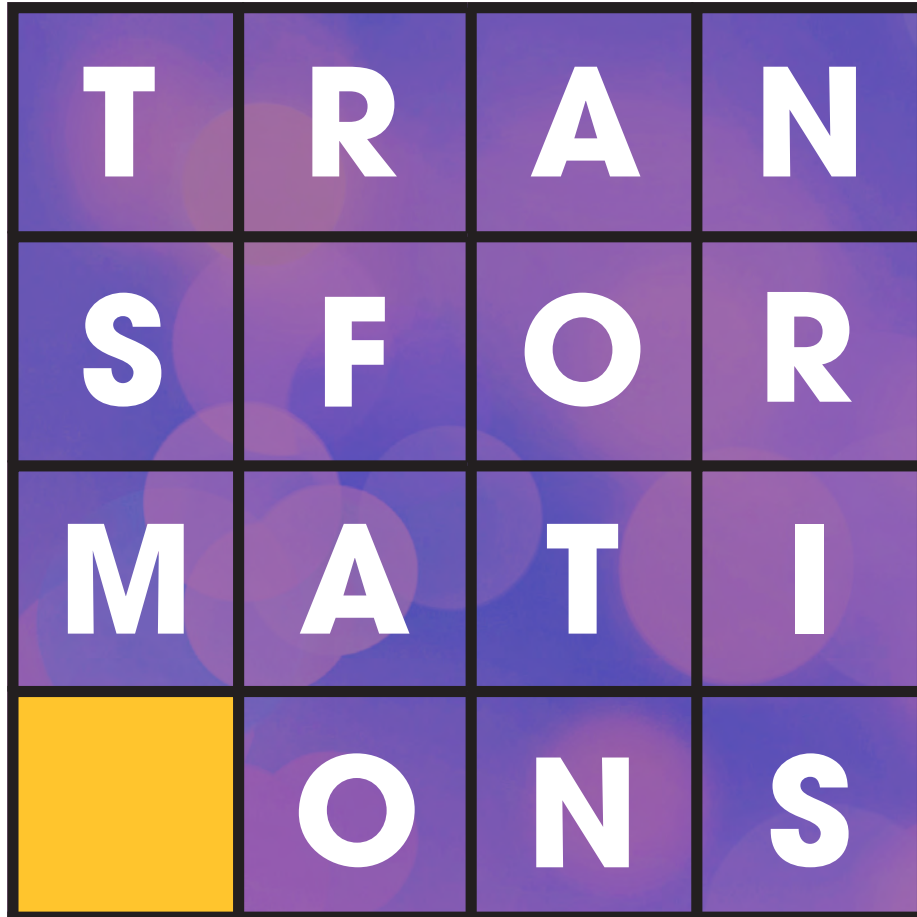


D I G I T A L H E A L T H C A R E



Applied Research and  
Industry Collaborations



**KENNESAW STATE  
UNIVERSITY**

COLES COLLEGE OF BUSINESS  
*Master of Science in Healthcare  
Management and Informatics*



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A MESSAGE FROM THE  
**EXECUTIVE DIRECTOR**



Even before launching the MSHMI program, we knew that collaborating with the healthcare and information technology industries was going to be a critical component of its success. As the program celebrates its fifth anniversary, it is clear this was the right decision. Our students have the opportunity to prepare for careers in digital healthcare by connecting with businesses and other organizations driving

innovation in that space. In addition, they participate in leading edge research that will help improve healthcare delivery and patient outcomes. None of this would be possible without our industry colleagues' valuable support.

Sweta Sneha  
Founder and Executive Director, MSHMI

A MESSAGE FROM THE  
**DEAN OF COLES COLLEGE OF BUSINESS**



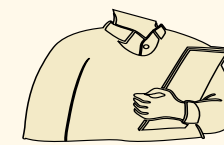
Throughout the past five years, the MSHMI program has grown both in size and reputation thanks in no small part to strong relationships with healthcare providers and technology companies. These relationships have ensured that our students have access to professional resources, perspectives, and data, and have provided steppingstones into exciting new careers. The MSHMI program

bridges the gap between multiple healthcare and technology disciplines while also bridging the gap between academic study and real-world application. It is no surprise that, after five years, Kennesaw State's MSHMI program remains the only one like it in Georgia.

Robin Cheramie  
Dean, Coles College of Business

# Healthcare Management & Informatics (HMI): Aspire to More

## ACADEMIC INNOVATION



190+ Students



The Only Program of its Kind

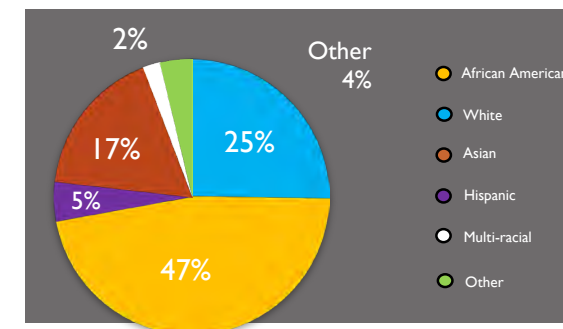


Interdisciplinary Across Four Colleges



Textbooks, Software, Professional Membership

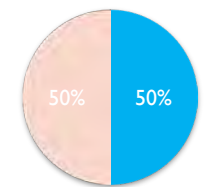
## DIVERSITY, EQUITY, INCLUSIVITY



6 Continents



30 Years Average Age



Gender Equality

No GMAT/GRE

## FOOTPRINT - ECONOMIC & WORKFORCE DEVELOPMENT



Student Awards/ Accolades  
HIMSS, SONY, TAG



Industry Engagements



Certifications  
AHIMA, CAHIM, R, SAS, etc.



Publications



Faculty Fellowships



Graduate Research Assistantships

## The Evolving Landscape of Health Information Exchange: Preparing MEDITECH for TEFCA Onboarding



Adopting standards and procedures that support nationwide interoperability are critical for healthcare organizations transitioning into the Trusted Exchange Framework and Common Agreement (TEFCA). The EHR companies like MEDITECH, are one of the first Participants to be adopted under TEFCA and will be required to make changes to their current policies and procedures.

MEDITECH's current practices and procedures that involve health information exchange are being analyzed to assist with what the future state will be under TEFCA. Research, workflow analysis and customer survey responses have led to recommendations and optimized workflow designs that will support nationwide interoperability. This analysis is a steppingstone in what the healthcare industry will look like as TEFCA becomes the precedent for health information exchange. EHR companies should be evaluating their current workflows and procedures to identify areas of change that will allow a smooth transition to this new agreement.

**Students:** Cameron Broadnax, Chris Burgess, Clarette Epps

**Faculty Advisor:** Sweta Sneha

**Industry Sponsor:** Adama Blaha, Director of Interoperability,  
MEDITECH

## An Exploratory Analysis of Return on Investment of Employee Wellness Programs



**Purpose:** Employee wellness programs are becoming increasingly popular in corporate America. The prevalence of risk factors such as high cholesterol, obesity, and high blood pressure in the workplace is on the rise. In order to keep costs low on health insurance and improve employee wellness, employers are turning to wellness programs in order to mitigate the issue. However, many employers want to know the return on investment (ROI) of these programs and if they are profitable and effective. The goal of this paper is to analyze the trends of data collected from multiple companies and attempt to calculate an accurate ROI.

**Methods:** This project consists of creating a dashboard in Power BI that follows data generated from 6,000+ employees from over 10 different employers from the years 2022 to 2023 collected from a southern United States based wellness corporation. The dashboard was broken up into 9 different tabs that allow the user to focus on one specific theme of the data such as habits, basic statistics, screening, age, gender, ROI, and more.

**Findings:** After completing the dashboard, the variables that can be used to calculate an accurate ROI are the number of sessions completed and the number of participants that are considered high, low, and moderate risk from year to year. By looking at the number of coaching sessions attended and the level of risk, one can conclude that the increased participation in coaching sessions leads to a decrease in the level of risk, or otherwise, a positive ROI. Therefore, a negative ROI is the result of a decrease in participation of coaching sessions and an increase in the level of risk year to year.

**Students:** Mikaela Keith, Tyler Simon, Lisero Mugula

**Faculty Advisors:** Soo Shin, Sweta Sneha

**Industry Sponsor:** Employee Health Group



## Barcode Medication Administration – Process Mapping and Assessing in a Military Hospital



**Objective:** To assess and map the barcode assisted medication administration (BCMA) process in medical-surgical units at a military hospital and develop a dashboard to ease viewing metrics and variables associated with barcode scanning.

**Materials and Methods:** A retrospective study in a tertiary care military medical center data analysis covered a six-month period (September 2022 - February 2023) across four inpatient medical-surgical units. The data was de-identified of patient or staff details, but included variables surrounding instances where medication barcode scanning was not used.

**Results:** The analysis revealed nearly 10% of non-compliant meds have no bypass reason documented. Where documented, medication bypass was more prevalent than patient ID bypass. 54.78% of the medication bypass reasons were due to damaged or unable to scan barcodes, followed by 10.87% due to non-barcoded medication. Damaged or unable to scan barcodes accounted for 38.40% (n=1,038) of patient ID override reasons.

**Discussion:** Most bypass reasons were documented as damaged or unreadable barcodes, indicating a need for further investigation. The volume of non-barcoded medications also warrants standardized medication labeling consideration. Furthermore, the study provides specific information about the medications that generated the greatest number of override alerts.

**Conclusions:** The majority of bypass reasons were associated with medication bypasses and were heavily linked to barcode-related factors. Documentation via a pathway that doesn't require BCMA use or override documentation still remains. Ongoing dashboard management and monitoring along with deeper investigation in key areas will offer greater insight into opportunities to improve overall BCMA compliance and process adoption.

**Students:** Joli Miracle, Farah Muttardy, Richard Ogniewski, Ellie Tannouri

**Faculty Advisor:** Sweta Sneha

**Industry Sponsors:** MAJ Maria-Cristina Caruso, Tripler Army Medical Center, a Defense Health Agency (DHA) Facility V/R

## Gen Z Learning and Communication Styles



Using a literature review approach, we synthesized the existing research on Gen Z nurses and their impact on the healthcare industry. The literature review revealed that Gen Z nurses bring several unique attributes to the profession, such as being digital natives, having a strong desire for work-life balance, and valuing diversity and inclusion. Additionally, they have a strong sense of purpose and

are driven by a desire to make a difference in the world. These characteristics are becoming increasingly important in the healthcare industry, as it faces new challenges such as the aging population, the increasing demand for healthcare services, and the need for innovative solutions. Gen Z nurses are well-positioned to address these challenges, using their technological skills, their commitment to work-life balance, and their desire to make a positive impact.

**Students:** Ziyah Anderson

**Faculty Advisors:** Margot Hendenstrom, Sweta Sneha

**Industry Sponsor:** Piedmont Healthcare



## Assessing the Relationship Between Preventive Care Practices and Suicidal Ideation Among High School Students: An Analysis Using the 2019 Youth Risk Behavior Surveillance System



According to the Centers for Disease Control and Prevention (CDC), death by suicide has been persistently one of the top causes of death for teenagers in the United States. This, coupled with a worsening mental health crisis among teenagers in recent years, is cause for alarm for parents, school administrators, public health officials, and society in general. Because of the hidden nature of mental

health disorders and suicidal ideation, in addition to lingering taboos surrounding both, it may be challenging to adequately address these problems using traditional approaches. Interestingly, prior research has shown that healthy, preventive care behaviors, such as adequate sleep, physical activity, and healthy eating are associated with improved mental health and well-being. However, most of the research in this area explores the relationship between preventive care behaviors and a specific mental health condition, such as depression or anxiety. Fewer have explored the relationship between these behaviors and suicidal ideation specifically, and thus, the present study aims to fill this apparent gap. Results indicate that students who regularly meet sleep recommendations, regularly eat breakfast, and avoid cigarette and marijuana smoking may be less likely to experience suicidal ideation compared to their peers. These results demonstrate potential opportunities for programming, including food programs as well as improved health curriculum, which could be implemented in schools to indirectly begin to address the national crisis currently being experienced by teenagers.

**Students:** Jazmyne Lane, Anas Alhasan Almashhour, Austin Brown

**Faculty Advisor:** Sweta Sneha

**Industry Sponsor:** CDC

## PMMA, PEEK, and Porous Polyethylene: A Review of Implant Materials When Used in Cranioplasty



The purpose of this systematic study is to evaluate evidence-based data on Polymethyl methacrylate (PMMA), Porous Polyethylene, and Polyetheretherketone (PEEK) and examine the capabilities along with the potential for complications of these three materials when used as implants in a cranioplasty procedure. Methods: A search of articles was conducted on the PubMed and National Library of Medicine databases. Only

articles from the last five years were reviewed. The following keywords and phrases were used to uncover relevant data: “Cranioplasty Implant Material,” “PEEK versus PMMA versus Porous Polyethylene,” “Complications with PEEK in Cranioplasties,” “Complications with Porous Polyethylene in Cranioplasties,” “Complications with PMMA in Cranioplasties,” “Prosthesis Implantation,” and “Cranial Implant Infection.” Results: PMMA, PEEK, and Porous Polyethylene all had similar capabilities when used in cranioplasty procedures. The porous polyethylene allowed for fibrovascular in-growth, resulting in the reduced risk of infection. PMMA and PEEK offered great durability and strength when used in cranioplasties. Value: With cranioplasty procedures having such a large complication rate, it is crucial implant material does not add to this by creating unnecessary complications. It is critical that implant materials be examined thoroughly to determine their capabilities and true risk they play in the likelihood of adverse effects in cranioplasties.

**Student:** Jaclyn Maney

**Faculty Advisor:** Sweta Sneha

**Industry Partner:** Poriferous



## Metaverse Growth in Healthcare



Metaverse's integration with AI, VR, and blockchain will revolutionize healthcare by securely communicating patient data and improve education through immersive training. Metaverse blockchain stores data and connects the virtual with the real world. Metaverse technology can improve medical education by building a medical technology

and artificial intelligence ecosystem. VR metaverse training advances healthcare. Simulation-based activities allow students to practice complicated tasks safely, improving their skills and knowledge. Metaverse has a large healthcare market potential, and government and private funding is expected. Metaverse technology will revolutionize healthcare by transforming healthcare delivery and quality. This research will highlight how metaverse can impact healthcare through secure data sharing, educational training, and the challenges of funding it faces.

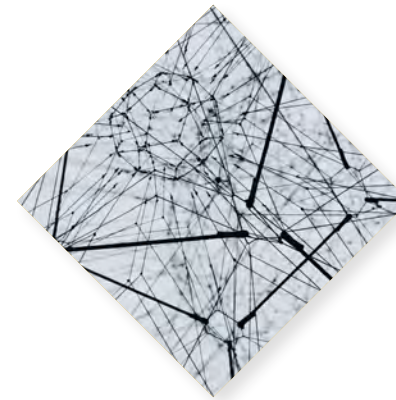
**Students:** Ashana Vaudreuil, Marci Sparrow, Mele Kwon,

Melissa Rivera

**Faculty Advisor:** Sweta Sneha

**Industry Sponsor:** AMIA Fellowship

## Optimization of Electronic Health Records (EHR) to Improve Consumer Outcomes and System Performance



This case study reveals true examples of how a personal injury law firm addresses quality improvement issues and problems within the medical records department. We will address strategies, challenges, barriers, and solutions in the implementation of electronic health records quality improvement interventions. This research has originated from real-world

experiences, proposing tools that can improve practices electronic counseling, lab ordering and telehealth capabilities. We will identify key performance indicators that will proliferate system performance and business revenue. Moreover, this research aims to be generalized throughout healthcare organizations, law firms, insurance companies, etc.

**Student:** Bryana Higginbotham

**Faculty Advisor:** Sweta Sneha

**Industry Sponsor:** Kaila & Solomon Law Group

## The Effectiveness of Telesitter on Video Monitoring of Patients to Reduce the Fall Rate



**Objective:** This study aimed to educate and train the telesitter staff in effectively monitoring the patients through video surveillance to reduce the fall rate and improve patient safety among hospitals.

**Methods:** A pre-implementation and post-implementation study in the video monitoring of patients was observed and conducted. By

reviewing the data from October to December of 2022 for the pre-implementation period and from February to April 2023 for the post-implementation period, fall rates were compared and the impact of telesitters through video monitoring was evaluated.

**Results:** We observed that there were twenty-three falls during the pre-implementation study and twelve falls during the post-implementation study, which showed that there was a significant reduction in the number of falls.

**Conclusions:** Telesitters were able to continuously watch the patients through video monitoring, which decreased the fall rate, decreased the costs for care and improved patient safety in hospitals.

**Students:** Brandi Baugh, Poornima Shahitha Katragadda

**Faculty Advisor:** Sweta Sneha

**Industry Sponsor:** Wellstar

## Pre-Mitigagint iPhones, Epic, and Applications Cases: Unifited Communications at Kennestone Hospital



Healthcare Organizations have seen many advancements throughout the decades. Advancement in Technology has been a significant issue over the years. Security, privacy, and interoperability have been significant challenges in all Healthcare organizations. To overcome these challenges, Wellstar Health System initiated the deployment of iPhones to their nurses and physicians to increase the effectiveness in their

workflow of patient care. The Unified Communications project that is in flight with Wellstar Health System was inspired by a similar previous completed project done with the Wellstar West Georgia Medical Center. With the transition of replacing outdated phones with minimal changes of functionality, the clinical staff can create an updated and more effective workflow in their patient care. The functionality of having mobile access to Epic via the application Rover, allows nurses and providers to work towards a superior patient care experience. The Epic Rover application on the iPhones give a greater good to the company through, better facilitation on medication barcode scanning, provide translation services, access to PerfectServe, and a secure messaging between staff functionalities. Completing the Unified Communications project at Wellstar Kennestone Hospital will increase effectiveness in patient care and create a foundation of expanding the project to all or many other Wellstar hospitals and practices

**Student:** Arleen Patinga, Hansa Das

**Faculty Advisors:** Dr. Sherry Ni & Sweta Sneha

**Industry Sponsors:** Wellstar Health System: Cori Kelley, Emmy Sturch, Katrina White





## Virtual Nursing Discharge: Enhancing Health and Well-Being while Reducing Readmissions



Virtual nursing has emerged as a viable solution to improve patient health outcomes and reduce hospital readmission. In this study, our method of approach was to investigate the advantages and disadvantages of virtual nursing discharge for improving health and well-being. Our sources utilized in this research were observation of the care team and interviews

with patients who had undergone virtual nursing discharge. Implementing the use of virtual nursing can alleviate workload that can be done remotely and allow nurses to focus on more direct, quality patient care. This paper provides an overview of the role of virtual nursing in the discharge process, including its benefits, challenges, and best practices. It will also identify the challenges and limitations concerned around patient privacy and the need for extended preparation and communication.

**Students:** Bonnie Therasias, Riley Tucker, Janice Goins, Jovelle Patterson, Nicole Ogbuagu

**Faculty Advisor:** Valentina Nino, Maria Valero de Clemente, Sweta Sneha

**Industry Sponsor:** Wellstar at Paulding Hospital

## A Comparative Analysis of State Legislation and Nascent Outcomes and Recommendations in Building State-Level Sickle Cell Disease Programs and a National Sickle Cell Disease Registry



Sickle Cell Disease currently has no national registry. However, several states over the previous half-decade have enacted legislation to create state-level structured SCD programs and SCD and Sickle Cell Trait, SCT, registries. Sickle Cell Disease is a genetic disorder, present from birth when the gene is passed from both parents. It is the most prevalent blood disorder in the United State with approximately 2000 new cases per year and about

100,000 people in the United State live with the disease. This report reviews recent legislation, laws, programs adopted and created related to SCD. This includes a review of initial annual reports by various state Sickle Cell Disease commissions. It looks at the variety of services and studies borne of these nascent programs: examples include services and studies examining Social Determinants of Health (SDOH), Rx medications, SCD treatments, SCD specific clinics, registries, healthcare access and positive wellness outcomes. The SCD data and policies are primarily from Medicaid recipients.

**Student:** Mark Greenburg

**Faculty Advisors:** Sweta Sneha

**Industry Sponsors:** Georgia Health Policy Center at Georgia State University



## Histological Staining



This paper examines the role of unstained slides within histology. At this time, unstained slides are being ordered from physicians at a very high rate. Most slides are not used for further testing and are filed and eventually thrown away. The wasting of slides is expensive. The wasting of patient tissue is the most expensive. Incorporating evidence from actual cases, we

have come up with a possible resolution to the over-ordering of unstained slides in histology laboratories. We have broken down which patient tissue had more unstained slides ordered on them and by which pathologist/resident. The results came from a 30-day window into the histology laboratory.

**Students:** Students – Jasmine Williams

**Faculty Advisor:** Sweta Sneha

**Industry Sponsor:** Emory







The Master of Science in Healthcare Management and Informatics Program thanks each of our industry partners for making their resources and expertise available to these projects. Their contributions are essential in empowering our student researchers to develop solutions to real-world digital healthcare challenges and improve patient outcomes.



## About MSHMI

The Master of Science in Healthcare Management and Informatics is the first degree of its kind in Georgia, and integrates information technology, computing, data analytics, and health care delivery processes with leadership and management principles. Our collaborative approach to health care IT allows our graduates to understand the complexity of relationships that must be considered when making technology decisions within a care delivery organization, and prepares them to succeed as leaders.



# Discover More About the MSHMI Program



**KENNESAW STATE  
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*Department of Information Systems  
and Security*