

# Financial Analysis of a Non-Profit Counseling Center

A Major Qualifying Project Report submitted to the Faculty of the Worcester Polytechnic Institute in partial fulfillment of the requirements for the Degree of Bachelor of Science in Actuarial Mathematics.

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#### **Abstract**

A non-profit counseling center has been losing money for years. The goal of this project was to determine a way for the center to increase their revenue. By creating a model that analyzed reimbursement rates and activity count per insurer, the center will be able to pinpoint the insurers which are giving them the lowest rates. The center can then decide to attempt to renegotiate those rates or drop an insurer altogether. We also explored other options to help the counseling center, including reducing no show rates, introducing mobile therapy, analyzing financial statements, and phasing in more fee-for-service staff as salaried staff retire.

### Acknowledgements

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We would also like to thank the counseling center for sponsoring our project as well as the people there who have assisted us throughout the year and provided us with useful information.

#### **Executive Summary**

A not-for-profit counseling center is currently losing money and has not broken even in years. The counseling center, located in Central Massachusetts, offers mental health services for patients with emotional and behavioral issues. When a patient has an appointment, the center gets paid through a combination of the patient's copayment and reimbursement from the patient's insurance company. However, these payments rarely add up to the actual cost of the patient's visit, leading to a loss for the counseling center.

The main goal of this project was to determine ways the counseling center can maximize their net income. At the beginning of our project, we believed we would create a model to determine which insurer reimburses the counseling center with the least amount of money. However, as we learned more about the issue, we realized that just looking at reimbursement rates would not solve the problem. From there, we began looking into other ideas, including no show rates, financial statements, and staff information. Using this information, we were able to develop some suggestions that may help the center decrease their losses.

To achieve this goal, we worked with the center's Director of Finance to learn more about the data and the counseling center. We talked to professionals in the insurance industry to obtain a better understanding of reimbursement rates and the rate renegotiation process. We learned how difficult it is to successfully renegotiate rates, especially for such a small provider in an area with many other clinics offering the same services. We also learned that every non-profit counseling center experiences the same issue of costs exceeding revenues, and thus this problem will be very difficult to solve. We created a mathematical model to show how much money the counseling center is getting from each of its insurance providers. If the center wanted to attempt to renegotiate, they could use this model to pick which insurers are giving the smallest rates for certain sessions.

The counseling center can use our model to determine which insurance company is paying them the least amount of money. From here, the center can decide whether to attempt to renegotiate some of these rates, or drop the payor all together. For the counseling center to successfully renegotiate, they also need to prove that they are more efficient and somehow stand out from other behavioral health clinics in the area. Every time a patient does not show up for their appointment the counseling center loses money. If this no show rate were to be reduced, the center could serve more people and lose less money. We also believe that if WPI were to work with the counseling center again next year, a group can focus on one of these topics in order to further help the counseling center.

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#### **Chapter 1: Introduction**

As prices and the cost of living increase over the years, businesses have to raise their rates in order to adjust to the market. If an organization does not raise their rates, they will have a difficult time staying in business. A provider in the medical field will have an even harder time keeping up with inflation if reimbursement rates do not change over time. A provider of medical services gets paid through a patient's copayment and reimbursement from the patient's insurer. These reimbursement rates are determined by the insurance company, or payor, and are very difficult for the provider to change.

This is one of the issues the counseling center we have been working with is experiencing. The not-for-profit agency, located in Central Massachusetts, offers mental health services to children and their families. Even though costs have increased, the center has been receiving the same reimbursement rates they were given years ago. This has put the counseling center in a difficult position financially (and the same is true with most other non-profit counseling centers). Another factor contributing to the counseling center's loss of money is their no show rate. When a patient misses their appointment, the center does not get paid anything even though they have a clinician ready to serve a patient. When the clinician is a salaried staff member, rather than fee-for-service, the counseling center loses even more money since they are paying the clinician to do nothing. The center's no show rate is approximately 20%, which is actually considered "good" by industry standards; however, this is still a large percent of clients missing appointments, contributing to an even greater loss for the center.

The ultimate goal of this project is to help the counseling center find a way to increase their revenue by analyzing their financial statements, reimbursement rates, and other relevant data. By creating a mathematical model, we will be able to determine which insurance company the counseling center should consider renegotiating with or dropping altogether. The model will incorporate insurance company's reimbursement rates per service as well as the activity count for each service. Since renegotiating reimbursement rates is so difficult, this will help the counseling center pick which rates would be the best to attempt to renegotiate.

#### **Chapter 2: Background**

#### 2.1 The Counseling Center

The counseling center we have been working with is a not-for-profit agency located in Central Massachusetts which provides mental health services for children and their families. Their program supports a variety of issues, including emotional and behavioral problems. The center offers various types of counseling sessions including individual, group, and family therapy, psychological testing, psychopharmacology, and parent training. According to a Microsoft Excel spreadsheet we were given by the counseling center, the most common service is the 45 minute session, utilized by over half of their clients (Excel Spreadsheet).

#### 2.2 Reimbursement Process

The counseling center provides many services to their patients. For insurance purposes, these services each have their own unique identifying code, known as a Current Procedural Terminology (CPT) code. These codes are universal, for example, 90834 represents a 45 minute individual psychotherapy session for a healthcare provider anywhere in the United States. Each service has a gross billing rate, which represents how much it costs the center to provide that service to a patient. If a patient does not have insurance, they would pay the full rate. However, if the patient does have insurance, the center gets paid for their service through a combination of the patient's copayment and reimbursement from the patient's insurance company.

In this relationship, the counseling center is identified as the provider and each insurance company is the payor. After the center provides a service to a patient, the patient's insurer pays the center an agreed upon rate. Reimbursement rates are determined when the healthcare provider and payor enter into a contract together. There are a few different methods of reimbursement – per diem rate, diagnostic-related groups, and schedules. The center and their payors use a set schedule for reimbursement rates. Not all insurance companies pay the same rate for the same service, thus the center has a different reimbursement schedule with each insurer.

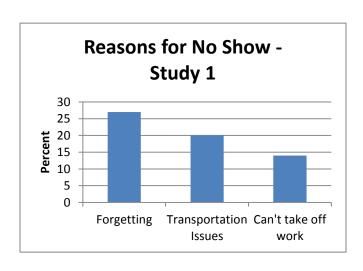
When creating a new contract, it is difficult for a small provider such as the counseling center to have much say in the reimbursement rates they are given. Payors typically have a set schedule to give a provider based on number of clients, location, and how many other providers in the area perform the same services. If there are many providers offering therapy services in one city, it would not be fair to give one center a better rate than others, so it is assumed that they

are very similar across providers. However, this is impossible to know with certainty, since reimbursement rates are confidential and it would violate antitrust laws to ask other providers about their rates.

#### 2.3 No Shows

A no show is a patient who misses their appointment or cancels it with less than 24 hours notice. When this happens, the provider loses money. The provider could have seen another patient in that time and been paid rather than do nothing. At the counseling center, if a clinician is fee-for-service, they will not be paid for the no show. However, if the clinician is salaried, they will still be paid, resulting in an even greater loss for the center. Across the globe, average no show rates range from 5% to 55% (Samuels, 2015). Many studies have been performed to determine reasons for clients missing appointments.

One survey found that the main reasons for no shows included forgetting about the appointment, transportation problems, and trouble taking time off work (Samuels, 2015). This study is shown below in Figure 1 on the left. Another survey found similar results but grouped the data into more general categories (Defife, 2010). This study is shown below in Figure 2 on the right. Clinical problems occur when the patient was sick due to medical and psychiatric concerns. Practical matters include work problems, scheduling conflicts, family issues, transportation problems, and inclement weather. Motivational issues are when the patient forgets about their appointment or has low motivation to attend their appointment. Negative treatment reactions occur when the clinician cancels an appointment or a patient reacts negatively to a treatment.



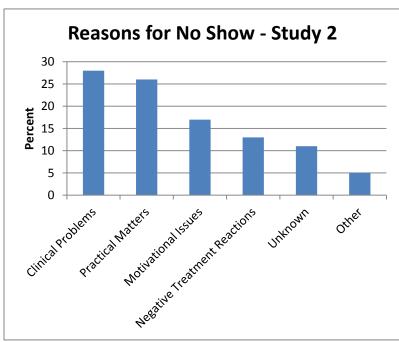


Figure 1: Study of reasons for no show (Samuels, 2015)

Figure 2: Another study of reasons for no show (Defife, 2010)

#### **Chapter 3: Methodology**

The goal of our project was to find a way to help the counseling center increase their revenue. When we began our project, it seemed as if there were many ways to go about doing this. However, as we learned more about our project and researched more into the field, we came to realize that many of our ideas would not be practical. Originally, we believed that we would be able to obtain data from the center, analyze it, and create a model that would be able to determine which insurer was providing the lowest reimbursement rates. This would then lead us to recommend that the center should attempt to negotiate with that insurer, or if the rates were very bad, possibly drop them. However, this data was not readily available for us, which led us to look into other options as well. Rather than exploring the numbers side of the issue, we were able to learn more about the industry and how everything works. The center's issue cannot be solved just by looking at numbers.

#### 3.1 Renegotiation

After spending some time researching on our own, we realized that it may be more useful to learn about the insurance industry through people who have worked in it, rather than reading articles about it. We contacted several Worcester Polytechnic Institute alums to learn more about the field and what may be possible for our project. We conducted phone interviews with three alums who work as actuaries for different health insurance companies. They explained how there are different methods of reimbursement and how the renegotiation process works. Prior to speaking with them, we believed the counseling center would easily be able to call a few payors and successfully renegotiate their rates. However, we soon realized how difficult this would be for various reasons. The alums we spoke with gave us tips on what may or may not have been feasible for our project. Notes from our conversations can be found in Appendix A.

#### 3.2 Financial Statements

We also analyzed the counseling center's financial statements to determine if there was anywhere they could lower costs. We did not believe the center would have any unnecessary expenses, but thought it would be good to take a look at anyway. We looked at financial statements from the past four years to see if anything was out of the ordinary.

#### 3.3 Model

The model we created can be used to figure out how much money the counseling center is receiving from each of its payors. For this, we needed to know how many customers per insurance company per provided service there are and how much each insurance company reimburses the counseling center for each service.

The counseling center provided us with a list of insurance companies they work with and the reimbursement rates for each service. We also received a full breakdown of the number of clients from each insurance company per service. However, the information was incomplete – there were many rates that were not included. We were not sure if this was because a payor did not reimburse the center for that service, or if the counseling center could not find the exact rate. In order to complete our model, we needed to fill in the rates that were unknown. A few possible methods were formulated to do this:

- Use 0 for that service.
- Use the lowest rate provided by any payor for that service.
- Use the average rate provided by payors for that service.
- Use the multiplicative average of the ratio of the unknown payor to a 'base mark' payor and multiply that ratio times the base mark payor's rates.

Using 0 would mean that the counseling center would be providing the service free of charge – an unlikely assumption. The last option would not work in our case because we were not given the reimbursement rates for some payors. This option would only work if every payor had at least one rate listed. While taking the average rate would be an unbiased estimator, using the lowest rate is a cautious estimator and is one used often in finance. Thus, we chose the lowest rate to complete our data.

The data the counseling center provided us with had some services that did not have any reimbursement rates. Since choosing the lowest rate from data that does not exist is impossible, those services and clients were disregarded for the purposes of the model. The number of these occurrences was very small, and has little impact on our results.

Since reimbursement rates are confidential, we assigned each payor a letter from A to Y. We calculated the amount of money provided to the counseling center for a particular insurance

company by multiplying the reimbursement rates and the activity counts for each payor, and then summing the products. An additional measure that could be useful is the 'average per-count value', which divides the above sum product by the total activity count from that insurance company. This tells us how much money the center is collecting for each patient being seen. In addition to finding the revenue for each payor, we also found the revenue brought in for each service. This was done by finding the sum product of the reimbursement rates and activity counts for each service and summing them. This shows which services are bringing in the most amount of revenue.

#### **Chapter 4: Analysis**

#### 4.1 Analysis of Financial Statements

Based on the 2013 and 2014 financial statements, we calculated and analyzed the following performance ratios to help us understand the strengths and weaknesses of the counseling center's financial operations. The ratios will provide the center with the information needed to make adjustments and adopt strategies to improve the organization's finances. Note that the financial statements are consolidated, with multiple lines of business of which the counseling center is just one.

To determine if the counseling center has sufficient funds to meet its current obligation, we calculated the Adequacy of Resources ratios to highlight the liquidity of the counseling center and whether these resources are enough to maintain future operations.

Listed below are the performance ratios that we calculated:

 Liquid Funds Amount = Unrestricted Net Assets - Net Fixed Assets +
 Mortgages and Other Notes Payables

	2014	2013
[1] Unrestricted net assets	3,174,110	2,995,880
[2] Net fixed assets	6,568,954	6,459,164
[3] Mortgages and other notes	100,000	0
[1] - [2] +[3] = Liquid Funds amount	(3,294,844)	(3,463,284)

Table 1: Liquid Funds Amount

The calculation above shows that the counseling center had a negative liquid funds amount in 2013 and 2014. This demonstrates that the counseling center may be struggling financially. If they were to pay all their net fixed assets from their total net unrestricted assets, they would not have enough net unrestricted resources to cover their net fixed assets.

## 2. $Savings\ indicator = \frac{Revenue - Expense}{Total\ Expense}$

	2014	2013
[1] Revenue	3,508,330	2,983,112
[2] Expenses	2,500,019	2,473,530
[3] Revenue - Expenses	1,008,311	509,582
[4] Total Expenses	3,101,690	3,054,712
[3]/[4] = Savings indicator	0.325	0.167

Table 2: Savings indicator

This ratio measures the ability of the counseling center to continue to be operational in the absence of new revenue. It also shows if the counseling center is adding or using up its net asset. High ratios may indicate excessive savings. The results of this ratio should be assessed in conjunction with the liquid funds. If the nonprofit has low liquid funds, a higher savings ratio may be desirable.

3. Current ratio = 
$$\frac{Current \ assets}{Current \ liability}$$

	2014	2013
[1] Current assets	974,716	317,962
[2] Current liability	352,943	233,572
[1]/[2] = Current ratio	2.76	1.36

Table 3: Current ratio

This ratio shows the ability of the counseling center to pay its bills within one year and it gives management an idea of the amount of cash necessary to maintain organizational strength. The

higher the figure, the better. It is desirable that the ratio should always be greater than or equal to one.

4. 
$$Debt\ ratio = \frac{Total\ debt}{Total\ assets}$$

	2014	2013
[1] Total debt	363,392	249,571
[2] Total assets	7,543,670	6,777,126
[1]/[2] = Debt ratio	4.8%	3.7%

Table 4: Debt ratio

We calculated this number to give the management of the counseling center the opportunity to measure the organizations ability to meet its short term debt. An increasing debt ratio indicates that it is more expensive and difficult to get loans.

5. Program service expense ratio = 
$$\frac{Program service expense}{Total expense}$$

	2014	2013
[1] Program service expense	2,508,330	2,473,530
[2] Total expense	3,101,690	3,054,712
[1]/[2] = Program service expense ratio	0.81	0.81

Table 5: Program service expense ratio

This information is very important to stakeholders since it shows how much the counseling center spends towards their primary mission.

## 6. Fundraising efficiency = $\frac{Fundraising\ expenses}{Contribution}$

	2014	2013	
[1] Fundraising expenses	191,837	174,447	
[2] Contribution	1,249,720	376,261	
[1]/[2] = Fundraising efficiency	15.4%	46.4%	

Table 6: Fundraising efficiency

From our calculation, it is evident that the center spent less on fund raising in 2014 than in the previous year. This ratio is noteworthy to donors, board members, and managers since it indicates how efficiently the organization raises funds. Ideally, this ratio should be between 0.1 and 0.35. However, it may depend on the nature of the fund raising activities of the organization. To further reduce their fund raising expense, the counseling center can rely on more foundation funding which has lower cost associated with them.

#### 7. Functional cost allocation

 $Administration\ cost\ ratio = \frac{Total\ fundraising, General\ and\ Administration\ expense}{Total\ expense}$ 

	2014	2013
[1] Total fundraising, general and administration expense	555,718	529,315
[2] Total expense	3,101,690	3,054,712
[1]/[2] = Administration cost ratio	18.0%	17.3%

Table 7: Administration cost ratio

This shows that an average of 18% of the total cost of the counseling center goes into administration and fundraising. This ratio is very important to donors and nonprofit watchdogs since it gives them an idea of how much the counseling center spends towards their mission. The lower the ratio, the better.

#### 8. Profit and Loss

Revenue less Expenses					
2009	2010	2011	2012	2013	2014
(296,492)	(301,162)	362,046	25,550	(75,600)	337,629

Table 8: Revenue less expenses

Over the last six years the counseling center has had a net loss of \$51,971.

#### Observations:

- 1. Regular tracking and monitoring of financial ratios could be beneficial to the counseling center especially in their internal decision making.
- 2. The counseling center could benefit from investing in data management system to collect real time financial information.

#### 4.2 Analysis of Model

We ranked all the payors based on the amount of revenue they brought in, as well as the revenue per patient. We also ranked all of the services based on the same criteria. In terms of insurance companies, Company O brings in the highest amount of revenue at \$237,869, but companies D and B are more efficient, leading with \$77 per average customer. Many of the same companies share the bottom spots of these two lists. The bottom seven on each list of twenty-five insurance companies each includes companies E, F, I, K, and Y. These companies in particular would be good companies to try to renegotiate with. Another option besides renegotiating would be to drop a payor altogether. The counseling center has a large enough waitlist where if they were to drop a payor, there would be enough patients with other insurance carriers waiting to book an appointment. However, this could be a disruptive change, particularly for existing

patients who might be negatively impacted, and so this won't be a change to be undertaken lightly.

Given that Service 90834 is a large portion of the customer base, it makes sense that it brings in the most revenue by far at \$489,417, with the next highest, Service 90847, only providing \$66,367. However, neither of these services proves most efficient; Service 90792 provides \$132 reimbursement per activity and Service 99215 provides \$110 reimbursement per activity.

#### **Chapter 5: Conclusions and Recommendations**

#### **5.1 Renegotiation of Reimbursement Rates**

One way to decrease the amount of money the counseling center loses is to renegotiate their reimbursement rates with their payors. About five years ago, the center attempted to do this but did not succeed. Over the years, inflation has raised the costs of operation but reimbursement rates have remained the same, leading to a loss of profitability. We believe that if the center could successfully renegotiate their rates, they would be able to increase revenue.

After speaking with multiple people, we believe that it will be very difficult for the center to renegotiate reimbursement rates without sufficient proof that they are a "better counseling center," providing a demonstrably higher degree of care, more efficient and effective service, or standing out in some other way. In order to prove that they are a better counseling center, they would need information that is nearly impossible to find. Behavioral health information is protected, thus finding information such as recovery rates and effectiveness of treatments is difficult to obtain.

A provider that offers physical health services would have a much easier time trying to renegotiate rates. For example, a clinic that offers services helping children recover from a broken leg would have the necessary data to determine if they have faster recovery rates or use better equipment. However, since this is not the case, this limits the different approaches that the center can take in order to successfully renegotiate reimbursement rates. One way for a behavioral health provider to renegotiate terms may be to prove that they are better than others in the area, either by offering better services or seeing patients more efficiently.

#### 5.2 Reduction of No Show Rates

One significant problem that many healthcare providers have is their no show rate. Currently the counseling center's no show rate is approximately 20%. Although this rate is consistent with industry norms, which vary from as little as 5% to as large as 55%, one out of every five patients misses their appointment, which leads to a loss for the center.

Since high no show rates are one of the reasons the counseling center is losing money, studying the causes behind why patients are missing appointments may be worth looking into. The center can better understand the population of patients who are missing appointments by

sending out surveys. These can be delivered by mail, email, or even a phone call. This will help the center determine if the same group of people are consistently missing appointments and focus on helping them make their appointments. Or if the center finds that people are missing appointments for similar reasons, they can work to fix that problem.

In 2007 a study was performed that showed that calling patients to remind them of their appointments significantly reduced no show rates (Parikh, 2010). Patients were randomly placed into three groups: one in which they would receive no reminder, a second in which they would receive an automated telephone reminder, and lastly in which a staff member would personally call to remind them of their appointment. The study found that an automated reminder dropped the no show rate from 23.1% to 17.3% from no reminder, and that the rate dropped even further to 13.6% when a staff member called. These results are shown in Figure 3 below. Currently, the counseling center personally calls some patients to remind them of their appointments, but does not reach everyone. Implementing a new calling system may be useful to reducing the center's no show rates. However, an automated system will cost money and a personal phone call requires that staff members stop other work to focus on this. The counseling center has to decide what will be the most cost efficient for their business.

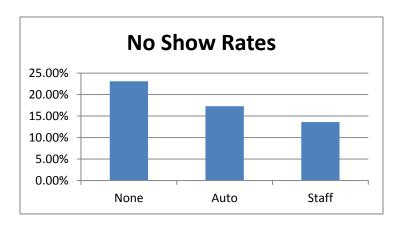


Figure 3: No show rates with and without reminders (Parikh, 2010)

Many of the families that come to the counseling center are not in the best financial positions. They may not have their own car and have to use public transportation, which may not be very reliable. By providing transportation to patients who may be in need, the counseling center could improve their no show rates. However, the revenue earned from these patients may not be enough to cover the cost of transportation. The Massachusetts government offers a

transportation system that assists those who cannot drive themselves to appointments called PT-1. Certain patients under MassHealth can apply for these transportation services. Not only does PT-1 offer transportation services, but it also reimburses patients for public transportation they may have used. By informing patients of this option, the counseling center may be able to decrease their no show rate.

Another option the counseling center can look into is mobile therapy. Clinicians could drive to patients that cannot make it to the center. This may be easier for patients who have a history of missing appointments. However, this option is also very expensive, is a lot more time consuming, and there would be safety concerns for the clinicians.

By effectively overbooking appointments, the counseling center could increase productivity and clinic performance while correcting the no show rate. However, the counseling center does not work like an airline or hotel, and cannot afford to overbook patients.

Overbooking could increase the wait time of patients and make the clinicians work overtime.

Patients will most likely not be happy waiting long periods of time before their appointment and may give the counseling center a bad reputation. The tradeoff and balance between these factors need to be considered carefully.

#### 5.3 Transition of Staff Members

By phasing out salaried staff for fee-for-service staff the counseling center may be able to save money. Salaried staff members are paid even when a patient does not show up and the clinician does not have any work to do. A fee-for-service staff member will not be paid for the time that their client does not show up. Although this is not great for the clinician, and may make it more difficult to maintain an adequate fee-for-service clinician workforce, the center will not be spending as much money.

#### **5.4 Monitoring of Financial Ratios**

Ratios are relatively easy to understand and simple to compute. Analyzing financial ratios is important when evaluating an organization's financial situation in order to make effective business decisions. This would be beneficial to the counseling center in order to understand how well the organization is performing, the areas that can be improved upon, the trends that may happen in the future, and when making decisions for their center.

#### 5.5 Continuation of Another MQP Group

The counseling center could use another MQP group to continue and expand upon the research that we have completed. The group can continue to help the counseling center find a way to increase revenue and decrease costs.

One of the topics another WPI group can focus on is reducing the counseling center's no show rate. The group can look further into the center's data to find any trends. Maybe during winter months people have a harder time getting to their appointments. This could either be from the weather making it difficult to get to the center, or maybe people are more depressed and would rather not go to their appointment. The students can break the data down by month, clinician, as well as some other categories.

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#### **Appendices**

#### **Appendix A: Notes from Conversations with Alums**

#### From alum #1:

- There are different types of reimbursement methods:
  - Schedules
  - o Per diem rate (daily rates, fee for service)
  - Drg (diagnostic-related groups)
    - Cluster by similar procedures
    - Rather than pay per night, pay per condition → hospital decides how long to keep the patient and gets paid the same amount
- Companies revisit their schedules every couple years

#### From alum #2:

- Larger providers have greater leverage when it comes to negotiating rates, it's a couple months long process
- Smaller providers don't have as much leverage
- Don't typically look at Medicare when renegotiating
  - o If rates are less than Medicare, request at Medicare
- Don't believe that smaller groups can get different rates (everyone gets paid the same), unless they have a compelling argument

#### From alum #3:

- There is no standard schedule of reimbursement rates
- Reimbursement rates vary by location, type of provider, and more
- Provider contracts are confidential
- Supply/demand: what does a counseling center provide that no one else does in the community; uniqueness
- Not unique → likelihood of renegotiation decreases
- Behavioral health data is protected, not a lot of unique data available
- Qualities to look at:
  - O How quickly can they get a member to be seen
  - o Member satisfaction scores of clinicians
  - o Faster/cheaper
  - O What in the area can provide the same service
- Can base renegotiation off Medicare
- Ways of rating behavioral:
  - o How popular are they?
  - Word of mouth