005; Vinzant & Crothers, 1998). These services are provided in a world that is undeniably complex. Substantial bodies of rules, both clinical and nonclinical, are created at the state, regional, and organizational levels to guide the behavior of EMS providers as they deliver care to the sick and injured. These rules are, in turn, employed collectively to shape the full complement of activities that EMS agencies provide, including patient assessment and the provision of important interventions that both save lives and bring relief to critically ill patients.

When a paramedic responds to a call, patient assessment is completed through an iterative process that compares patient presentation with inclusion and exclusion criteria outlined in clinical protocols, allowing the paramedic to determine patient need and respond appropriately. Procedures for treating patients are often highly specified, indicating the types of procedures or therapies that should be provided, the order in which they should be completed, and when physicians at receiving hospitals should be
contacted for further advice or permission to continue treatment in accordance with appropriate protocols. These processes are outlined in a mixed text and visual algorithm manner, with highly complex protocols spanning multiple pages and frequently referencing other potentially relevant protocols. The end result is, in the words of one study participant, a comprehensive, yet sometimes “cumbersome” document.

Recognizing the inability of clinical rules to fully account for every possible emergency scenario, a key reason for street-level discretion as outlined by Lipsky (1980), some amount of latitude is both explicitly and implicitly included in these clinical rules. Judgment is extended to men and women providing street-level EMS in the necessity of specific procedures, such as intubation, in the appropriateness or types of medications administered, in the order of the execution for some rules, and in the appropriateness of specific therapies if physician guidance is not available. In other cases, this discretion is less regulated, including decisions on when to prepare and move patients for transport. Finally, in other cases, judgment is implicit through an absence of regulations, most notably that of pain management in which paramedics are only given the contraindications for the administration of analgesics. In the latter two areas, another form of regulation, those of organizational and occupational cultural norms come in to play. Of note, the process of inculcating newer paramedics into positions of responsibility for direct patient care addressed both the use of clinical rules and the development of decision-making capabilities based in cultural norms of behavior.

Though protocols provide a foundation for clinical care, paramedics noted in several instances that they were frustrated by the restrictive nature of the clinical protocols, and indicated that the protocols are tailored to an inexperienced paramedic
who does not treat the volume and severity of patients seen by working in more urban
EMS agencies. This sentiment highlights important questions about the utility and
applicability of these rules across broadly varying geographical areas with significant
variations in demand for services, resources, and continued personnel training beyond the
initial paramedic curriculum.

Operating at a much more local level, organizational policies are aimed at
addressing matters specific to the unique characteristics of EMS agencies. These include
considerations related to geography and resource-availability (e.g., local and specialty
care hospitals; the roles of other first responders in assisting EMS crews) and those
aspects of the provision of EMS that are nonclinical in nature. In contrast to clinical
protocols which allow for a variety of both general and specific types of discretionary
behavior related to the patient’s clinical needs, organizational policies allow for judgment
and discretion more broadly as they pertain to the entirety of the incident. This discretion
is aimed holistically at the situation, rather than just those elements of behavior that are
directly related to patient assessment and care. Thus, organizational documents, in their
role supporting clinical protocols, have a different focus. In essence, these policies are
more connected to the paramedic working in the specific local or geographical context of
an emergency incident.

Though these specific rule-sets, clinical protocols and organizational policies and
procedures, are outlined separately in Chapter 5, in effect they are thoroughly and
completely intertwined. While it is necessary to engage in closer examination of these
rules separately, they are enacted contemporaneously during an emergency by multiple
actors as their coordinated response to a single event. Thus, they affect one another, and
patient outcomes, deeply. Additionally, it is not surprising that the clinical protocols and organizational operating rules, both of which are employed rapidly as the basis for the primary tasks of patient treatment, are committed to memory and infrequently reviewed in hard copy form. Supporting the importance of daily tasks in shaping behavior (Sandfort, 2000), rules that were frequently enacted were committed to memory and made part of the daily routine of providing care, whereas those which were new or infrequently used had to be reviewed during or after an emergency call. And, indicative of the complexity of both rules and patient condition, a majority of study paramedics frequently employ multiple clinical rules in the process of providing patient care.

The importance of rules, particularly clinical rules, was evident throughout the study. In cases in which patient need is obvious, the sorting process is accomplished with relative ease in accordance with rules, and rule-adherence becomes more a matter of skill. The incident relayed in Story 6.1 is a strong example of this. The patient was in cardiac arrest, which, after focused diagnostic activities, was relatively simple to treat. This resulted in close rule-following, notably easy decision-making, and positive patient outcomes. Importantly, in this case, both of the methods of regulating behavior: formal rules and cultural norms, were in harmony and supportive of each other, thus enabling a clearly appropriate and legitimate course of action. Other cases discussed by paramedics, specifically those patients presenting with severely traumatic injuries or cases in which patient need was clear, also noted the relatively straightforward decision-making and minimal conflict. However, in both of these cases two other factors are important, including patient assessment abilities and specific procedural skills like intubation and overall call management. Both cardiac arrest patients and severely injured trauma patients
require multiple tasks to be completed contemporaneously, indicating the importance of experience in treating these types of patients. Likewise, the probability of strict rule abidance was much more likely in treating patients with minor injuries. In both cases the probability that front-line EMS providers will abide by rules is substantially increased.

**Proposition 1:** The likelihood of strict rule-abidance by paramedics will be significantly increased when patients presenting with both very minor and very severe clinical conditions.

These rules were also frequently important in post-incident review of service provision and creation of official patient care reports (PCRs). Paramedics participating in both interviews and focus groups noted that rules were referenced specifically to both document their work properly and to clarify appropriateness of behavior in those cases in which some aspect of an emergency call was abnormal or anomalous. Thus, rules became a tool used for immediate feedback on performance, a critical learning tool (Kahneman & Klein, 2009).

In line with Prottas (1978), these PCRs became an important tool in managerial oversight of street-level EMS providers. Supervisors from participating organizations used these PCRs to ensure that paramedics were adhering to rules and treating patients appropriately. Though street-level supervisors were occasionally on-scene to assist with patient care, in most cases they were not present and relied heavily on paper reports of behavior. One-on-one interviews with supervisors noted that in most cases of serious error or deviation the treating paramedic would report such behavior to the organizational leaders, though in other cases these behaviors would only be recognized through in-depth, close review of PCRs. While noting the utility of these documents in this process
of catching poor performance, one supervisor participating in the study noted that this was not a frequent occurrence. Rules, however, were not the only factors influencing front-line providers, and these other organizational and extraorganizational factors are worthy of individual attention.

**Occupational Culture**

Conceptually, occupational culture can be identified as the norms, values, beliefs, and everyday practices surrounding the primary tasks of a job (Sandfort, 2000). Clinical protocols, shaped and refined by individuals at different levels of government, have the most tangible effect on EMS workers, providing a solid foundation for patient assessment and treatment. Through both training and experience street-level EMS providers familiarize themselves with the content of rules, critical cues that allow for recognition of patient need or appropriateness of care, and instances in which specific aspects of rules are inapplicable or may be harmful to a particular patient. This daily, almost routine interaction with rules and rule-application serves to support research that place occupational culture at the fore in terms of factors influencing street-level behavior (Isett, Morrissey, & Topping, 2006; Riccucci, 2005; Sandfort, 2000). These clinical protocols serve to delimit perhaps the most important function of street-level EMS, that of outlining the inclusion and exclusion criteria for patient “processing.” Experience, then, and the process of gaining knowledge about the tasks of a job become crucial in examining behavior. Even though paramedics were in many cases faced with enacting complex rules in difficult situations, many of the stories related noted concordance between rules, patient needs, and paramedic experiences with specific situations.
The saliency of experience and the development of appropriate practices and patterns of behavior in rule enactment are important in both Story 6.1 outlined previously and in the other data collected in both interviews and focus groups. This saliency was especially true in those areas open to discretion with more broad regulatory guidance such as intubation and decisions to provide some medications. Previous experiences with these types of patients allowed paramedics to recognize cues that indicated that a specific treatment. Experiences, then, were a key aspect of the development of clinical judgment surrounding issues of patient assessment and treatment.

**Proposition 2:** Experienced paramedics will display more substantively developed clinical judgment skills in areas of patient assessment and treatment.

Norms of treatment were also in some cases enduring and resistant to change. Describing a protocol change to the use of a new medication, a paramedic noted that it was only through positive experiences with this new drug that paramedics became comfortable with its use.

Experience, however, was not always beneficial in shaping front-line behavior. As with those cases of easy patient processing, experience and practice were an important type of influence in difficult assessment and diagnoses. Several paramedics noted that they encountered situations in which a diagnosis seemed relatively easy only to find out that they were incorrect in their clinical findings. When reviewing these cases they noted that they recognized cues or signs that one particular diagnosis might be correct and may have ignored or missed others. This leaves great potential for misdiagnosis given the nature of front-line EMS work as grounded in frequently unobservable patient needs or
conditions. Importantly, it is the recognition of specific cues that either prevented paramedics from recognizing the true nature of the call or alerted them to the fact that they may have been following in an inappropriate protocol. These stories illuminate the potential utility of employing theoretical frameworks from studies of experts and professionals generated by psychologists. Specifically, use of concepts of naturalistic decision-making, which serves to “… demystify intuition by identifying the cues that experts use to make their judgments …” and that of research on heuristics and biases, which “… favors a skeptical attitude toward expertise and expert judgment would be pertinent (Kahneman & Klein, 2009, pp. 516-517; Klein, 2008). These cues, then, and the recognition of important aspects of patient condition become an important consideration when examining paramedic behavior.

*Proposition 3:* Paramedics with increased patient-treatment experience will be better able to recognize cues identifying patient condition and determine an appropriate treatment plan.

Occupational culture was also found to influence paramedics in cases of deviation from rules. Two stories, 8.3 and 8.4, note types of influence that were ultimately grounded in patient need. In both cases, the patient’s needs exceeded the immediately allowable treatment options available to paramedics. The former, a story about a patient in severe respiratory distress in need of two medications that were contraindicated by the patient’s vital signs, the paramedics made the decision to treat the patient despite the conflict. This behavior was largely motivated by the desire to provide some amount of relief to a patient who was potentially not going to survive the amount of time it would take to transport the patient to the hospital. The intense desire of the paramedics to treat
the patient with substantial and obvious needs outweighed the clinical rules created to
treat that patient’s condition. In the latter case, the conflict came in the form of timing;
the pediatric patient’s presentation was dire and paramedics felt it was crucial that they
acted without first getting permission from the medical command physician. Although
the therapies they employed may have been approved by the physician, temporal
considerations were prohibitive. In both cases, a cultural norm of action was favored over
strict rule-abidance, providing additional support for the importance of occupational
culture on the behavior of street-level bureaucrats (Riccucci, 2005; Sandfort, 2000) and
front-line health care workers (Isett, Morrissey, & Topping, 2006).

Deviation was not a static concept universally noted by all survey respondents. The amount of deviation varied widely among survey responses from participating
paramedics. Although not uncommon, almost a third of survey respondents indicated that
deviation happens once a week or more, more than half of respondents indicated that it
happens once a month or less. Interestingly, focus group participants were not unanimous
on the definition of “deviation,” thus highlighting the need for additional research on this
topic. Some participants characterized it as any departure from a strict interpretation of
the rules, while others felt that skipping steps like contacting medical command
physicians did not constitute a deviation. Regardless, many focus group participants felt
that deviation of either definition was acceptable in cases of clear patient need.

Results from the multiple regression model examining survey responses showed
support for this concept of departing from a strict interpretation of the rules given high
likelihood for patient benefit. The dependent variable for the multiple regression model, a
measurement of rule-bending tendencies, indicates that paramedics become more flexible
in rule-adherence as they gain experience providing emergency medical care. As newer paramedics moved from more protocol-driven clinical decision-making and developed more nuanced views of the intersection of rules and patients, the probability of disagreement with rule-bending was reduced, and substantial gains in strong agreement were noted. Thus, paramedics with more substantive experiences tended to indicate more favorable view of rule-bending behavior.

Proposition 4: More experienced paramedics will exhibit increased rule-bending tendencies in cases of improved patient outcomes.

This probability raises important questions about the shaping of what Oberfield (2010) called “default rule-following tendencies” and paramedic development through formal training and information interactions with peers and supervisors.

Interestingly, not all paramedics noted the opportunity to deviate from protocols or the desire to do so. Whereas some of the vignettes presented in this study examine that type of occurrence – some amount of risk to the paramedic through beneficial bending of rules – one study participant made the point that this is not a given. In his words,

I always tell my students, there are three different types of prehospital providers out there. There’s like 40% that don’t have a clue. They have no idea what they are doing, they just managed to do this because that’s what they thought would be a cool career. And they’re usually the ones that in … two years will be gone because they can’t do this job. …[T]here’s another 50% of them that are protocol medics: “This is what my protocol tells me to do, this is all I do, that’s all I’m going to do.” And I said, then there’s only a select few of us make up the remaining 10 percent, that “I’ll do what I need to do for my patient at the time, within limits.” Something that isn’t going to take it out of the ordinary. And as long as I know that I did the right thing for my patient, I’ll deal with the consequences for me later.

Though this statement represents the opinion of one paramedic about a broad field of practice, several key ideas emerge. The first is that there are paramedics who are
protocol-oriented: in providing care they strive to match a patient’s symptoms with the appropriate protocol and treat according to the rules. Though not stated explicitly, the medic implies that this treatment would potentially include even those therapies that are not necessary for every patient. And, importantly, this manner of categorization would also indicate that this type of paramedic would not deviate from rules to benefit patients. The last type of paramedic he outlined is those who are willing to go beyond the rules to treat patients, potentially at some risk to their careers.

Peer Health Care Providers

Importantly, these experiences were shaped to some extent by both peer paramedics and by policy governing mentorship in EMS agencies. Newly certified paramedics were in some cases subjected to a rigorous process of skill verification, gradually increasing responsibility for patient care, and tests of clinical judgment. In at least one organization, this process was formalized in a mentoring program that became a part of the hiring process, whereas more informal training programs were also used, pairing more experienced paramedics with newer EMS providers. These training programs were, according to one interviewee, key to advancing paramedic decision-making at a pace that is much more rapid than would otherwise occur without such guidance. The salient experiences of peer providers and supervisors, who often come from the ranks of front-line providers, are important in passing on key information that will speed a newly certified paramedic’s abilities to accurately assess and treat patients.

**Proposition 5:** Paramedics working in EMS agencies with mentoring programs are likely to have more substantively developed clinical judgment.
Although their effect was different, organizational supervisors also influenced discretionary decision-making. This occurred not only through the review of PCRs already described, but through the alteration of expectations of behavior during an emergency. The presence of a supervisor as a partner or additional responder spurred some paramedics to engage in more aggressive assessment and patient treatment through changing ideas about the appropriateness of behavior.

Peers were also influential in decisions to deviate from rules. The incident recounted in Story 8.5 is illustrative of this, with a responding paramedic deferring to the judgment of another paramedic in a decision not to fulfill the dictates of the clinical protocol on sedation-assisted intubation for an agitated victim of a car accident. While the narrator described some hesitancy at not completing the full procedure as indicated in the clinical rules, in the end he decided that the expertise and discretionary abilities of the peer paramedic were sufficient.

*Other Street-Level Bureaucrats*

Other street-level bureaucrats were also notably influential in assisting paramedics with patient assessment and treatment. This assistance took the shape of both fresh ideas or methods of solving a particularly difficult problem, one in which the situation was abnormal and paramedics were aided by the input of these other public servants, and in routine situations as well. In some examples, police officers and firefighters drove the ambulance so all crew members could render care, and in others these other public servants either provided an initial assessment that allowed paramedics to be better prepared during their response or reduced the effort needed on scene to assess
the patient. Although in many cases this assistance was not highly technical or clinical in nature, the support provided substantively affected the patient treatment process or patient outcomes through a reduction in uncertainty, improved abilities to overcome nonclinical obstacles, or other situational difficulties.

Whereas the nonroutine support occurred less frequently, the more routine types of assistance were experienced on a much more frequent basis. This support was implemented through both formal and informal means, with some organizations creating specific policies that mandated assistance from other city employees while others established more informal, front-line partnerships with responding organizations. In both cases the level of support coming from other front-line workers was varied. Some, especially fire service members stationed in the same building as EMS units, were actively engaged in seeking training from study paramedics, while others were not as eager to provide this assistance. Regardless of the frequency or intensity of this assistance, the efforts of other street-level bureaucrats were potentially very influential in shaping EMS provider behavior.

Managerial and Supervisory Influence

Although not directly providing assistance at the scene with other street-level bureaucrats, medical command physicians were notably influential in paramedic behavior via consultations and orders for specific procedures or medications. A majority of focus group participants noted the generally trusting relationships created between physicians and front-line paramedics. This relationship served in some cases to ease the potentially over-restrictive rules that may require frequent confirmation from physicians of the
appropriateness of therapies or other types of permission. The increased latitude and eased expectations for strict rule-adherence to those requirements for permission allow for more agency, giving paramedics an increased sense of self-efficacy and making their perception of individual contributions to patient outcomes more salient. Importantly, these eased restrictions do not allow for easier deviation from rules; rather, they were addressing cases in which permission to continue a therapy or employ a protocol-specified treatment were necessary. The relationship between paramedics and medical command physicians, then, is important in considering the amount of discretion available to these front-line EMS providers.

**Proposition 6:** Paramedics with substantial formal or informal interactions with medical command physicians will enjoy increased discretionary latitude.

Although these trusting relationships were developed, not all organizations allowed paramedics to operate with the increased freedom allowed by the physicians at receiving hospitals. In at least one study organization the service medical director and organizational administrators were more restrictive on the latitude given paramedics, serving to highlight the potential importance of organizational culture on behavior (Kelly, 1994). Usefully, this scenario points to other pertinent reference groups, service medical directors and medical command physicians at receiving hospitals, that should be included in future research examining the stability or instability of rule-following tendencies (Oberfield, 2010).

Medical command physicians also influenced paramedic discretionary behavior through the imposition of restrictions on behavior. Story 6.2 outlined one example of this
type of restriction, with a physician ordering a dose of a drug that was not, in the opinion of the treating paramedic, going to be effective at achieving the desired clinical outcome. Subsequent discussions among organizational leaders, paramedics, and physicians altered this type of decision-making in future cases, however many other areas of paramedic behavior are still open to such restrictions. Though not included specifically as a factor in the example provided, the abilities of paramedics to effectively communicate the nature of an incident, the patient’s condition, and their request to provide a specific medication or procedure are all important to this relationship.

*Patient Identity, Need, and Worthiness*

Patient identity was noted as influential in those cases in which rules did not specify behavior and paramedic judgment was key in determining treatment. An example provided recounted a call in which the treating paramedic exerted significantly extra effort to assist a patient suffering from a drug overdose because of her identity as a Caucasian, upper middle class female. Whether or not another patient would have received the same treatment from this paramedic is unknown, but these characteristics were mentioned as key aspects of the patient assessment in the example provided. The patient’s characteristics, then, qualified the patient as “worthy” from the perspective of the treating paramedic.

**Proposition 7:** Patients perceived by paramedics as worthy of emergency medical services are likely to receive more comprehensive assessment and treatment.
A paramedic’s impression of patient identity was also influential in another example, that of Story 7.2, in which identity muddled the information gathering process. The assessment of the patient’s identity led to the paramedic ruling out a specific diagnosis of a drug overdose, which delayed appropriate care. The paramedic’s assessment of the combination of patient presentation, information from family members, and their interpretation of ascribed characteristics formed, from their perspective, a cohesive causal illustration of the patient’s condition.

Although intertwined with the concept of patient identity, patient need was also a salient influence on paramedic behavior. In both Stories 8.1 and 8.2, the cause for deviation from the rules was directly noted as patient need. The first story describes a patient in severe physiological and psychological pain who was given extra narcotics to provide some relief, while the second detailed a decision to disregard a supervisor’s orders so that a patient would not risk a severe neck injury through a rough transport to a trauma center. The paramedics noted the importance of rules, however in both situations the benefit to the patient was more important than strict rule adherence.

Patient need, however, seemed to be less influential in shaping paramedic behavior for relatively minor cases. Several medics noted experiences with patients who were deemed to have less severe clinical conditions, mentioning in several cases that these individuals were provided a minimal level of assessment and transported to the hospital. Though protocols existed to address patient assessment for all patients regardless of presentation, other specific rules for more serious conditions were not applicable, thus greatly reducing the amount and types of rules that govern behavior in treating these patients. By following clinical rules for general patient assessment,
paramedics were treating these patients “by the book.” When considering this finding with earlier discussion on close rule-following in very severe cases and the increased need for rule-bending or deviation in more complex, moderately ill patients, an inverted, U-shaped relationship emerges.

**Proposition 8:** The relationship between the amount of discretion available to street-level EMS providers and patient severity will take a curvilinear, inverted U-shaped form.

Both patient identity and direct assessments of need are tied conceptually to the broader concept of patient worthiness. Patients experiencing many of the more severe, life-threatening situations noted previously will, through the assessment of specific clinical needs, meet conceptual requirements for worthiness. Conversely, those patients with less severe conditions may not meet the conceptual requirements to be considered a “worthy” patient. Although there was not palpable mismatch between patient needs and rules — most likely because rules were broadly drawn and compliance was simple — other restrictions may have been present in treating less clinically needy patients including those of occupational or cultural norms of behavior towards this type of patient. Though none of the stories relayed by participating paramedics explicitly noted these norms, potentially because of the tendency for “memorable” stories to be those that are most severe, other comments made by paramedics may allude to this.

Though the rule-patient mismatch was not present, other tension did exist. In discussing these cases, a majority of paramedics noted that these individuals were “system abusers,” patients not worthy of EMS services given the lessened severity of their clinical condition (Maynard-Moody & Musheno, 2003). This perspective can be
explained through several avenues. First, working as a paramedic undoubtedly exposes these public servants to highly variable levels of patient need, including many patients who are in critical, life-threatening conditions or deceased. In responding to calls for very clinically minor conditions paramedics often make potentially unconscious comparisons between patients who have a significant clinical need for services and those exhibiting less severe clinical presentations. Second, the level of care necessary to treat patients with only minor conditions is low, with several paramedics comparing themselves to a “taxi service” in explaining their treatment of these types of patients. Thus, patients presenting with reduced clinical severity may act to reduce paramedics’ feelings of significance.

As several study participants noted, these calls for service are, from the patient’s perspective, legitimate and necessary. This disparity in the perceived need for services from the perspectives of paramedics and patients could possibly lead to some amount of tension. Findings from the multiple regression analysis of survey responses indicated that those paramedics scoring highest on perspective-taking abilities are significantly less likely to rate patients at as “not at all deserving” of services, and are more likely to have a neutral to positive perception of patient worthiness. Conversely, those paramedics scoring lower on perspective-taking were much more likely to have an unfavorable rating of patient worthiness and an exceedingly low probability of rating patients as neutral or “very deserving.” Each of these findings was in line with Maynard-Moody and Musheno’s (2003) conceptualization of patient worthiness. Although rating of patient worthiness may not translate directly into paramedic behavior, this does point to a need for further research. And, additional research on this area should also seek to explicitly
include research from the field of clinical medicine on patient worthiness and interactions between patients and their health care providers.

Though study participants noted that reduced treatment or withholding of care from less clinically severe patients was profoundly inappropriate, most did not address the nonclinical aspects of patient care. Those who did recognize the patient’s difficulties and explained the incident in terms of the patient’s situation rather than individual attributes were more likely to express some amount of empathy for the patient. Given this additional empathy, paramedics may be increasingly likely to provide supportive measures of a nonclinical nature. Importantly, other behavior of a non-clinical nature including affect, body language, other means of communicating that may provide comfort to the patient, and non-clinical means of ensuring patient relief, can equally as important.

**Proposition 9:** Paramedics who are better able to understand the patient’s perspective in requesting EMS will be more likely to engage in supportive or caring nonclinical behaviors.

And, equally important, a paramedic’s incorrect assignment of a patient to a category of lesser severity for reasons other than legitimate, protocol-based assessment activities risks severely inadequate under treatment.

*Paramedic Communication Skills and the Information Gathering Process*

The process of matching patients and rules was not, however, universally simple. Paramedics were, during some service interactions, faced with a challenging patient assessment made increasingly difficult by the abilities or inabilities of both medics and
patients to communicate. Notable in Story 7.1, the paramedic’s recognition that the patient’s condition was serious and required additional assessment through in-depth questioning resulted in an appropriate treatment plan that may have saved the patient’s life. Given the same scenario, another patient who was not subjected to an intense line of questioning might not have a positive outcome. Thus, the importance of communication between patients and EMS providers may be crucial in providing assistance to specific types of patients.

**Proposition 10:** Paramedics who are better able to communicate with patients will be more likely to make accurate diagnoses and form appropriate treatment plans.

Those patients who are unable to communicate their past medical history or the essential characteristics of their current clinical situation may be at a distinct disadvantage when it comes to receiving care from EMS providers, especially given the urgent and time-constrained nature of prehospital emergency care. Addressing this, Fiscella (2004) stated that “[p]atient educational level and health literacy affect knowledge of risk factors, symptom recognition, and ability to navigate the healthcare system” (p. 940).

**Situational Factors**

Situational factors also proved influential in some types of emergency calls. This type of influence was noted in story 6.3, in which the paramedic’s decision to move the injured child into the ambulance prior to providing pain medication was influenced by a intimidating crowd. The decision about patient movement, an area open to paramedic
discretion, was powerfully shaped by the increasing situational stress and reduced comfort level of the paramedic. Importantly, in this case, patient needs and clinical protocols were still matched; the paramedic did not feel any need to deviate from clinical or organizational rules in treating the patient. The paramedic employed discretionary authority allowed by the protocols in deciding the order of treatment, as well as appropriate packaging and movement of the patient, but in each of these cases the paramedic followed the clinical and organizational rules promulgated to guide behavior. The setting of an emergency incident, then, is important in the potentially adding uncertainty to interactions among key individuals including patients and paramedics, and to placing additional stress on these individuals as they cope with potential personal danger. Although this type of influence is not apparent in all types of emergencies, many incidents in which EMS providers can make a substantial impact on both long- and short-term patient outcomes may involve some amount of situational stress.

Bystanders

While conceptually similar to the situational factors noted previously, bystanders served to influence behavior through a specific mechanism. Friends or family members of the patient, or any individual with in-depth knowledge of a patient’s potential condition, shaped the information gathering process. The family members noted in Story 7.3 provided a plausible explanation for the patient’s condition which was adopted by the paramedics. It was only through additional assessment and inconsistencies between the suspected diagnosis and patient presentation that the paramedics eventually switched treatment plans. Though in most cases paramedics will gather information from the
patient both through questioning and observation of patient condition, many more clinically severe situations often render the patient unable to provide this information. In these instances the individuals witnessing incidents or having substantial previous interactions with a patient that would result in a patient-specific knowledge become a central factor via their influence on paramedics.

The example provided describing the importance of communication is also related to concepts of occupational culture and experience. To be influential the information provided by a bystander must not create any substantive dissonance with other information gathered by the paramedic through other means of skilled assessment. Data provided by the bystander will be most influential in those cases where it is unique in its nature and strength, and is not contradicted by these other subjective and objective means of patient assessment.

Organizational Arrangements

The first and second research questions have been addressed in the key findings thus far; now, it is important to address the third research question regarding variation in organizational arrangements and the potential impact on paramedic behavior. The intent of this study was to allow these potential systemic differences to emerge from the data rather than probe for answers directly, however such differences were not evident. A potential reason for this rests in the weaker-than-anticipated connections between the participating organizational “home.” This does not serve, however, to invalidate this line of research and disprove such an influence. Indeed, the weak links and lack of systemic differences are certainly commensurable, and future research would benefit from the
purposeful selection of organizations with stronger ties to fire departments, police
departments, hospital systems, and those without any such ties.

**Implications for Theories of Street-Level Bureaucracy**

Results from this study both lend support to previously elicited theories of street-
level bureaucracy and add insight from the unique perspective provided by an exploratory
study of a different front-line function. Of notable importance, this study provides
evidence in the saliency of rules, policies, and procedures in shaping street-level EMS
worker behavior. In a majority of incidents relayed by paramedics, rule-following
behavior was notable, with clinical protocols providing a firm foundation for patient
assessment and treatment. These clinical rules were nearly universally upheld by
prehospital EMS providers as vitally important to their daily activities and often served as
a source of legitimation for specific behavior when questioned about patient care. Also
supported is the prominence of the discretionary latitude available to street-level
bureaucrats. This discretion exists as both purposefully created within-rule discretion and
as a result of an inability to fully legislate all behavior of front-line workers.

This study also supports the prominence of other sources of influence which serve
to shape street-level behavior outside of the rules, policies, and procedures. Importantly
these sources of influence served to shape behavior in varying ways. Some influences,
served to reinforce the importance of rule-following, whereas others complicated the
process of assessing and treating patients by altering the information gathering process.
And, importantly, influences were present that motivated front-line EMS workers to
deviate from specifically created rules. Though these influences may have only been
noted as affecting rule-adherence, difficult in matching patients to rules, or deviation, it is
important to note that these may actually affect all three. Each type of influence will now be discussed in turn.

The influence of occupational culture is notable throughout this study. As a primary source of influence, the task-based norms, beliefs, values that constitute the day-to-day practices of EMS providers are important in rule-following behavior, difficult patient assessment situations, and in rule deviation. The internalization of rules occurs through iterative experiences employing those rules in both simulated and real situations. This frequent and sustained experience with rule content, application, and expected outcomes creates the foundation for a substantial portion of the behavior of EMS providers. Cases in which rule-application is difficult may be resolved through improved methods of communication learned through experiences and through mentoring by peers. Salient experiences recognizing the inapplicability of rules or the need to provide some medication or therapy despite protocol are also evident. In each of these cases, the professionalism of both peers and supervisors is also key as notions of culture must conceptually include the sharing of these norms, beliefs, and values.

Support is also present for theories that place patient worthiness at the fore in explaining front-line worker behavior. Evaluations of worthiness were evident in this study in several comments made by front-line paramedics, including cases in which unfavorable ratings of patient worthiness were expressed. These evaluations present a particularly important challenge given the potential for situations in which an initial patient assessment returned a less-than-worthy rating. Subsequent assessments of the same patient may then cease, resulting in a missed diagnosis and potential poor patient outcomes. The rating of patient worthiness is especially troubling when such a rating is
devised from an evaluation of the patient’s identity. The use of ascribed characteristics as a tool for evaluating patient need or attributing causality for a particular condition or the context of the incident presents considerable problems of ethics, representativeness, and equality. Likewise, in those cases in which patients were deemed worthy by the provider, either through an assessment of identity or need, additional services may be provided to the patient beyond those specified by rules. This also creates problems of equality, representativeness, and unfair benefit as a result of identity.

Influential superiors, most importantly medical command physicians, are also significant in both limiting behavior and allowing freedom of action. The second effect is perhaps the most important. The frequently busy and clinically aggressive paramedics interviewed for this study enjoyed relative freedom from many of the rules that require permission from a physician for specific therapies. The formal and informal interactions between physicians and paramedics served to create substantial trust that provided the foundation for this relative freedom, which then allowed paramedics to operate with increased efficiency. These relationships were not universal or perpetual, with each built on a foundation of continued appropriate treatment and demonstrated strong clinical judgment from paramedics.

Importantly, not all organizations were permissive of these less restricted behaviors, lending support to those theories of street-level bureaucracy that incorporate organizational culture as a key component. In at least one organization participating in this study paramedics were required to follow clinical protocols closely, including those rules indicating that medical command physician approval is necessary to use certain drugs or tools. The impetus for this stringent rule-following was the collective ruling of
the organizational medical command physician and the chief administrative officer. Thus, the cultural norms established by these key individuals and supported by the enforcement efforts of middle managers shaped the behavior of front-line workers. This serves to support theories of street-level bureaucracy which note the importance of leaders in shaping organizational culture.

Where other theories of street-level bureaucracy have advanced the importance of political principals, this study provides only partial support for these types of influence. While it is tempting to simply attribute the close following of rules noted above to agents acting in concert with the wishes of political principals, the manner in which these rules are drafted does not allow for an easy direct link. Clinical protocols are, as with many administrative laws, created in an iterative process using a public notice-and-comment period. While the authority to create these rules comes from the state executive branch, the actual authoring of rules falls to a body of experts including physicians, front-line paramedics, and representatives of related organizations. Thus, the highly technical tasks shaping clinical rules are not fully formed through the actions of political principals, but by interested professionals from the field with public input. Less participatory rule-making does occur within state-level agencies, but none have the consistency and depth of influence demonstrated by clinical protocols. Other local-level political principals may, however, have some influence on EMS workers. As noted by Gilboy (1992), the anticipation of some sort of favorable or unfavorable response by an elected official to the behavior of a front-line EMS worker was noted in a focus group response. This type of anticipatory pressure was only felt in those cases in which the patient was the elected
official or an elected official’s family member, reducing the likelihood of such influence occurring.

Of the results contained herein, those pertaining to the importance of patient need add insight into the difficulties of street-level work. As noted in the literature review, the majority of street-level occupations studied to-date are focused on serving clients with social, financial, or legal needs. EMS workers, however, provide services to of a primarily clinical nature, focusing on physiological and psychological needs, the latter which can sometimes be less easily observed. When combined with the time-constrained and urgent nature of the emergency medical services provision, those sources of influence serving to reduce uncertainty about patient need become even more salient to street-level workers. Specifically, occupational culture, when conceptualized as the day-to-day practices related to the tasks that make up service provision (Sandfort, 2000), and assessments of patient identity both serve to provide cues to patient needs that may not be otherwise observable and palpable. The validity of these cues is not guaranteed, as previously mentioned, placing additional emphasis on the necessity of strong initial and ongoing training and ongoing dialogue with peers and supervisors.

Placed in a broader perspective, this study reaffirms the key role of street-level bureaucrats in the policy implementation process. These public servants are tasked with putting into practice voluminous rule-sets responding to critically difficult situations involving direct service to clients. Discretionary latitude, but rule-constrained and norm-constrained versions, are evident in the examples of service provision outlined by study participants. The use of this latitude was notably virtuous and aimed at improved patient
outcomes in most situations, adding support for individuals who support the legitimacy of
front-line policy making through discretionary behavior.

**Contributions to EMS Literature**

Perhaps the most glaring gap in EMS literature is that research into the
nonclinical, non-rule-based influences on EMS provider behavior. This study begins to
fill this gap by noting that these influences exist and have real, tangible effects on
behavior. Concepts of occupational and organizational culture, peer and supervisory
influence, and patient characteristics are potentially key variables in the decisions made
by EMS workers. This study also points to important considerations about units and
levels of analysis in EMS research. A substantial body of scholarly work exists in EMS at
the systems level, however this study highlights the importance of individual-level
research on actual patient care and outcomes. There is, in essence, a need to become more
granular in the examination of emergency medical services with a focus on street-level
EMS workers.

Also important is the recognition that the study of clinical therapies should
include a behavioral component. Paramedics may not always abide by clinical rules
especially in those situations in which patients may benefit from deviation. The impact of
a clinical intervention is key to those types of studies, and the applicability of this past
research studies to patients should be carefully evaluated in light of the potential for
inappropriateness. On a related note, this also points to the necessarily interdisciplinary
nature of EMS research. A field of practice such as prehospital health care would surely
benefit from collaborative endeavors from individuals representing the fields of clinical
medicine, public policy and administration, sociology and psychology, business, and economics. An interdisciplinary approach will surely strengthen a service that spans so many realms of scholarly inquiry.

This study underscores the importance of both exposure to new clinical knowledge and skills and continual employment of both in prehospital EMS education. The saliency of experiences in establishing and reinforcing both rules and professional norms signals that effective education should incorporate real-life scenarios or simulations that mimic actual practice as closely as possible. This may be especially important for highly technical skills or those skills that are used infrequently, such as intubation or the treatment of pediatric patients.

Concepts of causality and use of specific research methods are also an important part of this discussion. Although the use of retrospective analysis of call reports may serve to identify relationships of interest, these studies do not fully identify causality among variables of interest. And, though retrospective analysis of incidents using narrative analysis was effectively used in this study to interpret causality, it is important to employ methods that will allow for verification of behavior and close linkages between these narratives or explanations of behavior and the observation of incidents. With this in mind, future research into the complex relationships at work in EMS could employ both observation of incidents and post-incident discussion with front-line providers to gain a temporally close, in-depth account of the intricacies of the event.

This study does, however, highlight several concerns regarding the provision of emergency medical services. First, as noted in several instances, concepts of patient identity do have an impact on paramedic behavior. Ascribed characteristics such as race,
gender, socioeconomic status, or other characteristics may impact assessment of possible clinical conditions as well as eliciting other judgments about patients. Identity, then, may cause some amount of error in diagnosis and treatment, which would have potentially devastating consequences for patients. Although slightly less tangible, paramedic assessments of patient worthiness, especially in cases in which the assessment was unfavorable, may also result in less appropriate behavior of a nonclinical nature.

Paramedic attitude, affect, and other “softer” methods of interacting with patients may be as important as clinical therapies in considering overall patient treatment. Also, as noted previously, experiences and positive reinforcement can aid in improving paramedic skills and judgment. However, data collected in this study suggests the possibility of detrimental effects of experience. Specifically, an example provided by a paramedic outlined a case in which substantial experiences with a certain type of condition may have pointed the paramedic in the wrong clinical direction, resulting in an inappropriate treatment plan. Great care and attention must be paid to the ways in which concepts of identity, worthiness, and causality are tied up in paramedic assessments of patients.

As much of this study is situated in actual events and experiences of front-line responders, discussion on the applicability of findings to practice is both necessary and appropriate. While these are preliminary and may not be applicable to all organizations, these suggestions may at the very least spur discussion between academics and practitioners.
**Implications for Practice**

Several findings from this study may be applicable to practice through translation and refinement to fit the specific context of individual organizations. Perhaps most importantly, organizations may benefit from the recognition and purposeful discussion of discretionary behavior. Dimock (1936/1967) noted that “[d]iscretion sometimes leads to experiment; improved practices may follow; and the final result may be a new rule” (p. 48). Not only can newer paramedics learn from the judgment of more seasoned paramedics, organizations and state regulatory bodies may find such information useful in crafting or revising rules and procedures. Although substantive effort is undoubtedly expended in creating clinical protocols and organizational policies, new and unforeseen situations or circumstances may become evident to front-line paramedics, which could fundamentally change the tenor of these rules. Similarly, purposeful discussion of difficult calls may facilitate discoveries of more appropriate methods of providing services, and other innovative means of improving existing service provision or of improving patient outcomes. Including in the discussion both service medical directors and medical command physicians from local hospitals would also serve to improve informal working relationships, which may spur further substantive dialog on service improvement.

The importance of occupational culture and the saliency of experience in both absorbing rule content and recognizing anomalous situations points to the importance of training plans that incorporate scenarios or simulations. In many cases, scenario-driven training plans are incorporated as part of initial and ongoing EMS training, and the learning experience may be improved greatly by not only the completion of patient care
routines but the conscious and explicit discussion of key aspects of these experiences. Focusing on those specific aspects of patient presentation, procedural skills, or other fine details may allow paramedics to gain a more thorough grasp of the appropriateness or inappropriateness of specific therapies for varying types of patients. These interactions would also serve to strengthen cooperative peer learning among paramedics, which may translate into more supportive decision-making interactions during particularly difficult calls.

Collaborative training opportunities with public safety professionals may reduce the burden on paramedics as they provide patient care. Although resource scarcity may not allow for the dedication of resources to assist EMS during tough calls, those training programs that are able to harness the capabilities of these groups could derive even more benefit through providing focused training. This is possible through informal relationships, like those mentioned by interview participants, in which training is provided to police officers or firefighters on information gathering or simple diagnostic techniques that may be helpful to paramedics before they arrive on scene. Or, increasingly formal means like cross-training of firefighters as EMTs may be increasingly useful if support from other organizations and slack resources are available. Interestingly, despite the initial resistance by fire departments to the merger of fire suppression and EMS, many such departments are now clamoring to claim EMS as part of their service to bolster reduced demand for fire services.

Finally, recognition of patient-specific characteristics and their impact on decision-making will be crucial in providing appropriate levels of services. There were many cases in which patient worthiness was not an issue, especially those patients with
an obvious clinical need for services; however, other cases in which patients were less likely to be viewed as legitimately requiring EMS were obvious. The near-universal nature of the descriptions of “system abusers” underscores the need for explicit and frank discussions with front-line public servants about the nature of nonclinical aspects of interactions with these patients. Though less important to the physiological health of patients, nonclinical factors, such as body language and demeanor, can be important considerations in evaluating overall service performance.

**Limitations of the Research**

Several limitations of this research are evident. First, the primary research method, using primary accounts of service provision, relies entirely on participant’s self-reported behavior. The narratives of critical incidents were accounts of subjectively experienced events and may have been incomplete accounts of incidents. As is notable throughout the results chapters, the stories told in this study were dramatic and stressful, requiring complex assessments and skilled clinical action to treat seriously ill or injured patients. This serves, in essence, to leave out incidents that were more routine, less-severe, or less “interesting” to the paramedics. Although many paramedics relayed feelings on these less-severe types of incidents, none told complete, detailed stories about these. Finally, the paramedics related only stories that they wanted to relate, thus controlling the characterization of both their own actions and of the profession that were relayed to the PI. Incidents that were controversial, created a negative image of the paramedic or of the profession, or were unacceptable for another reason may have been excluded by the interviewee. Though this research served to indentify several key themes,
it is important to recognize for the reasons noted that the primary data collection method does not constitute a complete picture.

A related limitation is evident in considering analysis of the qualitative data. Coding for both interviews and focus groups was conducted by the PI. Though care was taken by the PI to code interviews and focus groups in a manner that was fully consistent with the study participants’ meaning, the process is not without pitfalls. Additional analytical rigor could be achieved through the use of multiple coders and assessments of interrater reliability.

Given the nature of the main research methods and sampling, generalization to larger populations is not possible. For reasons previously noted, the use of qualitative methods in examining the causal mechanisms that lead to street-level bureaucratic behavior is key to this research. The small sample size and purposeful selection of participating organizations on the basis of structured variation in organizational characteristics does not allow for the maintenance of representativeness of any larger population. Further reducing generalizability, this study does not account for potentially significant state-based variation among the rules created to govern EMS provider behavior, variations in service delivery and target population, and any number of other differences that may be important to the study of this type of service.

Additionally, there is potential for selection bias in the identification of both organizations and participating paramedics for this research. However, as selection of participating organizations occurred in a relatively mechanical manner, this limitation has been minimized. Likewise, selection of paramedics for participation in the semi-structured interview was based on availability during down time from emergency calls,
introducing some amount of randomness into the selection process. Selection for focus groups was open to all paramedics at participating organizations via email solicitation, and, although selection bias on the part of the PI was not an issue in this study, managerial selection bias may have consciously or unconsciously been a factor. And, as previously noted, a related limitation comes as a by-product of using population and organizational form to select cases. Those departments serving larger populations are primarily career departments, which serves to effectively exclude primarily volunteer organizations from this study. It is acknowledged that these organizations are a vital and important aspect of EMS in Pennsylvania, and future research should specifically target these organizations.

Beyond the extant limitations of the use of qualitative methods, several limitations are evident in the use of survey data and quantitative analytical techniques. First, generating inferences about causal mechanisms is not possible given the cross-sectional nature of the data. Second, similar to interviews and focus groups used in the qualitative sections, the survey relied entirely on self-reported behavior of paramedics which may or may not be fully accurate. Third, selection issues may also have been evident in the survey data collection. Even though more than 50% of the population responded to the questionnaire, self-selection into the study group may have resulted in a non-representative population. Additionally, though a majority of variables employed were found to be valid and reliable through previous research, the dependent variable in one study model was created specifically for this research. Although this measure has substantial face validity, additional validity and reliability efforts would further support the use of this measure.
Despite the limitations noted for the collection of both qualitative and quantitative data, these limitations are acceptable in that this is exploratory research seeking to examine an area of study previously not considered. Importantly, this research allows for generalization of the results to theory. Thus, this research can serve as a theoretical base for future research.

**Future Research**

Several avenues of investigation emerge from this research. As this is exploratory research, several findings will inevitably require additional in-depth examination. Though this study highlights the existence of a relationship between constructs of interest, it does not examine them fully. Importantly, this study served to explore the general effects of types of influence on paramedic behavior. Although sufficient for exploratory research, defining the dependent variable more specifically is important for future research. Along these lines, concepts of occupational culture should be studied with particular vigor as the daily activities and routines of paramedics, especially the continually reified causal relationships that are created in these routines, play a substantial role in shaping rule-adherence and deviation. Methods of examining these can include more focused observation of actual service interactions coupled with in depth interviews with paramedics about their actions during these incidents. Additional research could also focus on the cognitive bases of paramedic behavior, examining their decision-making with added depth and generating insight into assessment and use of rules.

Likewise, patient worthiness, and related areas of patient identity and patient need, should be subject to further examination and conceptual unpacking. These concepts
were identified as important in this study, and the mechanisms through which influence was exerted were multiple and complex. Additional research could employ methods utilized in clinical medicine such as large-scale retrospective analysis of patient care reports, methods that eliminate the possibility that paramedics would provide a socially acceptable answer to sensitive questions of race, gender, or culture. Although a retrospective analysis would allow for examination of more obvious differences in patient treatment, such as administration of pain medication, it would not allow for differences in other “softer” care techniques like paramedic attitude or demeanor. Other methods could include experimental studies placing paramedics in scenarios testing for changes in behavior based on identity. These scenarios allow for alteration of key identity variables, however, investigators would have to pay close attention to ensuring that incidents are realistic enough and not far removed from actual incidents, and that research questions are not obvious to participants.

Related to this, studies of representativeness of EMS providers would also be a worthy next step. The population of EMS providers who constitute the sources of data for the majority of this study were predominantly male and Caucasian. In contrast, the populations served by these providers were much more diverse. This disparity, and the potential importance of identity and race on patient assessment and treatment results in a glaring need to examine the intersections of these concepts.

The importance of the methods and effectiveness of communication between paramedics and patients is critical in establishing accurate diagnoses and determining appropriate clinical interventions. Mentioned as one cause of improper assessment, communication skills may be as critical to patient outcomes as the actual clinical skill
used in treating patients. Whereas the needs of patients with relatively minor complaints and some types of very severe conditions (e.g., cardiac arrest) are relatively obvious, communication becomes especially important in those patients presenting with moderate-to-severe symptoms that may not be as obvious to treating paramedics. Further research on this topic would establish optimal patterns of communication and would identify those patient populations that may be less able to communicate complex information relating to the incident or personal medical history. The latter is especially important as diagnosing and treating patients becomes much more difficult in uncertain and time-constrained situations. Research into communication effectiveness could also be extended to interactions between paramedics and medical command physicians in discussing treatment options during an emergency. Further research may reveal that information communicated, and the means by which that information is communicated, may potentially result in the approval or rejection of requested therapies for patients.

Future research on the interactions between paramedics and physicians should also examine issues of trust. Cited in several cases as an important variable, dyadic trust played a key role in the approval or rejection of specific therapies during emergency situations. The manner in which this trust is established should be examined and must take into account the multiple types of interactions that may be important. These include the volume of patients brought to a specific ED and programs enabling physicians to “ride-along” with paramedics as they treat patients. Extending this investigation to the organizational level, it would also be important to study physician perceptions of organizations and related levels of expertise. Several paramedics working for multiple organizations noted differences in physician perceptions of these agencies, setting up
interesting natural experiments that may lend insight into these questions. Also related, ethnographic studies of the interactions among paramedics and ED staff members, including physicians, nurses, and administrators, could assist in explaining the development of trust by examining unrelated, yet potentially socially salient, post-patient transfer interactions.

Other types of collaboration between EMS agencies and other health care organizations in both training and service provision may allow for other types of interesting research. Current examples of these collaborative efforts are plentiful, and include cooperative clinical care (e.g., implementation of innovative clinical procedures in the prehospital setting with continued use after patient transfer to hospital medical staff), as well as continuing education experiences for prehospital providers through professional training in a hospital setting. Although the organizational “home” of EMS agencies was not found to be significant in this study, future research examining hospital-based EMS should consider the formal organizational links between ED physicians and EMS agencies.

Additional research could also focus on two categories of health services personnel working in uniquely stressful environments. These include nurses and paramedics who provide aeromedical (e.g., helicopter) transport services, and health care providers serving in Federal Emergency Management Agency task force teams who deploy both domestically and internationally in response to disasters and crises. Both categories are particularly interesting as they constitute populations that self-select into more intense, uncertain, and demanding service areas. Questions of organizational citizenship, commitment, job satisfaction, and motivation are readily apparent when
examining these groups. As with the present study, these may require initial exploratory research of a qualitative nature, which can then be used in formal quantitative modeling.

Already mentioned as a limitation of this study, future research should also examine variations in EMS provider behavior at the state level. As many of the most important regulatory decisions are made at this level, it is crucial to examine behavior and rule-enactment as situated in a varying policy context. Variations in implementation of these policies also exist between EMS regions, the enforcing arms of state government, inviting discussion and examination of interorganizational collaboration between regions and individual EMS agencies.

Further research could also focus on front-line health care providers in an international context. Many of the same questions from this study, including discretion, rule abidance or deviation (broadly construed), and organizational arrangements can be extended internationally, with a focus on comparative research. Behavior in EMS organizations may be particularly interesting when situated in differing political, social, and economic systems, and when examined as a component part of larger health care systems. Additionally, though slightly different in the types of services provided, research into front-line health care workers in developing countries may be especially valuable as these street-level bureaucrats provide a broad range of both emergent and non-emergent services to underserved populations.

**Conclusion**

Street-level bureaucrats working in EMS organizations provide invaluable services to a substantial body of citizens. In doing so, they enact complex rules in
difficult situations, responding often to both uncertainty and severe time-constraints
during these incidents. In many situations, the rules created to guide behavior are well
matched to patient needs, resulting in a negligible amount of conflict or difficulty.
Patients are treated in accordance with rules, and the necessity for any amount of
deviation from rules, policies and procedures is eliminated. In other cases, the matching
of rules and behavior may not be easy or uncomplicated due to changing situations, other
public servants or health care professionals, or patient characteristics. These sources of
influence that exist outside of formally promulgated rules can shape discretionary
behavior. And, on occasion, rules and patients are poorly matched, creating impetus for
deviation from rules with the interests of patients in mind. While this exploratory
research serves to begin a discussion on the nature of these services, it also brings to light
additional avenues for research. Though a substantial body of research on clinical care,
paramedic education, and systems-level properties of EMS agencies has been amassed,
additional research is necessary to effectively span all three of these areas.
REFERENCES


An Act defining emergency medical technician; authorizing such personnel to render emergency care; exempting such personnel and physicians working in conjunction with them from civil liability when rendering such care; and making repeals. Pub. L. No. 1205, § 1-7, 35 Pa. Stat. § 6801–6805. (repealed 1985)


NFPA, 1710. *Standard for the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by career fire departments* (National Fire Protection Association, 2010).


APPENDIX A

February xx, 2010

FIRST NAME LAST NAME
AGENCY
ADDRESS 1
ADDRESS 2
CITY, Pennsylvania ZIP

Dear ________________,

My name is Alex Henderson and I am currently a doctoral candidate in the School of Public Affairs and Administration at Rutgers University. I am writing to formally introduce myself and to express interest in including employees of the AGENCY as part of my doctoral dissertation research. This research focuses on decision-making and behavior at the front-lines of emergency medical services (EMS).

Participation would result in minimal time costs for your staff members. Specifically, this research would consist of 10 one-on-one interviews with full-time EMS providers in your agency, one focus group consisting of 5 to 7 additional providers, and administration of a short survey to all of your full time EMS providers. The expected duration of the interviews and focus groups will be approximately one hour. If you agree to allow your providers to participate, I would be more than happy to travel to your station at a time that is convenient for both the participants and the organization.

All participants are guaranteed complete anonymity. No personally identifiable information will be recorded to ensure that comments made by participants cannot be linked to them in any way. Additionally, I will ensure anonymity for AGENCY and will not include the name of the organization in any part of my research.

This research will meet the rigorous standards of the Rutgers University Institutional Review Board, the purpose of which is to ensure that the utmost care is used in designing research for the protection of the participants. Importantly, this research focuses on EMS providers, will not involve patients or interfere with patient care, and will not involve any type of clinical intervention or therapy.

My interest in EMS provider behavior is based in my professional experiences. Before beginning the Ph.D. program at Rutgers I spent a little over 11 years as both a paid and volunteer firefighter and EMT with several organizations in southeastern Pennsylvania, including Radnor Fire Company (as a firefighter/EMT, fire Captain, and Director), Volunteer Medical Services Corps of Lower Merion and Narberth (as a career staff EMT), and Lafayette Ambulance and Rescue Squad (as Executive Manager).
My dissertation committee is chaired by Dr. Frank Thompson, who has published extensively on issues of health policy, policy implementation, public personnel policy, and administrative politics. Committee members Dr. Norma Riccucci and Dr. Sanjay Pandey have expertise in public management, human resources, leadership, diversity, and decision-making.

Also serving on my committee is Dr. Ed Dickinson. Dr. Dickinson is an emergency department physician and associate professor of Emergency Medicine at the Hospital of the University of Pennsylvania (HUP). He has extensive experiences working in EMS as a provider and as the Medical Director for several EMS organizations in southeastern Pennsylvania.

Enclosed is a letter of support for this research project from Heather Sharar, the Executive Director of the Ambulance Association of Pennsylvania (AAP).

It is my hope that this collaboration will be mutually beneficial. I will be happy to share the results of my research with the organization as a tool to assess and analyze service delivery.

Please do not hesitate to contact me if you have any questions or concerns. My email address is xxxxx@rutgers.edu, and my cell phone number is (xxx) xxx-xxxx. I will follow up via phone in a few days to discuss this research project with you.

Sincerely,

Alexander C. Henderson, MPA, EMT-B
APPENDIX B

List of Requested Organizational Documents

- Mission, Vision, and Values Statements
- Patient Bill of Rights
- Personnel Policy Manual
- Standard Operating Procedures (or Guidelines)
- Clinical Protocols (organizational amendments to PA State ALS / BLS protocols)
- Union Contract (if applicable)
- Any other organizational policy documents for employees
APPENDIX C

Pre-Interview Instructions for EMS Provider Stories

Over the next week, I would like you to write down a rough outline of 3 to 4 different stories. These stories should describe situations that take place within your organization during this time, or that you might recall from the past. The rough outlines will help you remember the story when you tell it to me later; you will not be required to share these notes with me.

I am interested in stories about memorable emergency incidents. These incidents can include particularly difficult situations, incidents in which you felt your clinical skills were tested, patients presenting with complex illnesses or injuries, or patients that were memorable for any another reason. Stories can involve an encounter between you and patients, be about encounters between you and your agency related to patient care, or among you and other members of your agency regarding an emergency incident.

The stories should, as much as possible: (1) have a plot or storyline with a beginning, middle, and end; (2) tell us who the characters are; (3) explain the relationships among the characters; (4) describe the feelings of the characters towards each other and the events; (5) include a description of the setting and circumstances in which the event(s) occurred, including:

A. Nature of the incident as dispatched
B. Initial impression of patient’s condition
C. Patient’s chief complaint upon arrival
D. History of present illness / incident (and mechanism of injury if applicable),

and (6) a detailed description of the actions that were taken during the course of the incident, including:

E. Findings of initial assessment
F. Provider impression of illness or injury
G. Treatment(s) provided to the patient and results
H. Patient condition at hospital

APPENDIX D

Interview Protocol

Thank you for taking the time to talk with me.

Before I begin, let me explain a little about my research project:

This is academic research that seeks to understand more about front-line emergency medical services providers. Although I have permission from [name of agency head] to do the research, I am not reporting to [him or her] or anyone else in the government. What you tell me will remain anonymous. I will use what I learn for scholarly writing but will not link specific observations with individuals.

Overall, the purpose of this research is to gain a greater understanding of the nature of front-line emergency medical services work from the point of view of individuals such as you.

My purpose today is to get to know a little more about the nature of [the organization] and about you.

Do you have any questions?

General Information

1. First, can you tell me a little about yourself?
2a. Are you an EMT or Paramedic?
2b. How long have you been an [EMT / Paramedic]?
2c. What made you decide to become an [EMT / Paramedic]?
3. How long have you been working at [name of organization]?
4. Can you tell me why you wanted to work here?
5. Can you tell me a little about other jobs that you have had?

Probes for Storytelling

Agents

Can you tell me a little more about the people involved this incident?
APPENDIX D (continued)

Background

*Can you tell me more about the events that led up to this incident?*

Predicaments

*Can you tell me more about the patient’s particular condition? What caused it? Would you characterize it as serious?*

Intentions

*Can you tell me a little more about how you created your plan for treating the patient?*

Actions

*Can you tell me more about how you treated the patient? Why did you use a certain technique or skill?*

Motives

*Can you tell me what motivated you to do that? Can you tell me why you think that person was motivated to do that?*

Relationships

*Can you tell me about your working relationship with that person?*

Emotions

*Can you tell me how you felt [at that moment/after the incident]?*

Objects

*Can you list the equipment you used during the call? How did you decide to use that particular piece of equipment?*

Causality

*What happened when you did that? What was the patient’s condition when you got to the hospital? Was this expected?*
APPENDIX D (continued)

Surprises

*Did anything unexpected happen?*

*Clinical Scenario*

See attached.

Follow-up Question:

*Can you tell me, with as much detail as possible, how you would treat this patient?*

Thank you very much. If you can think of anything else that you would like to add, just let me know.
APPENDIX E

Clinical Scenario 1

PATIENT HISTORY: You are dispatched for a fall victim. You arrive on location to find a 27 year old male sitting on the curb complaining of severe ankle pain. The patient notes that he slipped on ice while walking down the street, and felt a “pop” as he fell.

PHYSICAL EXAMINATION: The patient presents with a swollen ankle, is unable to put any weight on the ankle, and rates the pain as greater than 10 on a 0 to 10 pain scale. You notice during the physical examination that the patient has apparent track marks. Vitals are as follows: pulse is 110, BP is 122/82, and respirations are 16.

Clinical Scenario 2

PATIENT HISTORY: You are dispatched for a fall victim. You arrive on location to find a 27 year old male sitting on the curb complaining of severe ankle pain. The patient notes that he slipped on ice while walking down the street, and felt a “pop” as he fell.

PHYSICAL EXAMINATION: The patient presents with a swollen ankle, is unable to put any weight on the ankle, and rates the pain as greater than 10 on a 0 to 10 pain scale. Vitals are as follows: pulse is 110, BP is 122/82, and respirations are 16.
APPENDIX F

Focus Group Guide

Introduction

Good morning. My name is Alex Henderson, and I am doctoral candidate at Rutgers University studying public administration. My research interests are primarily in emergency services and organizational behavior.

Before we begin, let me explain a little about this research project:

This is academic research that seeks to understand more about front-line emergency medical services providers. Although I have permission from [name of agency head] to do the research, I am not reporting to [him or her] or anyone else in the organization. What you tell me will remain anonymous. I will use what I learn for scholarly writing but will not link specific observations with individuals.

Overall, the purpose of this research is to gain a greater understanding of the nature of front-line emergency medical services work from the point of view of individuals such as you.

Basic Rules and Guidelines

In an effort to encourage open and honest dialogue, there will be very limited structure to this focus group. There is no particular order in which you need to speak, and I invite you to respond to my questions freely, honestly, and completely. If you feel the urge, you can also respond to or build upon a comment of one of the other participants.

The only expectation is that of a polite and orderly environment where everyone will feel confident participating in the discussion. Feel free to speak your mind and please allow others to do the same. Additionally, if there is a question that you do not feel comfortable answering you are free to abstain from the discussion.

You’ll notice that we are creating an audio recording of this conversation. The recording will allow me to facilitate this conversation without the added distraction of note-taking, and will allow me reflect upon the details of the conversation while engaging in the analysis phase of this project.

Please rest assured, your comments will not be linked to you in any way and will not be provided to your employer or coworkers.

Before we begin, do you have any questions?
APPENDIX F (continued)

State, Regional, and Organizational Clinical Protocols

1. In the course of an emergency incident, do you ever refer to the State ALS or BLS protocols or regional protocols?

   Probe: Can you tell me how you refer to them? (i.e., on paper or from memory)
  Probe: Can you give me specific examples of the information you reference?
   Probe: Can you tell me which protocols you refer to most often?

2. How often do you review these protocols outside of emergency incidents?

   Probe: In what situations would you review the protocols outside of an emergency incident?

   Probe: Can you give me an example of the specific information you would look up?

3. How often do you receive training that explicitly refers to or includes clinical protocols?

   Probe: Can you describe this training?
   Probe: Is this training adequate?

4. Can you describe your thoughts on the purpose of these protocols?

   Probe: Are these protocols adequate? Do they meet your perception of their purpose?

Organizational Standard Operating Procedures / Guidelines

5. How often do you refer to the organizational SOPs/SOGs in your day-to-day activities?

   Probe: Can you give me an example of the specific information you would look up?
   Probe: Can you tell me which procedures / guidelines you refer to?

6. How often do you review these SOPs/SOGs outside of emergency incidents?
APPENDIX F (continued)

Probe: In what situations would you review the procedures / guidelines outside of an emergency incident?
Probe: Can you give me an example of the specific information you would look up?

7. How often do you receive training that explicitly refers to or includes these procedures / guidelines?

Probe: Can you describe this training?
Probe: Is this training adequate?

8. Can you describe your thoughts on the purpose of these procedures / guidelines?

Probe: Are these procedures/ guidelines adequate? Do they meet your perception of their purpose?

Thank you very much for your time and participation. If you can think of anything else that you would like to add, just let me know.
Dear City of _________ Paramedic,

In the next few days you will receive a link for a web-based survey that asks questions about you, and about your experiences as a paramedic. This survey is one part of a dissertation research project conducted by Alex Henderson, a doctoral candidate at Rutgers University – Newark. Prior to beginning school at Rutgers, Alex was a firefighter, EMT, and EMS administrator in suburban Philadelphia.

As a paramedic employed by City of _________, you have been chosen to take this study and provide insight into your experiences. The profession of emergency medical services has long been neglected in academic research, and this research will begin to remedy the lack of inquiry into this core public service.

Obtaining direct input from paramedics is vital to gaining a better understanding about the field of emergency medical services. This enhanced appreciation for the nuances of emergency medical services provision can help strengthen the field as a whole.

This survey should take about fifteen minutes of your time. Your responses are voluntary and will be completely confidential. No personally identifying information will be collected during the survey, and all responses will be compiled and analyzed as a group.

I would appreciate your time in completing this survey.

If you have any questions or concerns, please contact Alex by email to _______@_______.edu.

Thank you,

NAME OF EMS ADMINISTRATOR
Dear City of ________ Paramedic,

Earlier this week you received an email letting you know about a survey that is intended to gather information about your experiences as a paramedic. The link for the survey is included here:

SURVEY URL HERE

This web-based survey asks questions about you, and about your experiences as a paramedic. This survey is one part of a dissertation research project conducted by Alex Henderson, a doctoral candidate at Rutgers University – Newark.

As a paramedic employed by City of __________, you have been chosen to take this study and provide insight into your experiences. The profession of emergency medical services has long been neglected in academic research, and this research will begin to remedy the lack of inquiry into this core public service.

Obtaining direct input from paramedics is vital to gaining a better understanding about the field of emergency medical services. This enhanced appreciation for the nuances of emergency medical services provision can help strengthen the field as a whole.

This survey should take about fifteen minutes of your time. Your responses are voluntary and will be confidential. No personally identifying information will be collected during the survey, and all responses will be compiled and analyzed as a group.

I greatly appreciate your time and effort in completing this survey.

If you have any questions or concerns, please contact me by email to __________@__________.edu.

Thank you,

Alexander C. Henderson, MPA, EMT-B
Doctoral Candidate
Rutgers University - Newark
__________@__________.edu
Dear City of ________ Paramedic,

Last week you received an email inviting you to take part in a survey that examines your experiences as a paramedic. If you have already completed this survey, I sincerely thank you for your participation. Please feel free to delete this email.

If you have not completed the survey, I invite you to do so now. The link for the survey is included below.

SURVEY URL HERE

Your responses are voluntary and will be confidential. No personally identifying information will be collected during the survey, and all responses will be compiled and analyzed as a group.

I greatly appreciate your time and effort in completing this survey.

If you have any questions or concerns, please contact me by email to _________@__________.edu.

Thank you,

Alexander C. Henderson, MPA, EMT-B
Doctoral Candidate
Rutgers University - Newark
__________@__________.edu
CURRICULUM VITAE

1980  Born January 4 in Bryn Mawr, Pennsylvania
1998–2002  Attended Villanova University, Major – Political Science
2002  B.A. in Political Science, Villanova University, Villanova, Pennsylvania
2002–2004  Attended Villanova University, Major – Public Administration
2004  M.P.A., Villanova University, Villanova, Pennsylvania
2002–2003  Management Intern, Township of Radnor, Pennsylvania
2003–2004  Emergency Medical Technician, Volunteer Medical Service Corps of Lower Merion and Narberth, Ardmore, Pennsylvania
2004–2007  Executive Manager, Lafayette Ambulance and Rescue Squad, King of Prussia, Pennsylvania
2007–2010  Teaching Assistant, School of Public Affairs and Administration, Rutgers, The State University of New Jersey, Campus at Newark
2010–2011  Dissertation Fellow, School of Public Affairs and Administration, Rutgers, The State University of New Jersey, Campus at Newark
2011  Ph.D., Rutgers, The State University of New Jersey, Campus at Newark