

TRENDS IN REIMBURSEMENT FOR REPRODUCTIVE GENETIC COUNSELING BY  
MULTIPLE PAYERS FROM 2010-2018

By

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## ABSTRACT OF THE THESIS

Trends in Reimbursement for Reproductive Genetic Counseling by Multiple Payers from

2010-2018

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In 2007, the implementation of CPT code 96040 for “Medical Genetics and Genetic Counseling Services” allowed genetic counselors to bill directly for services and to regulate genetic counseling reimbursement. Lack of insurance coverage is a barrier of access to care for patients that needs to be addressed. This retrospective study examined reimbursement of reproductive genetic counseling encounters billed under 96040 at Rutgers Robert Wood Johnson Medical School, a regional perinatal center in New Jersey, a state requiring licensure. Descriptive statistics were tabulated to assess the difference between payer categories, (Medicare/Medicaid, Managed Care Medicaid, and commercial insurance), including how often encounters were reimbursed and if reimbursed, at what percentage of the amount billed. For commercial payers, a comparison of individual plan types (Health Maintenance Organization, Point of Service, and Preferred Provider Organization) was carried out. Trends in reimbursement were assessed over the eight-year period for payer types.

The study found that 61% of 60-minute encounters billed under 96040 were given any reimbursement. Of reimbursed encounters, the payer reimbursed only 36%

of the amount billed. Medicare/Medicaid encounters were never reimbursed as the Centers for Medicare and Medicaid Services (CMS) do not recognize genetic counselors as credentialed providers nor recognize 96040. Commercial insurance reimbursed most often at 65% of encounters, but varied greatly between payer and individual plan type. There was an overall downward trend of the percentage of encounters reimbursed over the eight-year period.

In order to improve payer reimbursement, consistent infrastructure needs to be created for each payer type. While this has started with the introduction H.R 7083, “Access to Genetic Counselor Services Act of 2018” to recognize genetic counselors as CMS providers, the need is still present for other payers. If genetic counselors were deemed in-network providers for commercial payers, reimbursement could increase and be more consistent. For this to occur, advocacy on the local and national levels needs to focus on this effort to overcome this barrier of access to care.

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## Introduction

The field of genetic counseling is a relatively new division of health care that has been growing at an exponential rate since the creation of the National Society of Genetic Counselors (NSGC) in 1979. This professional network has allowed for genetic counseling to grow in an organized and efficient manner by working endlessly to meet the goals and expectations of its members. This includes providing support as individual states petition for licensure of their genetic counselors. With the collaboration of the Human Genetics Association of New Jersey and NSGC's Government Relations team and Licensure Subcommittee, licensure was secured for New Jersey upon "The Genetic Counselor's Licensing Act" (A269) being signed into law April 2009. The Genetic Counseling Advisory Committee wrote the rules and regulations of licensure which allowed for licenses to be issued starting July 2014 (HGANJ, 2018). Genetic counselors were also granted individual National Provider Identifier (NPI) in June 2005 as per Debra Lochner Doyle, MS, LCGC who was integral in its establishment.

One area in current need of improvement is billing and reimbursement for genetic counseling services. In order for any health care provider to receive reimbursement from insurance companies for outpatient or office-based services, it must be billed using a Current Procedural Terminology (CPT) code that is designed specifically for that service. Without the correct code, insurance companies will not recognize the service and will not know how to properly reimburse the provider. The CPT codes are determined by the American Medical Association with new editions being released annually (American Medical Association, 2019). Since each code is specific to a type of service, newer fields, such as genetic counseling, have had to wait

for a new CPT code that incorporates their scope of practice. This lack of a specific code would prevent genetic counselors from being reimbursed for genetic counseling services. If insurance companies do not recognize or reimburse for a service, patients often do not access the service. Lack of proper and consistent reimbursement is a current barrier of access to care.

Noting this immense issue, Debra Lochner Doyle, MS, LCGC, former NSGC president worked tirelessly along with a dedicated NSGC subcommittee to formulate the necessary documentation to petition for a genetic counseling specific CPT code. In a November 2018 interview with Lochner Doyle, she described the obstacles she overcame to get the CPT code approved. She recounted her experience sitting on the Health Professional Advisory Committee, a board acting as gatekeeper to the CPT Editorial Panel. This allowed her the opportunity to understand how new CPT codes are evaluated and to structure the 96040 code petition accordingly. While the 96040 code was not initially accepted, the introduction of two critical changes helped obtain approval. The first being the use of “genetic counseling” as one word, rather than referring to services as simply “counseling.” This demonstrates the validity of genetic counseling services as the term represents a specialty that requires a board-certified genetic counselor. The other change was using a stackable, time-based CPT code as not every aspect of genetic counseling is demonstrated in each session. With these changes implemented, the CPT code was defended again to the CPT Editorial Panel.

In 2007, Lochner Doyle and NSGC’s mission was complete as the American Medical Association added a new Category I CPT code, 96040 for “Medical Genetics and Genetic Counseling Services” (Harrison, 2009). The implementation of this code would

allow for trained genetic counselors to bill insurance companies under his or her own name and NPI number, without the need of a supervising physician's NPI, while using appropriate International Classification of Diseases (ICD) codes. Counselors became more autonomous while following more compliant billing practices. The code was created in response to inconsistency in billing across the United States and to improve accuracy in medical billing (Gustafson, 2011).

The 96040 CPT code is to be used by "trained genetic counselors," which NSGC notes is not a defined term as payers will individually determine what credentials are required. In an NSGC published document intended to educate genetic counselors, it is noted several times that reimbursement is not equal across third party payers as each payer will have their own credentialing and licensure requirements. When a payer considers a provider to be "credentialed," their services can be billed in network and receive consistent rates of reimbursement. Without this, genetic counseling services are billed out of network and hence receive less consistent and possibly lower reimbursement rates. It is suggested that each individual institution contact leading payers in their area to inquire about credentialing. However not every payer, including private and public insurance companies, treat the 96040 code equally and will not reimburse at the same rates. The 96040 code is intended to encompass 30 minutes of face-to-face counseling (NSGC Billing and Reimbursement Toolkit, 2013) and is considered to be stackable, where the same code is billed for every 30 minutes that the patient was seen. NSGC was unable to predict whether the reimbursement amounts of the new CPT code would improve the amounts already being reimbursed to the

institutions (NSGC Billing and Reimbursement Toolkit, 2013). That being said, the implementation of the 96040 code was promising yet its utility was questionable.

In addition to commercial insurance coverage, there is a historic lack of Medicare and Medicaid coverage as both the CPT code and genetic counseling services are not recognized by the Centers for Medicare and Medicaid Services (CMS). The AMA/Specialty Society RVS Update Committee (RUC) was created to make recommendations to CMS regarding CPT reimbursement based on a Resource-Based Relative Value Scale (RBRVS). This scale takes several factors into account including time, technical skill, and physical effort and creates a relative value unit (RVU). The RVU is then multiplied by the physician conversion factor to give the suggested payment amount (NSGC Billing and Reimbursement Toolkit, 2013). In 2007, the RVU was .98 and this increased to 1.34 in 2018 (ACOG, 2018). The physician conversion factor was \$37.8975 in 2007 and decreased to \$35.99 in 2018. Using the 2018 RVU and conversion factor, \$48.23 of reimbursement is suggested for each time 96040 is billed. This amount is stackable for every 30 minutes for face-to-face genetic counseling. While this is recommended, neither Medicare/Medicaid nor Managed Care Medicaid payers guarantees it (NSGC Billing and Reimbursement Toolkit, 2013). In order to address the lack of CMS recognition and reimbursement, a new federal bill, H.R. 7083, “Access to Genetic Counselor Services Act of 2018” (NSGC) has been introduced. If this bill is passed, genetic counseling services would be reimbursed by CMS and hence increase access to its beneficiaries.

Reimbursement of genetic counseling services under the 96040 code has been studied since its inception in 2007. A 2010 study by the NSGC CPT Working Group



evaluated 387 responses to a survey sent to NSGC listserv members regarding billing knowledge and practice. This was the first study on the implementation of the 96040 code and whether it was used for billing by genetic counselors across all specialties. They found that of all respondents, 94% knew of 96040. They study also found that only 69% of respondents were billing for their services and of those, 24% used 96040. There was a lack of knowledge regarding 96040's utility, as a majority were unsure of the reimbursement rate at their intuition and how many plans reimbursed when billed under this code. The study called for continued education to encourage reimbursement for 96040 (Harrison, 2009).

A 2010 study based in Illinois used a combination of surveys, interviews, and policy review to evaluate insurance plan coverage of genetic services. Three of the ten payers evaluated responded to the survey. These responses evidenced the inconsistency of payer views on genetic counseling and their noted barriers to reimbursement. Through policy review, Latchaw et al. found that varying payer policies for genetic counseling services and genetic testing were inconsistent. The study called for strategies to be implemented for "improvement of billing, reimbursement, and insurance coverage of genetic services," (Latchaw, 2010). While this study was in Illinois the concepts of legislation, consistent criteria, and including genetic counselor involvement in policy-making and payer education would help address the billing and reimbursement issues seen nationwide (Latchaw, 2010).

To assess whether a different service delivery model would increase 96040 reimbursement, a 2011 study by Gustafson et al. reviewed billing using 96040 under a supervising physician NPI for a 14-month period. The study does note that this practice

goes against the language of CPT code 96040, which notes that a non-physician genetic counselor NPI must be used. Of the 289 encounters billed to third party payers, 62.6% received some level of reimbursement. Of the 108 encounters not reimbursed, 87 encounters included reasoning for lack of reimbursement. One third of these reasons were related to the 96040 CPT code. This study noted that in order for billing and reimbursement to move forward, “federal CMS should include genetic counselors as non-physician providers” (Gustafson, 2011).

A 2015 study by Doyle et al. was thought to be the “first comprehensive exploration of the relative importance of potential barriers to routine payer reimbursement of genetic counselors.” Data was collected by a survey response of 22 chief medical officers or medical director at payer organizations asked to rate the given barriers to reimbursement. “Evidence that use of genetic counselors improves health outcomes” and “licensure” were cited as the largest barriers. Others noted that they follow CMS’s infrastructure for reimbursement of genetic counselors. There was also a concern about a return of investment on coverage of genetic counseling services, which notes an underlying question about the validity of genetic counseling. This study gave insight to understanding why there is a lack of reimbursement amongst payers even with 96040 implemented as payer inconsistencies and attitudes call for further education, advocacy, and legislature (Doyle, 2015).

To our knowledge, the largest study evaluating the longest time period of billing and reimbursement was published in 2017 using data from a single institution in South Dakota, a state requiring licensure. Their data spanned from 2009-2013 using 582 encounters to compare 31 different payers based upon if they credentialed genetic

counselors. This study excluded encounters where patients saw a physician on the same day, self-pay, Medicare, and Medicaid. It depicted that there were higher rates of reimbursement and higher percentages of amount reimbursed when genetic counselors were credentialed. This study calls for each state to have licensure, as they believe it could positively impact reimbursement. In states that already require licensure, this data evidences that reimbursement could increase if commercial payers credential licensed genetic counselors (Leonhard, 2017).

It would be beneficial to the genetic counseling community to assess their own billing and reimbursement data in order to understand how the 96040 CPT code was performing at their respective institution. This need was seen in New Jersey, a state requiring licensure. The purpose of this study was to retrospectively evaluate the trends for reimbursement for the 96040 CPT code at a regional perinatal center.

Using data from Rutgers Robert Wood Johnson Medical School (Rutgers-RWJMS) Perinatal Genetics Division from 2010-2018, this study looks to review the reimbursement by individual payers for genetic counseling services. This is an outpatient setting located in New Brunswick, New Jersey. In addition, the study will be looking to investigate the difference between Health Maintenance Organizations (HMO), Point of Service plan (POS), and Preferred Provider Organizations (PPO). We also sought to determine whether there are differences between commercial insurance and Managed Care Medicaid reimbursement. Finally, this study will be looking to review the trends of reimbursement over this eight-year period for each type of payer.

Patient encounters from 2010-2018 at Rutgers-RWJMS will be reviewed and used to educate the genetic counseling community about the level of reimbursement by

insurance companies in New Jersey, a state requiring licensure. Eventually, this model can be used to evaluate billing and reimbursement of reproductive genetic counseling in other states.

## Methods

### Ascertainment of Data:

Rutgers Robert Wood Johnson Medical School Perinatal Genetics Division collected the data from 2010-2018 using the billing and reimbursement information. The Institutional Review Board at Rutgers University determined on 3/3/2010 that this application does not meet the regulatory definition of human subjects research and does not require IRB approval. The data encompasses the services billed under the CPT code, 96040, by ten different genetic counseling providers. Each patient encounter has a record of the amount charged, amount paid, amount adjusted, and invoice balance. The types of insurance and specific plans are noted as well for the individual encounter time. This compilation of data was collected and organized for the intended use of research and investigation of billing and reimbursement practices of the CPT code, 96040.

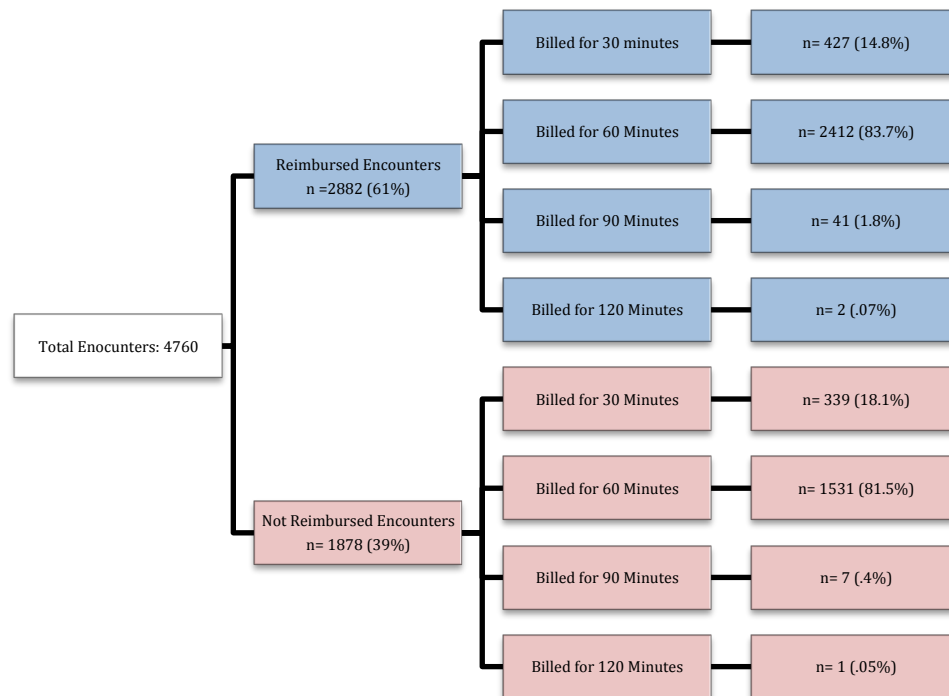
### Data Organization:

The data was focused on 60-minute encounters, as this was 82.8% of all patient encounters. Descriptive statistics were performed for each of the large categories of payers including Medicare/Medicaid, Managed Care Medicaid, and commercial insurance. For each of the specific payers within the above categories, the analysis was carried out for the amounts paid and reimbursed for encounters billed under CPT code 96040 over the eight-year period.

## Results

During the time period of April 2010 to May 2018, there were a total of 5694 genetic counseling encounters provided by 10 different genetic counselors. Of these 5694 encounters, 934 fell into the “self pay” category of payer. “Self pay” in the practice is defined as patients who are uninsured and are considered indigent. Most of these patients qualify for charity care at our institution. Therefore, most of these patients do not ultimately pay for services and we have elected to exclude them from our analysis. This leaves the study to examine reimbursement for 4760 encounters. All encounters were billed under the individual genetic counselor’s NPI. All encounters were billed for CPT code 96040. A total of 2882/4760 (61%) of encounters were reimbursed. Encounters were billed for 30 minutes, 60 minutes, 90 minutes, or 120 minutes depending on how long the counselor spent with the patient. Figure 1 tabulates the number of encounters and how many were reimbursed.

Figure 1: Breakdown of billing for all patient encounters



This is further broken down into the amount of time spent with the patient. Of the 4760 patient encounters, 766 encounters were billed for 30 minutes, 3943 encounters were billed for 60 minutes, 48 encounters were billed for 90 minutes, and 3 encounters were billed for 120 minutes. Since 82.8% of the encounters were billed for 60 minutes, the data analysis in the remainder of the study was focused on these 4760 60- minute patient encounters.

The main payers investigated in this study were self-pay, Medicaid/Medicare, Managed Care Medicaid, and commercial insurance. Figure 2 further breaks the encounters down based on payer type, whether the encounter was reimbursed, and the percentage of reimbursement for reimbursed encounters.

Figure 2: Breakdown of encounters by payer and reimbursement for 60-minute encounters

Payer Type	Total number of encounters (n)	% Encounters reimbursed	Of reimbursed encounters, % reimbursed of amount billed
Medicare/Medicaid	166	0%	0%
Managed Care Medicaid	519	59%	23%
Commercial	3258	65%	38%
Total	3943	61%	36%

As seen in Figure 2, of the 60-minute encounters, 519 (13%) were Managed Care Medicaid, 166 (4%) were Medicaid/Medicare, and 3258 (83%) were commercial insurance. Only 59% of the 519 Managed Care Medicaid encounters were reimbursed. Of the 3258 commercial insurance encounters, 65% were reimbursed. None of the 166 Medicaid/Medicare were reimbursed. Commercial insurance and Managed Care Medicaid respectively reimbursed 38% and 23% of the amount billed.

We compared reimbursement rates by insurance company for the 3258 60 minute commercial encounters. For commercial insurance, we reviewed data specifically for Company A, Company B, Company C, and Company D. These four companies represented the majority (87%) of 60-minute encounters billed to commercial payers. We then subdivided reimbursement data based on whether the plan was a Health Maintenance Organization (HMO), Point of Service (POS), and Preferred Provider Organization (PPO). Figure 3 shows the number of reimbursed 60 minute encounters per plan type for each commercial insurance company.



Figure 3: Commercial payer plans of reimbursed 60-minute encounters

Commercial Payer	Total number of encounters (n)	% Encounters reimbursed	HMO (n)	% HMO Reimbursed	POS (n)	% POS Reimbursed	PPO (n)	% PPO Reimbursed
Company A	708	81%	124	68%	299	82%	283	85%
Company B	1459	66%	60	67%	322	57%	1077	68%
Company C	263	86%	74	93%	109	87%	80	78%
Company D	395	51%	45	62%	187	47%	163	52%
Total	2825	69%	303	73%	917	67%	1603	70%

This data displayed in Figure 3 shows that Company D consistently had the lowest percentage of encounters reimbursed at 51% compared to Company C with the highest reimbursement rate at 86%. Company D provided the lowest percentage of encounters reimbursed across all beneficiary plan types. Company C gave the highest percentage of encounters reimbursed for HMO and POS plans at 93% and 87% respectively. PPO plan encounter reimbursement was highest by Company A at 85%. Overall, the HMO plans gave the highest total percentage of encounters reimbursed at 73% compared to 67% of POS plans and 70% of PPO plans.

The average amount billed and reimbursed for the four commercial payers are seen in Figure 4.

Figure 4: For paid claims, average billed and reimbursed by payer for 60 minute encounters

Commercial Payer	Average % reimbursed
Company A	32%
Company B	41%
Company C	39%
Company D	40%

From this data, the average percentage of amount reimbursed was determined per payer. The four payers ranged from the lowest of Company A, providing 32% to the highest of Company B providing 41% reimbursement.

The primary Managed Care Medicaid payers are Company E and Company F. Figure 5 depicts the number of 60-minute encounters billed to each payer and of those, how many were reimbursed.

Figure 5: 60 minute encounters reimbursed per Managed Care Medicaid payer

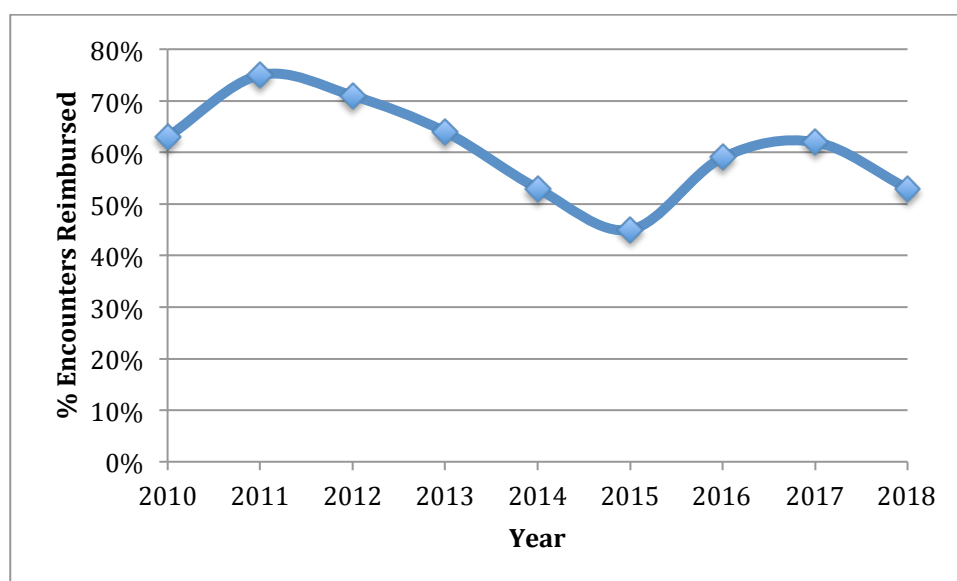
Managed Care Medicaid Payer	Total number of encounters (n)	% Encounters reimbursed	Of reimbursed encounters, % reimbursed of amount billed
Company E	328	44%	23%
Company F	176	86%	22%
Total	504	59%	22%

The average amount reimbursed was similar for the two Managed Care Medicaid payers. Company E reimbursed 23% of the amount billed when reimbursed while Company F reimbursed 22% of the amount billed when reimbursed. While this is similar, there is discordance in the percentage of amount of encounters reimbursed.

Company E averaged a reimbursement of 44% of their 60-minute encounters, while Company F averaged a reimbursement of 86% of their 60-minute encounters reimbursed.

The trends in reimbursement were evaluated by each category of payer, including Medicare/Medicaid, Managed Care Medicaid, and commercial insurance. Figure 6 shows the average percentage of 60-minute encounters reimbursed per year investigated.

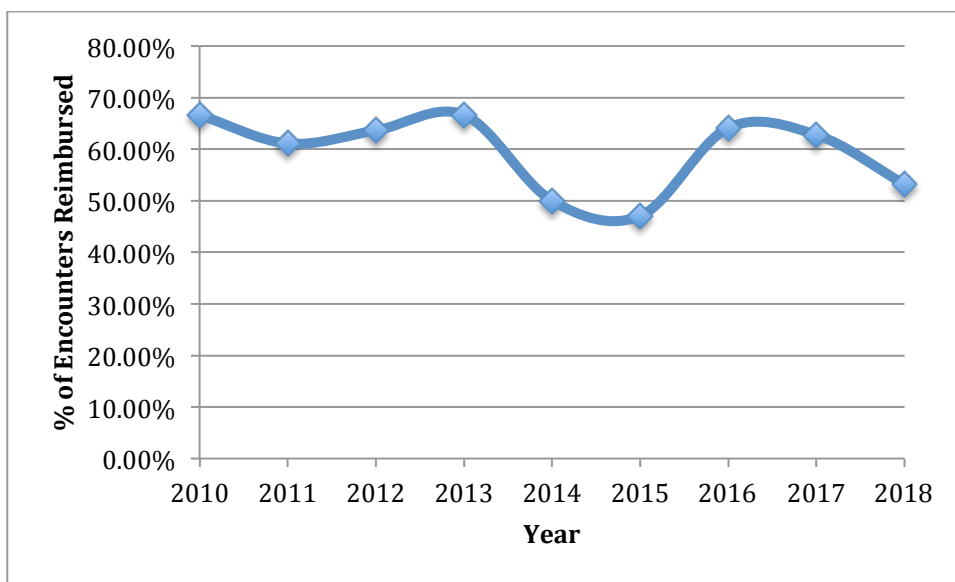
Figure 6: Percentage of encounters reimbursed across all payer types\*



\*Payer Types: Managed Care Medicaid, Medicare/Medicaid, and commercial payers

Figure 6 displays the trends in reimbursement by all payers from 2010-2018 by graphing the percentage of 60-minute encounters reimbursed. The highest percentage of reimbursed encounters was 75% in 2011 while the lowest was 45% in 2015. There is an overall downward trend as the percentage of encounters reimbursed in 2010 was 63% while it lowered to 53% in 2018.

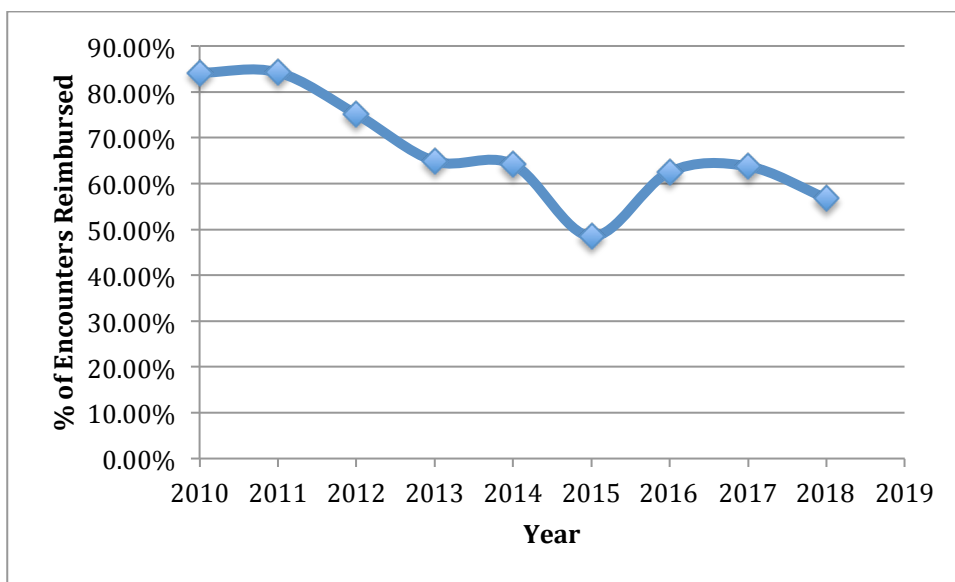
Figure 7: Percentage of reimbursed encounters billed to Managed Care Medicaid payers



The trends seen in Figure 7 show that there is a lack of consistency in reimbursement with an overall downward trend. The lowest percentage of encounter reimbursement is 47% in 2015. While there are spikes in the percentage of reimbursement in 2013 and 2016, the percentage of encounters reimbursed has still decreased from 67% in 2010 to 53% in 2018.

Figure 8 depicts the trends in reimbursement from 2010-2018 for commercial insurance payers.

Figure 8: Percentage of reimbursed encounters billed to commercial payers



The lowest percentage of reimbursed 60-minute encounters with commercial payers was 48% in 2015 while the highest percentage was 84% in 2011. There is an overall downward trend in the percentage of encounters reimbursed as 84% of encounters were reimbursed in 2010 while only 57% were reimbursed in 2018.

## Discussion

From our analysis of data from a regional perinatal center over an eight-year period (2010-2018), we found that reimbursement is inconsistent across payer types and within the individual payers. The overall fee collection for the genetic counseling services is not limited to payer reimbursed. Payer reimbursement, co-pays, and co-insurance that were paid by the patients represent the overall fee. Thus, the total reimbursed is actually higher for each visit than reported in our data. All data analysis completed was based solely on payer reimbursement for genetic counseling encounters. To our knowledge, this study evaluated the largest sample population over the longest period of time for reimbursement of 96040.

This lack of consistent reimbursement is evident by only 61% of all 60-minute encounters with Medicare/Medicaid, Managed Care Medicaid, and commercial insurance were reimbursed. Our primary hypothesis for the lack of reimbursement is that insurance companies do not credential genetic counselors, which is a requirement for billing services in network. Because of the lack of in-network status, most of the encounters were treated as out of network. Having services be billed out of network likely contributes to the reduced number of encounters reimbursed. If those services were billed in network, the percentage of reimbursed encounters would likely be significantly higher.

Of the 3943 60-minute encounters evaluated in this study, only 61% had any form of reimbursement. Commercial insurance had the highest percentage of encounters reimbursed at 65%. This is similar to the 62.6% of encounters reimbursed

reported in Gustafason et al. (2011) and 52.75% of encounters reimbursed reported in Leonhard et al. (2017).

According to 2017 data from the Kaiser Family Foundation using the Census Bureau's American Community Survey, only 56% of New Jersey residents have commercial insurance through their employers, while 30% have Medicare or Medicaid. While 56% of New Jersey residents may have an increased likelihood of insurance coverage, 30% of residents would not be able to expect any coverage for genetic counseling services (Kaiser Family Foundation, 2019). This lack of reimbursement is consistent in the data as none of the 166 Medicare or Medicaid encounters studied received any reimbursement. This is a glaring disparity in access to care, as CMS beneficiaries often are a patient population with more limited resources. Preventing a patient with already minimal access to healthcare services from receiving genetic counseling hinders their overall quality of care. The lack of consistent reimbursement across payer types creates discordance in genetic counseling services for patients in NJ and likely this may extend to other states.

As 96040 is not specific to one specialty of genetic counseling, billing and reimbursement has been evaluated for oncology genetics as well. The specialty is structured for cascade testing and appropriate screening when there is a positive test result. A patient's family could be proactive and prevent future unnecessary and costly testing if they are aware they have a genetic predisposition to cancer. A 2017 oncology-based study evidenced that "genetic counselors are providing test utilization management to ensure that the most appropriate, cost-effective testing is ordered for all patients" (Haide, 2017). It outlines the duties taken on by genetic counselors during

the testing process including “choosing best test methodology, choosing the best person in the family to test, selecting the optimal testing laboratory, comparing test costs, obtaining insurance prior authorization, and assisting with interpretation of test results” (Haide, 2017). It reduces the financial burden on the health care system as a trained professional is choosing the most appropriate testing for the patient. This was compared to non-genetic counseling providers who made double the amount of test order errors. By utilizing genetic counselors, patient outcomes can be improved while lowering healthcare system expenses.

Many women who qualify for genetics services do not receive genetic counseling due to medical insurance coverage barriers. This is a crippling issue across all genetic counseling specialties as a 2012 study reviewed the patient-reported barriers and facilitators for utilization of genetic counseling and risk assessment services in an oncology setting of young breast cancer survivors. The subjects were ascertained through the Michigan Cancer Surveillance Program and those who did not receive genetic counseling services were asked what their primary barrier to access was. 23.4% of their study subjects did not have genetic counseling and risk assessment due to medical insurance coverage issues (Anderson, 2012). As per the findings of these studies, coverage and recognition of 96040 in a consistent manner would be prudent to payers of all types as genetic counseling services can overall lower the cost to the healthcare system.

American College of Obstetricians and Gynecologists Committee Opinion 693 (2017) notes that referrals to genetic counselors are appropriate when the genetics knowledge needed to counsel patients is outside of the physician’s purview. For



oncology, The National Comprehensive Cancer Network sets guidelines for what types of patients are eligible for genetic counseling services and risk assessment (2019). If it is recommended by the leading organization that patients should have genetic counseling when appropriate, then insurance coverage should not be a barrier. All patients who qualify should have access to genetic counseling services, as a genetic counselor are specially trained to provide non-directive counseling about complex genetic information and testing options. Given the discordance in access to care, our profession needs to work to improve reimbursement for genetic counseling services.

To address this disparity in access to care, CMS and NSGC have introduced H.R 7083, “Access to Genetic Counselor Services Act of 2018.” According to a NSGC publication, CMS will recognize genetic counselors as healthcare providers and would improve Medicare beneficiaries’ accessibility to genetic counselors” (NSGC). This bill is a step in the right direction, but needs to be passed in order for Medicare and Medicaid beneficiaries to see coverage for genetic counseling services they need.

There is discordance between the percentages of encounters reimbursed between commercial insurance companies. While Company C reimbursed the highest at 86% of its 60-minute encounters, Company D reimbursed the lowest at 51% of its 60-minute encounters. Company B reimbursed 66% of its 60-minute encounters, which Company A reimbursed at 81%. For the encounters reimbursed, Company A reimbursed 32% of the amount billed, Company B reimbursed 41% of the amount billed, Company C reimbursed 39% of the amount billed, and Company D reimbursed 40% of the amount billed. These percentages fall within the range of percent of amount billed reimbursed of 10%-71% reported by Harrison et al. (2010). These are also

similar to the 42.44% of the amount billed reimbursed reported by Leonhard et al. (2017).

The evaluation of HMO, POS, and PPO plan reimbursement further demonstrated the inconsistency in reimbursement. Company C had the highest level of reimbursement for both HMO and POS plans at 93% and 87% respectively. Company A had the highest PPO reimbursement at 85% of encounters. Company C and Company A had consistently higher rates of reimbursement of 60-minute encounters than Company B and Company D. The reimbursement is more consistent from these two payers because they have some basic guidelines and recognition of genetic counseling services.

Across all plan types, Company D offered the lowest percentage of encounters reimbursed when compared to the other three commercial. An expected trend between plan types was for the percentage of the amount of encounters reimbursed to increase from HMO, POS, to PPO. However, this was not demonstrated in the data as the highest percentage of encounters reimbursed was for HMO plans at 73%. This is not what we expected as HMO plans normally do not cover out of network services. We expected PPO plans to reimburse at the highest rates but PPO plans reimbursed 70% of encounters. POS plans reimbursed at the lowest rates at 67% of encounters billed. This was unexpected, as we did not expect HMO plans to have any reimbursement as most do not cover out of network services. We speculate that there are massive inconsistencies across the assessment of billing and reimbursement within the payers as these the trends reports are different than what was expected. This unpredictable nature of reimbursement further demonstrates the need for consistent infrastructure between payers.

While the study demonstrated inconsistency in reimbursement when compared by payer, the inconsistency is further perpetuated when reviewing the trends in reimbursement from 2010-2018. There was an overall downward trend demonstrated for reimbursement of all 60-minute encounters. This was also seen for all Managed Care Medicaid and commercial payers. For the trends exhibited for all encounters, Managed Care Medicaid, and commercial payers, the year with the lowest percentage of encounters reimbursed was 2015. There are many factors within the center, payers, or legislature that could give reasoning to this consistent dip in reimbursement rates. From 2010-2011, all payer types have reimbursed fewer encounters billed under 96040. These trends represent Rutgers-Robert Wood Johnson Medical School and may not be indicative of statewide or national trends as they can reflect changes within the center that are not related to payer reimbursement.

The limitations of this study are that we cannot determine the barriers within each payer. We speculate that it is because genetic counseling services are billed out of network due to a lack of credentialing, but cannot be certain, as there are other mitigating factors to insurance coverage. As this study did not survey payers directly, this would be an important future investigation.

In order to further evaluate how lack of insurance coverage acts as a barrier of access to genetic counseling services, similar retrospective studies should be carried out amongst different genetic counseling specialties including oncology and pediatrics. While each of the specialties provides different types of services, they all provide patient education, and risk assessment. Referrals for formal genetic counseling services are likely to increase with the growing role of genetics in medicine. Institutions in other

states requiring licensure should review their trends in billing and reimbursement under 96040. While this study represents one center, it would be informative to compare this data to that of other institutions both in New Jersey and nationally. Using nationwide data, the trends of reimbursement need to be more broadly evaluated. Another future study would be the to compare the rates of reimbursement for encounters billed under 96040 to encounters billed under CPT codes 99244 and 99204 as these are used for physician-based consults. This type of study would reveal if there are disparities between genetic counselor and physician reimbursement for encounters billed under their respective codes. In addition, it would be useful to review ICD-10 codes for encounters billed under 96040 to determine whether they are predictor of reimbursement. It could be possible that trends in reimbursement exist due to certain codes receiving coverage while others do not.

For genetic counseling services to increase reimbursement, payers need to create the necessary infrastructure to credential genetic counselors. In network billing will allow for more payer beneficiaries to receive coverage and increase access to care. As evidenced by previous professional issues, NSGC's leadership and subcommittees could be integral in making the necessary changes to payers' approaches to reimbursing genetic counseling services. Both NSGC and payers look to benefit the patients by providing the highest level of targeted genetics education and risk assessment, as seen in the efforts for a CPT code, licensure, and CMS recognition. In order to accomplish these goals, a collaborative relationship between NSGC and payers would allow for appropriate and necessary infrastructures to credential genetic counselors in the hopes of making reimbursement more consistent. If payers could

create uniformity in their approach to reimbursement of genetic counseling services, we could overcome this disparity in access to care experienced by our patients.

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