

2022

## UTHealth Quality Symposium 2022 Abstracts

Follow this and additional works at: [https://digitalcommons.library.tmc.edu/j\\_tic](https://digitalcommons.library.tmc.edu/j_tic)



Part of the [Health and Physical Education Commons](#), [Health Policy Commons](#), and the [Medical Education Commons](#)

---

### Recommended Citation

(2022) "UTHealth Quality Symposium 2022 Abstracts," *Teaching in Clinics*: Vol. 1: Iss. 1, Article 4.

DOI: <https://doi.org/10.58464/2835-2017.1004>

Available at: [https://digitalcommons.library.tmc.edu/j\\_tic/vol1/iss1/4](https://digitalcommons.library.tmc.edu/j_tic/vol1/iss1/4)

This Innovation is brought to you for free and open access by the McGovern Medical School at DigitalCommons@TMC. It has been accepted for inclusion in Teaching in Clinics by an authorized editor of DigitalCommons@TMC. For more information, please contact [digcommons@library.tmc.edu](mailto:digcommons@library.tmc.edu).

## UTHEALTH QUALITY SYMPOSIUM 2022 ABSTRACTS, HOUSTON, TX

### Poster 1: The Gamification of Pediatric Graduate Medical Education: A Pilot Study

Frank Abene, DO, MSADE, Emma Omoruyi, MD, Kelly Erickson, Monaliza Evangelista, MD, Tracy Omoegbele, MD, Mason Stevens

<sup>1</sup>UTHealth, The University of Texas Health Science Center at Houston, McGovern Medical School

#### Introduction

Educators are constantly searching for novel educational tools to improve competency and learning in an educational setting. Structured education among residents has traditionally been emphasized as a key component of excellence in physician training. Education outside the clinic and hospital setting uses didactic lectures and simulations to provide realistic scenarios for resident trainees to practice clinical skills while not adding unnecessary risk to patients' lives.<sup>1</sup> As technology has become embedded in almost every aspect of our lives, we have seen the concurrent rise in the idea of gamification, or the use of game design elements in non-game contexts.<sup>2</sup> Recently, gamification of these traditional models of education has become more common while the success of these changes in medical education remains largely unknown. Our study investigated the utility of gamification of lectures in pediatric residency programs and its association with improved participation, engagement, and knowledge retention among our resident physicians.

Providing effective methods of learning and accurate assessment of those methods with the goal of improving the diagnostic skills among first-year, pediatric resident physician constitutes a largely unexplored and challenging area of research.<sup>4</sup> The importance of such research lies in its ability to improve diagnostic techniques and clinical accuracy among pediatric interns to provide better clinical outcomes for pediatric patients. Past studies on the use of educational games have explored the success of such learning tools in higher education. The research is lacking largely in the area of gamification for pediatric residencies specifically in valuable methods of assessment, perceived correlation to improvement in clinical skills, as well as evidence of increased intern participation and engagement. These are the areas of investigation for our study as we seek to improve the current model of education through gamification of the intern morning report lecture series. We will also investigate a tangible method of assessment for quality and effectiveness of clinical skills learning.

#### Objectives

Our pilot program investigated the gamification of lectures in a pediatric residency program and its association with improved participation, engagement, and knowledge retention among our resident physicians. By incorporating an interactive game and team-based learning session via an online interactive interface into a lecture series we explored how to improve the learning environment and further clinical skills knowledge among interns.

## **Methods**

In this first PDSA cycle, five first-year, pediatric residents who were rotating through our community hospital participated in the month-long pilot. We used an interactive coded gaming platform that allowed us to test medical management using four real-world case scenarios culminating in an accurate diagnosis, treatment, and follow-up among participants with minimal “lives lost” (the negative outcome for incorrect answers). Using pre-and post-test questions that were taken from the American Board of Pediatrics board review materials for content validity to measure knowledge acquisition. We compared the level of engagement, interest, and participation using a post-session survey.

## **Results**

The pre-test had an average score of four out of eight questions correct with a range of two to five correct. The post-test had an average score of five of eight questions correct. In the post-survey, 100% of the participants felt more confident in the covered clinical scenarios after the curriculum.

## **Conclusions**

The residents involved in this pilot program enjoyed the gamified nature of the curriculum and felt more confident in the clinical scenarios after going through the cases. The novelty of the curriculum, the board and clinical relevance of the material, and the gamification of the learning process all were important factors in the program’s effectiveness. In future PDSA cycles, a larger population with an extended curriculum is needed to further define the role of the gamified curriculum in graduate medical education.

## **Poster 2:CTA Prioritization in the Emergency Department**

John Waller-Delarosa MD, Zheng Ben Ma MD, Samuel Prater MD, Long Tran

<sup>1</sup>UTHealth, The University of Texas Health Science Center at Houston, McGovern Medical School

### **Introduction:**

Aortic pathologies, such as aortic dissection and ruptured aortic aneurysm, are among the most lethal conditions encountered in the emergency department (ED). It is therefore imperative to promptly identify these disease processes by advanced imaging.

Through feedback from other service lines, automated data capture, and voluntary reports, the emergency department compiles and analyzes cases for quality improvement opportunities. One

opportunity evaluated by the quality assurance (QA) committee was to reduce delays in CT angiography (CTA) for possible acute aortic pathology.

**Intervention:**

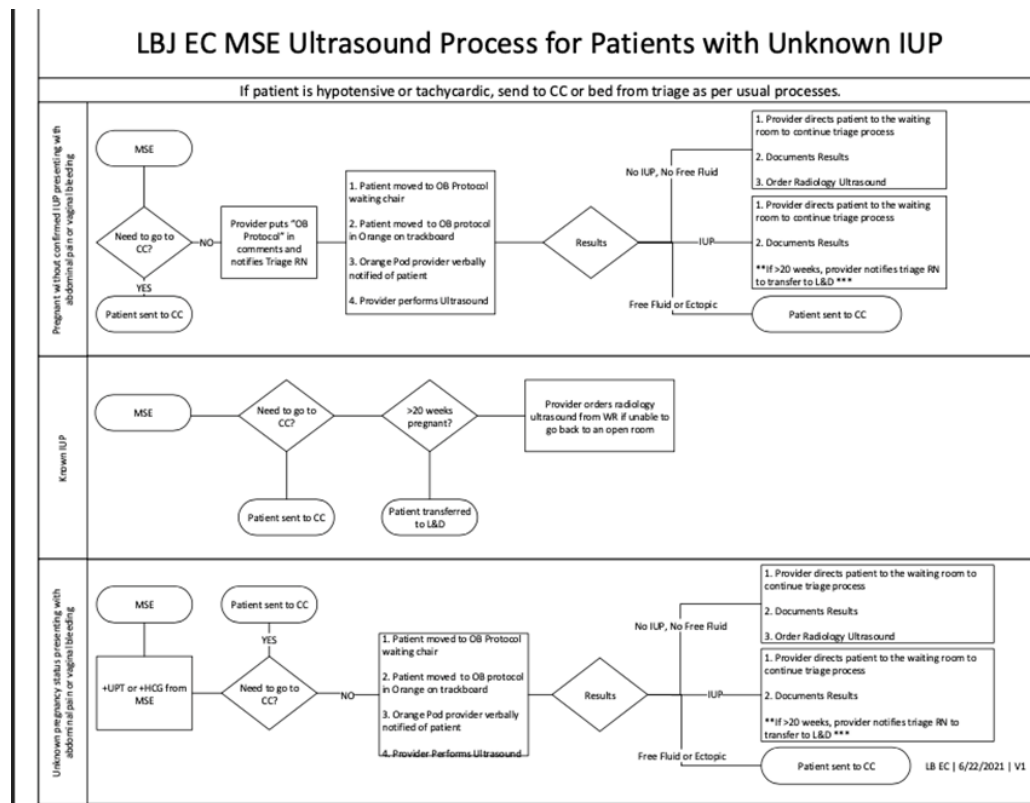
The intervention involved two complimentary components. First was collaboration with CT technologists to create and follow a prioritized list of CT scans by risk of disease acuity, and associated high prioritization of CTA scans for aortic pathology. Secondly, a case of delayed CTA scan along with the new CTA prioritization were presented together at the emergency medicine department monthly QA conference.

**Data:**

After 10 weeks of the increased CTA prioritization, data was obtained from Radsnet of CTA Aorta chest/abdomen/pelvis scans ordered from the ED. There was a total of 18 scan completed during the post-intervention period. A comparison control report was collected of the 18 scans ordered prior to the prioritization change. The interval from CTA order time to start time was calculated from both data sets.

**Results:**

The average time from CTA order to start decreased from 88 to 65 minutes. The number of imaging studies that took longer than 90 minutes was decreased by half from 44% to 22% of the scans.



### **Poster 3: Implementation of a surgical site infection (SSI) prevention bundle at the time of cesarean delivery in Labor and Delivery at Memorial Hermann Memorial City Medical Center**

Shean Manickchan, MBA, MSN<sup>1</sup>, Jennifer Rocha, BSN, RNC-OB<sup>1</sup>, Carlos Carreno, MD<sup>2</sup>

Memorial Hermann Memorial City Hospital<sup>1</sup>, Houston, TX, McGovern Medical School at The University of Texas Health Science Center at Houston (UTHealth), Houston, TX<sup>2</sup>

#### **Background**

SSI at the time of cesarean delivery (CD) increases maternal morbidity, and mortality and decreases patient satisfaction with a significant increase in hospital cost. In late 2020 we observed an increase in the SSI at the time of CD that allocated us in the “concern” status for our hospital system. SSI prevention bundles have been associated with a reduction in the SSI rate. Our hypothesis was that we would significantly reduce the SSI rate after the implementation of an SSI prevention bundle over a 12-month period.

#### **Methods**

This was a quasi-experimental, preintervention, and postintervention study of women undergoing cesarean delivery. The following bundle based on best practices was implemented once stakeholders and barriers to implementation were identified. Our primary outcome was a reduction in the number of SSIs. An SSI prevention team was created to disseminate and implement the initiative that consisted of a physician and nursing education curriculum, mitigation process, linen changes, chlorhexidine wipes upon admission and every 24 hours, performing a vaginal cleanse and sterile skin prep standardized surgical dressings, preoperative and postoperative antibiotic prophylaxis, normothermia during surgery, writing removal date on dressing as a patient reminder, RN and patient education regarding incision care and SSI signs and symptoms and an audit process. As a final intervention, the SSI Risk Assessment Checklist was completed and a callback to patients postoperative was performed to inquire about the incision.

#### **Results**

Before the study period, there were 11 SSIs in 2019 and 14 in 2020. The NHSN SSI Standardized Infection Ratio for 2019 and 2020 were 0.92 and 1.06 respectively. Implementation occurred in January 2021 and from February 2021 to January 2022, there were a total of six SSIs with an SSI ratio of 0.49.

#### **Conclusion**

After the implementation of a comprehensive SSI prevention bundle based on current best practices, we were able to decrease the SSI ratio > 50 % and achieve SSI distinguished status for the Memorial Hermann Hospital System in the 12 months following implementation.

#### **Poster 4: Implementing a Culture of Safety Curriculum in a Family Medicine Residency**

Goldstein S<sup>1</sup>, des Bordes J<sup>1</sup>, Nguyen PD<sup>1</sup>; Neher S<sup>2</sup>, Rianon N<sup>1</sup>.

<sup>1</sup>Family and Community Medicine, UTHealth McGovern Medical School

<sup>2</sup>Office of Educational Programs, UTHealth McGovern Medical School

#### **Abstract**

Medical errors contribute significantly to patient morbidity and mortality. Therefore, the American College of Graduate Medical Education (ACGME) requires all family medicine residency programs to implement a formal curriculum aimed at minimizing medical errors and promoting a culture of safety.

The aim of this study is to describe the development and implementation of a culture of safety curriculum in a family medicine residency program.

A longitudinal patient safety curriculum was developed comprising of quarterly morbidity and mortality (M&M) conferences, three online quality and safety learning modules, and didactic lectures. The program targeted all 36 family medicine residents from 2020-2021. The program was evaluated at the end of its first year by an anonymous online survey.

Nineteen residents responded to the pre and post curriculum surveys. Prior to implementation of the curriculum, 47% reported having prior education in patient safety, 74% understood the main causes of medical errors, 37% could accurately report safety concerns, and 20% could recognize safety gaps. About 58% of residents attended three or more M&Ms and patient safety lectures. Completion rates for the online modules were 53% to 100%. In the post survey, 79% reported learning about the main causes of medical errors, 42% learned about safety concerns, 58% felt comfortable discussing safety concerns with peers, and 26% could recognize safety gaps.

Modest improvements in awareness and knowledge about safety and quality in patient care were observed among residents. We continue to work with the leadership to improve participation and completion of all components of curriculum.

#### **Poster 5: Targeted Temperature Management (TTM) Cost and Resource Utilization**

Vishal Demla, MD

<sup>1</sup> UTHealth McGovern Medical School

Targeted temperature management requires significant resource utilization, including experienced staff, training, devices, and cost. Additional resources include nursing ratios, usually 1:1 nursing, nurse training in operation of the specialized equipment such as invasive cooling and temperature feedback devices. These devices also require proprietary pads and catheters. This cost is passed on to the hospital and patients.

Targeted temperature management is a current standard of care for patients post cardiac arrest. However, temperature goals have changed through the years. In 2002, initial recommendations were to cool patients to 33C. They were revised after a landmark study in 2013 that stated there was no difference between 33-36C, which is reflected in the 2015 AHA guidelines for post cardiac arrest care. Finally, just last year, a well done study in NEJM has shown no difference between 36C and 37C. Although temperatures have become less stringent, the use of resources has not changed.

We propose the use of noninvasive, non proprietary cooling methods for post cardiac arrest patients. We feel that it will be similarly effective in reaching goal temperature and preventing temperature spikes. In addition, this will likely result in significant cost savings for both hospital and patient.

The main hurdle to reach this goal was provider and nursing education. Due to almost unanimous stakeholder support and enthusiasm, we thus far have had approximately 80% compliance with the new protocol. In addition, time to goal temperature and temperature spikes is similar to the previous protocol.

Moving forward, we would like to pilot the protocol on more patients to ensure compliance and find potential obstacles to implantation at other facilities. We would also like to observe neurological outcomes of patients compared to previous protocols.

### **Poster 6: Improving Vitamin D Supplementation in Newborns**

Prajakta Yeragi, Radhini Bell, Lyca Intal, Jessica Bolen, Laura Moore, Alyssa Wilson, Caleb Curry, Nhat Hoang, Sara Mahmoud, Deborah Martinez, Tracy Omoegbele

<sup>1</sup>The University of Texas Health Science Center at Houston, McGovern Medical School, Department of Pediatrics

#### **Abstract**

**Introduction:** Vitamin D deficiency can lead to poor growth, osteomalacia or nutritional rickets. Per the American Academy of Pediatrics, 400 IU of daily Vitamin D are required for newborns whether they are breast- or formula-fed. However, many parents and physicians are unaware of this recommendation.

**Objective:** Improve Vitamin D supplementation for newborns at CMHH-TMC through education and prescription prior to discharge (PTD).

#### **Interventions:**

- Importance of Vitamin D supplementation included in anticipatory guidance PTD
- Pamphlet provided in inpatient/outpatient settings
- Residents instructed to prescribe Vitamin D for all newborns at CMHH-TMC and outpatient visits
- EMR templates updated to document Vitamin D supplementation status

#### **Results:**

The following were calculated using CMHH-TMC and UTH clinic EMR data before and after interventions:

1 Month Before Interventions:	2-Month Period After Interventions:	
-------------------------------	-------------------------------------	--

0%	50.8%	Prescribed Vitamin D PTD
----	-------	--------------------------

**Discussion/Limitations:** Providing inpatient/outpatient parental education and changing EMR templates to ensure physician prescription of Vitamin D resulted in an increase in Vitamin D prescription. Many patients did not have follow-up within our UT clinic system. This limited our data collection on reported supplementation at follow-up visits.

**Conclusion:** Creating a system that provides thorough education, follow-up, and access is effective in increasing prescribed Vitamin D supplementation and is a valuable contribution to routine newborn care.

**Future Studies:** We will collect data on how many subjects reported receiving adequate supplementation of Vitamin D at the 2 and 8 weeks of life mark by revisiting patient charts and talking to families.

**Poster 7:HUMAN+KIND Project: Human Trafficking Screening Tool**

Nhi Le, MD; Kristi Prophet, MD; Michelle R. Klawans, MPH; & PD Nguyen, MD

<sup>1</sup> UTHealth McGovern Medical School, Department of Family and Community Medicine

Human trafficking (HT) victims may present to clinics, urgent care, or emergency departments as patients but are infrequently identified as victims. There are many educative training tools that are related to trauma and sexual assault but few that are aimed specifically at identifying victims of HT. The purpose of this quality improvement project is to create an educational presentation and screening tool that can help family medicine resident physicians quickly and accurately identify these patients. We will create a formal presentation to guide providers on steps to evaluate human trafficking victims using set systems, including the HEAR mnemonic from the US Department of Health and Human Services. This presentation will then be consolidated and converted into an interactive, digital PDF application for residents to refer to for continued education and reference during encounters with HT patients. This presentation will be given to all family medicine residents in an urban, academic program (N=36) following completion of a pre-survey assessing current HT knowledge. Pre-survey results have indicated that the majority of residents and providers are aware of human trafficking, but never had treated an HT victim. Further, responses indicate that the majority of providers are not aware of how to proceed if they were to identify one of their patients as a victim of HT. After 6 months, residents will complete a postsurvey to reassess their knowledge and comfort level with distinguishing, diagnosing, and treating human trafficking patients.



## Poster 8: Impact of training in geriatric prescribing on hospitalists' confidence and prescribing practices

Ezenwa Onyema MD<sup>1</sup>, John G. Biebighauser BS<sup>1</sup>, Rachel Jantea MD MS<sup>1</sup>, Teri Ogg PharmD, BCPS<sup>2</sup>, Lauren Standiford, RN, MSN, CNL<sup>2</sup>, Anjali Garg MD<sup>1</sup>

<sup>1</sup>University of Texas Health Science Center at Houston- John P and Katherine G McGovern Medical School

<sup>2</sup>Memorial Hermann Hospital, Texas Medical Center

**Objectives:** Hospitalized older adults in a geriatric trauma unit have an increased risk of adverse drug events with high-risk medications like benzodiazepines. Appropriate prescribing skills is essential to providing Age Friendly Care for geriatric patients. Hospitalists received training on appropriate prescribing, then confidence level in performing medication-related geriatric skills and prescriber practices (benzodiazepine orders) were assessed for impact.

**Methods:** Educational intervention for hospitalists in a level 1 trauma academic center was part of a Hospitalist Geriatric Certificate which utilized a flipped classroom. Hospitalists completed pre-work activities, attended 1 hour skill-based session on appropriate prescribing in older adults. Pre- and Post-intervention, participants rated their confidence in performing 3 geriatric skills (0=not confident at all, 100=extremely confident): 1) Identify potentially inappropriate medications, 2) Reduce polypharmacy, 3) Reduce use of high risk/low benefit drugs. We analyzed pre-post responses from 26 hospitalists using paired *t*-tests. We then assessed prescriber practices using EMR data to compare frequency of hospitalists' benzodiazepine orders for older adults on a geriatric trauma unit during two, 3-month intervals before and after intervention using descriptive statistics.

### Results:

1. Mean confidence level (%) across all 3 skills increased by 16% [Pre 70% (SD=20) vs. Post 86% (SD=11),  $p<.001$ ].
2. Percentage of benzodiazepines orders for older adults admitted to the geriatric trauma unit decreased post-intervention. (Pre 18.6% vs. Post 11.9%), a 6.7 point % decrease in rate of benzodiazepine orders.

**Conclusion:** Our results show that a targeted educational session increased confidence in prescribing skills and reduced benzodiazepine prescriptions in hospitalized older adults.