



MED
TALKS

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VIRTUAL

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Creating the Stepping Stones to Engage Physicians “Where They Are”

Marion Mull McCrary MD FACP

INTRODUCTION

Physician burnout is unfortunately prevalent. The general internal medicine burnout rate has ranged from 60% in 2014 to 50% in 2017.

A 2019 Mini-Z survey of the North Carolina (NC) chapter of the American College of Physicians (ACP) showed similar rates with 47% of total responders and 60% of female responders reporting burnout. (nonpublished data) The Mini-Z is a validated survey that reports a total score, a sub-score for work pace and EMR stress, as well as a sub-score for supportive work environment. Burnout leads to an increased loss of physician life due to suicide, increased cost to health systems due to physicians leaving practice or cutting back on practice, and decreased patient compliance, access, and satisfaction. Addressing physician burnout can help create success in the realms of the Quadruple Aim- better patient experience, better population health and lower overall costs and increased physician professional satisfaction.

The Center for Disease Control reports no consensus definition but notes “there is general agreement that at minimum, well-being includes the presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), satisfaction with life, fulfillment and positive functioning. In simple terms, well-being can be described as judging life positively and feeling good. For public health purposes, physical well-being (e.g., feeling very healthy and full of energy) is also viewed as critical to overall well-being.”

As the Well-Being Champion for the NC Chapter of the ACP, I wanted to know: How can we improve the burnout in our chapter? How can we facilitate our members having this sense of Well-being? How can we reach our members?

To do this we needed to overcome the challenges of a large geographic footprint of our state, low engagement in our annual in-person meeting, and possibly a sense of vulnerability about this topic. We want to meet the members where they are.

Approximately 10% of the ACP members attend the one annual in-person meeting (February 2020) and at that meeting the Wellness Workshop was attended by approximately 10 people (nonpublished data). Also, approximately 10% did the Mini Z survey mentioned above. There are many other members who are not engaged in this conversation. To reach members in periphery of the state requires several travel hours. Lastly, for some physicians the concept of burnout has a stigma.

Given these challenges, I have hypothesized that providing physicians access to an authentic but private series of videos would give them an opportunity to learn strategies to combat and prevent burnout, an important and prevalent problem in medicine. This scenario might make them feel more comfortable in investing their time on learning more about this topic. Also, in the time of a pandemic, virtual gatherings are preferred and encouraged over in person meetings. I also would like to follow up this series with multiple options for discussion in a virtual space so that the conversation about physician wellness can continue.

METHODS

To highlight solutions to enhance wellbeing and prevent burnout I used the framework from the STEPSForward™ module on Physician Well-being to develop a series of short videos entitled *Stepping Stones – A Practical Path to Well-Being and Finding Joy*. These introduce tangible steps that can guide a physician down a path to well-being. There are 10 total videos that total approximately 70 minutes of content. The videos are housed on VIMEO and my personal website. The viewing is anonymous and only the total number of views is noted on VIMEO site.

STEPS Forward™ is an American Medical Association (AMA) collection of educational modules created to share practice improvement strategies. It is designed to help physicians achieve the Quadruple Aim. Well-being is influenced by both external and internal factors. Several of the modules address physician burnout and well-being. I chose the Well-Being module to expand upon because it identified many interventions a person could make for themselves without having to influence others or the system. The module suggests implementation of 7 steps that can protect against burnout and encourage self-care:

1. Get organized (get organized, prioritize, manage your time and finances, and put yourself on your own schedule)
2. Think about your Physical state (sleep, physical activity, and preventative healthcare)
3. Think about your Mental state (connect with values: individual mission statement, connect with meaning: write down inspiring patient stories, and connect with emotions: take stock of your own desires, feelings, and actions)
4. Connect Socially (consider a support or supportive group, enlist your peers to provide support, seek professional help, and connect with local resources)
5. Find meaning in and outside of work (consider the legacy you want to leave behind, start a gratitude journal, learn something new, develop your spiritual practice, and take a mindfulness class)
6. Embrace joy!
7. Reflect and Refine (remember your stated values and compare them to how you spend your time.)

I also used my skills as a Well-Being Champion trained by the ACP and as an integrative health and wellness coach trained at WellCoaches© and Duke Integrative Medicine to supplement the strategies in the module and relay the key messages in a manner to guide personal change. I also used training I received at the American Medical Association's Practice Transformation Initiative.

Technology used included PowerPoint, Vimeo, and Typeform.

A link to the video series was disseminated to physicians via the NC chapter of the ACP Wellness newsletter, the North Carolina Medical Society (NCMS) Morning Rounds newsletter, my personal and business social media accounts, and my business website. The video series was emailed to individuals with whom I have a personal or professional relationship with who had interests in the physician wellness aspect of the project.

Each video has an attached survey link available. The questions asked on the survey are:

1. Which section did your review?
2. Please rank the presentation (1-5)- did it provide tangible ways to enhance Physician Well-Being and Joy?
3. What are your key take-aways from this section?
4. What else would you like to learn about that this did not address?
5. Do you think what you learned could help address physician burnout?
6. Will you make changes based on something you learned?
7. Please share anything else you would like me to know.
8. Please provide your email.

RESULTS

The survey results were reviewed and only four results were available at the time of this report. We will continue to collect information in the future until we receive 100 survey results (the maximum allowed for this survey type).

DISCUSSION

This project was undertaken to reach out to the members of the NC chapter of the ACP and the NCMS primarily but is also available to any physicians who are not members. It can also be valuable to health care providers who are not physicians

I have chosen this media so that it is more accessible to the physicians I am trying to reach. The AMA, ACP, and NCMS all have a variety of resources available on-line to its members. However, I wanted to provide a more personal and local voice with which our NC physicians might have

more things in common. In an informal survey of the Leadership College Scholars, individuals noted they prefer presentations with more stories and examples to dense slides and data points. To encourage engagement and viewing of videos, they are therefore story-based, and the slides primarily provide visual summaries. I used PowerPoint as a tool, but I mainly spoke to the audience rather than relying on the slides as a strategy to transfer information. I created shorter videos to match attention spans that could be digested in small pieces instead of having to watch one long video.

There were challenges in creating and disseminating the video series. There is a learning curve for anyone creating a series of videos if they do not have previous experience. There are multiple ways to create the videos and being comfortable with one platform helps. The videos can be housed on online sites like Vimeo or YouTube.

Just because this series was sent to a physician via email does not mean it was viewed. Individuals also experience “email fatigue”. Marketing teachings suggest someone must be exposed to something five times before they really pay attention to it. Information can be obtained about the “open rate” of the emails from the system that sent out the email.

I also suggest that trying to improve engagement also has other pitfalls. Disengagement is one of the triad of symptoms present in burnout so physicians who are at most need for the information may not seek it out. There is vulnerability and shame around the topic. High achieving physicians often see burnout as a personal failure and may not want to have open conversations about this. A video series can be a way to reach folks on a private basis so they may feel more comfortable doing this.

I do not see a physician experiencing burnout as a failure. Rather, I advocate that experiencing burnout is an invitation for self-reflection, making new decisions, and an opportunity for coaching and community with other physicians.

In the future I hope to provide an online platform for both discussion and physician community for the members of the NC chapter of the ACP. More and more physicians are seeking out this type of interaction with private online groups providing safety of discussion leading to more authentic dialogue. Particularly in my state which is geographically broad, it is more difficult to reach physicians in person at meetings or in their practices due to time and travel constraints. These options would provide increased access to opportunity for valuable engagement. I will review the survey question results to tailor the topics of discussion to what the membership wants and needs.

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Design and Development of a Data Analytics Dashboard to Address Pediatric Sepsis Metrics

Zachary Fleming

INTRODUCTION

The goal of my Leadership College project was to determine the most effective way to present and track pediatric sepsis performance metrics for a large academic children's hospital. The need for data visualization grew out of the hospital's participation in the Children's Hospital Association (CHA) Improving Pediatric Sepsis Outcomes (IPSO) national collaborative. The collaborative brings together more than fifty-five children's hospitals from around the United States to collectively share ideas, strategies, and lessons learned from efforts to tackle sepsis in the pediatric population. One requirement of all participating hospitals was to submit performance data for certain pediatric sepsis measures to a shared database for comparison and benchmarking. The raw data that was shared from the central database could be downloaded in Microsoft Excel files but lacked any meaningful visualization of metric performance.

The CHA IPSO collaborative defined five key processes to affect outcomes in pediatric sepsis care. Those five processes are as follows:

1. Sepsis screening
2. Sepsis huddle
3. Order set utilization
4. Time to first fluid bolus
5. Time to first IV antibiotic

The pediatric sepsis quality improvement team from my partner hospital expressed interest in narrowing the scope of the project to focus on the 'Time to first IV antibiotic' process. There appeared to be opportunity for improvement in this area, and the QI team had a great working relationship with pharmacy staff.

When first presented with this problem, I hypothesized that a data analytics dashboard built with Tableau (interactive business intelligence and analytics software) would optimally address the hospital's needs. I had extensive experience with dashboards and data visualization from my work before medical school as a healthcare consultant. I had even worked on the implementation of an adult sepsis dashboard that helped clients track their internal performance on adherence to the CMS Sepsis Bundle requirements. Most of the dashboards I had helped build and implement utilized Excel's (Microsoft) built-in graphing and charting

functionality. One project, however, involved the use of a relatively new visualization software called Tableau. I was invited to attend a week-long training course that taught the fundamentals of Tableau as well as explored many of the program’s capabilities. These experiences gave me confidence that building an interactive dashboard was the perfect solution to the pediatric sepsis data problem.

METHODS

The first step to successfully tackling any meaningful project is the formation of an effective team. In this case, the QI committee had tasked me with the formation and oversight of the project team. The initial team that was put together included members in the following roles: project manager (me), pediatric emergency medicine physician, pharmacist with data analytics experience, manager of performance improvement, data scientist. The team was an amalgamation of skillsets that would all be leveraged to achieve a common goal. I recognized that my role was to keep the team organized and progressing toward completion. I would also function as a sort of interpreter between the two very different languages of clinical medicine and data.

The team met on at least a monthly basis with that interval being shorter at key times during the project. In my role as project manager, I organized and scheduled all team meetings. Each meeting had minutes documented that were sent out within a day of the meeting. I also enforced accountability for action items as assigned during each meeting. I also sent out a meeting agenda at least two days prior to each meeting to ensure we were efficient with all members’ time. Most meetings were held in-person, but WebEx meetings were utilized when scheduling conflicts or travel was prohibitive.

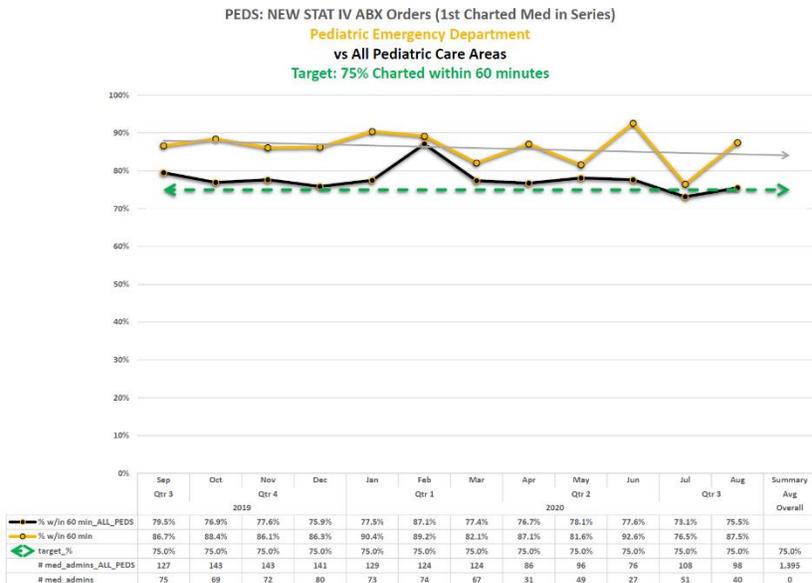


Figure 1: Current pediatric sepsis IV antibiotics administered under one-hour data visualization

The team functioned as part of a larger quality improvement committee at the health system. I assisted with the preparation of committee updates and attended some of those update meetings in-person.

The next step involved assessing the hospital's existing process of displaying and distributing time to first antibiotic data. The process involved downloading the data in an Excel file from the IPSO collaborative database. The data came in a crude format that listed the percentage of pediatric patients who received antibiotics in under one hour. The children's hospital had a data analyst add run charts that allowed each pediatric unit to compare its performance to the overall children's hospital performance. A target line was also placed on the charts that represented the goal set by the collaborative of seventy percent of sepsis patients receiving antibiotics in under an hour. Once per month, each nursing unit manager received an updated file with the latest raw data and run chart showing performance over a moving one-year time window. In theory, each unit would use this performance data to gauge performance and identify opportunities for improvement.

My team interviewed nursing administrators as well as several of the unit managers to get feedback on the current process. The feedback was mixed with several common themes emerging. One common complaint was that the data was not interactive. The run charts were fixed so that even simple criteria like date range could not be changed by the end user. In some instances, the unit managers had tried to update the graphics manually and ended up displaying incorrect data. Another complaint was that the data only showed high level performance without the ability to drill down and perform root cause analysis. Poor performing units had a difficult time identifying where to focus improvement efforts due to the limited amount of analysis provided in the data sheet.

One of the most frequent complaints about the existing process of distributing performance data was the lack of insight into why antibiotic administration had been delayed. Unit managers could see that their unit's average performance might be below target but understanding their "misses" was key to further improvement. Our team made note of this opportunity to provide increased granularity into the data being circulated. We took inspiration from the Toyota Production System's concept of "five whys". This root cause analysis technique involves getting to the root of waste within a system by repeatedly asking why an inefficiency or defect is occurring. This allows for an appropriate level of scrutiny to eliminate process misses. We were ultimately able to identify existing data that was being collected by a pharmacy database on why medication orders were being delayed. The team felt it was important to include stratification of these reasons for misses in the new dashboard. This would allow leaders to focus efforts on specific gaps in their processes.

After analyzing feedback from the key stakeholders, the next phase of the project was to identify the data sources and key metrics for the new dashboard. Our data scientist and

pharmacy data analytics expert identified three primary data streams that would feed our data visualizations: Epic patient level data, pharmacy process data, Pyxis drug access and distribution data. Data queries were then written to select the correct database records that would ultimately populate the Tableau dashboard. The query writing portion of the project required a combined effort between clinicians and data scientists to ensure that accurate data was appropriately captured for every patient.

Identification of critical process metrics and sub-metrics is a critical step in the early stages of any process improvement project. This was no different in the team's effort to improve the reporting and display of pediatric sepsis treatment data. The key process metric identified by the team, 'Time to first IV antibiotic', came directly from IPSO collaboratives recommendation. Through brainstorming sessions, the team identified four key sub-intervals that would be valuable to key stakeholders when breaking down performance in 'Time to first IV antibiotic'.

Those four sub-measures are listed below:

- Sepsis flag to antibiotic order
- Antibiotic order to pharmacy review
- Pharmacy review to antibiotic administration
- Sepsis flag to antibiotic administration

The team felt that these unique time intervals help provide additional granularity into where process delays or bottlenecks might be occurring.

As part of his project, the team researched the impact of data visualization and transparency on organizational performance. Many studies have demonstrated a link between providing performance data to all members of an organization with comparison between departments/service lines and increased overall performance. Transparency of process performance metrics inspires competition and a sense of comradery within organizations. This idea of unit to unit performance comparison was at the root of our effort to create an improved data analytics dashboard.

An important aspect of building any dashboard is designing the layout that will most effectively display actionable information to the end user. It is critical to develop a layout that is clear, concise and data rich without overwhelming the viewer. After deciding on a dashboard layout, our team had to select the appropriate types of visualization tools. Tableau software provides an almost unlimited array of graphs, charts, maps, and key metric highlight tiles to choose from. Our team was very deliberate in the selection of data visualization mediums to display the key process metrics we had previously identified.

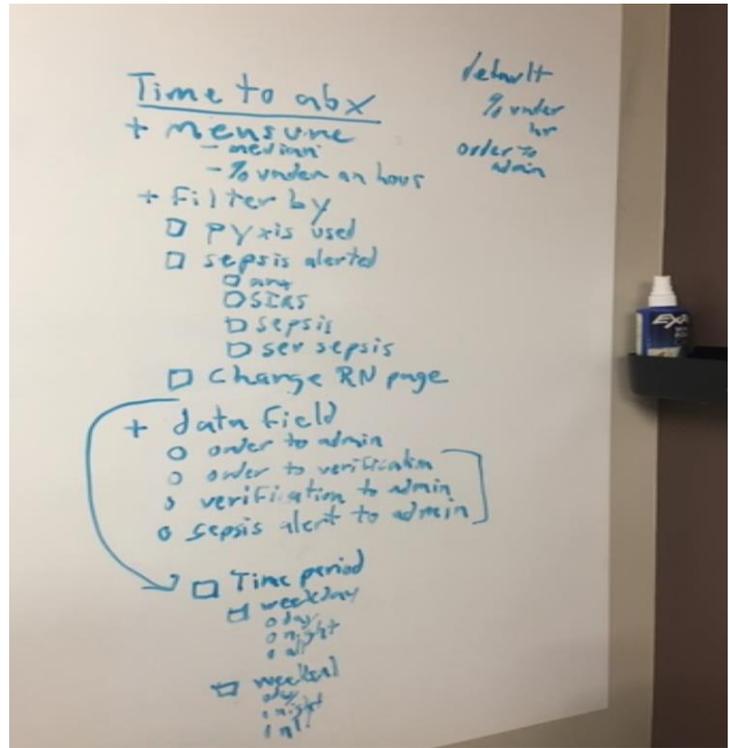


Figure 2: Team brainstorming session notes for dashboard metrics and structure

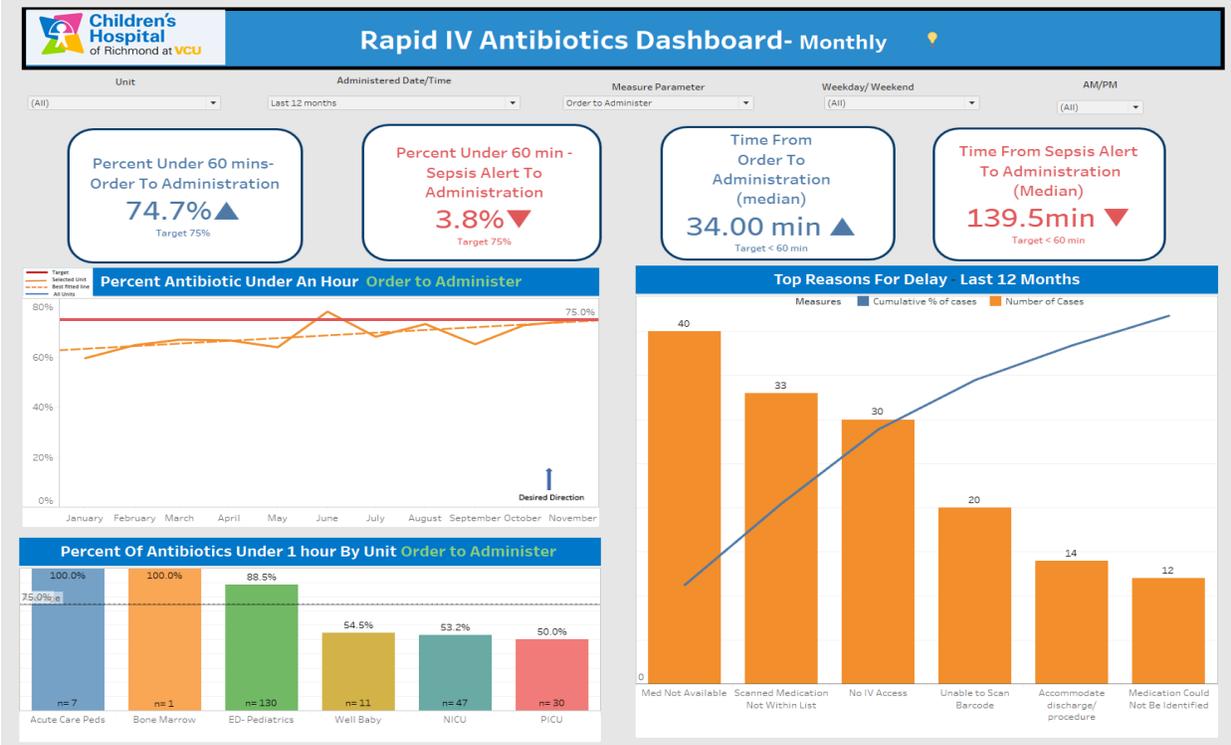


Figure 3: Proposed layout for the final dashboard

The original process for visualization of the ‘time to antibiotic’ data used exclusively Excel run charts. We received feedback that these charts would have been more valuable if they possessed customization options such as: date range, target/goal lines, comparison to other units, comparison to all unit overall performance. We decided that keeping a run chart displaying *percentage of antibiotics administered under an hour* on the dashboard would help end users with the transition from the old process to the new dashboard. To provide the end user with comparative performance information, we chose to also include a bar graph displaying the performance of the top six pediatric units in *percent of antibiotics administered under 1 hour by unit*.

This graph also included a 75th percentile performance target line. Several of the major mainstream performance improvement methodologies utilize the pareto chart to identify the frequency of process defects. In simplified terms, pareto charts help teams identify where to focus improvement efforts to achieve the largest benefit for time invested. The team decided to include a pareto chart that stratified *top reasons for delay*. This would display frequently occurring reasons why antibiotics failed to be delivered in less than one hour.

Tableau offers a data display format known as a metric singleton. These graphics allow for numerical metrics to be displayed in green or red color to indicate positive or negative

performance based on a pre-assigned target. The team decided that including several singletons near the top of the dashboard would quickly provide the end user with feedback about how the selected unit was performing. The singletons rapidly convey performance across the four previously identified sub-measures before the viewer progresses to the charts/graphs that further drill-down into the data.

The final step in development of the dashboard involved ironing out titles, labels, color scheme and formatting. This was an iterative process where each member of the team would provide feedback until everyone agreed on the final product. We paid special attention to ensuring that graphs had titles, labels and legends that allowed for clear interpretation. The dashboard was also sent to the marketing department for approval of the color scheme and institutional branding. Data validation occurred throughout development, but a final data validation was done to confirm that the dashboard populated accurately with historical data.

RESULTS

The team met in January of 2020 to unveil the final version of the “Pediatric Rapid IV Antibiotics Dashboard”. This was an important part of the project because it allowed the entire team to celebrate the result of more than a year of work. It was interesting to look back through meeting minutes from early in the project and reflect on just how far we had come. It was also rewarding to look back at our original goals for the project and confirm that we had met our process requirements.

CONCLUSION

The team had met its goals for the project, but it was equally important to allow our end users to evaluate the new dashboard. We presented the dashboard in a QI committee meeting to allow the broader team to compare the old process to the new. To further confirm that our work had measurably improved the way that pediatric sepsis data was being presented, we developed a survey to distribute to all key stakeholders. We wanted the survey to be simple to achieve the highest possible response rate. The team also want to include survey questions that compared the old process of disseminating an Excel sheet with a single run chart to the new dashboard.

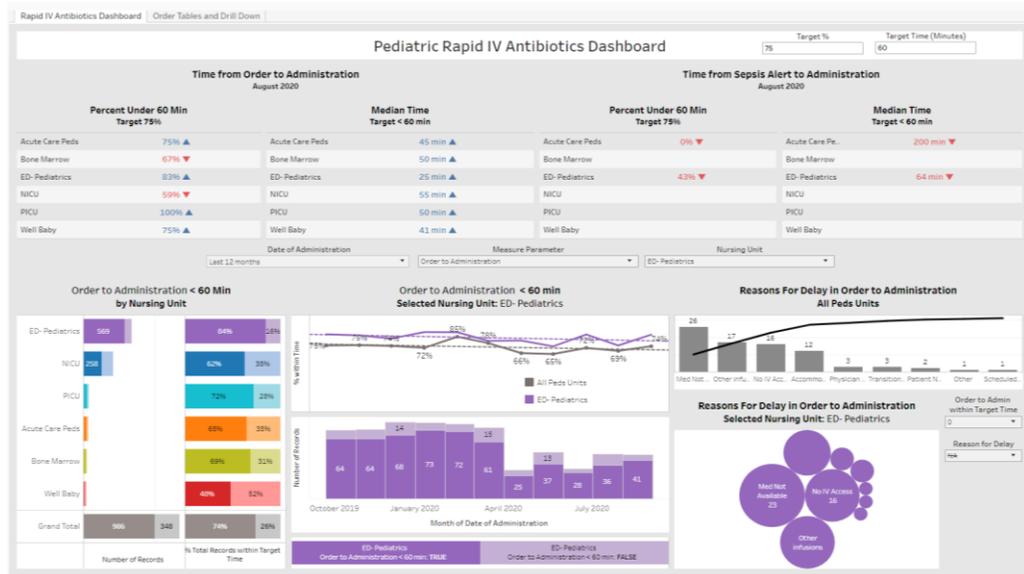


Figure 4: Final version of the dashboard

The survey was administered through SurveyMonkey to make distribution as easy as possible. The team identified 32 end users that had experience with the previous process and would be exposed to the new dashboard. We included screenshots of both processes in the survey to ensure survey takers were clear on the two different modalities they would be evaluating. All respondents had also been given access to the dashboard through Tableau Server and were encouraged to login and experiment with it. Survey takers were given six weeks to respond and multiple reminders were sent via email. Ultimately, 73% of the surveys were completed. Survey data was analyzed using Excel.

	Existing Process	New Dashboard
Interpretation of Data	2.9	4.21
Ability to Customize	1.23	4.67
Identification of Root Causes	1.1	4.73
Sharing Results with Teammates	3.5	3.9
Overall Usability	3.28	4.6

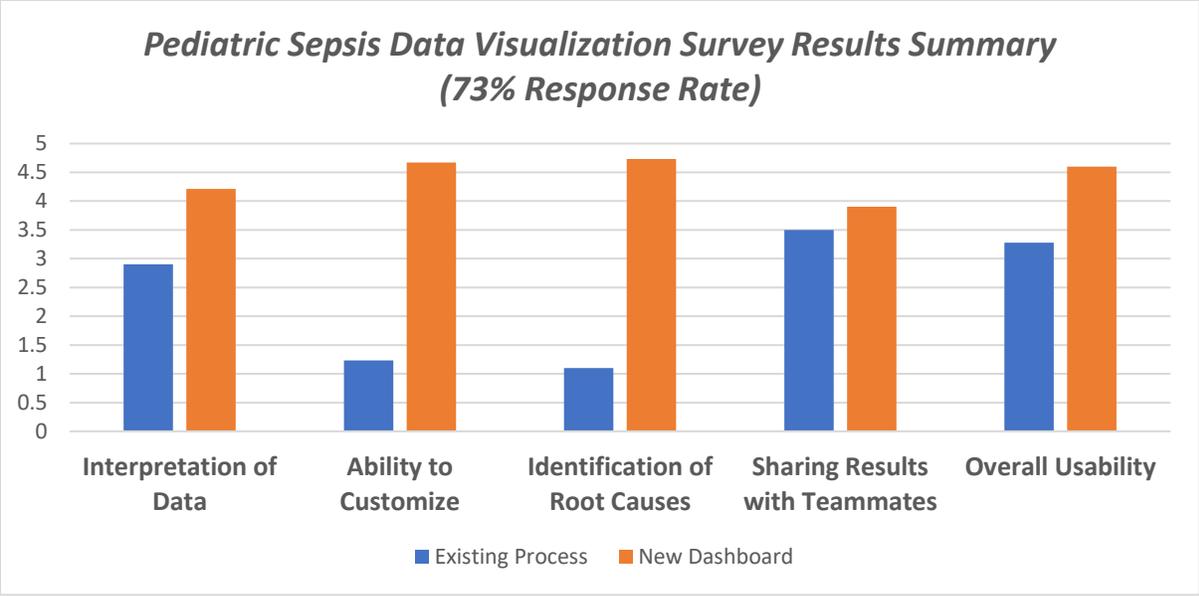


Figure 5: Results of the end user survey

The development of an improved process for pediatric sepsis data visualization will have a significant impact on the care provided to pediatric patients with severe illness. Healthcare providers are asked to provide the best possible care to every patient every time. Measuring the quality and efficiency of this care is the next logical step in moving from a fee for service delivery model to one focused on high quality care utilizing the right amount of resources. Providers must be able to quantify their performance to know what processes are working and which ones need improvement. All too often, organizations collect massive amounts of process data, but rarely use that data to drive decision making. This project demonstrates that meaningful insights and better decisions can be made when data is presented in a concise and informative way.

This project was incredibly innovative because it leveraged a relatively new data visualization technology to display best practice metrics as identified by the IPSO collaborative. The literature search in the early stages of our work revealed no published examples of utilizing Tableau dashboards to display pediatric sepsis care data. This project is currently serving as a template for dashboard application in other clinical areas within the health system. The marketing department is also planning to display the dashboard on the system’s quality & safety innovation page.

The development of the pediatric sepsis dashboard also elucidated the power of multi-disciplinary teams in solving some of healthcare’s greatest problems. Our team was incredibly diverse with deliberate representation from the fields of data analytics, pharmacy, emergency

medicine, project management and quality improvement. Each member of the team played an important individual role but the synergistic effect of all the skillsets combined cannot be denied. Significant effort was required to keep the team organized and progressing toward our ultimate goal. The importance of staying organized and providing frequent communication cannot be overstated. It is also important to point out the value of agility for small teams solving complex problems. Multiple times during our work we were faced with challenges that required quick decision making and slight deviation from our original path. Large organizations often struggle with this sort of decentralized leadership structure. The dashboard project is yet another example of the value of strong leadership within small teams.

Moving forward the pediatric hospital's performance in the IPSO collaborative metrics will be closely followed. It is our hope that the pediatric sepsis dashboard will ultimately result in moving the needle on performance in time to IV antibiotic administration. Additional project teams working on other aspects of pediatric sepsis care should use our experiences to hone their efforts. Our lessons learned can be applied broadly and help others avoid making some of the same mistakes. This project ultimately demonstrated that small, multidisciplinary teams with sound leadership can tackle the most pressing problems faced in healthcare today.

APPENDIX

1st Filter Logic (Formula to count only first antibiotic ordered in a “volley”)

1. FIN is not the same as the record above = “*” if not go to step 2.
2. FIN is the same as the record above AND ordered on same day/time = “ ” if not go to step 3.
3. FIN is the same as the record above AND event end date/time is greater than 2 days after the event end date/time of record above AND antibiotic name is the same as the record above = “*” if not go to step 4.
4. FIN is the same as the record above AND event end date/time is greater than event end date/time of record above plus 2 hours AND antibiotic name is not the same as the record above = “*” if not “ ”

Records with * for this field are eligible to be counted assuming additional filter criteria are met.

Supplement 1: SQL database query logic to identify first IV antibiotic ordered for a pediatric

Pediatric Sepsis Data Visualization Survey

Please rate the existing pediatric sepsis data distribution & visualization process across the following categories:

- Interpretation of Data
Difficult 1 2 3 4 5 Easy
- Ability to Customize
Difficult 1 2 3 4 5 Easy
- Identification of Root Causes
Difficult 1 2 3 4 5 Easy
- Sharing Results with Teammates
Difficult 1 2 3 4 5 Easy
- Overall Usability
Difficult 1 2 3 4 5 Easy

Please rate the new pediatric sepsis dashboard across the following categories:

- Interpretation of Data
Difficult 1 2 3 4 5 Easy
- Ability to Customize
Difficult 1 2 3 4 5 Easy
- Identification of Root Causes
Difficult 1 2 3 4 5 Easy
- Sharing Results with Teammates
Difficult 1 2 3 4 5 Easy
- Overall Usability
Difficult 1 2 3 4 5 Easy

Supplement 2: Survey questions provided to end users via SurveyMonkey patient

Sepsis Dashboard Meeting 10/10/19

- Pareto chart should be re-labeled: “Top Reasons for Delay”
- Kinjal will pull in real data so that we can validate the metrics for accuracy
 - Can we go back to 2008?
 - Kinjal to include data at least back to 2015
- Chart title: “Pediatric Antibiotic Administration Performance”
- Text needs to be included at the bottom to define specific metrics in detail
 - Dr. Silverman will take charge of this
- Put “n” under the title on bottom left graph
- Decrease width of drop-down menus on right side of dashboard to increase size of graphics
- Need to add new children’s hospital logo to top left of the dashboard -> Micha to provide
- New titles need to be discussed for all of the graphics
 - Zack will initiate discussion
- Kinjal will give Dr. Silverman and Micha access to play with the dashboard in Tableau
- In terms of distribution, Dr. Silverman would like the dashboard to be available on intranet and have it posted on the CHOR website

Supplement 3: Example of notes from a team meeting on 10/10/19

Efficacy of a Substance Abuse Screening Tool in the Emergency Department

Jennifer Parker Cote-Cote, MD

INTRODUCTION

Substance abuse is a catastrophic concern in the United States. Per the National Institute on Drug Abuse (NIDA) there is an estimated cost of \$740 billion annually related to crime, lost work productivity, and health care from alcohol, tobacco, and illicit drug abuse. Preliminary data for 2019 from the Centers for Disease Control and Prevention report an increase in drug overdose deaths by 4.6%. Opioids represented an overwhelming involvement with 50,042 deaths, out of a total 70,980 drug overdose deaths per 2019 provisional data (Ahmad et al., 2020). Synthetic opioid-involved death increased by 10% from 2017 to 2018 (Wilson et al., 2020, Hedegaard H et al., 2020). Prescription opioid-involved death rates decreased by 13.5% and heroin-involved death rates declined by 4% (Wilson et al., 2020; Hedegaard et al., 2020). According to the National Survey on Drug use and Health, in 2018, 14.4 million adults have an alcohol use disorder, and an estimated 95,000 people die annually from alcohol-related causes (SAMHSA, 2018, CDC, 2020). Only 7.9 % of those with an alcohol use disorder in the past year received treatment (SAMHSA, 2019). Approximately one fourth of the population in the United States use tobacco products and this leads to 480,000 deaths annually (NIDA, USDHHS, 2014).

Patients suffering from substance use disorders, along with mental illness or social stressors such as homelessness, frequently utilize the emergency department as a source of healthcare due to lack of primary care access (Marco et al., 2012; Sacamano et al., 2018). Emergency department utilization peaks around the months preceding and after overdose (Maeng et al., 2017; Gjersing et al., 2017). One retrospective cohort study found that patients with substance related emergency department encounters were 6 times more likely than patients who used the emergency department for any cause to experience an opioid overdose death within a year of presentation (Krawczyk et al., 2020). A retrospective cohort study evaluated the 1-year all-cause mortality rate after an acute opioid overdose treated in the emergency department in Massachusetts was 5.5 % at one year, 1.1% at one month, and 0.25% in 2 days (Weiner et al., 2020).

Studies have shown that brief counseling can change alcohol and tobacco habits in primary care (Kaner et al., 2018; Lindson-Hawley et al., 2015). There are mixed results in regard to the effectiveness of screening and counseling in the emergency department setting (Hawk & D’Onofrio, 2018). Results may vary for different methods of patient intervention regarding substance use. Brief motivational intervention did not significantly decrease alcohol consumption in younger emergency department patients (Gomez et al., 2019). A randomized

control trial comparing initiation buprenorphine treatment in the emergency department to referral and referral with brief intervention found that initiation of buprenorphine led to significantly increased engagement in addition treatment, to reduced self-reported illicit drug use, and decreased use of inpatient addiction treatment (D’Onofrio et al., 2015).

The Tobacco, Alcohol, and Prescription Medication, and Other Substance use (TAPS) tool initially developed for adult substance abuse screening in the primary care setting (McNeely et al., 2016). The first stage (TAPS-1) contains four items that ask about the use of four substance categories over the past 12 months, with four options for response. If positive on the first stage (TAPS-1), then TAPS-2 (second stage) is administered, which further delineates frequency and type of illicit drug use over the past 3 months. Prior studies report that TAPS screening is 70% or greater in sensitivity for tobacco, ethanol, and marijuana with cutoff of a score of 2+ for a substance use disorder (DSM-5), and sensitivity of 82% for illicit drug use for score cutoff of 1+ (McNeely et al., 2016).

Currently, substance abuse screening is not part of the emergency department triage screening at Vidant Medical Center. My project aims to assess the efficacy of the TAPS tool in the emergency department by screening adult patients in the emergency department, providing outpatient resources to those patients who screen positive, and assess the number of patients who contact one of the provided resources after two weeks.

OBJECTIVES/GOALS

- Before adding another task into the triage process, would like to see if our population would benefit from screening.
- If a patient is positive with screening, then the goal is to offer outpatient resources.
- If effective, our goal is to incorporate into triage screening in the emergency department.

METHODS

IRB Information

A study protocol was submitted to institutional IRBs for Vidant Medical Center in Greenville, NC as well as East Carolina University and certified exempt. Protected health information will be kept de-identified on institutional approved drives. Patients will be contacted via telephone or email to assess whether patients contacted a provided resource or not.

Patient

A convenience sample of adult patients in the emergency department will be screened, over the course of two weeks. Patients will be provided verbal consent. Patients who are acutely intoxicated, have a history of dementia, or presenting with a complaint of altered mental status will be excluded as they cannot give informed verbal consent.

Screening

Once patients are placed into a room in the emergency department screeners will ask patients to provide verbal consent to participate in substance abuse screening. TAPS-1 screening tool will then be administered by the screener, and a patient is considered positive on TAPS-1 if they report other than “never,” on any of the four questions. If positive on TAPS-1 the screener will then complete TAPS-2 screening. Patients who score 2+ will be provided a list of outpatient resources for substance abuse treatment, after informing the patient the score was concerning for problem substance use and encouragement of cessation by screeners. Provided outpatient resources will include addiction resources for tobacco, alcohol, and illicit drug abuse. We will ask patients who score positive on screening, for a reliable cell phone number and email.

Follow-up

Two weeks from screening date, a survey will be sent via email or completed by telephone to the provided cell phone number inquiring if the patient contacted any of the resources provided.

Data to be collected:

- number of patients screened
- number of patients screening positive each category: tobacco, alcohol, illicit/prescription drug use and total of those screening positive
- number of surveys sent
- number of replies to survey
- number of patients who reported contacting the substance abuse treatment resource

Results Pending.

IMPACT

Screening for substance use disorders and providing substance abuse treatment resources will likely benefit patients about their physical and mental health. Opioid addiction alone leads to overdose and death more than motor vehicle collisions. In 2018, 67,367 people died from drug overdoses, making it a leading cause of injury-related death in the United States with almost

70% involving prescription or illicit opioids (Wilson et al., 2020). Between 2015 – 2017, the overall life expectancy in the United States decreased, largely due to loss of life at a younger age from overdose and suicide (Arias & Xu, 2017; Woolf & Schoomaker, 2019).

There is evidence that suggestion of smoking cessation by a health care provider positively influences patients making them more likely to quit (Kaner et al., 2018; Lindson-Hawley et al., 2015). Patients in a pre-contemplation phase of substance abuse and misuse may be influenced by screening. For one, their perception of their substance use may be identified as abuse through screening and encourage the patient to consider seeking help.

Long-term use of alcohol and tobacco leads to chronic conditions such as cirrhosis, chronic obstructive pulmonary disorder, hypertension, stroke, coronary artery disease, cardiomyopathy, and cancers. Early intervention and successful cessation of alcohol intake and tobacco use has the potential save healthcare dollars in a time when healthcare expenditures are escalating.

RECOMMENDATIONS FOR FUTURE STUDY OR EXPLORATION

Limitations

Patients presenting intoxicated who cannot give verbal consent will not be included in the study. Acutely intoxicated individuals presenting to the emergency department would benefit from redirection and referral to substance abuse resources. Although in the future, acutely intoxicated patients would be provided outpatient substance abuse resources. Other studies demonstrate patients prefer self-assessment screening electronically (Gryczynski et al., 2017). Currently, we are unable to provide electronic self-assessment. Losing patients to follow up is a common issue with many studies about substance abuse, and we predict this may be significant for this study.

Future Studies

Future assessment of the TAPS tool potentially includes evaluation of methods to incorporate screening either in nursing triage versus evaluation by nursing during initial assessment about efficiency, nurse perception, and patient perception.

Feasibility

If the screening tool is found to be effective, we would encourage incorporation into nursing triage process potentially in Vidant emergency department in Greenville, NC other and potentially other Vidant Health emergency departments in eastern North Carolina.

CONCLUSION

The emergency department provides a unique opportunity to screen for substance abuse and re-direct patients toward an appropriate addiction resource. At this time, I have received IRB approval and plan to initiate screening.

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Eliminating Unintended Pregnancy: From a Tertiary Medical Center to across the United States

Geoffrey Slaughter, MD

INTRODUCTION

Almost half of all live births in the United States are the result of unintended pregnancy. There are a multitude of political, social, and economic factors that have made it difficult to curb this unsavory statistic. As an OB/GYN resident physician, I find the current situation to be particularly shameful, and I don't find it too lofty a goal for every reproductive age woman to be able to choose under what circumstances they have a children. Although the task of reaching this goal may on the surface might appear to be beyond the reach of women's healthcare providers, compelling evidence exists that relatively small but profound changes in how we address this issue can allow us to reach our target.

Unintended pregnancy affected 45 per 1,000 reproductive age women (age 15-44) in 2011, with significant disparities across both racial and socioeconomic subgroups.¹ Among those below the poverty line, rates were two to three times the national average. Among non-Hispanic Black women, 64 percent of pregnancies were unintended, compared to 50 and 38 percent for Hispanic and White women, respectively. Significant negative implications are associated with unintended pregnancy, for the mother, infant and society. These women have increased risk of smoking during pregnancy, alcohol use, and delayed prenatal care. Infants born from unintended pregnancy are at greater risk of low birth weight, prematurity, and less likely to be breastfed. Highlighting unintended pregnancy as a worldwide concern, the Institute of Medicine Committee on Unintended Pregnancy in 1995 stated that 'the consequences of pregnancy are serious, imposing appreciable burdens on children, women, and their families.'²

The financial burden of unintended pregnancy is significant.³ Public insurers paid for 68% of the 1.5 million unplanned births in 2011, compared with 38% of planned births. Ultimately, \$21 billion was spent on birth, abortion and, miscarriages from unintended pregnancies, constituting 51% of all publicly funded births that year. The total gross potential savings from averting all unintended pregnancies would have been \$15.5 billion, conservatively.

Given that the abstinence-only national sex education policy during the late 1990s and early 2000s led to increased rates of teen pregnancy and sexually transmitted diseases, broad access to effective contraception has more recently been emphasized.⁴ Indeed, almost all women who have unintended failed to use contraceptives consistently or correctly, had extended gaps in birth control use, or often use no method at all.⁵ There are a variety of contraceptive options

available in the United States. Importantly, when used properly, they are all highly effective (greater than 98% effective at preventing pregnancy with regular vaginal intercourse).

However, depending on the method, proper use can be very difficult, and rates of ineffectiveness are directly correlated to how frequently the birth control method must be administered. Organizing the effectiveness of birth control methods into a tiered system, long-acting reversible contraceptives (LARCs) such as subdermal implants and intrauterine devices (IUDs) have the highest efficacy, roughly 99.5% effective or better, as they remain active after the initial insertion for five to ten years or when removed. Other forms of contraception, including oral pills, dermal patches, vaginal rings, injections, condoms, and fertility tracking range from 75-90% effective with normal use due to the need to actively take the medication or perform a task necessary for contraceptive effectiveness. The American College of Obstetricians and Gynecologists (ACOG) Committee Opinion titled 'Increasing Access to Contraceptive Implants and Intrauterine Devices to Reduce Unintended Pregnancy', published in 2015, and reaffirmed in 2018 encourages obstetricians to consider LARCs for all appropriate candidates, as well as advocate for coverage and appropriate reimbursement for these devices.⁶

Several strategies have been incredibly successful at increasing uptake of LARCs. Through eliminating cost as a barrier to contraceptive selection, investing in provider training, and using a standardized counseling method, the Contraceptive CHOICE project, increased LARC use among the study cohort in St. Louis to 75% from less than 5%.^{7,8} Importantly, non-LARC users were 22 times more likely to experience an unintended pregnancy than their LARC-using counterparts. Additionally, the rate of abortions was reduced to half that of the similar metropolitan area of Kansas City in that time period. LARC users were overall very satisfied with their method of contraception, with other studies showing similar patient satisfaction.⁹

METHODS

Over the first two years of my residency training, from June 2018 through May 2020, barriers to contraception access were identified informally through daily interactions with female patients of reproductive age in the inpatient setting at New Hanover Regional Medical Center (NHRMC) and at the resident NHRMC OB/GYN Specialists clinic. Various efforts by myself and others to remove these barriers were undertaken, however they were ineffective in implementing the necessary changes to billing, provider training, stocking, and electronic medical record configuration. In trying to identify effective community partners that could aid in addressing these barriers, Upstream USA was identified, a non-profit organization that partners with states and community health organizations to provide healthcare centers with patient-centered,

evidence-based training and technical assistance that eliminate barriers to offering the full range of contraception.

Results to date show that their efforts have been incredibly successful at decreasing unintended pregnancies in the communities where they have been active. Given the difficulties encountered in addressing the barriers to contraception access at NHRMC on my own, I became committed to establishing a partnership between our two organizations.

RESULTS

Initially, myself and another resident physician had a video conference with the Regional Director of Partnerships at Upstream USA. We listened to a short presentation about the services offered and success they have had in other states, particularly in Delaware. We learned that there were over a dozen North Carolina partners that were at various stages of engagement with Upstream, including larger entities such as Atrium Health and Novant Health. We found that the Regional Director had made attempts to contact NHRMC leadership about a potential partnership, however had been unsuccessful.

After this very successful meeting, I reached out to the Associate Program Director of my residency program, who had previously expressed interest in being my faculty advisor for my KIPL project. I arranged a video conference between my faculty advisor and the Regional Director, which I participated in, where she gave a similar presentation and answered questions surrounding reservations about the potential cost of the partnership as well as concern for the ability of NHRMC to remain autonomous in decision making during our potential engagement. My advisor left the discussion endorsing enthusiasm about a future partnership, pending approval from a representative of NHRMC capable of signing a contractual agreement. We left that meeting with a plan to engage higher level members of the NHRMC leadership.

After several weeks of following up with my faculty advisor about any progress, it became clear that none had been made. After some deliberation, I elected to engage the Vice-President of Graduate Medical Education (GME) at NHRMC, the highest-ranking person in leadership at NHRMC that I had a relationship with. After briefly discussing the partnership that I desired to establish, as well as providing him with additional literature, he informed me that he would discuss further with my faculty advisor and talk to the appropriate people who could make decisions about such a partnership.

It was at this time that I transferred to an out of state, making any further progress difficult.

CONCLUSION

Ultimately, my project is still in the initiation phase, still needing to gain more support within my organization to move forward. To date, I have been able to identify a significant issue affecting social, emotional, and financial aspects of many people's lives, as well as identified the barriers to solve the problem. I have attempted to address them alone but realized that they were too large to individually overcome. Through networking outside of my hospital system, I identified a community partner that has the resources, expertise, and desire to help solve the problem. However, their involvement requires additional buy-in from high level members of my organization.

I am realizing that completing a large project whose primary stakeholder is a lower-level member of an organization takes significant skill and tact. I have reflected a lot on the assignment we did through the KIPL Leadership course on gaining support in a project created by the Harvard Business School. Factors such as timing, engaging appropriate potential team members, and when to attempt attracting champions to the cause are all crucial to creating traction that leads to continuous movement towards the goal. I cannot deny that factors such as the COVID-19 pandemic and the uncertainty that comes with the bidding and future sale of NHRMC likely contributed to the lack of progress of my project. However, I do think that the timing and manner in which I tried to engage potential advocates and champions can be criticized. In learning about my personality type through the Insights Discovery color energies workshop, I likely led with too much fiery red. It is a situation that I encounter not infrequently, where my passion for a given topic can overwhelm an interaction with potential team members. I viewed a potential partnership with Upstream USA to be so clearly beneficial for all parties involved, that when hesitancy from my superiors was encountered, I likely let my frustration and resulting actions impede progress.

If I were to get a do-over, I would have looked to other residents and faculty within the OB/GYN program for support. I then would reach out to other groups at NHRMC with a vested interest in improved access to contraception, such as the Family Medicine residency program, as well as the Midwifery service for additional support. With that coalition, I then would approach the Vice-President of GME, or perhaps through others in my coalition, would be able to approach a different person in a position of power that could approve of the partnership with Upstream USA.

I plan to continue working towards building a coalition at NHRMC that will eventually establish a partnership with Upstream, because I know it is the right thing. It will just take a bit more time and thought. I keep in communication with the Regional Director of Partnerships at

Upstream, who recently encouraged me to apply for a position as a clinician trainer for Upstream. The fight against unintended pregnancy is not won over the course of a yearlong leadership course. I need to remember to stay patient, have a positive attitude, stay solution-focused, and allow my enthusiasm to draw people in rather than push them away. I greatly appreciate the poignant lessons that this work has taught me, and plan to use them the entirety of my career in medicine.

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Evaluating the Didactic Medical Education of How to Treat Sexual Assault Victims

Kailey Remien, DO

ABSTRACT

Providing structured education for medical students on the treatment of sexual assault victims is critical to ensuring that student doctors are prepared to adequately address with the complex medical, psychological, and social aspects of their care. However, most medical schools within the United States fail to incorporate this key clinical knowledge into their curriculums. In this study, it was found that a wide spectrum of medical schools include little to no formal education on the treatment of sexual assault victims and many medical students do not feel comfortable treating these patients.

This educational gap leaves these already vulnerable patients at risk for inappropriate medical care and misinformation about their medical care, their legal options, and the public health resources that may be available to them. These patients also require a more advanced level of emotional support from their health care team, which requires a delicate and cautious approach that must be taught to ensure that re-traumatization is minimized. Medical students are often the first to interact with these patients and have the potential to establish a level of trust necessary to make the patient feel confident in the care that their healthcare team is to provide. This study reveals a clear need for the incorporation of a course within the preclinical years of medical school education to equip student doctors with the tools necessary to treat this unique patient population.

INTRODUCTION

Medical school curricula are developed to ensure that students receive formal, structured education. Guidelines for medical education are developed by accreditation bodies, which consider community-based learning, patient safety guidelines, and clinical competency as part of the requirements for medical schools to integrate into their programs. However, curriculum development for the care of victims of sexual assault has yet to be implemented across many medical schools within the United States. This is despite statistics which indicate that up to 33 percent of females and 16 percent of males will be victims of sexual assault in their lifetime⁴.

Medical education studies play a key role in the development of medical school curriculums and are instrumental in finding gaps within programs. These studies can identify weak points in student training and go on to develop and implement a course of action to address disparities. Student doctors will then be better equipped to treat their future patient population.

Medical students many times are the first “provider” that patients see in the emergency department (ED) and the clinic. In this case, the medical student might be the first person the patient will tell that they were sexually assaulted. It is important that the medical student is well-informed and educated on the policies and processes so they can educate, comfort, and respond appropriately to this patient who has experienced a traumatic experience. The examination process after sexual assault can be re-traumatizing to patients and the goal is for medical student’s initial response and their support can set the tone for the patient’s entire visit and not add to the trauma. Students are typically not as busy as nurses, attendings, or residents and can provide emotional support and extra time to a sexual assault patient.

In this study, a survey was conducted to assess medical education provided to a wide population of healthcare students, primarily medical students. It was identified that nationally, there is a lack of medical education on patient care for victims of sexual assault. Many programs do not have a formal education that addresses the intricate medical standards of care, the psychosocial implications, or the legal processes specific to these victims. This study also unveiled a general lack of student confidence in their ability to care for these patients. In addition to the medical treatment, students felt that they did not know how to appropriately interact with this unique patient population.

While victims of sexual assault are unique in both their medical care and mental health needs from healthcare professionals, they are not uncommon patients. Roughly 33% of female patients and 16.7% of male patients will be victims of sexual assault within their lifetime.⁴ When taking prevalence into consideration, it is easy to compare statistics of patients who have experienced a sexual assault to other common conditions. For example, only 10.5% of patients, both male and female, will be diagnosed with diabetes.⁸ Medical students are thoroughly educated on how to care for patients with diabetes, but there is a staggering disparity when compared to their training on how to treat victims of sexual assault. Therefore, accreditation bodies must address this inconsistency.

METHODS

A literature review was completed to compile evidence-based medical treatment for sexual assault victims. A PowerPoint presentation was created based on the literature review and delivered as a lecture to medical students. The learning objectives of the lecture were to:

- Provide a level of patient care to ensure patient safety, while recognizing the individual needs and humanity of the patient, including those special considerations for a patient following sexual assault.
- Outline formal education to improve the treatment of victims of sexual assault.

- Provide education on the billing of patients who receive medical care following sexual assault, including government programs and local resources available.
- Provide students the opportunity to work as a helpful member of an effective interprofessional team to the deliver care to victims of sexual assault.
- Optimize the transition of care, including their safety, frequency, and structure.
- Outline positive continuity of care during transitional periods, including emergency care, evidence collection, and basic medical services following an assault
- Describe the roles between members of the healthcare team when treating sexual assault victims
- Educate how to maximize communication between team members

PowerPoint presentation is able to be viewed at:

https://drive.google.com/file/d/1SyNmvt0_6dLNIMkw-uOMkDTz_D1If_5N/view?usp=sharing

Concurrently, a survey was created to assess the medical education of students around the country and their comfort level treating sexual assault victims. This survey [Image 1] was distributed online and participants were able to respond to the survey voluntarily and anonymously. The survey was also administered to the medical students before participating in the sexual assault lecture.

After the in-person lecture, a post-survey [image 2] was administered to assess the efficacy of the training and how valuable the students thought the information was to their future career and patients. Due to the COVID-19 pandemic, the presentation was only able to be administered to 1st and 2nd-year medical students at Campbell University School of Osteopathic Medicine (CUSOM). Originally, the research design was to host the lecture at multiple medical and physician assistant programs throughout North Carolina.

Data was collected about the efficacy of the lecture for improving medical student knowledge of how to treat sexual assault victims, understand the care necessary for their specific psychological needs, and increase their individual confidence in treating these patients over a two-week period via an online survey. The survey was distributed through social media to all Campbell University students (37% of respondents) and was passed along through social media and personal contacts to students at other medical institutions including, Baylor College of Medicine, Midwestern College of Osteopathic Medicine, Lincoln Memorial University-DeBusk College of Osteopathic Medicine, University of Central Florida College of Medicine, University of the Incarnate Word School of Osteopathic Medicine, Texas College of Osteopathic Medicine, Texas Tech University Health Science Center Paul L. Foster School of Medicine, and University of Missouri College of Medicine.

RESULTS

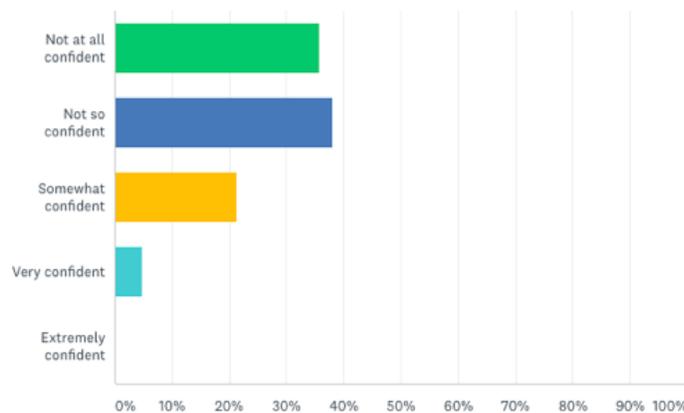
Of the 168 surveyed, 166 were medical students, one was a physician assistant student, and one was a nursing student. Of the survey group, 57 students (33.39%) were in their first year; 55 students (32.74%) were in their second year; 34 students (20.24%) were in their third year, and; 19 students (11.31%) were in their fourth year. The three remaining responses were from one graduate medical student (GME), one master's student, and one gap year/leave of absence student.

When asked how much formal education these students have had on treating sexual assault victims, 94 (55.95%) said "none at all"; 62 (36.90%) said "a little"; 10 (5.95%) said "a moderate amount"; 2 (1.19%) said "a lot", and; 0% said they have had "a great deal" of formal education (Graph 1).

Finally, when asked how confident the students are in treating sexual assault victims, the highest response rate was "not so confident", with 64 responses (38.10%). 60 (35.71%) said "not at all confident", 36 (21.43%) said "somewhat confident", 8 (4.76%) said "very confident". 0 responders said they felt "extremely confident". (Graph 2)

Currently, how confident are you in treating sexual assault victims?

Answered: 168 Skipped: 0

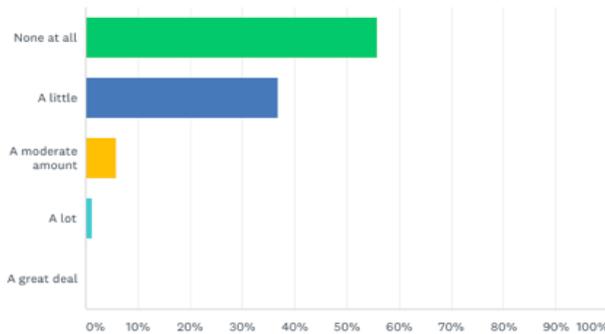


Graph 1: Pre-lecture survey results from 168 students on their formal education on treated sexual assault victims

23 students were then given a one-hour sexual assault presentation and asked to complete a follow-up survey. Poor turnout of students was attributed to this lecture being optional, was after lecture and labs, and the evening before a quiz. 22 of these students were medical students and 1 was a nursing student. Of the responses, 14 (60.87%) said the education was "extremely useful", 8 (34.78%) said it was "very useful" and 1 (4.35%) said it was "somewhat useful". 0 students said it was "not so useful" or "not at all useful". 22 students (95.65%) also

How much formal education have you had from your institution on treating sexual assault victims

Answered: 168 Skipped: 0



Graph 2: Pre-lecture survey results from 168 students on how confident they felt about treating sexual assault victims

reported that the information was “extremely valuable”, with the remaining student reporting it as “very valuable”. When asked about their confidence in treating sexual assault victims

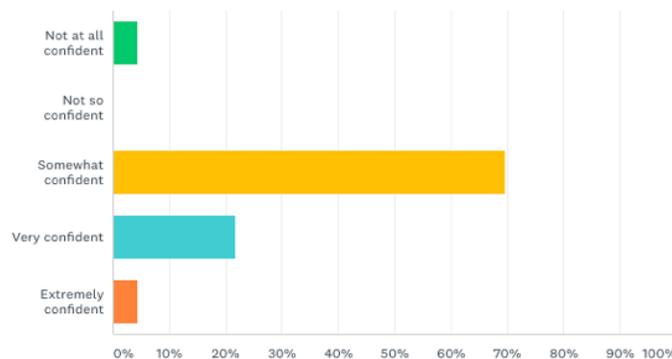
after the lecture, 1 (4.35%) reported “extremely

confident”, 5 (21.74%) reported “very confident”, 16 (69.57%) reported “somewhat confident”, 0 reported “not so confident”, and 1 student reported feeling “not at all confident”. (Graph 3)

Finally, when asked if this knowledge will impact their future with patients, 14 (60.87%) said “very likely”, 8 (34.78%) said “likely”, and 1 (4.35%) said “very unlikely”. (Graph 4)

Now, how confident are you in treating sexual assault victims?

Answered: 23 Skipped: 0



Graph 3: Post-lecture survey results on how confident they felt treating sexual assault victims from the 23 students who received the oral presentation

An additional optional question in the post-survey asked for something from the presentation that the

student found interesting or something that they did not previously know. Of the 19 responses to this question, 11 of them were pertaining to the existence, importance, or accessibility of sexual assault nursing examination nurses. Five of the responses were pertaining to education on STI prevention and emergency contraception. The three remaining responses were addressing the education on local resources and crisis centers.

Once all the data was collected, a meeting was held with faculty at Campbell University School of Osteopathic Medicine. To support the lecture being accepted to the Campbell Medicine

curriculum, five questions [See Appendix: Image 3] were created for testing purposes. After much debate and back and forth, the lecture was accepted for incorporation into the psychiatry curriculum for 1st year medical students at CUSOM.

CONCLUSION

This study identified that there is a pronounced disparity in the education of future medical professionals in the treatment of a significant population of patients. Most responders reported that they have had no education, with the next highest response being that they have had a little education. This survey also shows that most students preparing to enter the medical field do not feel confident in treating victims of sexual assault. The results from the post-presentation survey show that the 23 students found the education useful, valuable, and likely to impact their ability to interact with patients in the future. Additionally, when asked about their confidence level in treating sexual assault victims, the majority answered, “somewhat confident” or “very confident”. This increase in confidence after a one-hour presentation supports the idea that formal medical education is crucial in preparing medical practitioners for the future treatment of sexual assault victims

There are multiple ways to incorporate these findings into relevant and useful practices. Perhaps the most pressing change is the addition of a standard sexual assault curriculum in the current medical education system. This can be done in a variety of ways, including standard instructor-based lectures, standardized patient encounters, or a simulated case-based activity. Additionally, the survey can be sent to different US states, countries, and cultures to expand our existing knowledge of sexual assault awareness and the need for formal education. This may also serve to address different perceptions of sexual assault among different populations and cultures. These findings also provide a framework for future medical education projects, which can be expanded to various other medical professionals and to other levels of physician education, such as clinical rotations during medical school and residency programs.

An initial step toward promoting education of sexual assault can be to incorporate handouts or brochures into medical offices and shelters. These can provide information on how to interact with victims of sexual violence or steps a victim of sexual assault can take to ensure appropriate safety and medical care. The handout created in this project [image 4] can easily be distributed to more clinics and businesses. The information can also be expanded and added to the EMR of many hospitals and clinics.

Moving forward, formal education on treating victims of sexual assault can easily be developed to meet the requirements of medical school accreditation body standards. The current lack of

course based education in a pre-clinical setting on the treatment of victims of sexual assault leads to a gap in clinical proficiency. This must be addressed to generate a better standard of care for victims of sexual assault. At the very least, a standard lecture should be incorporated into the pre-clinical education of medical students to provide education on patient safety, clinical responsibility, establishing clinical competency of treating sexual assault patients.

It is also important to form a culture of safety to ensure that patients who are victims of sexual assault feel reassured and treated properly. Medical students are often one of the first people on a victim's healthcare team to interact with them in the clinic or ED. Therefore, it is integral to have student doctors trained to establish a good rapport with the patient from the beginning, ensuring that the patient is confident in their team's ability to handle their unique medical needs. This can be extremely difficult with victims of sexual assault. The patient's comfort level and their ability to feel safe is key in facilitating their healing process.

The clinical responsibility of a physician should also be addressed in these education programs. While clinical responsibility includes the standard medical care for patients of sexual assault, it also requires that student doctors should be educated on resources that are available to patients and some of the legal processes specific to these patients. The lecture provided to the students covered victim compensation, reporting options, and resources for more information were shared. Knowing that medical care following a sexual assault is covered under state-funded government assistance programs, such as crime victim's compensation, could make the difference in what medical care the patient accepts. In addition to this, education on local and state programs, like rape crisis centers, can provide the patient with much needed mental health support and other recourses following the assault. Education should also be provided on reporting requirements in cases of sexual assault. It is key to understand the patient's autonomy in their ability to choose to report to law enforcement.

The general limitations of this study include accessibility to students, in terms of delivery of the survey and eligibility to complete the post-survey. Most survey responses came from Arizona, Missouri, North Carolina, and Texas. The students that were not given any form of sexual assault education were not eligible to complete the post-survey. During the research period, COVID-19 severely decreased the number of students able to be reached. The initial design of the study was to have the pre-survey reach as many students as possible across the country to establish a baseline of sexual assault medical education. The presentation would then be given at several medical schools and physician assistant programs throughout North Carolina.

However, due to social distancing and the programs switching to an online curriculum the presentations were unable to be given at other institutions, only Campbell University School of Osteopathic Medicine.

While the capacity of the study was limited, the results produced were enough to elicit change. Due to the findings of this survey, Campbell University School of Osteopathic Medicine agreed to incorporate the lecture provided into their core curriculum for 1st-year medical students. The curriculum was developed taking into consideration the standard accreditation guidelines. Five test questions (image 3) were also provided in conjunction with the lecture PowerPoint. Incorporating this lecture, or similar lectures, into the curriculum at medical schools across North Carolina and the United States would be simple and have a huge impact on the care of sexual assault victims provided by medical students.

APPENDIX

Medical education on treating sexual assault victims

1. Which type of professional school do you attend?

- Medical
- Physician Assistant
- Nursing
- Other

2. Which institution do you attend

3. What year are you?

- 1
- 2
- 3
- 4
- GME
- Other (please specify)

4. How much formal education have you had from your institution on treating sexual assault victims

- None at all
- A little
- A moderate amount
- A lot
- A great deal

5. Please describe the formal education that you have received on treating sexual assault victims

6. Currently, how confident are you in treating sexual assault victims?

- Not at all confident
- Not so confident
- Somewhat confident
- Very confident
- Extremely confident

Image 1: Pre-lecture survey administered to students prior to the oral lecture and spread online to several medical schools

Post-education on treating sexual assault victims

1. Which type of professional school do you attend?

- Medical
- Physician Assistant
- Nursing
- Other

2. Which institution do you attend?

[Redacted]

3. What year are you?

- 1
- 2
- 3
- 4
- GME
- Other (please specify)

[Redacted]

4. Did you find this education useful?

- Not at all useful
- Not so useful
- Somewhat useful
- Very useful
- Extremely useful

5. How valuable do you think education of treating sexual assault victims is?

- Not at all valuable
- Not so valuable
- Somewhat valuable
- Very valuable
- Extremely valuable

6. Please, let us know something from this presentation that you found interesting or something you did previously know

[Redacted]

7. Now, how confident are you in treating sexual assault victims?

- Not at all confident
- Not so confident
- Somewhat confident
- Very confident
- Extremely confident

8. Will this medical knowledge impact your future patients

- Very unlikely
- Unlikely
- Neither likely nor unlikely
- Likely
- Very likely

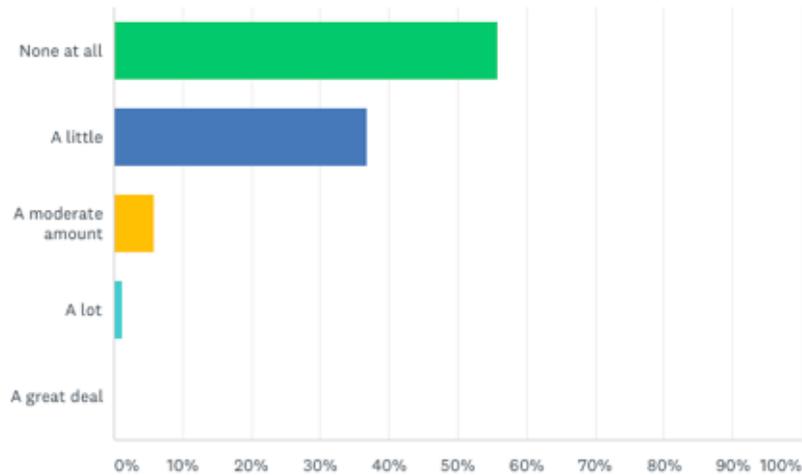
Image 2: Post-lecture survey administered to those students who attended the in-person lecture

- 1) A 16-year-old female presents to the emergency department following a sexual assault. She expressed her desire to not have family in the room. She was examined and a SANE exam was performed, she is waiting for prophylactic antibiotics to be administered. However, her mother comes to the emergency department and demands to see her daughter. The clerk at the front desk should:
 - a) Tell the mother that her daughter is in the emergency room but she is required to wait in the waiting room.
 - b) Allow the mother to enter the emergency department because her daughter is under the age of 18.
 - c) Call security on the mother for being disruptive within the waiting room.
 - d) Send out the victim advocate to speak with the mother.
 - e) She should not disclose if the patient is in the emergency room and the patient should be listed as private within the EMR.
- 2) Which of the following is an accurate description of the SANE exam?
 - a) The SANE exam is performed by the emergency room physician to assess the patient for injuries following a sexual assault.
 - b) The SANE exam is a way to prove a patient was a victim of sexual assault.
 - c) The SANE exam is performed by a specially trained nurse and can be re-traumatizing to the victim.
 - d) Evidence collected from the SANE exam must be filed in a police report.
- 3) Which of the following is an accurate description of pregnancy prevention therapy that should be offered to women following a sexual assault?
 - a) Ulipristal acetate can be acquired over the counter at a drug store and must be taken within 24 hours of unprotected sex.
 - b) Hormonal based IUDs are a form of emergency contraception and can be inserted up to 3 days following unprotected sex.
 - c) Levonorgestrel is a form of oral emergency contraceptive that can be purchased over the counter but is less effective in obese women.
 - d) Copper IUDs are a safe mechanism of emergency contraception and can be placed up to ten days following unprotected sex.
- 4) Which of the following is an example of an ineffective or inappropriate method of communication with a patient who has experienced sexual assault?
 - a) Listening to the patient describe their experience and asking them medically relevant questions once they have finished speaking.
 - b) Maintaining eye contact when gathering medical history and touching their hand whenever they speak.
 - c) Asking the patient if there is anything that you can do for them, outside of them having questions about their medical care.
 - d) Acknowledging the patient's right to not disclose their assault to the police and supporting their right to autonomy.
- 5) Which of these situations describes the proper use of prophylactic STI care following a sexual assault:
 - a) If a patient knows the perpetrator they should wait to receive prophylactic antibiotics until their follow up appointment, in order to see if they can determine the perpetrators' STI status to avoid unnecessary antibiotics.
 - b) A patient is likely unlikely to be immune to HBV, therefore, antiretroviral therapy should be initiated within the emergency department.
 - c) Prophylaxis treatment of HPV is administered in the form of vaccination, even if the patient has not received any of the vaccination series prior to the assault.
 - d) HIV has a high risk of transmission during vaginal intercourse and prophylactic therapy should be administered between 3-7 days following the assault.

Image 3: Test questions for the treatment of sexual assault patients' lecture

How much formal education have you had from your institution on treating sexual assault victims

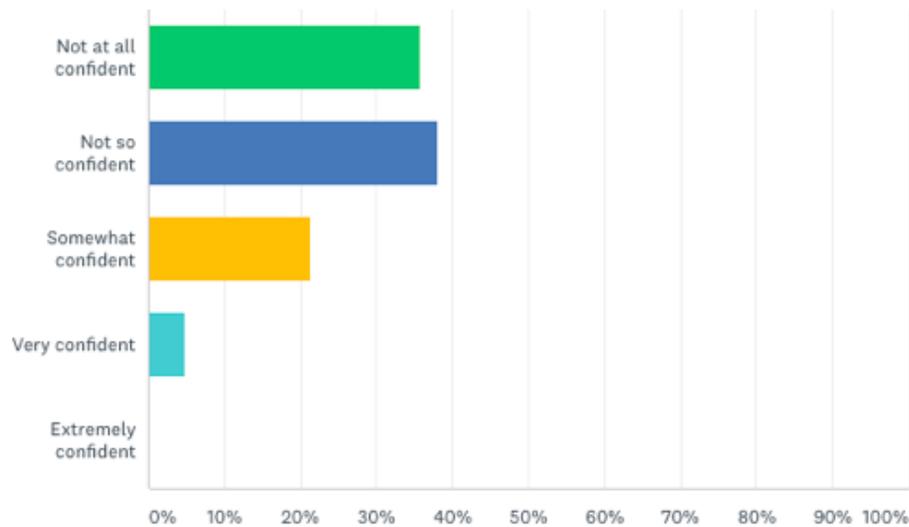
Answered: 168 Skipped: 0



Graph 1: Pre-lecture survey results from 168 students on their formal education on treated sexual assault victims

Currently, how confident are you in treating sexual assault victims?

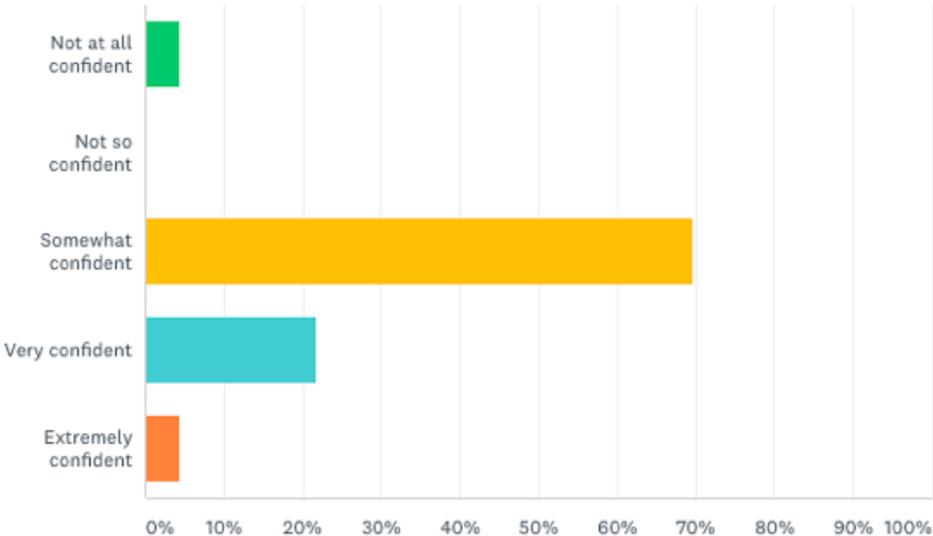
Answered: 168 Skipped: 0



Graph 2: Pre-lecture survey results from 168 students on how confident they felt about treating sexual assault victims

Now, how confident are you in treating sexual assault victims?

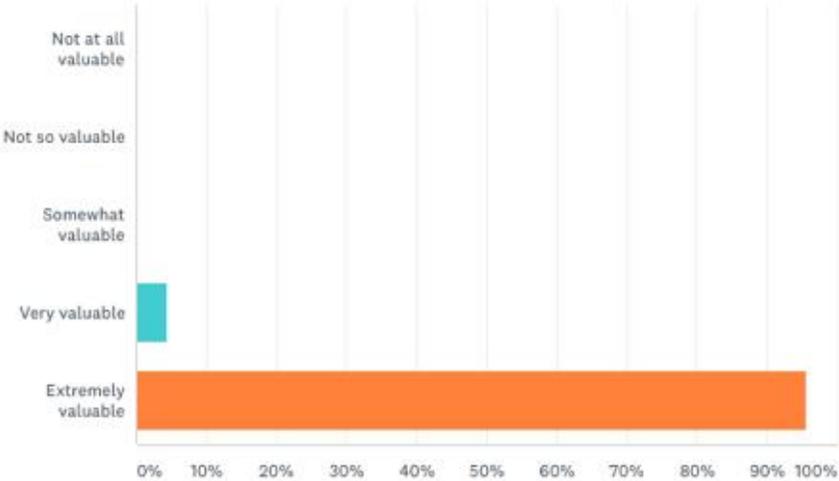
Answered: 23 Skipped: 0



Graph 3: Post-lecture survey results on how confident they felt treating sexual assault victims from the 23 students who received the oral presentation

How valuable do you think education of treating sexual assault victims is?

Answered: 23 Skipped: 0



Graph 4: Post-lecture survey results from the 23 students who attended the oral presentation on how valuable the students felt it was

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Hysterectomy: An Outpatient Procedure

Kaitlin Warta, MD, MPH

ABSTRACT

Introduction: Minimally invasive hysterectomy (MIH) can be performed safely and effectively on an outpatient basis. However, same day discharge (SDD) is not a universal standard, and many hospitals are still admitting uncomplicated patients overnight for this procedure. The purpose of this project is to create and enact same day discharge protocol for MIH at New Hanover Regional Medical Center (NHRMC).

Methods: A literature review was conducted to choose optimal patient criteria for SDD. Through a joint effort between the Obstetrics and Gynecology (OBGYN) and Anesthesiology departments, SDD was offered as an opt-in program beginning June 2, 2020. Changes in nursing PACU protocols were made to accommodate SDD patients. *Impact:* Since the initiation of SDD, 72 patients have undergone outpatient MIH. None of these patients were readmitted for postoperative complications.

Conclusion: SDD for MIH at NHRMC has been successfully implemented as an opt-in program for 72 patients thus far. Ultimately, the goal will be to make SDD for MIH the standard-of-care at NHRMC. In the future, further evaluation of this pilot population is needed to inform potential changes in long-term protocol. Specifically, data on inpatient opioid consumption, 30-day ED visits, postoperative nausea and vomiting are currently in the process of being collected.

INTRODUCTION

In the United States, nearly 600,000 hysterectomies are performed annually, with one in three women having a hysterectomy in her lifetime.¹ Minimally invasive hysterectomy (MIH), which include laparoscopic and vaginal hysterectomies, can be performed safely and effectively on an outpatient basis, allowing for decreased opioid use, faster recovery, and lower cost. The literature on same day discharge (SDD) for MIH suggests that over 90% of benign patients and 80% of oncology patients meet criteria for SDD.^{2,3} Despite this data, SDD is not yet universally accepted as the standard-of-care in the field of Obstetrics and Gynecology (OBGYN). For this reason, many hospitals are not offering this service. At New Hanover Regional Medical Center (NHRMC) in Wilmington, North Carolina, approximately 600 MIHs are performed yearly, however nearly all patients stay overnight in the hospital. The purpose of this project is to create, enact, and evaluate SDD protocol for MIH at NHRMC.

METHODS

This project was determined to be quality improvement and therefore exempt by the Institutional Review Board (IRB). First, a literature review was conducted to determine optimal patient criteria and protocols for SDD. This protocol was discussed with the Enhanced Recovery After Surgery (ERAS) coordinator, and the Anesthesiology and OBGYN departments. Second, a department meeting was held to gain feedback on the criteria and identify potential barriers in the current protocol that may prohibit SDD implementation. We planned to select a low risk pilot population who would undergo this protocol initially.

First, patient criteria were selected as listed below:

Inclusion Criteria:

- American Society of Anesthesiologists Classification of Physical Status (ASA score) 1 or 2
- ASA 3 patients with some exclusions (see Exclusion Criteria)
- Age <70 years old

Relative Exclusions:

- No access to a supportive care person who can provide assistance at home for two days after surgery
- Completion of surgery later than 6pm
- Patients with pain disorders that may require additional postoperative pain management or who elect for spinal anesthesia prior to surgery

Absolute Exclusions:

- ASA 3 patients who require overnight oxygen, have obstructive sleep apnea, or require inpatient anticoagulation
- Conversion to laparotomy
- Intraoperative complications requiring inpatient admission
- Additional non-gynecologic surgeries performed during the operation that would require inpatient admission
- Patients with mental health or mobility limitations without access to a home caregiver

After these criteria were agreed upon and established, surgeons and patients could opt-in depending on their levels of comfort.

Second, the NHRMC “Discharge Criteria for Ambulatory Surgery” policy was made available for MIH patients. These criteria assign a patient score based on PACU RN assessment of factors such as vital

signs, nausea and vomiting, alertness, and ability to ambulate (see Appendix A). A score of 10 or greater indicates that a patient is safe for discharge. If the patient scores less than 10, further evaluation for inpatient recovery is warranted. In addition to these standard criteria for ambulatory surgery patients, we decided that patients must also be able to void prior to discharge. We also recommend that the surgeon examines the patient prior to discharge to confirm that stable before leaving the hospital.

Initial pilot data on patient outcomes and baseline characteristics were collected through the EPIC Electronic Medical Record (EMR) “SlicerDicer” application. After this initial search, a request was placed through the hospital analytics department to collect further data that we could not obtain through the EMR.

RESULTS

Since the initiation of SDD on June 2, 2020, 304 patients have had undergone MIH at NHRMC. Of these patients, 72 (23.4%) were discharged home on the day of surgery. 219 (72%) were admitted for overnight extended recovery, and 13 (4.3%) were admitted for inpatient stay (defined as at least 2 midnights). Average age of patients at the time of surgery was 51 years old and BMI was 31. Demographic data including race, ethnicity, type of medical insurance, and ASA status are in the process of being collected.

First pain scores after surgery, recorded using the 0 to 10 Numeric Rating Scale (NRS) by an RN in PACU, were similar amongst the groups (4 vs. 3 vs. 3 in the Outpatient, Extended Recovery, and Inpatient groups respectively). There were no 30-day hospital readmissions in the Outpatient group. However, there were 4 (1.8%) Extended Recovery and 1 (7.7%) Inpatient patients who were readmitted.

Data on inpatient opioid consumption, 30-day ED visits, postoperative nausea and vomiting are currently under review.

DISCUSSION

Protocol Implementation and Trouble Shooting

While the program has been well-received by many gynecologic surgeons, there are future barriers to overcome in the process of achieving universal implementation. First, some gynecologic practices are not yet aware that this option is available, or if their patients may qualify. Advertising this option at a department meeting and readdressing surgeon concerns with the protocol may help increase implementation rates. In addition, making patient criteria easily accessible to both surgeons and

surgery schedulers will allow more seamless screening of qualifying patients. PolicyStat, a database of hospital-wide policies, is available online to NHRMC employees. By making patient criteria for MIH part of the SDD official policy and posting it to the PolicyStat website, staff will easily be able to access this information.

Second, patients who are discharged home on the day of surgery are not able to receive spinal anesthesia due to concerns for respiratory compromise. In the past, this procedure has significantly decreased postoperative pain, and is a potential reason that surgeons are hesitant to offer SDD to their patients. A future endeavor for the SDD program will be to identify equally effective, alternative methods for pain management that can be used on an outpatient basis. One option is the use of paracervical block in lieu of spinal anesthesia for immediate postoperative pain control.⁴

During a meeting between the ERAS department and PACU, nurses expressed concern that surgeries occurring later in the day were requiring them to work overtime, since SDD patients can take several hours to meet the criteria necessary to go home. To avoid this issue, we now require that patients be posted for surgery in the first or second OR slots (around 7am and 10am, respectively), to qualify for SDD.

Patient Experience

Initial implementation of new SDD protocol has been successful for 72 patients. The marker or patient safety and quality used for this study is the 30-day readmission rate. To date, none of the patients who underwent SDD were readmitted to NHRMC for surgical complications. Other measures, such as inpatient opioid consumption, 30-day ED visits, postoperative nausea and vomiting were not available through the EMR-provided data collection system. Therefore, further evaluation of these data points may give a more holistic picture of the SDD patient experience. It has been reported by surgeons and ERAS staff that patients have expressed positive experiences with the protocol. Surveys may be implemented in the future to measure and compare patient satisfaction more objectively. One option for this is the Consumer Assessment of Healthcare Providers and Systems (CAHPS) Surgical Care Survey, a validated tool that assesses the patient experience in both the inpatient and outpatient settings. Questions focus on patient preparedness, staff communication, and pain control.

While in the process of implementing this new protocol, we found areas of the discharge process that needed to be updated to better accommodate SDD patients. For example, previously provided patient education materials did not mention the option for SDD or what to expect upon discharge. We are currently in the process of updating these patient resources. Once available in English, these materials will then be translated in Spanish through a medical interpreter at NHRMC. Unfortunately,

due to budget limitations, there are no plans currently for translating these materials into other languages.

Social Determinants of Health and Patient Diversity

Social determinants of health, including race, ethnicity, insurance status, and access to transportation, impact every aspect of a person's health and their opportunities for receiving equitable care. The availability of SDD is no exception. For example, an individual who lives several hours away from the hospital, or who has children or an elderly parent at home with minimal social support, may not be able to safely return home on the day of surgery. In addition, cultural beliefs surrounding health and healing may impact a patient's decision to undergo SDD in ways that do not always become clear in a standard patient interview. Instead of simply offering patients the option of SDD, exploring the barriers for patients that decline SDD may offer insight into making this protocol more inclusive. It may become prudent for Case Managers to become involved well before the scheduled surgery to ensure that patients have the resources necessary to feel safe returning home. We do not yet have the demographic data available to compare the populations of patients who opt for SDD vs. the traditional extended recovery route. When this data is available, it may unveil valuable information concerning gaps in access. In addition to traditional demographics, distance lived from hospital, access to a personal vehicle, primary language, and highest level of education attained will be helpful to determine patient populations that may feel excluded from SDD as a feasible option.

Cost

In addition to evaluating the patient experience, further data is needed to determine the potential benefit in cost savings. SDD has potential for minimizing excess spending by eliminating inpatient hospitalization charges, estimated around \$2000 per day. Using this estimate, our hospital would save over \$1.2 million per year just by discharging patients on the same day of their MIH. We plan to contact the hospital analytics department to gain further insight into specific charges for MIH patients who stay inpatient at NHRMC and more accurately assess cost savings benefit in this area.

COVID-19 Impact

This program was initiated during the start of the COVID-19 pandemic in 2020. Due to this global health crisis, elective surgeries were canceled and postponed from March to late May. Additionally, hospital resources including our research, ERAS, and residency departments suffered budget cuts, as available personnel and finances were shunted towards prioritizing COVID-19 related concerns. We had initially planned on implementing this protocol earlier in 2020, however for these reasons we were delayed for several months. If this project had started at the anticipated time, we would potentially have had access to more patient data, which would have helped inform further process improvements.

Although we are becoming accustomed to this “new normal,” we cannot predict if cases of COVID-19 will rise again in the future, or what this will imply for gynecologic surgical cases as most MIH are considered to be elective (with the exception of surgeries indicated for malignancy). Surgical volume is now normalizing, and we have been surprised at the relative ease of implementation considering these obvious barriers. In some ways, the pandemic may have encouraged the uptake of this new practice. SDD allows outpatient surgical candidates to avoid iatrogenic exposure to COVID-19 while also preserving inpatient resources for critically ill patients. For this reason, we foresee the implementation of SDD for MIH being a sustainable protocol during this uncertain time.

CONCLUSION

Overall, this project was successful regarding implementing a safe and well-accepted protocol for discharging patients’ home on the same day of MIH. As an opt-in program that has only been available for four months, 23.4% of MIH patients have undergone SDD with promising results. We anticipated that surgeons would be hesitant about discharging patients’ home on the day of surgery due to fear of potential surgical complications or readmissions. However, many have been eager to offer this option to qualifying patients.

Future plans for this program include creating a database of SDD patients in order to track patient outcomes, updating patient education materials to include expectations for SDD, discovering populations that may be excluded from the existing protocol, and finding ways to overcome their barriers to care.

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APPENDIX:

Discharge Criteria for Ambulatory Surgery

PROCEDURE

1. The RN will utilize an ongoing assessment of the following areas to obtain a numerical score that indicates a general post-operative functioning of each patient at the time of discharge.

"NHRMC Anesthesia/Sedation Recovery Scale"

LEVEL OF CONSCIOUSNESS:

2= Alert, oriented x 3 (or at pre-anesthesia baseline)

1= Drowsy but awake, or awakens to verbal stimulation

0= Somnolent, arouses only with tactile stimulation

MUSCLE CONTROL:

2= Able to move all extremities well; ambulatory (as applicable versus pre-anesthesia/pre-procedure status)

1= Mild to moderate weakness or lack of coordination; requires assistance to ambulate (as applicable versus pre-anesthesia status)

0= Weakness evident; not ambulatory (as applicable versus pre-anesthesia status)

CIRCULATION/VITAL SIGNS:

2= Systolic Blood pressure/pulse within 20% of pre-anesthesia/procedure baseline; temperature 97-99 degrees F.

1= Systolic Blood pressure/pulse within 30% of pre-anesthesia/procedure baseline; temperature 97-99 degrees F.

0= Systolic Blood pressure/pulse outside 30% of pre-anesthesia/procedure baseline; temperature under 97 or over 100 degrees F.

RESPIRATION:

2= Able to breathe/cough freely; SaO₂ over 92% on room air

1= Able to breathe/cough adequately; supplemental O₂ required to keep SaO₂ over 92%

0= Dyspneic, tachypneic (over 25 respirations/min), hypopneic (less than 10 respirations/min); SaO₂ less than 92% with supplemental oxygen delivery.

PAIN: (utilizing a zero-to-10 Verbal Numeric Pain Scale [VNPS] or Visual Analog Scale [VAS]) (Circle one)

2= Mild or no pain

1= Moderate to severe pain controlled with analgesic therapy (pain score less than 6 or no more than 2 points greater than baseline pain score in patients with chronic pain treated with narcotic preoperatively/pre-procedure)

0= Persistent severe pain (VAS over 6)

NAUSEA AND VOMITING:

2= Mild or no nausea with no active vomiting

1= Mild to moderate nausea with transient vomiting or retching

0= Persistent severe nausea and/or vomiting or retching

SCORE: _____

Score must be equal to or greater than 10 out of 12 (with no zeros* in any category) or return to baseline for the patient to be discharged/transferred to the next level of care EXCEPT BY PHYSICIAN ORDER

*with the exception of peripheral nerve blocks, epidural, or spinal anesthetics

2. An overall score of 10-12 with no zero scores for any criteria indicates satisfactory functioning for discharge. In addition, the RN will ensure that appropriate transportation is available and that the patient or responsible party is able to verbalize discharge instructions.
3. A score of less than 10 or with a zero in any area indicates specific limitations in functioning which may require extended care. The RN will notify the attending surgeon and/or anesthesiologist that the patient does not meet the discharge criteria.
 - a. A surgeon may determine whether or not discharge should proceed based on this evaluation.
 - b. In the event the surgeon cannot be reached in a reasonable amount of time, the RN may consult with the anesthesiologist of this patient regarding disposition.
 - c. The patient can be moved to extended recovery or changed to observation status with MD order.

Implementing the Collaborative Care Model for Integration of Physical and Mental Healthcare in the Primary Care Setting

Gretchen Velazquez, MD

INTRODUCTION

It is a fact that mental health diagnoses affect over 25% of the US population at any given time. A vast number of these patients are diagnosed and treated for common behavioral health conditions such as depression, anxiety, and substance use disorders in the primary care setting. It is also common to see medical comorbidities for this population of patients. Many of them have at least one co-occurring chronic medical problem. We know that in many cases acute and chronic medical problems involve health behaviors or psychosocial issues with the potential to exacerbate symptoms or undermine treatment outcomes and for this reason it thus follows that the primary care setting is the ideal place to be designated as the medical home for the provision of essential behavioral health care (CMS brief, 2013).

This is where the Collaborative Care Model plays a vital role. The Collaborative Care Model is an evidence-based strategy to deliver integrated mental health and general medical care within the primary care setting. A Collaborative Care Model allows for a team-based approach in which a primary care provider, a behavioral health manager and a psychiatric consultant work together to provide care and monitor patient's progress. This type of program has been shown to be both clinically effective and cost effective for a variety of mental health conditions, in a variety of settings and using different payment mechanisms.

Evidence for Collaborative Care Model

The IMPACT study of Collaborative Care is the largest trial of collaborative care to date and included 1,801 adults aged 60 and older with depression in 18 primary care clinics in five states. The patients in this study averaged 3.5 chronic medical conditions. The participants were randomly assigned to collaborative care or to usual care. The trial included patients with both fee-for-service and capitated Medicare and Medicaid coverage. The study showed that twice as many patients had improvements in their depression scores within a year. The results showed decreased rates of depression, less physical pain and higher quality of life compared to the patients in the usual care arm. There was also evidence for greater patient and provider satisfaction and cost effectiveness (Smith et. al, 2009).

There are now over 80 randomized controlled trials corroborating the original findings of the IMPACT study. The evidence is there for diagnoses of depression, anxiety, PTSD, chronic pain, dementia and substance use disorders in adolescents, depressed cancer patients and diabetics. Collaborative Care is now recognized as an evidence-based practice by the Substance Abuse and Mental Health Services Administration and recognized as best practice by the Surgeon's General Report on Mental Health and many other national mental health organizations (CMS brief, 2013).

Healthcare Cost Savings

Mental health conditions are known to increase overall healthcare utilization and costs by 50 to 100 percent. This is most notable in patients with multiple chronic medical conditions. The IMPACT study was able to show that patients in the collaborative care arm of the study had substantially lower health care expenditures as opposed to those patients under usual care. There are also other financial benefits. Mental health problems often reduce an individual's ability to remain in the workforce and increases absenteeism at work. Patients with a diagnosis of depression have been found to have lower personal income than those without depression.

The findings described above suggest that the implementation of collaborative care programs for depression in primary care can lower the negative financial fall out for patients allowing them to return to full employment. This is a favorable long-term result for government subsidized program such as Medicaid and Medicare.

Delivery of Care

Collaborative Care is provided by a collaborative team that includes the following:

- A primary care provider (PCP) such as a family physician, internist, nurse practitioner or physician assistant.
- Care management staff such as a nurse, clinical social worker or psychologist who is embedded within the primary care clinic and trained to provide evidence- based care coordination, brief behavioral interventions and support the treatments such as medications started by the PCP.
- A psychiatric consultant, who advises the primary care team with a focus on patients who present diagnostic challenges or who are not improving. The psychiatrist provides consultation generally through communication with the care management team and/or PCP through web communication (telephone, electronic mail message or video conference).

The clinical approach follows the principles of measurement-based care, treatment to target and stepped care. In the collaborative care model patient progress is tracked by the team through the utilization of validated tools such as the PHQ-9 questionnaire for depression. This

is done in a similar way that a diabetic would have their Hba1c laboratory test done every few months to monitor their progress. Treatment of behavioral conditions is adjusted if the patients do not show improvement. This is where the involvement of the psychiatrist as a consultant is valuable because the primary care team can manage some medication adjustments. Individuals that are not improving with this mode of treatment can then be referred to a separate clinic where there are dedicated mental healthcare specialists. Alternatively, a patient can also choose to be referred out to a mental healthcare provider by choice and leave the collaborative care program (CMS Brief, 2013).

Payment Model

Primary care practices that are providing collaborative care services can now bill for those services using CPT® codes for Psychiatric Collaborative Care Services (99492, 99493, 99494). Medicare, and some commercial payers, and Medicaid plans are also providing coverage (CMS MLS, 2019).

The Centers for Medicare and Medicaid Services (CMS) has provided a fact sheet and a short list of FAQs that describe Collaborative Care Model services and their associated billing requirements. They have classified all of these (99492, 99493, 99494 and 99484) as Behavioral Health Integration (BHI) services on their care management site (CMS LMS, 2019)

The CPT code that is billed monthly for services provided using the collaborative care program is based on the amount of time the behavioral health manager or clinical staff spent managing the patient's case during a given 30 day calendar month (CMS LMS, 2019).

Goals of Collaborative Care Model

The roles played by all team members will help clarify how communication with patient and treatment goals are defined.

The role of the primary care provider is to provide usual medical care and have sufficient psychopharmacology knowledge. They identify patients who would benefit from behavioral health support and engage them in the treatment model. The primary care provider collaborates and consults with the behavioral health provider and the psychiatric consultant to enhance care by engaging in the "warm handoff." This is when the PCP introduces the concept of Collaborative Care to the patient and during that same visit personally introduces the BHP to the patient to begin a therapeutic relationship if the patient provides consent for services. The PCP then continues care by initiating prescription medication and administering PHQ-9 or other validated instrument as applicable during follow up visits (Unutzer,2013)

The care manager on their end will establish rapport and provide patient engagement and education. The care manager is responsible for close follow-up by phone or in person visit that focuses on treatment adherence, treatment effectiveness and treatment side effects. They also provide brief counseling using established evidence-based techniques such as Motivational Interviewing, Behavioral Activation and Problem-Solving Treatment in Primary Care. The care manager engages with the patient about once a week if they are not showing improvement as expected, and their case is then discussed with the psychiatric consultant. The care manager also facilitates communication between the PCP and the psychiatric consultant. Furthermore, the care manager provides referrals to outside mental health specialty care including substance abuse services and social services. In cases when the patient has shown significant improvement the care manager helps create a relapse prevention plan prior to dismissal from the program (Unutzer,2013).

The psychiatrist's role is to provide mental health specialty support to the PCP and BPH in cases where patients are failing to improve as expected. They are available to help with diagnostic dilemmas and complex cases. This work is carried out through weekly reviews of patient caseloads and providing treatment recommendations to the PCP for patients that are not improving. These recommendations are provided through the BPH, but the psychiatrist is always available to the PCP via pager or phone (Unutzer,2013).

Clinical performance measures include process metrics such as:

- percent of patients screened for depression, percent with follow-up with care manager within 2 weeks
- percent not improving that received case review and psychiatric recommendations
- percent with treatment plan changed based on advice from psychiatrist and percent not improving referred to specialty BH
- percent with 50% reduction in PHQ-9 clinical response to treatment and percent reaching remission (PHQ-9 score below 5)
- provider and patient satisfaction
- functional metrics such as decreased absences at work or school
- decreased utilization such as decreased emergency department visits, decreased 30 day re-admits and decreased overall cost of care (Raney and Lasky, 2020).

Implementation of Collaborative Care at Wake Forest Health Network Clinics

A decision was made to implement the Collaborative Care Model at the Wake Forest Health Network. I became involved in this project by invitation from the Chair of Family Medicine Richard Lord, MD and the Interim Chair of Psychiatry, Steve Scoggins PhD at Wake Forest

Baptist Health. To that end we partnered with a consulting group named Health Management Associates. We decided to roll out the program as a pilot and approached primary care clinics with a high volume of patients and at least a 50% of Medicare/Medicaid population in different regions of our footprint. We enrolled four clinics in the pilot: Piedmont Plaza Family Medicine in Winston-Salem, Family Medicine in Conover, Downtown Health Plaza Pediatrics in Winston-Salem, and Internal Medicine in Jamestown. These clinics were also selected due to the physicians' interest and willingness to be engaged in the process and in seeing the effects of the Collaborative Care Model in their patient population.

The mental health diagnoses of interest in the roll out of our pilot program were depression and anxiety. We were advised to focus on these diagnoses by our consultants and they seemed the obvious choice because of their high frequency of presentation in the primary care setting and because these mental health problems can be successfully treated (based on research) within the scope of the Collaborative Care Model.

The pilot program designated licensed counseling social workers as the care manager for these clinics. The clinics were tasked with hiring an LCSW prior to the beginning of the program with the goal of having the care manager embedded in the clinic fulltime.

We had an initial two-day orientation during which the four clinics brought in their respective teams of PCP, LCSW and supportive staff (office manager and clinical coordinator) to meet with the consultants and to meet the psychiatrist for the program. The consultants presented the Collaborative Care Model and discussed in detail the expectations of each role within the model. The healthcare providers and the counselors performed mock "warm-handoffs" during this meeting. The healthcare providers also did mock consultations on the "telephone" with the psychiatrist. The consultants addressed topics related to documentation by each team member and questions about charging and coding that are unique to the Collaborative Care Model.

We were starting to enroll patients in our program sometime after this initial meeting in February and March when the novel coronavirus -19 pandemic was declared. Our clinical and administrative skills were diverted to focus on the care and management of patients with a new and highly infectious disease process.

The study in our Internal Medicine Clinic in Jamestown had 20 patients enrolled in the program with diagnosis of depression at the time the program was halted. These patients were seeing me every few weeks and having either phone or in-person visits with the LCSW at least once a week based on their need as determined by the care manager. The care manager discussed their cases with the psychiatrist once a week if there was a concern that their symptoms were worsening or failing to respond to current prescription therapy and counseling. This was determined by following PHQ-9 scores done at least once a week.

My intention before the Pandemic halted the program was to also monitor the progression of chronic medical conditions including diabetes and hypertension along with their response to treatment for depression. The expectation was to see a positive correlation between decreased PHQ-9 scores and lower hba1c and blood pressure readings. The thought being that a patient that is feeling healthy and balanced emotionally is more likely to have the desire and energy to invest more attention and care to their general well-being which would translate into better medication adherence and possible healthier lifestyle choices.

CONCLUSION

I think the challenge for this program is going to be obtaining sufficient reimbursement for these services so that the program can remain viable and sustainable. One of the difficulties we encountered was that many patients that could benefit from the program did not have insurance coverage that allowed payment for the Collaborative Care Model. These patients were relegated to traditional care within the primary care setting and rarely agreed to see a counselor or mental health care provider at another facility because those services were also not covered by their insurance or had minimal coverage.

I look forward to continuing our project and anticipate that those patients who can enroll in the Collaborative Care Model will show greater overall health benefits at six months and beyond.

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Pediatric Overweight and Obesity Rates in Rural Areas of North Carolina

Lourdes Pereda. MD

INTRODUCTION

Obesity rates have been on the rise in recent years, with Pediatric patients having a significant increase in weight, specifically body mass index (BMI) (4). Obesity is identified with the (BMI) of the patients, a measure of weight in kilograms divided by height in meters squared, rounded to one decimal place. For an adult, a normal BMI falls between 18.5 and 25, an overweight BMI is defined as one between 25 and 30, and an obese BMI is defined as being above 30. In Pediatrics percentiles of BMI are used to determine whether they are normal (5-85%), overweight (85-95%), or obese (>95%). Childhood obesity rates have been extensively studied, with differing rates based on location of the child, either urban or rural. (5)

The CDC reports 1 in 6 children is obese. (6) The increase in childhood obesity has generated many concerns, as obesity increases the risks of developing Type II diabetes, heart disease, fatty liver, and high blood pressure (2). Type 2 Diabetes in children was rare 20 years ago, today it constitutes nearly one half of all new cases of diabetes among children in some settings (7.) Therefore, the rates of childhood obesity have been heavily monitored and measured in the past years. The National Center for Health Statistics (2017) (8) has determined that in 2015-2016, 18.5% of United States youth aged 2-19 were diagnosed as obese. Additionally, they reported that the “observed change in prevalence between 2013-2014 and 2015-2016 was not significant among youths”. Similarly, Xu and Xue (2016) reported that approximately 16-18% of youths were diagnosed with abdominal obesity. They also determined that overall, approximately 37-42% of children and adolescents were either overweight or obese. (9)

The only pediatric practice in Angier is named Kidz Pediatrics, located in the rural town of Angier, Harnett County, North Carolina. In this pediatric practice our population consists of 50% Hispanic patients, 25% African American patients, 20% white patients and 5% others: Chinese, Korean, Hindu, Jordanians, etc. Most of the Hispanic households have at least one farmworker member. Kidz Pediatrics and Sandhills Community Care conducted a “Fit Clinic” during 2017 when a nurse from Sandhills group came to Angier once a month to check patients with obesity during a sick visit, and provided nutritional education to patient and parents using literature from ChooseMyPlate.gov. and the 5-2-1-0 program about Prevention of Obesity (10).

During each visit we talked with the parents and child about different aspects of Obesity: what it means and how you get to be obese, the genetic components, complications of obese children as diabetes, liver cirrhosis, HTA, heart problems. We discussed also the, economic

impact if their children continue with these problems during adulthood, ways to prevent it to continue, we reviewed menus and exercises, generated goals for each visit and discussed about blood work results. The grant for this “Fit Clinic” ended in 2018, but the “Fit Clinic” in Angier continued running with the Pediatrician and CNAs offering the orientation and follow up appointments during well child visit and sick visits until present.

According to the U.S. Census, the median income in Harnett County during 2017 was \$45, 428, and the average persons per household are 2.69. Based on the Human Services Poverty Guidelines, a household with 3 people, and an income of about 43,000, places them at a 200% Federal Poverty Level. Ogden et al. (2018) determined that the obesity prevalence of those in a 130%-350% FPL is 19.9% (8). Therefore, it would be expected that the prevalence of obesity of the patients seen in Angier, North Carolina would be around 20%. Additionally, Ogden et al. (2018) determined that the obesity prevalence of children whose head of the household had a college degree is 8.5%, and if they had either attended some college or only obtained a high school diploma, the prevalence of childhood obesity increases to 18.3%-21.6% (9). The U.S. Census determined that only 20.7% of Angier residents obtained a college degree (12), indicating that the obesity prevalence in Angier will align more with the second category presented by Ogden et al., of 18.3%-21.6%.

Therefore, this study aims to explore the hypothesis that children in rural, or more socioeconomically disadvantaged areas, will show higher rates of childhood obesity due to limited access of knowledge about nutrition, healthy food options, and municipal recreation programs.

METHOD

Participants

The electronic health records (EHR) of pediatric visits ($N=1,469$, ages 2-18) seen at Kidz Pediatrics in Angier during, North Carolina, between the dates of January 2nd, 2019 and March 31st, 2019 were reviewed and data collected for this study (See Table 1).. The pediatric visits consist of well visits and sick visits, not distinction was made about sex or race while gathering information. The patients did not receive compensation for their part in this study.

Low Weight	67
Normal Weight	938
At Risk for Obesity	247
Obesity	217
Total=	1,469

Pic 1. EHR patient chart and graph

For the purposes of this study, the percentiles of BMI charts were utilized, and a normal weight was defined as being between the 5th and 85th percentile. An overweight BMI was categorized

as being in the 85th to 94th percentile, and BMIs falling above the 95th percentile were categorized as obese. The BMI percentiles of all patients were collected. Blood work was drawn from patients with overweight or obesity. Results were collected of patients who were obese or overweight and those results were grouped by high cholesterol, abnormal triglyceride, abnormal ALT, or abnormal hemoglobin A1C. Initially, the data was collected on paper, and then transferred into Excel for further analysis.

RESULTS

This study found that 32% of the visits (well child and sick visits) between January 2nd, 2019 and March 31st, 2019, were either overweight or already obese. Additionally, this study found that 15% of patients seen were obese, and 17% were overweight (see Figure 1)

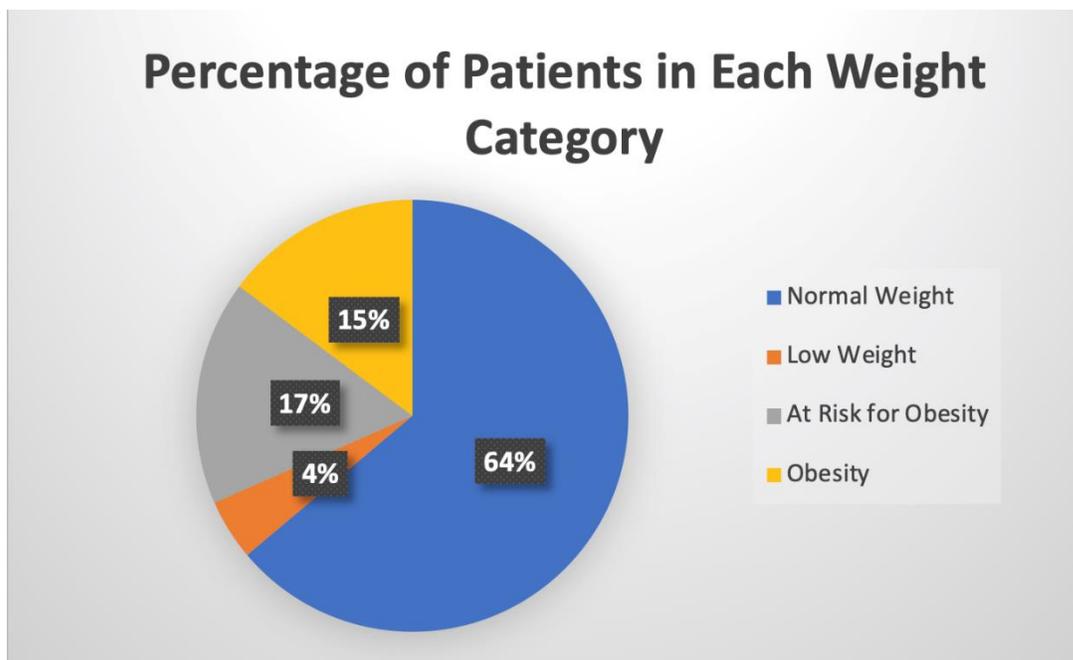


Figure 1. Graph of percentages of patients in the different weight categories.

From these patients with overweight or obesity (total: 464) we found many of them had already systemic problems or complications: 81 patients (17.4%) had high cholesterol, 76 patients (16.3%) had abnormal triglyceride, 32 patients (6.9%) had abnormal ALT (Fatty liver), and 3 patients (0.6%) had abnormal hemoglobin A1C: Prediabetes.

DISCUSSION

The results of this study determined that the rates of overweight and obesity for patients at Kidz Pediatrics, a Pediatrics Clinic in the rural town of Angier, North Carolina were similar or even slightly lower than rates established by the Center for Disease Control (CDC) for children between the ages of 2 and 18. The CDC reports a prevalence of obesity of 18.5% of children, versus the observed 17% in this study. As Skinner et al study found overweight and obesity prevalence were 35% of the pediatric population, versus the observed 32% in our study.

We found some limitations to the study: because of the way the data was gathered we were not able to separate patients by sex or race, which would have given us better demographic information about obesity in our population. We also had few duplicate of the patients, since some were seen during a well visit, we tried to see them back in 3 months, but we found some patients with extreme abnormal weight gain in a very short time, we had to follow up in a shorter time like in a month to monitor if the changes in diet and exercise we discussed during the visit were implemented and were effective.

The barrier of different language was overcome due to the doctor and CNA and staff are all bilingual, making the communication culturally and linguistically smoother. Hispanic families, which were around 50% of our population, tend to have diets with high carbohydrates (rice, tortillas, potatoes, pasta), low in vegetables and drink sugary beverages daily. These families were open to learn about healthy habits. Last year Kidz Pediatrics in partnership with EFNEP (Extended Food and Nutrition Education Program) from NC State University worked together and offered classes in the Pediatric Clinic for the families in the community. The program in Spanish had much more participants than the program in English. The Town of Angier's secretary helped us promote the classes in the Town of Angier Facebook and bulletin. Those classes consisted in education about nutrition but also how to budget healthy and inexpensive meals, safety and hygiene during cooking, how to count calories, how to read the nutrition facts of every product, portion size, and the importance of exercise daily. The classes were given during one hour per week for three months. Participants got useful giveaways (measuring cups, meat thermometers, cutting boards, grocery reusable bags, recipe books, etc.) and a Certification of Participation at the end of the course.

We would like to speculate that the constant education and follow up visits during the last two years, when Sandhills Community Care started the "Fit Clinic" and which then continued by Kidz Pediatrics' staff until now during well visits and sick visits, have had some impact in the slight decrease in number of pediatric patients with Overweight and Obesity. We were expecting a

higher rate of patients with weight problems in this rural area as other studies reported already.

Angier is a community with many fast-food restaurants, but also many farmers markets with fresh produce grown in the community. Angier is not a food desert. The town of Angier built a community sports park few years ago, where families and school age children are reunited by the Park & Recreations Department. This local department organizes seasonal championships in many sports for children Kinder to middle school. The park also has a large pond and a track to run or walk around it. Angier also has a private Gym for children, which is not expensive but not all the families can afford it. Angier does not have a YMCA. During the last 8 years the Town of Angier has implemented the legislation for new houses and businesses to build a sidewalk to let people walk more. Main streets in Angier now have a sidewalk too.

CONCLUSION

Despite previous reports that Obesity in children in rural and low-income areas are high, we found the rates in our patients were aligned and even slightly lower than the national average. Our rates are still high and need to improve, not just in the local level but nationally. If we want to help our children who are the future of our country, we need to create changes at all levels.

The prevalence of overweight and obesity in NC and in our community remains higher than the Healthy People 2030 goals of 17% among youth and 20 % in adults. (13) Persons in low income households, and those with lower levels of educational degrees have higher odds of consuming multiple sugary beverages a day. This is a disparity that will only improve with constant and culturally adequate education, better legislation to decrease the very colorful TV and media propaganda, which make it very appealing to children and youth to consume many sugary drinks a day.

National Health Policy, to stimulate family-base changes, teaches easy to grasp and easy to start at home health improvement habits and generate easy goals for families to achieve. We must improve treatment interventions too. With these steps we will improve and create an effective prevention system not just for our children but their families.

As a pediatrician who follows the AAP Obesity policies and strategies and as a social media advocate, which finds it a great way to educate and share Public Health standards, I will continue our "Fit Clinics" at Kidz Pediatrics. We will continue to look for the overweight and obese children during their well child visit and will follow them periodically to enforce education given during the well child visit. We will continue to order blood work and labs to

find any possible complications of obesity in certain patients and will refer to specialist in a case by case method. We will continue to use Kidz Pediatrics Facebook, Instagram and Twitter accounts to share educational material about healthy eating and healthy living as well as various types of exercises and activities to improve fitness.

I would like to continue exchanging information about obesity and other strategies with my colleagues here in North Carolina thru the NC Pediatric Society meetings, and nationally with the AAP fellows. We will continue to use the 5-2-1-0 strategy from the AAP to educate parents about nutrition and fitness; many kids were already taught it at school.

I would appreciate if the NC Pediatric Society supports me to starts the conversation about changing 1 regulation/legislation which I found against healthy diet which is remove any juices from WIC beneficiaries, and create a legislation like they have in Texas (as a parent told me recently) where every pizza goes home with a salad.

We will continue to work with the Town of Angier and the EFNEP from NC State University to bring more education to our families, even during our after-hours time as we did last year.

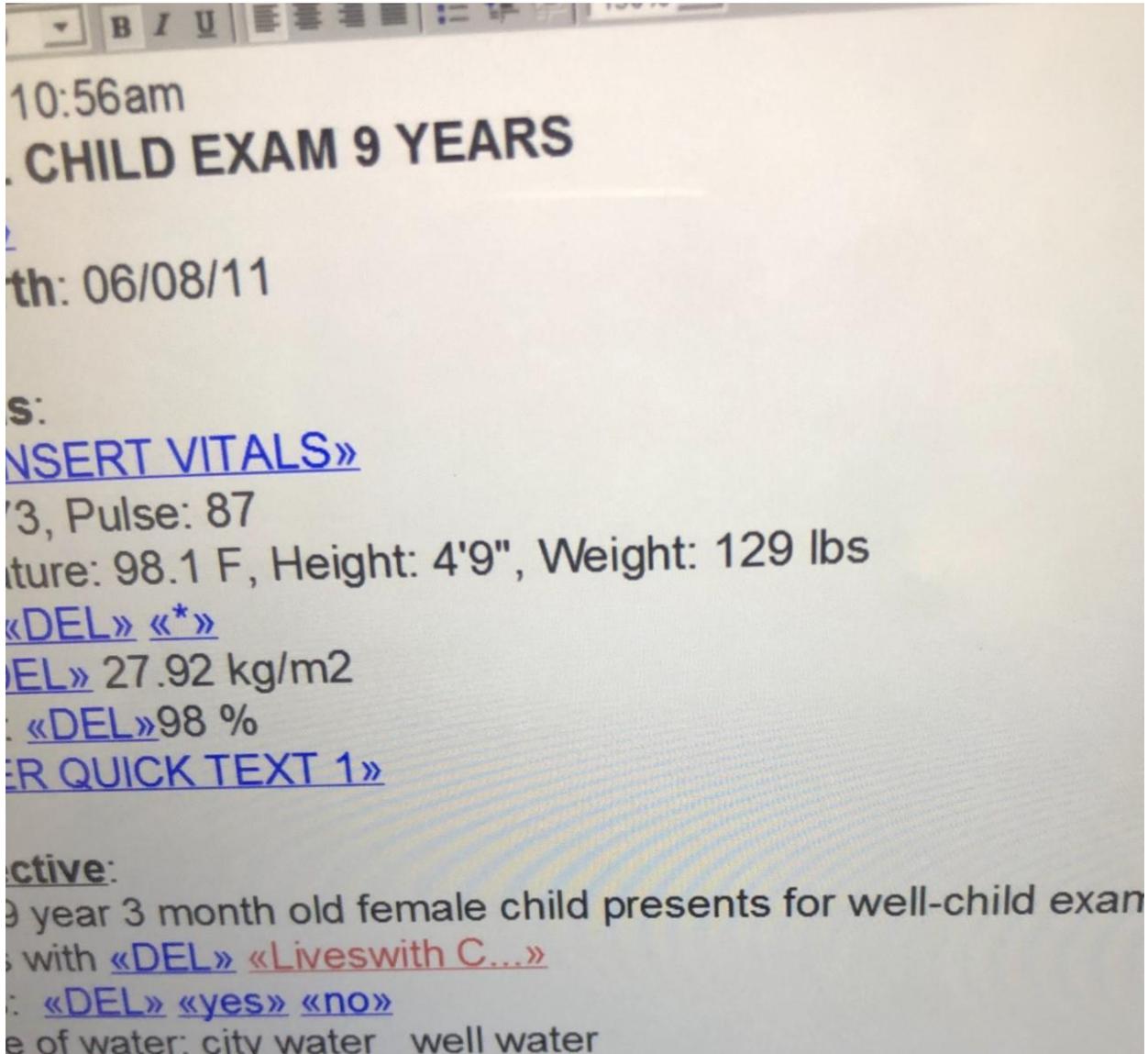
Acknowledgement

I would like to acknowledge the hard work of Kidz Pediatrics staff toward the families in our community, special thank you to Asalia Lopez Portillo, Isabella Mujica & Michelle Mujica for their assistance with data collection, graphs, and manuscript.

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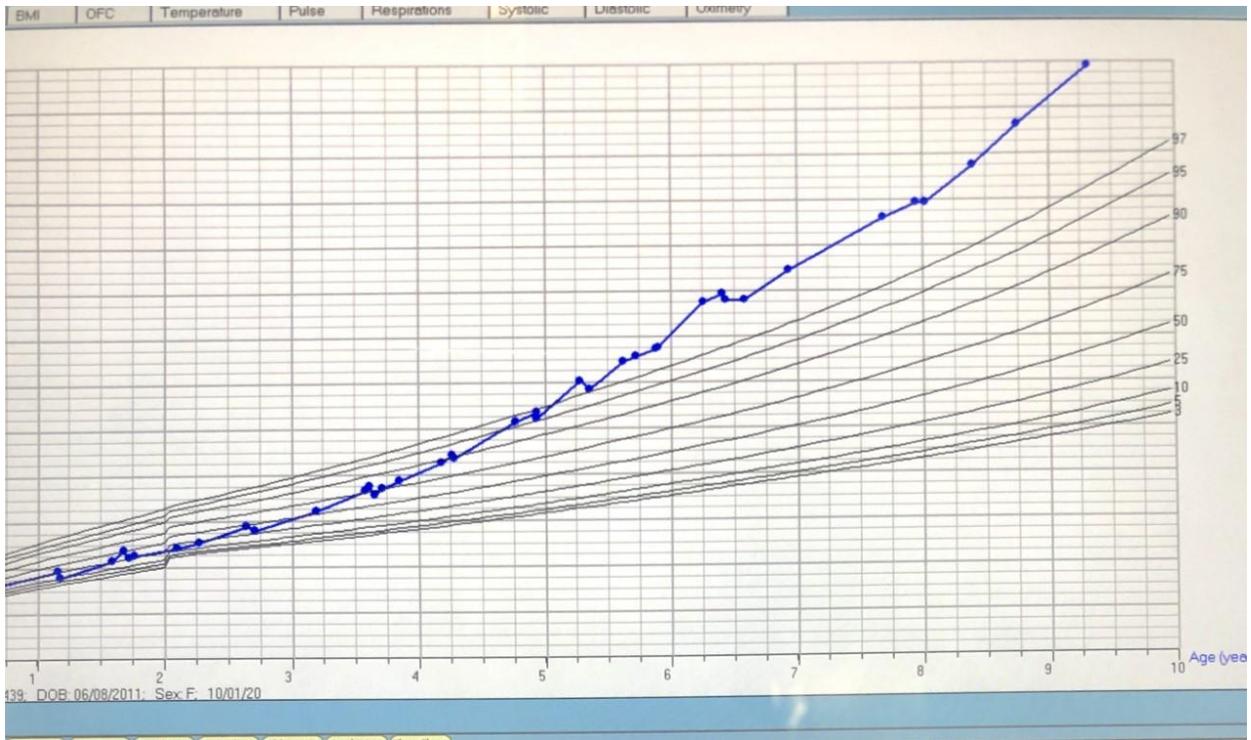


Table 1. The number of patients in each weight category

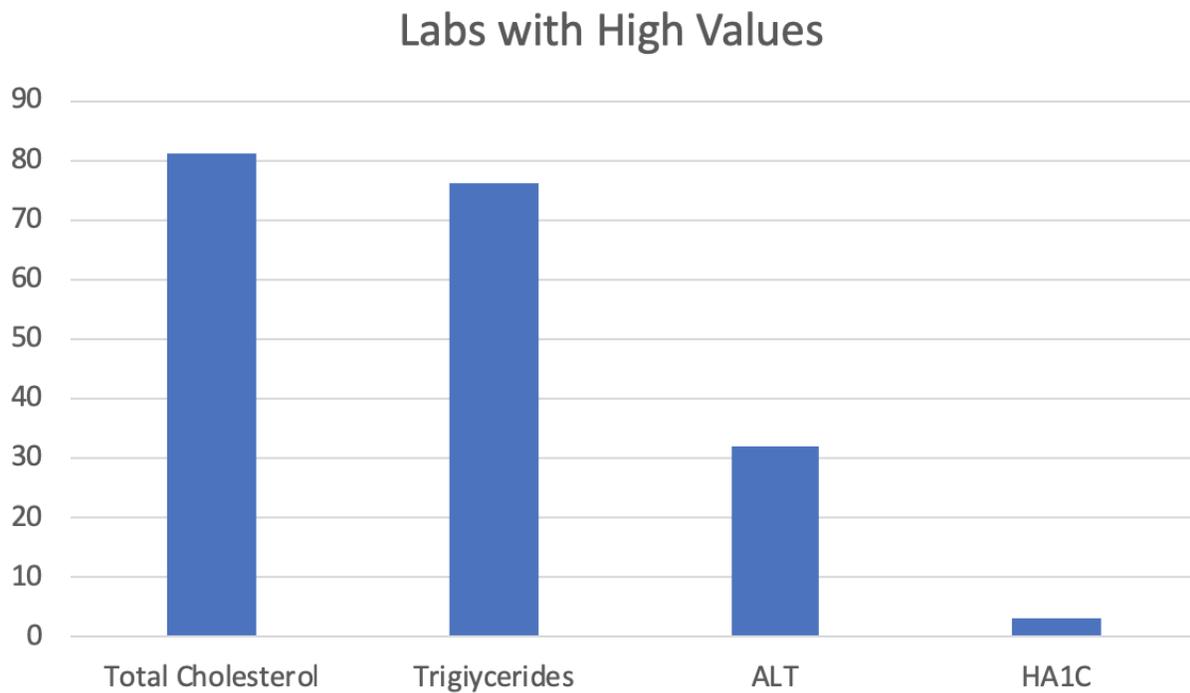


Figure 2. The number of labs that came back with abnormally high values of cholesterol, triglycerides, ALT, and HA1C.

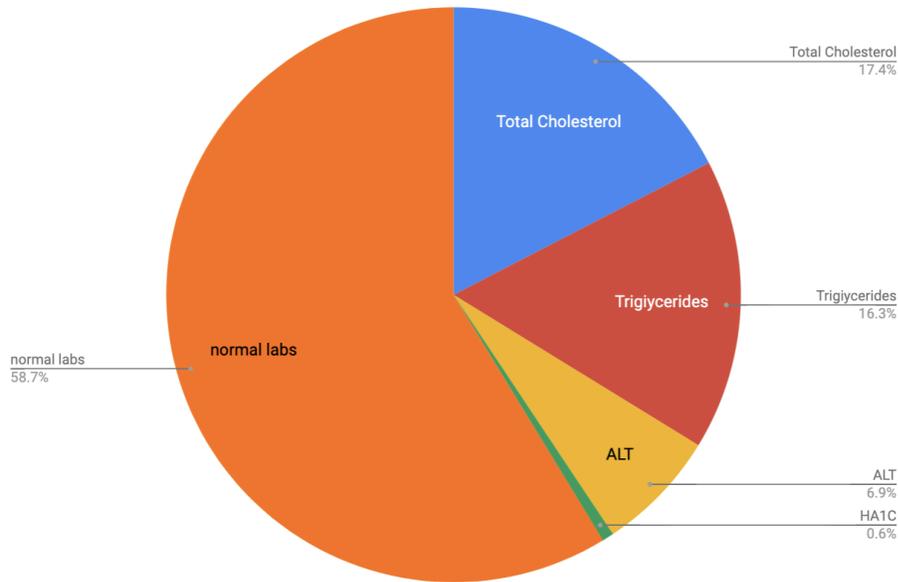


Figure 3. Pie Chart of percentage of normal labs to labs with high values.

SOCIAL MEDIA EDUCATION

Sugary drinks: sugar content per soda bottle, educational material in Kidz Pediatrics Facebook.

Partnership: Kidz Pediatrics and EFNEP: Expanded Food and Nutrition Education Program from NCSU



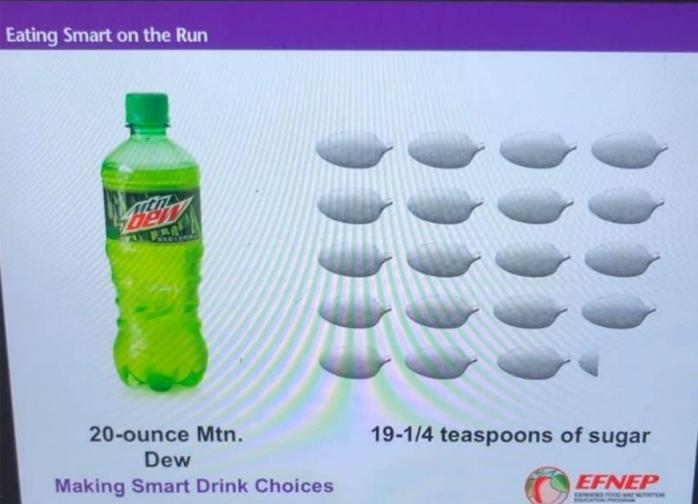
Page



Kidz Pediatrics: Lourdes Pereda MD ...

Posted by Lourdes Pereda
February 27 · 🌐

How much sugar has a 20 oz Mountain Dew?
Over 19 teaspoons! **#Diabetes #Obesity #DrinkWater**



Eating Smart on the Run

20-ounce Mtn. Dew

19-1/4 teaspoons of sugar

Making Smart Drink Choices





Kidz Pediatrics: Lourdes Pereda MD ...

Posted by Lourdes Pereda
February 4 · 🌐

The nutritional classes in Spanish will be held now every Thursday 5 pm here in the Clinic. We are having more and more participants every week.

The English classes can't start until we get enough participants registered.

Las clases de nutrición serán los jue... See More



Our Goal: Healthy kids now and 2030



Kidz Pediatrics: Lourdes Pereda MD ...
is 😊 feeling proud.

Posted by Lourdes Pereda
July 21 · 🌐

Healthy Living: 44 lbs down and counting! You go girl! 🌸 What a healthy diet, exercise, tons of willpower, supportive parents and a great health team can do! #FightingObesity

#HealthyLifeStyle 🍌 #Summer 🌞

#DrinkWater #EatFresh #Veggies 🥕 🥦 🥬

#YesWeCan 🙌 🙌 🙌 🙌 🙌 🙌 🙌 🙌 🙌 🙌



Perinatal Recovery Groups: Working together to treat substance use disorders among pregnant and parenting women in Western NC

Amy Marietta, MD

INTRODUCTION

The incidence of substance use disorders among pregnant, postpartum, and parenting women continues to increase in the United States. Among women of primary childbearing age, 18 to 25 years, 12% had diagnosed substance use disorders in the past year, according to the 2017 National Survey on Drug Use and Health (NSDUH) (1). Among pregnant women, the incidence of self-reported substance use in the past month increased by almost one third from 2015-2017, peaking at 16.6% (1, 2). Substance use disorders in the perinatal period increases risk of birth defects, poor fetal growth, preterm delivery, stillbirth, neonatal abstinence syndrome, relapse and overdose in the postpartum period, and involvement with child protective services (3-7).

All major medical associations recommend treatment for perinatal substance use disorders (PSUDs), including prenatal care, substance use treatment, behavioral health services, medication assisted treatment (MAT) if indicated, and coordination with social, legal, and community-based support services. Comprehensive, integrated, multidisciplinary, gender-specific and trauma-informed PSUDs treatment programs can offer or wrap-around services for pregnant and parenting women in a “one stop shop” model, in which pregnancy care, behavioral health, and medication assisted treatment services are available in one location (4). Family physicians are uniquely situated to provide comprehensive care for women and children affected by perinatal substance use disorders, due to their broad scope of practice, longitudinal care, and attention to the psychosocial elements that affect the well-being of patients’ and families’ overall health.

Women living in rural areas may face additional barriers to engaging in PSUDs treatment (8). There is a nationwide shortage of opioid treatment programs (OTPs), which can dispense buprenorphine and methadone, but rural areas are worse off – 88.6% of large rural counties lack an opioid treatment program (9). Those seeking treatment may need to travel long distances to reach a provider, and a lack of adequate transportation or child care may prevent a woman from seeking care. Rural providers may not have adequate training, resources, or support to feel prepared to offer perinatal substance use care, so even outpatient treatment options may be scarce. Fear of engaging in treatment due to stigma and perceived acceptability of treatment services, particularly in small close-knit communities, may also prevent women from engaging in care.

In Polk county, NC, a county of approximately 20,000, there are about 100 live births annually, 60% of which are to women enrolled in Medicaid. As in most rural counties in North Carolina, substance use is a significant health problem, and this trend is seen among women of child-bearing age as well. From 2004-2012, the incidence of neonatal abstinence syndrome (NAS) increased over 500% in North Carolina (10). Polk county residents face many of the same barriers to care as other rural North Carolinians. A lack of pregnancy care and substance use providers, lack of transportation and child care, and stigma surrounding perinatal substance use are barriers cited among women seeking PSUDs care.

Blue Ridge Health, a federally qualified health center with over 20 clinical sites in eight counties in Western NC, opened its Polk county site at the end of 2015. Since its inception, Blue Ridge Health has aimed to provide high quality accessible care regardless of a patient's ability to pay. BRH has been a leader in providing medication-assisted treatment (MAT) with buprenorphine and integrating this service into its scope of comprehensive primary care and behavioral health services. In 2017, BRH received funding from SAMHSA to integrate MAT into its primary care services. The organization now has over ten sites providing comprehensive treatment services in Rutherford, Polk, Transylvania, Henderson, Haywood, Jackson, and Swain counties

In 2018, in response to the lack of options for perinatal substance use disorders (PSUDs) treatment, particularly in rural areas, I launched a program for comprehensive, gender-specific, trauma-informed PSUDs care at Blue Ridge Health in Polk county. The perinatal recovery groups are weekly group therapy sessions where pregnant and postpartum women (up to one year after delivery) can participate in a group process to recover from substance abuse. A licensed clinical addiction specialist and family physician (myself) co-facilitate the groups. Group sessions focus on tools in recovery (including medication-assisted treatment), mindfulness, identifying and coping with past trauma, and preparing for, bonding with, and caring for their babies postpartum. Babies and children are welcomed at groups, and parenting skills are modeled and shared among group members. Group participants are also engaged in a comprehensive plan of care including individual counseling, psychiatric services, medication-assisted treatment (MAT) if indicated, medical services including prenatal care, and preparation for delivery and postpartum.

To better understand the outcomes of the program and to identify areas for improvement, I conducted an evaluation of several indicators of the program's impact. The sense from co-facilitators is that specific perinatal group sessions facilitate recovery more effectively than traditional outpatient substance use modalities, and I wanted to see if this was reflected in the data available.

METHODS

This project was determined to be IRB exempt by the IRB committee at Pardee Hospital UNC Healthcare, in Hendersonville, NC. I gathered data from chart review of participants' medical charts in Centricity (EHR for Blue Ridge Health), Pardee Hospital's EPIC EHR, and through review of consult and summary reports from outside hospitals if participants delivered outside Pardee (for example, Mission Memorial Hospital in Asheville, NC). Data was compiled and summarized, and no identifying information was collected or reported. The following metrics were examined:

1. Total number of participants referred to program
2. Referral sources (self-referred, DSS, referred by current participant, etc.)
3. Number of participants retained in program to date
4. Average attendance among group members (% of scheduled group sessions attended)
5. Retention in individual counseling and psychiatric services (% of scheduled appointments attended)
6. Percent of urine drug screens that were "as expected" based on patient self-report
7. For women referred to program while pregnant, percent of these women whose urine drug screens were "as expected" upon presentation to labor and delivery
8. Percent of neonates born to program participants who required extended stay/treatment for neonatal abstinence syndrome (NAS).
9. Percent of mother/child dyads with significant DSS involvement after delivery (defined as having an active case, not just a state-mandated report).

RESULTS

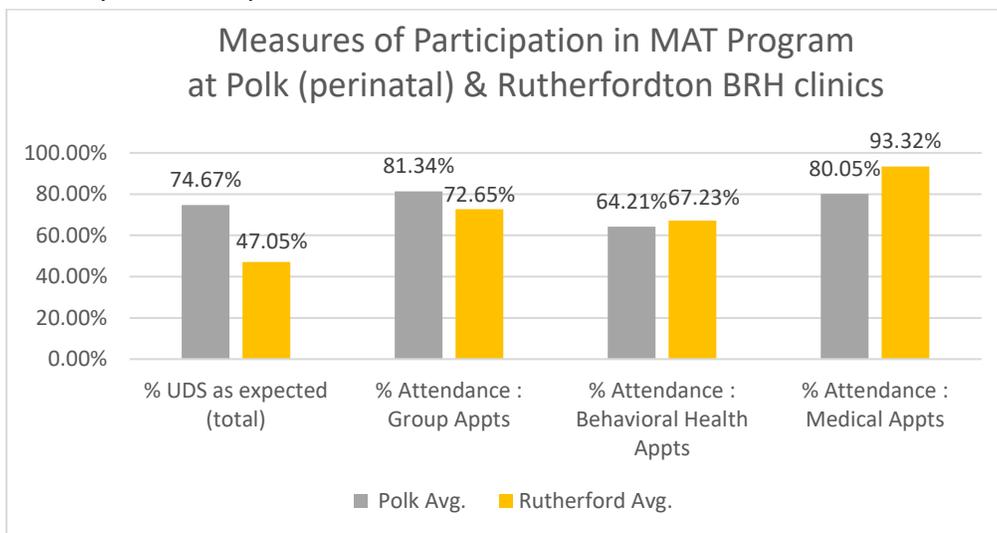
Since its inception in February 2018, twelve patients have been referred to the perinatal recovery program at Blue Ridge Health. All participants were native English speakers. Of the twelve, the majority (7) of the participants were residents of Polk county. Four were residents of Henderson county. One was a resident of Rutherford county. Five of these patients have been retained in the program to date. Of note, of the seven women who were not retained in the program, five of them were residents of counties other than Polk county. The most common referral sources include existing group members, DSS, and self-referral, most commonly during a prenatal care encounter. Of note, patients were more likely to self-refer during pregnancy, and they were more likely to be referred by DSS postpartum.

On average, group participants that were retained in the program attended about 81% of their scheduled group sessions, with attendance ranging from 78% to 84% of scheduled group sessions attended. In comparison, at a non-perinatal-specific MAT program within Blue Ridge

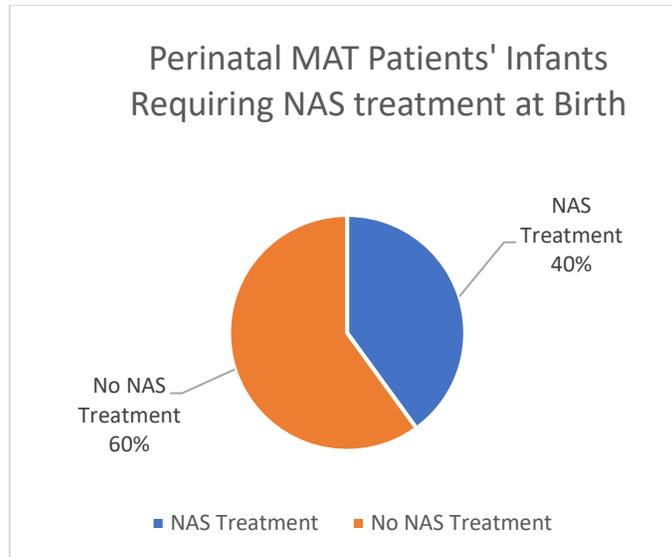
Health at their Rutherfordton clinic, patients attended about 73% of group appointments. Interestingly, perinatal recovery participants only attended about 64% of their scheduled individual counseling and psychiatric appointments, with attendance ranging from 44% to 83% of scheduled appointments attended. At the Rutherford clinic, attendance to individual behavioral health appointments was higher on average, at 67%.

As part of the medication-assisted treatment program, participants undergo routine urine drug screening. Samples are determined to be “as expected” if they correlate with the participant’s report of her use. Point of care samples that screen positive for substances not reported as used by the patient are sent out for confirmatory testing. Urine drug screening is not utilized in a punitive manner in the perinatal recovery groups program, but it is often requested and required by outside legal or social services agencies involved in the patient’s plan of care. Women who come to develop a sense of trust that they will not be “kicked out” if they struggle to remain in recovery or if they return to use are more likely to stay engaged in care.

Among participants retained in the program, about 75% of urine drug samples were as expected, ranging from 55% to 87% among participants. For women referred to the program while pregnant, 100% of their urine drug screens were “negative” upon presentation to labor and delivery at the hospital, meaning that their samples only tested positive for the medications they had been prescribed.



Of infants born to group participants, 33% required an extended hospital stay and/or treatment for neonatal abstinence syndrome (NAS). Treatment of opioid use disorder in pregnancy with buprenorphine is associated with an increased risk of NAS, or more specifically, neonatal opioid withdrawal syndrome (NOWS). Epidemiologic studies estimate that about 30-80% of infants born to mothers on opioid agonist therapy (buprenorphine or methadone) will experience NAS.



At the time of this evaluation, none of the participants who remained engaged in the perinatal recovery groups had an active and open DSS child protective services case. In 2016 congress passed the Comprehensive Addiction and Recovery Act that required states to develop policies and procedures that require health care providers to notify the child protective services system if they are involved in the delivery and care of an infant born and identified as being affected by substance use or withdrawal symptoms resulting from prenatal substance exposure, or a Fetal Alcohol Spectrum Disorder. The result of such reports may be limited, in the case of a woman who is engaged in treatment or may be more extensive and ultimately result in an active DSS case. Of the infants born to mothers engaged in the perinatal recovery groups, 83% remain in custody of their birth mothers.

CONCLUSIONS

Patients engaged in group substance use treatment services specific to pregnant and parenting women have high rates of attendance at groups, individual counseling, and psychiatric appointments. While data on attendance to prenatal appointments and medical care was not collected in this evaluation, there is data demonstrating that women who engage in perinatal substance use disorder (PSUDs) treatment are more likely to attend their scheduled prenatal care appointments (8). Going forward it may be valuable to examine rates of prenatal care attendance among group participants.

Rates of neonatal abstinence syndrome (NAS) symptoms and treatment were consistent with the statistics for all infants exposed to prescribed opioid agonist therapy en utero, even toward the lower end of this spectrum. Polysubstance use is common among women with untreated opiate use disorder, thus engaging women in treatment may reduce the risks of NAS since neonates born to women in treatment are exposed only to a single opioid agonist agent, as

opposed to multiple illicit substances. On average, the cost to provide treatment for one newborn with NAS is about \$55,000 (11,12), so in addition to the benefits to mom and baby, engaging women in substance use treatment, including MAT, leads to significant healthcare savings. Studies have shown that NAS disproportionately affects lower income, rural, and white households that rely on Medicaid (11). Substance use disorders in the perinatal period also increases risk of preterm delivery and low birthweight infants, and these may be additional outcomes to examine in future evaluations. For example, every infant born at term could save about \$47,000 in healthcare costs (12).

Unfortunately, less than half of the women who attended a perinatal recovery group remained engaged in care. While some of the reasons women no longer participated were positive (for example, a woman seeking a higher level of care in a residential facility) or unavoidable (a prison sentence), many of the women simply stopped coming to group. This indicates a need for increased support for new group members, and it may also indicate that some women have particular needs that were not being met in their early interactions with the program.

Outcomes for those who remained engaged in care are promising, so it will be important going forward to identify how to keep women coming back to group. Increased social support, contingency management, and identifying specific barriers to participation (transportation, stigma, cost, scheduling) may be approaches to consider in addressing this issue.

Over the course of this evaluation and program development, the program's connection to the department of Social Services (DSS) and Child Protective Services (CPS) became more apparent. DSS was the second most common referral source for program participants, most commonly in the postpartum period. Unfortunately, women in the postpartum period are less likely to engage in care than while pregnant (8), so their rates of maintaining engagement in care were much lower. Earlier partnership with social services leaders is essential to ensuring support leading to successful outcomes for pregnant and parenting women with substance use disorders. To this effect, as part of the perinatal recovery program at Blue Ridge Health we have started engaging Polk county DSS staff with a series of educational sessions and opportunities to ask questions and interact more with program staff. Stigma remains a prominent barrier keeping women from seeking and receiving effective substance use treatment. As a result, these sessions focus on evidence-based information on substance use disorders and their treatment and addressing myths that contribute to stigma and bias related to people who use drugs.

COVID19 has also presented a challenge in continuing to offer perinatal recovery services. Since March 2020, substance use treatment has been conducted only individually at Blue Ridge Health, with behavioral health services conducted nearly entirely by telehealth. The peer

support, accountability, group sharing and modeling, such rich parts of the perinatal group process, have been put on hold. While the participants still attend their individual behavioral health and medical appointments, they all express a longing to return to group, to see their peers, and to engage in this regular source of support and accountability.

Despite some of the challenges mentioned above, overall, this program evaluation demonstrated good outcomes for participants in the perinatal recovery groups at Blue Ridge Health- Polk. This program has had demonstrated success in a rural, low resource environment among women who are predominantly un- or under-insured. Such programs might be duplicated in other rural, under-resourced settings with high incidences of perinatal substance use disorders (which includes most of rural North Carolina). In an effort to promote the program and improve our capacity to serve women with substance use disorders, BRH – Polk has partnered with MAHEC Project CARA (Care that Advocates Respect, Resiliency, and Recovery for All) to become a “spoke” in their statewide network of organizations providing perinatal substance use disorder treatment (13). This network is modeled after Vermont’s nationally recognized “hub and spokes” model for care (14). MAHEC OBGYN serves as the regional “hub” for western North Carolina, providing expert consultation, technical support, and guidance to rural practices engaging in perinatal SUDs treatment. As a “spoke,” clinicians at BRH – Polk will be able to link our patients to a statewide network of treatment resources, social and legal support, and harm reduction organizations. We will also participate in a regional monthly ECHO, as participants and presenters, sharing strategies and engaging in inter-agency collaboration with other regional and state partners to learn about best practices in evidence-based perinatal substance use care and ways to collaborate when possible.

As a physician leader conducting and evaluating this program, I have also had the opportunity to share the program’s development and outcomes at several regional and state-wide venues. In October 2019 I presented at the 3rd annual perinatal substance exposure summit hosted by MAHEC in Asheville, about the perinatal recovery groups as one approach to rural substance use among pregnant and parenting populations. In November 2019, our team of behavioral health clinicians, program support staff, and myself as the physician lead presented at the integrated first annual NC Integrated Care Symposium in Raleigh on the perinatal recovery groups as an example of an integrated approach to perinatal substance use care. Finally, in March 2020 I co-presented with Tammy Cody, a social worker from MAHEC project CARA, on transitions of care among perinatal patients with substance use disorders, for western NC physicians, nurses, medical assistants, mental health professionals, and other professionals interested in comprehensive perinatal substance use care.

Going forward, in addition to continuing to provide pregnant and parenting women with high quality treatment for perinatal substance use disorders (PSUDs) at the BRH-Polk site, my primary goal is to expand the scope and reach of the program. As I work in a teaching health center associated with the MAHEC Hendersonville family medicine residency, it seems a natural expansion to incorporate resident learners in providing PSUDs care to this highly vulnerable population. I also plan to expand the scope of perinatal recovery groups not only within Blue Ridge Health to other sites, but also as a “spoke” in the MAHEC Project CARA network, where I hope to share my experience, expertise, and assistance to other clinicians who see the need for similar services in their practices/agencies/clinics for pregnant and parenting women struggling with substance use disorders.

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How to Alleviate the Impact of COVID-19 on the Hispanic Community of North Carolina

Arin Piramzadian DO, FACOEP, MSHCA-HCL, MRO, CPMA

INTRODUCTION

In 2018 the Hispanic population of North Carolina was estimated at 997,000 out of the total population of 10,500,000 NC residents. With only 9.5% of the population being Hispanic, there is an overwhelming 36% of positive COVID-19 patients that are Hispanic. The causes of this significantly skewed statistic are multifactorial in nature and create a large socioeconomic disadvantage for the Hispanic population.

Of the 180,754 confirmed COVID-19 cases in NC, 60,697 are missing data on ethnicity. However, of the other 120,061 cases as of September 10th, 2020, 43,222 identify as Hispanic. Nationwide similar statistics are seen. “Latino and African-American residents of the United States have been three times as likely to become infected as their white neighbors, according to the new data, which provides detailed characteristics of 640,000 infections detected in nearly 1,000 U.S. counties. And Black and Latino people have been nearly twice as likely to die from the virus as white people, the data shows” (Oppel, 2020).

To understand the significant increase in the Hispanic population of COVID-19 cases there must be an understanding of the culture itself. Many Mexican families have multiple generations living together in one household with the women taking care of many of the children of multiple families. Social distancing is often unlikely and economically unavailable. Many Hispanic families live in close clusters with 25% of the population living either in Mecklenburg or Wake counties. Many family members from different homes cook together and share food together, meals are often multi-generational events.

Governor Cooper on March 27th, with an impending influx of COVID-19 patients, signed Executive Order #121. This order effectively shut down many businesses to limit significant direct contact. Some of the essential businesses that were allowed to continue functioning included those with higher Hispanic populations such as critical trades: construction, plumbers, electricians, exterminators, cleaning and janitorial services, manufacturers, distributors and supply chain for critical industries, hotels and motels. With so many predominantly Hispanic workers in close direct contact, the shift in exposure increased in these populations. The following are the number of documented immigrant workers in several categories: Manufacturing 87,871, Construction 80,211, Accommodation and Food Services 62,978, Health

Care and Social Assistance 54,703 and Retail Trade 49,968. Not included in this are approximately 321,000 undocumented immigrants of whom 83% are from Mexico and Central America. During the stay at home orders these workers did not qualify for any government aid or unemployment benefits and still had to work and 71% of them are uninsured with minimal access to any healthcare.

As the owner of StarMed Family and Urgent Care, I have made it our goal to provide excellent care in underserved communities. Our first location was at 4001 Tuckaseegee Road in Charlotte. This location has a median household income of \$30,233 a year with the US average being \$53,482 a year with 88% African American population. Our second location is at 5344 Central Ave, Charlotte, NC 28212 with a median household income of \$32,185 a year and is 78% Hispanic population. The overall payer breakdown includes 30% Medicaid, 25% Medicare and 25% BCBS. In February, our clinics had 4 APC and 10 support staff. Currently we have 38 part time and fulltime providers and 350 medical assistants throughout the state of North Carolina. StarMed Family and Urgent Care began testing capabilities in March 2020. We noted a significant need for more access to testing in the local community at a time where testing was limited to only direct known contact with a COVID patient or significant admission criteria and required clearance from the CDC and state and local health departments. Like many other practices and hospitals throughout the country, StarMed Family and Urgent care contracted with Quest Diagnostics for both locations. However, as the major lab companies became inundated with COVID-19 samples, the turnaround time for results reached at one point an unacceptable and clinically irrelevant 18 days. As a result of this StarMed opened its own laboratory in the Tuckaseegee location with an FDA approved Thermofisher device which can run 96 manual samples every 8 hours and once upgraded to being fully automated had a 4-hour turnaround time.

The two locations were able to obtain over 1,000 swabs in the first week alone. In contrast our local health department had only a few hundred. Through just word of mouth, we tested close to 400 in the first day alone. After a few local interviews, paid advertisement, agreements with 18 health departments our testing has steadily increased to our current of 4,000 samples a week.

Early on we noticed a largely consistent influx of Hispanic patients requesting to get tested. As we do not charge our patients for their visits or their swabs, we initially believed it to be only related to our base population. It became apparent that most patients we were testing had never been to our clinic and were being sent in by their construction crews or factories to be tested due to outbreaks. Over the next few months we started to watch as multiple generations of family members would have to be tested who had not left the home and had no other

exposure except for the males in the family who were working in these essential jobs. We noticed this trend was being seen throughout the US as the overall shift of infected patients was in the minority communities of the Hispanic and African American populations. With each positive test, this would mean that a family that relied solely on the male adult for income was now without any source of money and were often ineligible to receive any government aid or grants for a minimum of 2 weeks and often times longer when patients would continuously test positive on repeat tests which were required by their businesses.

HYPOTHESIS

My project focus was to work to reduce the impact of COVID-19 on the Hispanic population through education. I believed we could help to slow down the infection rates in our Hispanic population by targeting both their workplaces and homes.

The methods included multiple different steps: hiring multilingual staff, Spanish speaking interpreters and creating discharge instructions in Spanish. We also developed and ran radio talk shows and ads. In addition, we worked with 4 factory and manual labor companies to improve PPEs and social distancing. These projects were started in early April and fully implemented by May.

RESULTS

In one factory alone, Golden Farms, we noted 13 positives during the first round of testing with 12 of the 13 being Hispanic employees. By implementing our plan, we have had 0 positives in weekly tests performed for the past 3 months. Similar findings were noted in 3 other businesses that test with us regularly. Of the 2,350 tests performed from these 4 locations only, there have been only 73 positives which is a 3% positive rate, lower than the state average of 5.7% and the national average of 5.2%

DISCUSSION

We determined that early on we would close our Central location, move the bilingual provider and staff to our Tuckaseegee location as it has a larger parking lot with more room for our onsite drive thru testing. We transitioned from in person to telemedicine visits, as many other practices could attest, volumes were extremely low and noted in one Harvard study to have dropped 56%. We learned early on that telemedicine had significant drawbacks from a lack of patient access, technical difficulties, patients not understanding how to log in appropriately, lack of vital signs and true assessment of patient's presentation. We alleviated these issues by

writing all instructions in both English and Spanish, sending text reminders to patients before their visit times, using Doximity and even FaceTime to make interacting easier. With Facetime we would even do group calls where an interpreter would be at another location easily interpreting for the patient and provider.

We also noted early on that our EMR system did not have any significant COVID related discharge instructions in English or Spanish. With the blessing of the Mecklenburg County Health Department Medical Director, we created our first pandemic related discharge instructions. These instructions were then professional translated into Spanish. Even with this translation, we noted that a lot of our male patients would not take quarantining home seriously. We therefore with their consent, spoke with their wives and explained the greater concern of spread and how to limit exposure in the household.

Our next task was to target the work environment. While many of these employees had N95 or P95 masks for their occupational hazards, they were still in close contact with each other and would immediately remove these masks once their tasks were done. We sent our Occupational Medicine team to the job sites that contacted us. We initially implemented wide range testing of all employees and with usual 3-day turnaround times were able to close the factory over the weekend and reopen by Monday. Once we identified positives in a factory, we would have those areas deep cleaned and contact trace any other staff that could potentially be positive. We then created safety guidelines in how to wear PPE while at work and on breaks, how to properly take temperatures throughout the day and fill out symptom checklists daily, how to approach social distancing on factory lines including the use of plexiglass and limiting the widespread exposure that occurs by those employees who move from one section to another like janitorial and maintenance crews.

We also noted that while we could on the reactive end help change behaviors at home after a positive result was confirmed, that there were just too many at risk families that we could not reach proactively. As a result, we decided to pay for radio ads and on-air talk show time. Through previous trial and error, we learned that radio time is one of the best means of reaching out to our Hispanic consumers. Either on the job site or at home, the radio is used as one of the means of entertainment and information. By purchasing time on the largest Hispanic radio station La Raza 106.1FM we allowed for real time viewer contact with our provider who is fluent in Spanish. She would discuss ways to prevent exposure, to follow stay at home orders, to limit exposure to the elderly, how to educate each other and when to see medical attention.

IMPACT

From a financial aspect, by limiting the number of positive cases in the businesses that we have been assisting, we have allowed for factories to stay open. This not only helps the company itself but allows for the workers to continue providing for their families. From a healthcare perspective, the less positive cases the lower the spread, mortality and morbidity associated with this illness.

CONCLUSION

The overall purpose was to limit the spread of the virus. While I believe the efforts we have put into place decrease positive rates, it is hard to determine the overall effect as the pandemic continues to worsen. I have tried to replicate this in 2 other family practice care offices that I assist with but without much wider efforts it is unlikely to stem the tide of the pandemic. I do hope to see these limitations lesson as government involvement increases and the shift of the care returns to public health officials who can make the broader stroke changes that are needed in our communities. Until this happens, I worry that the Hispanic community will continue to face the brunt of the infection.

Recently we were named as the NCDHHS preferred partner for COVID testing throughout the state. This has also been a great honor in working with the state and the local health departments to stem the tide of the virus. We provide testing on average in about seven counties daily including drive thru testing, on school campus testing and long-term care facilities. Majority of this testing is done in areas of the community that are underserved and less financially appealing to other health care entities. Our Occupational Health Department now has over 100 business contracts, but many of the businesses are still choosing to be reactive rather than proactive. They do not wish to spend the time to prevent appropriately and are mitigating the consequences that are associated with an outbreak. Simple steps such as screening for symptoms, temperature checks, teaching staff how to appropriately wear masks and wash hands and larger tasks such as plexiglass workstations and socially distancing shift workers can significantly decrease transmission rates.

What we did learn as a company was that this was a huge undertaking in a very short time frame. This significant growth did not occur without issues along the way. Our clinic went from receiving 20 calls a day to over 1,000 calls a day. Even with a team of six operators dedicated to answering calls we could not keep up with the overwhelming volume. This has hurt our ability to serve our regular family practice patients. We have also had a significant drop in our regular urgent care visits as the community has a concern that with our emphasis on COVID testing that

we are a higher exposure risk than other clinics. While we are providing a necessary service for the community, it is also affecting us on social media as we are often the target of those who believe this is a conspiracy. Our “Google” ratings have dropped since random poor feedback is posted from “patients” we cannot even identify as being seen in our clinic. Similar messages are left on our Facebook page and any ads that we may post. I would have used a different location and company name to provide these services in order to separate the two aspects of our care for the community.

While this has been a very tasking experience, StarMed has hopefully become a leading example in the state of how to approach healthcare in underserved communities especially in Hispanic community that has unfortunately been so heavily affected by the pandemic. We look forward to continuing and growing our efforts until this crisis is finally resolved.

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A Survey Comparing Waiting Times and Patient Satisfaction in an Endoscopy Center

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INTRODUCTION

Waiting time has been studied in several industries and compared to client satisfaction. In the medical field, prolonged waiting can impact a patient's perception of the quality of their health care. Quality markers, including patient satisfaction scores, can impact reimbursement for hospitals and providers. Increasingly patients can compare their physician choices and look at online medical reviews of patient scores of practitioners, as well as Health Insurance sites. Dissatisfaction may also impact patient's compliance with treatment and follow up care.

Previous research on this topic in the healthcare arena is predominantly in outpatient clinics and emergency rooms. Little has been done in procedure-based facilities. Given that endoscopic centers have grown over the last two decades, as more healthcare is provided outside of the hospital setting, I became interested in understanding patient perception of wait times in this setting. The objective of the study was to look at how the time patients spent in the waiting area, pre-procedure bay, and recovery room of an endoscopy center might impact their sense of satisfaction.

METHODS

I designed a questionnaire to be offered to patients before their procedure and collected after discharge or mailed in. The questionnaire included multiple choice and open-ended questions, to boost response rates while also allowing space for qualitative feedback. The questions were selected to gauge patient satisfaction overall and at each stage of the endoscopy experience (scheduling, waiting room, pre-procedure, and recovery) and to solicit feedback for improvements. The study design was reviewed and approved by the endoscopy committee, which consists of physician, nursing, and administrative staff, as well as an independent gastroenterologist. The full survey is included at the end of this paper.

The endoscopy center is a 7-person private practice group of board-certified gastroenterologists in southeastern NC that performs over 10,000 procedures a year. The study ran for eight weeks and was offered to all endoscopy patients during that time to optimize sample size. This study was performed in Jan-Feb 2020 and was pre-COVID. The study was entirely voluntary. The goal was to achieve a > 95% satisfaction score and to identify any correctable causes for patient dissatisfaction.

Table 1 Questions and answer choices in patient experience survey

Question	Answer Choices
How many days were between when your appointment was made and the day of your procedure?	Same day/1-5 days/6-10 days/11-15 days/16-20 days/20 days or greater
The time it took to get my appointment scheduled was acceptable.	Strongly Agree/Agree/Neutral/Disagree/ Strongly Disagree
The time I spent in the waiting room was acceptable.	Strongly Agree/Agree/Neutral/Disagree/ Strongly Disagree
The time I spent in the pre-procedure holding area was acceptable.	Strongly Agree/Agree/Neutral/Disagree/ Strongly Disagree
The time I spent in the recovery room was acceptable.	Strongly Agree/Agree/Neutral/Disagree/ Strongly Disagree
My time at Wilmington Gastroenterology Endoscopy Center was...	Acceptable/Lengthy/Rushed

RESULTS

187 patients responded to the survey and the responses are summarized below.

How many days were between when your appointment was made and the day of your procedure?

	Same Day	1-5 Days	6-10 Days	11-15 Days	15-20 Days	20 days or Greater
Dr. A	0	5	12	9	16	5
Dr. B	0	1	5	5	3	15
Dr. C	0	4	9	6	1	17
Dr. D	1	4	4	4	2	10
Dr. E	0	1	3	0	2	5
Dr. F	0	4	6	2	5	8
Dr. G	1	4	0	2	2	7
	1%	12%	21%	15%	16%	35%

- **1%** were scheduled the same day
- **12%** were scheduled within 1-5 days
- **21%** were scheduled within 6-10 days
- **15%** were scheduled within 11-15 days
- **16%** were scheduled in 15-20 days
- **35%** were scheduled in 20 days or greater

The time it took to get my appointment scheduled was acceptable.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	N/A
Dr. A	31	14	1	1	0	0
Dr. B	19	10	0	0	0	0
Dr. C	23	9	3	1	0	1
Dr. D	18	7	0	0	0	0
Dr. E	5	6	0	0	0	0
Dr. F	19	4	2	0	0	0
Dr. G	11	5	1	0	0	0
	66%	29%	7%	1%	0%	0%

- **66%** strongly agreed that the time it took to get their appointment scheduled was acceptable
- **29%** agreed that the time it took to get their appointment scheduled was acceptable
- **7%** were neutral about the time it took to get their appointment scheduled being acceptable
- **1%** disagreed that the time it took to get their appointment scheduled was acceptable
- **0%** strongly disagreed that the time it took to get their appointment scheduled was acceptable

The time I spent in the waiting room was acceptable.

	Strongly agree	Avg. Wait time	Agree	Avg. Wait time	Neutral	Avg. Wait time	Disagree	Avg. Wait time	Strongly Disagree	Avg. Wait time	N/A
Dr. A	23	14 min.	18	27 min.	5	39 min.	1	10 min.	0	0	0
Dr. B	13	17 min.	13	15 min.	0	0	3	35 min.	0	0	0
Dr. C	26	13 min.	10	15 min.	0	0	0	0	1	54 min.	0
Dr. D	17	18 min.	5	24 min.	2	23 min.	0	0	1	34 min.	0
Dr. E	4	15 min.	5	15 min.	2	74 min.	0	0	0	0	0
Dr. F	12	10 min.	8	35 min.	4	48 min.	0	0	1	72 min.	0
Dr. G	11	11 min.	5	20 min.	0	0	1	58 min.	0	0	0

- **56%** of patients strongly agreed the time spent in the waiting room was acceptable. Those who strongly agreed had an average wait time of **14 minutes**.

- **34%** of patients agreed the time spent in the waiting room was acceptable. Those who agreed had an average wait time of **22 minutes**.
- **7%** of patients were neutral as to whether the time spent in the waiting room was acceptable. Those who were neutral had wait times averaging **46 minutes**.
- **3%** of patients disagreed that the time spent in the waiting room was acceptable. Those who disagreed had an average wait time of **34 minutes**.
- **2%** of patients strongly disagreed that the time spent in the waiting room was acceptable. Those who strongly disagreed had an average wait time of **53 minutes**.

The time I spent in the holding area was acceptable

	Strongly agree	Avg. Wait time	Agree	Avg. Wait time	Neutral	Avg. Wait time	Disagree	Avg. Wait time	Strongly Disagree	Avg. Wait time	N/A
Dr. A	21	49 min.	19	60 min.	4	60 min.	2	77 min.	0	0	0
Dr. B	15	48 min.	8	48 min.	3	56 min.	3	56 min.	0	0	0
Dr. C	25	45 min.	12	54 min.	0	0	0	0	0	0	0
Dr. D	18	29 min.	5	45 min.	1	42 min.	1	62 min.	0	0	0
Dr. E	6	44 min.	5	46 min.	0	0	0	0	0	0	0
Dr. F	11	59 min.	7	56 min.	3	77 min.	3	80 min.	0	0	0
Dr. G	9	43 min.	7	61 min.	0	0	1	51 min.	0	0	0

- **55%** of patients strongly agreed the time they spent in the holding area was acceptable. Of those patients who strongly agreed, their average time in the holding area was **45 minutes**.
- **33%** of patients agreed the time they spent in the holding area was acceptable. Of those patients who agreed, their average time in the holding area was **53 minutes**.
- **6%** of patients were neutral about the time they spent in the holding area being acceptable. Of those patients who remained neutral, their average time in the holding area was **59 minutes**.
- **5%** of patients disagreed the time they spent in the holding area was acceptable. Of those patients who disagreed, their average time in the holding area was **65 minutes**.

The time I spent in the recovery room was acceptable

	Strongly agree	Avg. Wait time	Agree	Avg. Wait time	Neutral	Avg. Wait time	Disagree	Avg. Wait time	Strongly Disagree	Avg. Wait time	N/A
Dr. A	28	38 min.	18	38 min.	1	40 min.	0	0	0	0	0
Dr. B	18	30 min.	10	33 min.	1	38 min.	0	0	0	0	0
Dr. C	27	32 min.	10	30 min.	0	0	0	0	0	0	0
Dr. D	19	34 min.	5	39 min.	1	30 min.	0	0	0	0	0
Dr. E	6	25 min.	5	35 min.	0	0	0	0	0	0	0
Dr. F	19	28 min.	4	45 min.	1	35 min.	0	0	0	0	0
Dr. G	11	29 min.	6	33 min.	0	0	0	0	0	0	0

- **67%** of patients strongly agreed the time they spent in the recovery room was acceptable. Of those that strongly agreed, their average time in recovery was **31 minutes**.
- **31%** of patients agreed the time they spent in the recovery room was acceptable. Of those that agreed, their average time in recovery was **36 minutes**.
- **2%** of patients were neutral about the time they spent in the recovery room being acceptable. Of those patients who remained neutral, their average time in the holding area was **36 minutes**.

My time at Wilmington Gastroenterology Endoscopy Center was

	Acceptable	Door to Door Time	Lengthy	Door to Door Time	Rushed
Dr. A	45	146 min.	2	159 min.	0
Dr. B	27	125 min.	2	141 min.	0
Dr. C	37	120 min.	0	0	0
Dr. D	25	114 min.	0	0	0
Dr. E	10	122 min.	1	173 min.	0
Dr. F	23	149 min.	2	186 min.	0
Dr. G	16	120 min.	1	171 min.	0
	96%	128 min. avg.	4%	166 min. avg.	

- **96%** of patients felt like the time they spent at the center was acceptable. Of those 96%, the average time spent in the center was 128 minutes.
- **4%** of patients felt like the time they spent at the center was lengthy. Of those 4%, the average time spent in the center was 166 minutes.
- **0%** of the patients completing the survey felt rushed.

What do you consider an acceptable wait time

	<15 min.	15-30 min.	30-45 min	45-60 min	>60 min
Dr. A	8	29	7	1	1
Dr. B	8	16	1	2	2
Dr. C	7	23	4	0	2
Dr. D	6	18	1	0	0
Dr. E	2	8	0	1	0
Dr. F	4	17	3	0	0
Dr. G	7	8	2	0	0
	22%	63%	10%	2%	3%

- **22%** of the patients completing the survey felt like **less than 15 minutes** was an acceptable wait time in any area.
- **63%** of the patients completing the survey felt like **15-30 minutes** was an acceptable wait time in any area.
- **10%** of the patients completing the survey felt like **30-45 minutes** was an acceptable wait time in any area.
- **2%** of the patients completing the survey felt like **45-60 minutes** was an acceptable wait time in any area.
- **3%** of the patients completing the survey felt like **greater than 60 minutes** was an acceptable wait time in any area.

In an outpatient endoscopy setting, this study demonstrated that 96% of patients are satisfied with their wait time. There was an association between dissatisfaction scores and longer wait times.

With regards to different phases of care, both the waiting room and pre-procedure time demonstrated similar dissatisfaction scores of about 5%. No one expressed dissatisfaction with time spent in recovery. This likely reflects the shorter time patients spent in recovery of 31-36 minutes, compared to 14-53 minutes in the waiting room and 45-65 minutes in the pre-procedure area.

Patients reported other dissatisfaction issues in addition to wait time, including temperature of rooms, heated blankets, amenities for their drivers as well as activities and amenities in waiting area.

DISCUSSION

This study confirms that longer wait times are correlated with patient dissatisfaction scores. However, this is only one of several factors that impact a patient's perception of their care.

Qualitative feedback was also gathered at each stage of patient experience. In the waiting room, this feedback included requests for greater quality and quantity of magazines and other reading materials, another TV, more comfortable chairs, fragrance dispensers in the lobby, enforcement of no cell phone policy, food available for purchase (such as via vending machine), and water, tea, and coffee. In the holding area, this feedback consisted of complaints regarding low temperature and requests for warm blankets.

Beyond specific feedback from patients in this study, existing research suggests that communication is a key component of eliminating patient anxiety and improving patient satisfaction. A study by Chu, Westbrook, et al. on the psychology of wait times in clinics suggests measures to reduce dissatisfaction including keeping patients informed and updated about any delays, training staff to be empathic when communicating delays, and offering a sincere apology for the inconvenience. Additionally, developing a more fluid and flexible scheduling template that can be updated in real time can improve satisfaction.

With regards to the survey itself, it is worth noting that it was offered in English language only. Future improvements to the study could include additional language offerings, pre-stamped envelopes to boost engagement, and questions gathering demographic information such as race, ethnicity, and age. Additional variables to measure in the future include the impacts of time of day of appointment and transportation method on wait time and satisfaction.

CONCLUSION

The results of the survey were shared with the physicians in the practice and the Endoscopy Committee and have been incorporated into future initiatives to boost patient satisfaction. On a larger scale, this study affirms that patient perception of waiting is a critical factor in their overall satisfaction with healthcare interactions and reveals that actual wait times are not the only source of this perception. This information presents a unique opportunity to improve the healthcare experience despite uncontrollable factors that cause delays.

My call to action is for practices to improve the holistic waiting experience of patients by creating a pleasant waiting environment and providing amenities and services such as refreshments, internet connectivity, and entertainment materials. Additionally, practices can attempt to minimize actual wait times by better communicating scheduling changes or delays to patients before arrival and in the waiting area. More dynamic and flexible scheduling with updates via text messaging to keep patients up to date may help alleviate some of the stress associated with waiting. Finally, where delays are unavoidable, appropriate, and sincere apologies from practitioners improve patient perception of waiting. These actions taken to minimize wait times are valuable in that they may help alleviate anxiety and stress that patients feel prior to procedures and improve overall patient satisfaction.

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APPENDIX

WILMINGTON GASTROENTEROLOGY ASSOCIATES
ENDOSCOPY PATIENT SATISFACTION SURVEY

Your assistance in completing this survey will help us improve the care we provide to our patients. Please complete and return as soon as possible. Thank you!

Date of Visit: _____

Doctor Seen: Dr. A

Please indicate your choice by filling in the squares for each question. Choose only one square for each item.

How many days were there between the day your appointment was made and the day of your procedure?

Same day 1-5 days 6-10 days 11-15 days 15-20 days 20 days or greater

Strongly N/A

Strongly Agree Neutral Disagree

disagree

The time it took to get my appointment scheduled was acceptable.

Strongly N/A

Strongly Agree Neutral Disagree

disagree

The time I spent in the waiting room was acceptable.

If not acceptable, what would have made your wait more enjoyable?

The time I spent in the holding area prior to my procedure was acceptable.

If not acceptable, what would have made your wait more enjoyable?

The time I spent in the recovery room after my Procedure was acceptable.

If not acceptable, what can we do to improve?

My time at Wilmington Gastroenterology Endoscopy Center was:

Acceptable

Lengthy What can we do to improve?

Rushed

What can we do to improve?

We value your driver's opinion as well, so please leave additional comments that could improve their experience below.

What do you consider an acceptable wait time?

< 15 min. 15-30 min. 30-45 min. 45-60 min. >60min.

Name _____

PLEASE TURN THIS FORM IN TO ANY STAFF MEMBER PRIOR TO YOUR DEPARTURE