Events of interest

CIPCT 2018 Annual Meeting & Orientation
September 20-21 2019, Seattle, WA

American Medical Informatics Association (AMIA)
2019 Annual Symposium
November 16th-20th
YEAR IN REVIEW

A message from CIPCT Director Drs. Andrea Hartzler and Donna Berry

As the 2018-2019 academic year is coming to a close we celebrate many accomplishments in the program and are excited about the next steps.

Embedded in a busy month of June, a group of 6 faculty (3 School of Nursing and 3 Biomedical Informatics and Medical Education) will review 2017 recommendations from previous curriculum committees and mapping of CIPCT course objectives to 2018 AMIA competencies. All new recommendations will be evaluated for potential program and course revisions.

Summer is always an exciting time as many of our year 1 students will be identifying their scholarly projects. Our co-director Dr. Andrea Hartzler is teaching the research methods course this spring quarter and the scholarly proposal development course in summer 2019.

We are also getting ready for our annual meeting and orientation in September. We look forward to welcoming our 2019 cohort and second year students. Please check our website for updates.

Spring and summer graduates, we look forward to celebrating with you at commencement and convocation.

STUDENT SPOTLIGHT

This year two of our students Darshan Thota and Liam Toth had the opportunity to present at the American Medical Informatics Association (AMIA) clinical informatics conference held in Atlanta.

Leveraging the Tools You Have: Best practice HIT use through end-user engagement.

William R. Toth, Lt Col, MD, Darshan S. Thota, LCDR, MD
Madigan Army Medical Center, JBLM, WA

Both clinicians and informaticists are often infatuated by emerging technologies, latest trends, and the most sophisticated solutions to address the problems of physician burnout, patient experience, and HER inefficiencies. Interprofessional collaborative efforts may reveal latent design potential, workflow efficiencies, and process improvements that positively affect patient care access/satisfaction and end-user engagement. Practical and financial constraints can limit process improvement projects before they begin. By the end of this presentation, attendees will be able to recognize the importance of an engaged clinical workforce and how to utilize preexisting but underused tools within their EHR to better meet the needs of their end users, both clinicians and patients.
Jennifer Montances Garcia’s experience at HIMSS 2019

Attending the HIMSS19 conference in February of this year as a student volunteer was a phenomenal experience. HIMSS19 was held in sunny Orlando, Florida at the Orange County Convention Center, with about 47,000 people (e.g. physicians, informaticians, nurses, coders, IT analysts, vendors, students and educators) in attendance this year. I volunteered for the Interoperability Showcase which featured several big name EHR companies like EPIC, Cerner, AllScripts and others in “use cases” to solve electronic health record information sharing issues like clinical exchange and price transparency or coordinated care on a nationwide scale. I also volunteered at the UW CIPCT information booth on University Row.

Between my volunteer shifts, I looked into resources available for students and 1st time attendees. I was pleased to find out that HIMSS’ Program Development department has been making great strides to include students of all ages and cater to 1st time attendees at this annual global conference. Scheduled events that I attended and strongly recommend for new HIMSS attendees are:

First Timers Orientation- gives an overview of HIMSS organization, its history, facts about the scale of the conference, how to use HIMSS app to find scheduled presentations and events
Student Only Orientation- perks as to why you should join HIMSS (such as the $30 student membership discount), highlighted opportunities for jobs/internships and externships, job search resources (Jobmine.himss.org), tips on networking, offering scholarships
Student Institute- Interactive Q&A panel of informatics industry bosses and educators, featured guest speaker/consultant Bonnie Siegel who reviewed the newest advice on resume, Linked In bio and interview prep tips, network opportunity to meet Program Assistants and other volunteer opportunities at HIMSS
Career Fair- offered free headshots, resume review/feedback service, featured several booths for recruiters and job opportunities, display of winner and entries of annual HIMSS student poster contest

Aside from my volunteer shifts and attending the student focused events above, I attended key note speakers, other presentations, perused the giant floor room filled with vendor booths and free snacks, and went to a few social events offered throughout the week. As I returned on my flight home, albeit exhausted, I was filled with a sense of gratefulness and wonder. My busy week at the HIMSS19 conference went by in a whirlwind. However, in attending presentations and watching use cases at the Interoperability showcase, I was amazed at the scale of how impactful informatics is and will be to healthcare. Also, attending this conference as student volunteer was a great opportunity to connect with so many knowledgeable people in this space. I highly recommend to all CIPCT students to explore this opportunity and attend a HIMSS conference. As for me, I would love to attend the HIMSS annual conference again next year- hope to see some of you there too! - Jennifer Garcia
Chris Ann Clavey

Smartphone-Integrated Infant Physiologic Monitors: A Descriptive Study of Parent Perception, Use, and Infant Sleep Safety

This purpose of this scholarly project is to describe parents’ knowledge and attitudes regarding American Academy of Pediatrics (AAP) Safe Sleep recommendations, and their choices and perceptions around the use of wearable physiologic monitors for their infants. Participants were parents with infant(s) under 1 year of age, who were newly enrolled as participants in a community support group. A web-based cross-sectional survey was conducted, employing a questionnaire consisting of three main parts: knowledge and agreement with AAP Safe Sleep guidelines, physiologic monitor use, and socio-demographic characteristics of the participants. A follow-up phone interview focused on monitor use, the reasons that parents either did or did not choose to use physiologic monitors, and their perceptions of the monitors. Results showed little difference in the knowledge or attitudes to the Safe Sleep guidelines between the two groups. Peace of mind, reassurance, reduction of sleep anxiety, and worry are dominant themes that describe the reasons that parents chose to use a monitor as well as the benefits they felt the monitor delivered during use. Among monitor non-users, false alarms, increased anxiety and the amount of data monitors created were reasons parents chose not to use a monitor. This descriptive study showed that parental anxiety and stress are the main drivers of Safe Sleep choices, and emphasized the need for more comprehensive teaching around Safe Sleep strategies to reduce anxiety and improve compliance to Safe Sleep guidelines.

Autumn 2018 Committee: Hilaire Thompson, Teresa Ward

Kristina De La Cruz

Patient Reported Outcomes & Patient Generated Health Data using mHealth Technology

The rise in popularity of health technology has encouraged patients to use and share patient-generated health data (PGHD), as well as participate in patient reported outcomes (PRO). PGHD and PRO gather data by using health tools, such as digital questionnaires through wearables, mobile apps, and connected medical devices. These advancements have allowed patients to become more engaged in their health and ultimately stepping closer to patient-centered care.

PRO and PGHD implementation provide opportunities for both the patient and provider by giving providers the chance to monitor the status and needs of the patient. The first part of this project is to review the importance of PRO and PGHD in patients. The second part of this project examines mobile apps (or “mHealth”) from healthcare systems throughout Washington. These mobile apps will be analyzed from user reviews, while identifying strengths, barriers, and ways to improve. This project is based on a 2018 research study, directed by Dr. Danielle LaVallee. This project will present a synthesis of literature focusing on PRO and PGHD, as well as to inform how mHealth is an effective tool based on user reviews.

Autumn 2018 Committee: Bill Lober, Danielle LaVallee
Sonamjeet Kaur

An Evaluation of Electronic Health Record Adoption at Skilled Nursing Facilities

Background: The purpose of this project was to identify electronic health record (EHR) implementation challenges at Skilled Nursing Facilities (SNF). Era Living is planning to implement an EHR at Broadview Health Care Center (HCC), to consolidate the multiple information systems and paper charting currently in use.

Methods: First, we performed a literature review to identify challenges and recommendations for the implementation of an EHR in SNFs. Second, we conducted interviews with nine key informants from SNF organizations affiliated with the UW Post-Acute Network. The overall response rate was 69%. Interviews were analyzed to explore emergent themes in the experiences, challenges, and recommendations in the EHR implementation process.

Results: The literature review identified challenges and recommendations on the unintended consequences, advanced staff training methods, end-user feedback, and the need for quality improvement processes. An analysis of the interview responses revealed four overarching themes: the EHR selection process, staff notification of EHR adoption, staff training, and education, and challenges.

Conclusion: Most of the key informants promoted a positive experience and overall satisfaction with the EHR at their facility. The participants recognized areas of weakness and offered suggestions for improvement. We would recommend the following:

- Staff Engagement - involve frontline staff in the planning process.
- End User Training - we recommend training staff from three departments (medical records, nursing, and caregiver staff) to be super users.
- Staff Training - The training should be curtailed to the job role. Changes to workflow should be mapped and included in training sessions in preparation for go-live.

Autumn 2018 Committee : Baisa Belza, David Masuda

Nicholas Macharia

The Impact of Using Medication Reminder Applications as an Intervention to Improve Medication Adherence in Older Patients: A Literature Review

Lack of medication adherence leads to poor treatment outcome, lower quality of life and higher health care costs, especially among elderly patients. Medication adherence intervention is a promising strategy for achieving better treatment outcomes and reducing health care costs. Interventions focused on reminding elderly patients to take their medications may increase medication adherence and provide a viable medium for medication management. However, the utility of reminder applications for medication management can be limited without addressing the specific needs of seniors and facilitating the active involvement of care providers. Despite the growing number of technologies that support medication adherence, such as mobile phone applications (apps), little is known about how effective these apps are for elderly patients. This literature review has the following goals: (1) present evidence from the literature regarding the efficacy of medication reminders as an intervention for medication adherence in elderly patients; (2) describe features required to make an app effective for elderly patients (e.g., plain English, audible or visual reminder function, ability to share with caregivers, tracking medication history, medication database, refill reminder, uses visual aids and flexible scheduling); and (3) summarize findings with recommendations on future directions for application development to support medication adherence in
elderly patients. A comprehensive literature search was conducted using electronic bibliographic databases. The search strategy included articles published between 2010 and 2017 on medication adherence or compliance in elderly or older patients, and medication reminder apps. The literature search yielded twenty studies that met the inclusion criteria. Three studies focused on improving medication adherence in elderly patients. The studies examined yielded mixed results. Barriers exist in the usability of these applications for elderly patients. One such barrier is the lack of experience using technology in a majority of elderly patients which results in a lack of interest in using medication reminders. The other, older adults do not see a need for the medication reminders. The review of the medication reminders applications selected from Google Play store had many of the desirable features such as plain English, audible or visual reminder function, tracking medication history, medication database, refill reminder, record medical history, uses visual aids, flexible scheduling, appointment reminder, tracks other health metrics, and ability to share with caregivers. The review process used identified medication reminders applications with features that are capable of assisting elderly patients with their medication management.

*Autumn 2017 Committee: Oleg Zaslavsky, Hilaire Thompson*

**Erika Windsor Hjalseth**

**An Evaluation of Electronic Health Record Adoption at Skilled Nursing Facilities**

**Back Ground:** The implementation of an EHR system is a complex orchestration of patient care, clinical workforce, clinical workflow processes, information technology, and business systems. The successful implementation of an EHR requires a harmonious relationship between end users that understand the best utilization of technology and patient care, technology components working properly with established clinical workflow, and that all of the end users know how to use the EHR system correctly and efficiently. This report summarizes the interview findings conducted as part of identifying Electronic Health Record implementation challenges faced by Skilled Nursing Facilities to aid Era Living’s EHR implementation at Broadview Health Care Center (HCC). Findings are based on interviews that were conducted with nine key informants from local Seattle SNF organizations associated with the UW Post Acute Network in October and November 2018. The interviews explored the experiences, knowledge, successes, and challenges with the EHR implementation in the SNF setting.

**Method:** To begin the interview process, an introductory letter was emailed to thirteen SNF organizations associated with the UW Post Acute Network by the Director of Nursing at HCC (Appendix B). The letter explained that the interviews would be recorded with a transcript of their interview responses to be shared with HCC, but the responses would be anonymous. Thirteen SNF organizations were contacted to participate in a 30-45 minute in-person or phone interview. The key informant were asked interview questions based on the EHR implementation status of their SNF organization: 1) Yes EHR implemented, 2) No EHR not implemented, or 3) EHR in process of implementation (Appendix A and Appendix C). The interviews were conducted between October 25 - November 5, 2018 with a total of 9 key informant interviews, for a response rate of 69%. Interviews were analyzed using both deductive and inductive methods to explore emergent themes in the experiences, challenges, and recommendations in the EHR implementation process. In addition, an in-depth literature review was done to identify challenges and recommendations in the implementation of an EHR in long-term care facilities.

**Results:** An analysis of the interviews revealed four overarching themes across all key informant responses. The interview themes addressed: the EHR selection process, staff notification of EHR adoption, staff training and education, and challenges with the EHR implementation process. The literature identified challenges and
recommendations in the unintended consequences, advanced staff training methods, end-user feedback, and establishment of a quality improvement process for successful EHR implementation.

Conclusion: The majority of the key informants promoted a positive experience and overall satisfaction with the EHR at their facility. The participants recognized areas of weakness in the implementation process, and suggestions for improvement correlated with the findings of the literature review. The feedback illuminated common themes such as the lack of staff engagement prior to implementation, low technology skills among staff, end user training during pre/post implementation, and leadership support as critical elements to successful EHR adoption. The key informants recommended establishing a strategic plan to present the EHR adoption process to the staff members in order to gain staff buy in for the project, emphasized the importance of designing a comprehensive training program tailored and specific to the needs of the various disciplines and job roles. Based on the interview responses and literature review, our recommendations for Era Living include

Winter 2019 Committee: Baisa Belza, David Masuda

Yazan Gazy Kader

Review of mHealth applications and utilization by homeless individuals: A systematic review

Background: Homeless individuals have increased rates of poorly managing chronic health conditions, which leads to worse healthcare outcomes and greater use of healthcare resources that would otherwise not be necessary. Homeless people are also more likely to have mental health conditions such as depression, personality disorders, and substance misuse. Apps are an emerging technology worth studying to understand if and how they can assist homeless populations in managing medical and mental health conditions.

Objective: This nested systematic review closely looked at rigorously evaluated mHealth apps that would be beneficial for homeless persons.

Methods: Five electronic databases were searched for rigorously tested mHealth applications. From the final studies included in the parent study, this sub-analysis was done focusing on topics related to homeless individuals.

Results: 62 studies met inclusion criteria for the sub-analysis. None of the studies focused on homeless individuals. The included studies were related to diabetes, cardiovascular disease, pulmonary disease, mental health, HIV, and smoking cessation.

Conclusion: The lack of studies that focus on rigorously tested mHealth applications on the homeless population indicates a gap in research. mHealth applications with a focus on chronic disease management or mental health would be beneficial for this patient population. Future studies should focus in these areas.

Winter 2019 Committee: Sarah Iribarren, Ardith Doorenbos

Jabaley T, Underhill-Blazey ML, Berry DL. Development and Testing of a Decision Aid for Unaffected Women with a BRCA1 or BRCA2 Mutation. J Cancer Educ. 2019 Jan 19


Knoerl R, Hong F, Blonquist T, Berry D. Impact of Electronic Self-Assessment and Self-Care Technology on Adherence to Clinician Recommendations and Self-Management Activity for Cancer Treatment-Related Symptoms: Secondary Analysis of a Randomized Controlled Trial. JMIR Cancer. 2019 Jan 8


Safarova MS, Satterfield BA, Fan X, Austin EE, Ye Z, Bastarache L Crosslin D et al. A phenome-wide association study to discover pleiotropic effects of PCSK9, APOB, and LDLR. NPJ Genom Med. 2019 Feb


Turner AM, Osterhage KP, Taylor JO, Hartzler AL, Demiris G. A Closer Look at Health Information Seeking by Older Adults and Involved Family and Friends: Design Considerations for Health Information Technologies. AMIA Annu Symp Proc. 2018 Dec 5


Iribarren S, Demiris G, Lober B, Chirico C. What Do Patients and Experts Want in a Smartphone-Based Application to Support Tuberculosis Treatment Completion? Stud Health Technol Inform. 2018
### RECENT PUBLICATIONS

**Key:** CIPCT Faculty in **bold**; CIPCT students in **bold italics.**

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<tr>
<th>Authors</th>
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**RECENT PUBLICATIONS STUDENTS**

*Craig B. Monsen*, Joshua M. Liao, Barak Gaster, Kevin J. Flynn, and Thomas H. Payne
The effect of medication cost transparency alertson prescriber behavior. JMIA 2019 Jan 1

*Sadeghian, R.*, Gooch, R., Phelps, L. A., & Preud'homme, D.
The Feasibility and Satisfaction of Using Telemedicine to Provide Tertiary Paediatric Obesity Care. JISfTeH2018 August 18

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**CIPCT 2019**

**ANNUAL MEETING AND ORIENTATION**

**SEPTEMBER 20th and 21st SEATTLE CAMPUS**