Methods

1. A nonrandomized trial was conducted to ensure that all residents receive any possible benefit of the study.

2. Our study population included family medicine residents PGY1-3 who are completing their residency UMKC Family Medicine Residency. We included all residents unless they chose to opt out.

3. A total of 4 interventions: breathing techniques and mediation, guided imagery, yoga and progressive muscle relaxation or body scan. All four interventions were taught in one session in which residents that agree to participate selected one intervention. They were encouraged to practice this intervention a minimum of 4 days a week for the next 30 days. Resources were available for each intervention for the resident to access and practice in their own time. Each resident completed the Headington Institute’s burnout scale before and after the intervention.

4. A meaningful use survey was given along with the post-intervention survey to determine participation. We compared the results of the pre intervention and post intervention burnout scales. After each intervention a short survey regarding interest in the intervention and likelihood that residents will adopt this technique was completed.

Results and Discussion

Participants that took the before and after surveys but did not participate in any of the stress reduction techniques used as the control group. As expected, those who did not participate overall had increased levels of burnout according to the mean scores above.

The graph above is the mean score of residents burnout according to their post graduate year. 0-25 being very little burnout 26-50 low to moderate degree burnout 51-75 moderate to high degree burnout

Participants that agreed to have one session in which residents that agree to participate selected one intervention. There were 24 participants in this study. The control group showed low to moderate degree of burnout in the mean score before and after the study, but the burnout degree increased by 8%. In the study group, there was also low to moderate degree of burnout in the mean score but the burnout degree in this group decreased by 9%. In the study group the residents with low levels of burnout scores had no significant change after the intervention. The residents in the moderate to high burnout range had the greatest reduction in scores. The study shows that the stress reduction techniques utilized in this study decreased the amount of burnout by 9% over a 30 day period. Given this information, we believe that the TMC Lakewood residency program should regularly offer new stress reduction techniques to the residents and make it part of the didactics.

Recommendations

We recommend that stress reduction and integrative medicine techniques be regularly included in the curriculum and didactics for decreasing stress and physician burnout.

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Will physician encouragement regarding elimination of soft drinks for 3 months decrease A1C Levels?

Background
Type 2 diabetes remains one of the most challenging global health problems of our time, and with increasing prevalence the burden will escalate. Diabetes is associated with an increase in mortality rate, and was the 7th leading cause of death in the United States in 2010. Strong evidence indicates that sugar-sweetened soft drinks contribute to the development of diabetes, and may worsen diabetic control. People who consume sugary drinks regularly (1 to 2 cans a day or more) have a 26% greater risk of developing type 2 diabetes than people who rarely consume such drinks, and are 25% more likely to have difficulty controlling their blood sugars. Improved diabetic control can reduce the risk of diabetic complications, as studies show a 1% fall in hemoglobin A1c level is associated with 35% reduction in macrovascular disease.

Objectives
The purpose of this study is to find a sustainable lifestyle modification that can improve diabetic control and ultimately reduce complications. Specifically, the investigators will study the effect on A1c levels by eliminating soft drinks for 3 months.

Method
- Study population: Adults with uncontrolled diabetes, with A1c greater than 7 pooled from the three co-principal investigator's patient panels.
- Patient was encouraged to abstain from soft drinks as defined below and had a resulting lowering of their HgbA1c by 1%.
- Interview was conducted at 6 weeks to encourage compliance and survey bias.
- At the end of 3 month duration, A1C was rechecked and exit interview was conducted.

Inclusion Criteria
- Active opt-in to the study
- Working telephone number
- Uncontrolled Type 2 diabetes with A1C greater than 7 within the last 3 months
- Currently drinking any type of soft drink at least twice a month.
- Soft drink is defined as any drink that contains carbonated water, sweetener, and natural or artificial flavoring. Sweetener is defined as sugar, high fructose corn syrup, fruit juice, artificial sweetener, sugar substitutes, or some combination of these.

Exclusion Criteria
- Type 1 diabetes
- Controlled type 2 diabetes
- No consumption of soft drinks

Limitations:
- We had total of 8 patients in our study therefore decreasing the power of our study.
- Patient is aware that they are being studied and may be more compliant with their medications and/or lifestyle modifications (Hawthorne Effect), which may further decrease their final A1C.
- Recall bias regarding the amount of soft drinks reported by participant.
- Intervention duration was varied between patients due to when their last A1C was collected.

Conclusions:
- Physician encouragement for uncontrolled diabetics to eliminate soft drinks positively results in lifestyle modification and ultimately improves diabetic control. Patients reduced their soft drink consumption by 78% and had a resulting lowering of their HgbA1c by 1%.
- Simple diet modification can be as effective at lowering HgbA1c as many anti- hyperglycemic medications including GLP-1 Agonists, DDP-4 Inhibitors, and SGLT2 Inhibitors which can decrease HgbA1c by 0.5-1%.
- Resulting improvement in HgbA1c through diet modification in a 3 month time period ultimately empowered and encouraged patients to take a more active role in their diabetic management.

Future Directions:
- Extend pilot study to a large sample size to increase power and validity of results.
- Perform similar study in Type 1 Diabetics
- Investigate further the effect of eliminating diet soft drinks when compared to regular soft drinks on glucose control in diabetic patients.

Acknowledgements:
Many thanks to our study coordinator Dr. Amy for her support and guidance. Dr. Horan for providing her expertise and feedback. Dr. O’Malley for conducting the research. Thanks to trains for providing the graphics design. Dr. Little for his excellent IT assistance.

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Is Epidural Anesthesia Associated With Genital Tract Trauma?

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Background
• There were 2.64 million vaginal deliveries in the US in 2013
• Of these deliveries, approximately 60% receive epidural anesthesia
• 4% of women who had vaginal birth experienced spontaneous lacerations
• Multiple studies evaluated potential risks for genital tract trauma, specifically perineal lacerations, which include maternal age, parity, operational vaginal delivery, episiotomy, birth weight, occiput position, anesthesia, and ethnicity
• Several studies have shown a positive association between epidural anesthesia and severe (Grade 3 and 4) lacerations following vaginal delivery
• No studies were identified that looked at whether there is a positive association between epidural anesthesia and any genital tract laceration (Grade 1 to 4)

• Null hypothesis: There is no difference in laceration rate with or without an epidural

Objectives
• To determine if epidural anesthesia is associated with an increased risk of genital tract trauma during vaginal delivery
• To compare the rate of laceration between two institutions
• To compare our findings with known risk factors identified in previous studies
• Null hypothesis: There is no difference in laceration rate with or without an epidural

Design & Methods
• This was a retrospective review of ~2400 charts at Truman Medical Center Lakewood and Truman Medical Center Hospital Hill from January 1, 2013 to December 31, 2013. 2131 patients were included total.
• Patients were included if they had a term (>37 weeks), singleton, vaginal delivery (including operational vaginal deliveries and episiotomies).
• Patients were excluded if they had cesarean delivery, preterm delivery (<37 weeks), IUPD, or multiple gestations.
• Lacerations were graded on a scale of 0-4 based on description or assignment in chart by four different reviewers using the following criteria:
  Grade 0: No laceration
  Grade 1: Vaginal, labial or perineal laceration through the skin requiring sutures
  Grade 2: Lacerations of perineum through skin and into perineal muscles requiring sutures
  Grade 3: Two variable relations of anesthetized anulus pelvic muscle (partial or complete) requiring sutures
  Grade 4: Lacerations extending to the anal mucosa above the Z-line

• Logistic regression is the statistical model that was used to control for various factors (listed below) and determine the odds ratio or likelihood of an association between two variables, the risk factor and laceration.
• Factors that were controlled for include: Age, parity, race, location, OVD (including episiotomy), and birth weight.

Discussion
• Epidural showed a negative association with laceration when including all grades of laceration. However, there is no association with laceration grades 2-4 after controlling for age, parity, race, location, OVD, and birth weight.
• Decreased likelihood of having vaginal laceration if at TMC-Lakewood versus TMC-Hospital Hill. This is likely multi-factorial but interesting finding because most of the deliveries at TMC-Hospital Hill are by family physicians, whereas most deliveries at TMC-Hospital Hill are by obstetric physicians.
• As in previous studies, nulliparity and birth weight is associated with increased risk of laceration. As parity increases risk of laceration decreases.
• Laceration was twice as likely if the patient had a operational vaginal delivery, however operational vaginal delivery was not associated with epidural.
• There is significant negative association with laceration in the black race at TMC-Hospital Hill but no association at TMC-Lakewood, with an overall negative association, presumably due entirely to TMC-Hospital Hill.

Conclusions:
• Epidural does not increase the likelihood for laceration or operational vaginal delivery therefore should be offered to patients for pain control during labor.
• Further evaluation comparing the results of the two institutions will help to understand the complex multi-factorial nature of the differences in rate of laceration.
• Controlled studies to evaluate why the black race has decreased likelihood of laceration at TMC-Hospital Hill will help us to understand role of race in rate of laceration.

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Acknowledgements:
Thanks to Gwen Sprague, Hollie McKinney, Miranda Huffman, and Karen Williams for all their assistance with this project.
Conclusions

• Our patients are satisfied with the way we manage their chronic pain
• We are not as good as we think about completing initiatives for chronic pain management

Going Forward:

• As the data collection is not complete we need to do that before proper data analysis and conclusions can be made
• We as providers need to educate patients on the current recommendations and how we are being looked at while managing chronic pain
• We as physicians need to increase our own education on treating patients with opioids in addition to the alternatives to better care for our patients

Acknowledgements:

Thank you so much to Drs. Santee, Hempstead, and Huffman for guidance and support on this project.
Background
Transition of Care denotes a scenario in which a patient leaves one health care setting to move to another. This transitioning of care is a key step in a patient receiving the adequate resources and education needed for optimum health. Recent studies on hospital readmission rates have shown numerous causes of readmission and adverse health outcomes to include: deficiencies in communication between provider and patient, patient’s understanding (or lack of) of their healthcare plan, appropriate follow up, and communication between multiple providers.

The transition of care visit is designed to make sure patient has adequate understanding of health care plan, has adequate resources to maintain optimal health, and to prevent readmission rates to the hospital.

Objective
To assess the efficacy of transition of care visits on prevention of readmission rates

Method
Chart Review performed on patients discharged from TMC Lakewood Medical Service from January 1, 2015 to April 30, 2015

Inclusion Criteria
- Patients whose PCMH is TMC LW FMC clinic that were discharged from the hospital from the dates listed above

Exclusion Criteria
- Patients who are not a part of TMC LW FMC PCMH hospitalized during that period
- Charts were reviewed to determine if patients discharged from Lakewood Medical Service on dates listed above had transition of care visits performed.
- These visits included a phone call from case manager within 2 days of discharge to schedule appointment in LW FMC within 7-14 days after discharge from hospital
- Working on instituting transition of care resident visits on PCMH rotation where residents visit with patients scheduled for discharge that day to ensure patient understands plan for care after discharge, has all questions answered, understands changes in care, and has resources in place to successfully make changes/afford medications and other therapies in effort to prevent readmission to hospital

Results and Discussion
Of the 185 patients admitted and discharged from TMC Lakewood Medical Service from 1/1/15 to 4/30/15:
- 95 (50%) patients had TOC calls from case manager and TOC visits in the FMC clinic in the allotted time period for billing of TOC visits
- 11 (6%) patients that had TOC calls and visits who were not readmitted to the hospital
- 39 (21%) patients that had hospital follow up visits but did not qualify for TOC visit due to length of time between discharge and office visit or TOC phone call
- 4 (2%) patients that had hospital follow up visits but no TOC visits who were readmitted to the hospital
- 36 (19%) patients with no follow up after discharge

There were multiple patients that would qualify for transition of care visits but visit was billed as hospital discharge follow up rather than transitional care visit

Transitional Care Visit numbers increased throughout this period of time

Multiple patients who had initial TOC qualifying visit set up but then visit was rescheduled and no longer qualified for TOC visit

Conclusions
- Transition of Care visits appear to decrease hospital readmission rates and improve patient adherence to and understanding of their health plan
- Transition of Care process will need to be streamlined in order to improve efficacy as multiple patients would have qualified for transition of care visits but either were not able to schedule an appointment in the period allotted for TOC visits or had an appointment that was canceled/rescheduled and no longer qualified
- Using a team approach to develop and adopt a transition of care protocol will provide better care for patients and reduce readmission rates

Recommendations:
- Transition of Care process will need to be streamlined to increase adherence to visits and follow ups
- Residents on PCMH rotation should be given explicit instructions for performing transition of care interviews on day of patient discharge to ensure patient has adequate resources and ability to follow up
- Longer study period should be employed to increase amount of data collected and determine effectiveness of preventing readmission
- Education should be provided to attendings on how to bill transition of care visits to improve incentives for TMC LW and our patients

Bibliography

Acknowledgements:
Thanks to Dr. Voran, Hollie Mckinney, and Lynn Flaherty for help with my senior project.
Background

Labor induction is one of the most common interventions to occur during pregnancy. Approximately 23% of deliveries in the U.S. in 2013 were the result of inductions of labor. Several methods are commonly used to induce labor but limited evidence exists on which methods are most effective and carry the lowest risk to mother and fetus. The ability to shorten the length of time that women spend in labor, without increasing maternal and neonatal complications, has important clinical and financial implications. Oral misoprostol is an inexpensive and heat stable prostaglandin E1 synthetic analogue originally developed for the treatment of stomach ulcers but has been used off-label for cervical ripening in induction of labor. Limited studies exist comparing outcomes in regards to method of administration of misoprostol (orally or vaginally) for induction of labor in uncomplicated, term pregnancies.

Objective

To compare the length of labor and outcomes (maternal and fetal) of oral and vaginal misoprostol in uncomplicated inductions of labor.

Method

This was a retrospective study that was done in the Labor and Delivery Unit at Truman Medical Center - Lakewood. 65 Subjects were chosen through set inclusion and exclusion criteria.

Inclusion Criteria

1) Patient had to be a scheduled induction of labor.
2) Patient must have received oral or vaginal misoprostol as method of induction.

Exclusion Criteria

1) Patient must not have had a complication of pregnancy, such as, but not limited to, the following:
   • Preeclampsia/gestational hypertension
   • Previous cesarean section
   • Gestational diabetes
   • Intrauterine growth restriction
   • Oligo/Polyhydramnios
   • Preterm pregnancy
2) Patient must not have had both oral and vaginal misoprostol during the course of their induction.

Subjects' medical records were reviewed, and the following data collected for analysis: maternal age, gestational age, gravidity and parity, Bishop Score at time of scheduling, date of induction initiation, date of delivery, methods of induction (i.e. vaginal or oral misoprostol, Easi-Cath, dinoprostone, oxytocin and artificial rupture of membranes), delivery outcome (vaginal vs cesarean), fetal cord gas pH, birth complications, infant weight, and infant Apgar scores.

Length of induction was calculated from the first dose of misoprostol to time of birth.

Results and Discussion

Table 1

<table>
<thead>
<tr>
<th># of patients that received PO vs PV misoprostol and route of delivery</th>
<th>Oral Misoprostol</th>
<th>Vaginal Misoprostol</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVD</td>
<td>36</td>
<td>17</td>
<td>53</td>
</tr>
<tr>
<td>PLTCS</td>
<td>7</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>22</td>
<td>65</td>
</tr>
</tbody>
</table>

• The difference in length of induction to vaginal delivery was not statistically significant between routes of misoprostol administration.
• The difference in length of induction to PLTCS was not statistically significant between routes of misoprostol administration.
• Most patients undergoing uncomplicated IOL were also augmented with oxytocin, dinoprostone, eadi-cath or AROM.
• Cesarean section rate for oral misoprostol was 16%.
• Cesarean section rate for vaginal misoprostol was 23%.
• Due to small sample size power of the study is limited.

Table 2

| Comparing length of labor following administration of oral vs. vaginal misoprostol |
|---|---|---|---|
| Oral misoprostol to delivery | Vaginal misoprostol to delivery | Oral misoprostol to PLTCS | Vaginal misoprostol to PLTCS |
| Mean length of delivery (min) | 18.03 | 26.75 | 21.02 | 32.46 |
| 95% confidence interval | -7.87 to 2.42 | -35.46 to 12.59 |

Table 3

| Comparing Bishop scores, infant weights and cord blood pH to oral vs. vaginal misoprostol induction groups |
|---|---|---|---|
| Oral misoprostol to delivery | Vaginal misoprostol to delivery | Oral misoprostol to PLTCS | Vaginal misoprostol to PLTCS |
| Bishop Score | 3.2 | 2.3 | 3 | 1.8 |
| Infant weight (g) | 3663 | 3629 | 3545 | 3880 |
| Cord blood pH (Ven) | 7.216 | 7.261 | 7.221 | 7.305 |
| Cord blood pH (Arter) | 7.309 | 7.319 | 7.303 | 7.332 |

• In this study the average Bishop scores were all under the ideal Bishop score of 6 for induction of labor.
• Infant weight did not appear to have an effect on mode of delivery for vaginal or oral misoprostol.
• Cord blood pH did not appear to be compromised by differences in route of administration of misoprostol.

Conclusions

• In a two year timespan of uncomplicated induction of labor at Truman Medical Center – Lakewood, there was no statistical significance in length of induction when using oral or vaginal misoprostol.
• There was a 7% increase in rate of cesarean sections in patients who received vaginal vs. oral misoprostol.
• No differences were identified pertaining to infant weights, cord blood pH or Bishop scores in oral vs. vaginal misoprostol groups.

Recommendations:

• Larger studies of greater power may be required to confirm the results of this study.
• Ongoing factors such as maternal BMI, implementation of additional methods of augmentation and gravidity and parity should be considered in future studies.
• Number of doses of misoprostol should be controlled for in future studies.

Bibliography

Depression is a major health problem in the US, affecting approximately 8% Americans age 12 and up. While there is data being collected on the prevalence of depression, this data has not recently been compiled into a useful form nor has any significant action on a national level been derived from the previous data.

The Missouri Department of Health and Senior Services has for a number of years been collecting data on the health of its population. Part of this information is collected for the Behavior Risk Factor Surveillance system, and known as the BRFSS. Within the BRFSS system the state of Missouri reports that prevalence of depression is 21.8% suggesting that as many as 1.5 people per 1000 people living and receiving care in the state of Missouri are suffering from or have been treated for depression. In order to help improve the screening of the general population, the United States Preventative Services Task Force recommends screening all adult patients, including pregnant and postpartum women (Grade B recommendation). The most widely implemented tools currently used in screening for depression are the Patient Health Questionnaire (PHQ-2 and PHQ-9), the Geriatric Depression Scale, and the Edinburgh Postpartum Depression Scale.

In the Jackson County Region where there is a higher incidence of low economic status such that Disproportionate Share Hospitals (DSH), like the Truman system, see a significant higher number of patients of lower socioeconomic status which has been identified as a risk factor for depression.

Currently, there is no protocol for depression screening in the Truman Medical Center Lakewood Family Medicine Clinic. Combined with the above factors, the concern is that there is a significant incidence of depression that has yet to be identified in this clinic. The implementation of the PHQ-2 screen for a specified amount of time would allow us to perform a gross snapshot assessment for depression in patients who are seen and otherwise may not receive appropriate diagnosis and treatment. This study could potentially determine the increased necessity for the use of the PHQ-2 in the family medicine setting as well as expand into the use of tools such as the PHQ-9 in order to delineate patients with true clinical depression from those with emotional distress or other psychiatric disorders.

Objective

To assess depression rates in a lower socioeconomic population in a community family medicine center to support USPSTF recommendations for depression screening.
Paracentesis Workshop Efficacy in Resident Training Programs

Background
Most residents learn to perform paracentesis with the traditional “See one, Do one, Teach one” technique. Unfortunately, this can lead to residents with minimal training performing unpracticed techniques on unknowing patients or worse, poor patient outcomes. Many programs have implemented hands-on “skills labs” such as central line training in hopes of providing a controlled environment for training without the risk to patients during a residents first time experiencing a new procedure. Many IM residency programs offer training in paracentesis. But in a literature review, the efficacy and usefulness of training FM residents is poorly documented. Another problem that arises when implementing a skills lab is the cost for training tools. Reusable models often costing over $2000 apiece may not be affordable for many programs. We wanted to develop a skills lab that was useful and affordable to train family medicine residents.

Hypothesis:
1. A training workshop to develop paracentesis skills will improve confidence in paracentesis and helpfulness of the training.
2. Residents in family medicine can have favorable learning experience by using a model which is affordable to most programs.

Materials & Method
We hoped to develop an affordable and realistic model for training and began looking at possible media that would facilitate both. The final product was a sandwich sized disposable plastic container with a zip top plastic bag filled with approximately one cup of water dyed yellow/brown “ascitic fluid” as a base. Then a 3/4 butterflied pork chop was placed on top of the bag, which was then covered with chicken skin. Approximately 1/2 cup of prepared colorless unflavored gelatin was poured over the top of the prepared “abdomen” to hold all pieces in place. The plastic containers were then refrigerated and gelatin allowed to firm.

Safety-centesis
This model was used a training model for residents to practice techniques.

Residents watched a short prepared video of paracentesis by NEJM. Then an instructor demonstrated all equipment available for live practice of procedure. The residents each had an opportunity to practice the techniques learned from the video and presentation for one hour.

Results and Discussion
Residents were given pre and post surveys with 7 questions regarding their level of expertise with paracentesis and helpfulness of the training.

1. On a scale from 1 to 10, with 10 being highest, how comfortable are you with paracentesis indications?
2. How comfortable are you with current paracentesis techniques? (1 to 10)
3. How comfortable are you performing a therapeutic paracentesis on a patient with suprising attending? (1 to 10)
4. How comfortable are you performing a therapeutic paracentesis independently? (1 to 10)
5. How comfortable are you with handling complications that can occur from paracentesis? (1 to 10)
6. Do you believe you will perform a paracentesis in your practice after graduation? Y/N
7. Should IM and FM residency training programs offer training in paracentesis techniques? Y/N

All the questions were answered by 26 residents at a Pre-test and 24 residents responded to the post-survey. The above results all were evaluated using a t-test with a p <0.05 and were ALL statistically significant.

The residents were also asked if they thought they would be performing paracentesis in practice after graduation: 16/26 responded “yes” and were ALL statistically significant.

The residents were also asked if they thought they would be performing paracentesis in practice after graduation: 16/26 responded “yes.” When asked if they thought the training should be offered to all FM and IM residents, ALL responded “yes.”

Future Directions:
Because the power of this study is lacking, participation by more FM residents should show stronger significance. All Family Medicine residency training programs in Missouri have been contacted regarding results from this study. Most teaching/didactic coordinators were willing to participate in similar workshops. Continuing to monitor the efficacy of training more residents would allow for greater impact on statistical significance for this study. It also would broaden the scope of training for those who are preparing to practice primary care.

Comparing patient outcomes from pre and post-intervention could also lead to better understanding of the training.

Conclusions
- Residents overwhelmingly would like to have hands on training for paracentesis.
- Using models which cost ~$5 each to make, residents comfort level and understanding of technique were improved.
- White hands on experience with live patients and real-time stressors are the standard of training in the past, skills labs allowing trainees to develop comfort with current technique and tools to minimize technical stress. This comfort will hopefully lead to better patient outcomes.

Acknowledgments
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