VCLIC

VANDERBILT CLINICAL INFORMATICS CENTER

VCLIC ANNUAL REPORT

2020-2021

DIRECTOR'S WELCOME

It's been a great first year for the Vanderbilt Clinical Informatics Center. Vanderbilt has a long and proud history of innovation in clinical informatics. We started VCLIC to help Vanderbilt continue this legacy in the new era of a commercial EHR. Throughout this report, you'll see many of the programs that VCLIC carried out this year, but the real heart of VCLIC is our community. Our members include physicians, nurses, pharmacists, and informaticians interested in both research and operational aspects of clinical informatics. Nearly every clinical department, discipline, and level of training at VUMC is covered in our ranks. Together, we've been able to pave the road for clinical informatics innovation at Vanderbilt, and we have already seen payoffs in care quality, safety, and electronic health record usability. Our members have also produced academically, earning grants, publishing papers, and presenting at major informatics and clinical conferences. I'm proud to lead VCLIC and to work with our members, and I can't wait to see what we can accomplish in our second year together!

ADAM WRIGHT, PhD
VCLIC Director
Professor of
Biomedical Informatics

VCLIC BY THE NUMBERS

63
Members

16
Departments
Represented

18
AMIA
Fellows

384
Member
Publications

55
AMIA and CIC
Presentations

12
Educational
Programs

71,227
Weekly Clicks
Eliminated

36
Data Requests
Serviced

7
VDAWGs
Participants

CLICKBUSTERS

This year, VCLIC launched Clickbusters, an initiative led by **Allison McCoy, PhD**, and focused on improving safety and quality and reducing burnout. We held two rounds of Clickbusters, both focused on improving BestPractice Advisories (alerts) in Epic. We recruited participants from across VUMC, including informaticians, physicians, nurses, and pharmacists. Participants signed up to evaluate alerts and followed a VCLIC-designed process to do so.

Across two 3-month rounds, participants eliminated 71,227 unhelpful alerts per week from our Epic EHR. Winners received gift cards, ribbons, and the coveted Golden Mouse trophy.

CLICKBUSTING PROCESS

STEP 1
Review the current BPA logic and function

STEP 2
Review the BPA firing and acceptance data

STEP 3
Review issue/project tracking software for history of the BPA

STEP 4
Look at the BPA through the eyes of the user

STEP 5
Review the clinical evidence

STEP 6
Identify possible improvements to the BPA

STEP 7
Discuss possible improvements withs takeholders

STEP 8
Make changes to the BPA in POC

STEP 9
Test and release the BPA

STEP 10
Evaluate and share the results

DESIGN CHALLENGE

The VCLIC Techquity Design Challenge was an 8-week program, led by **Will Martinez, MD, MS**, **Trent Rosenbloom, MD, MPH**, and **Elise Russo, MPH**. VCLIC invited teams of students, clinicians, faculty, and staff from different scientific disciplines and of various backgrounds to propose novel solutions to problems related to healthcare equity and technology. We welcomed a range of informatics, technical, and socio-behavioral approaches to solving these complex problems, and were repeatedly impressed by the passion and tenacity demonstrated by the participating groups, who all strived to make VUMC a more equitable system and place. Teams worked with each other as well as with mentors from VCLIC to develop a prototype of their solution, and presented it to a panel of judges and a VUMC-wide audience. Winners received trophies and monetary prizes.

PARTICIPATING TEAMS

Capture of Smoking History in EHR for Assessment of Lung Cancer Screening Eligibility
Melinda Aldrich, PhD, MPH; Kim Sandler, MD; Melissa McPheeters, PhD, MPH; Jennifer Richmond, PhD, MSPH; Jeffrey Blume, PhD; Travis Osterman, DO, MS

VICC IMPACT: Interventions to Maintain and Promote Adherence to Cancer Therapies
Ryan Whitaker, MD, PhD; Evan Osmundson, MD, PhD; Brian Bingham, MD

Food Insecurity Resource Connection
Cristin Fritz, MD, MPH; Holly Hanson, MD, MS; Lauren Sanlorenzo, MD; Hannah Smith, MD; Sophia Kostelanetz, MD, MPH; Britta Roach, DO; Rosemary Hunter, MD; Shani Jones, MD; Mia Letterie, BA

Using Technology to Reduce Inequity in Discharge Medication Counseling for Hospitalized Children
Ali Carroll, MD; Derek Williams, MD, MPH; Amanda Mixon, MD, MS, MSPH; David Johnson, MD; John Wright, PharmD

Bridging the Digital Divide: Addressing Inequality in Access to Telehealth
Michael Clark, BS; William Quach, BS: Olivia Henry, BA; Kathy Lee, BS; Megan McLeod, BBA; Thomas Li, BS; Sricharan Kadimi, BS; Jay Kang, BA; Roman Gusdorf, BS; Chi Le, BS; Amany Alshibli, BS
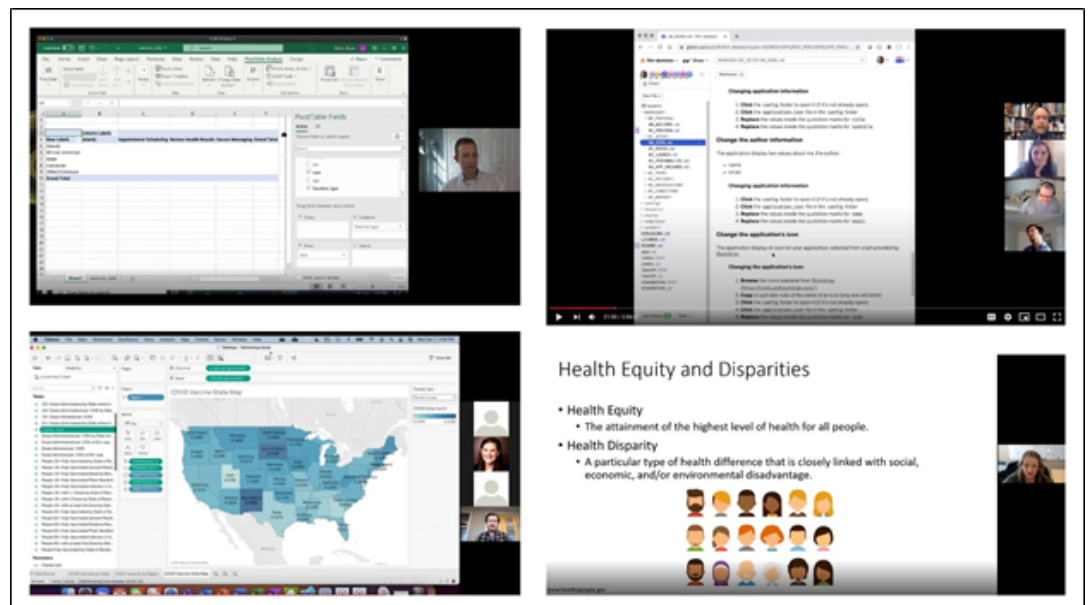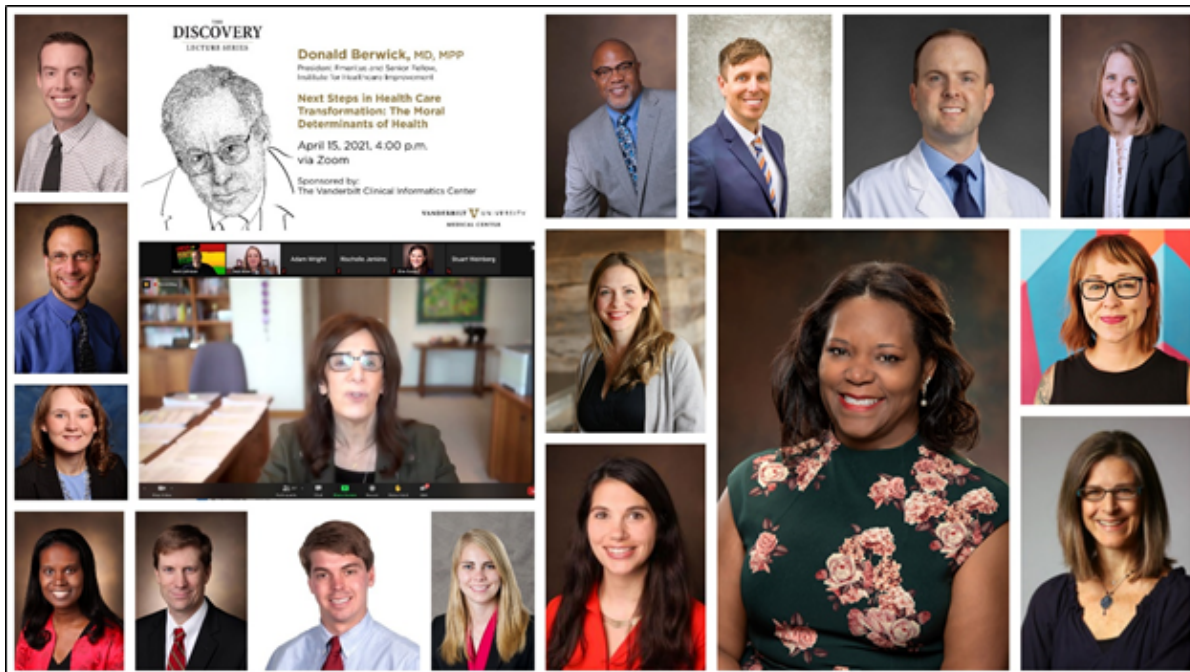
PROgnosIS CKD: Patient Reported Outcome Intake for Self-Care, Cognitive, and Functional Decline
Devika Nair, MD, MSCI

EDUCATION

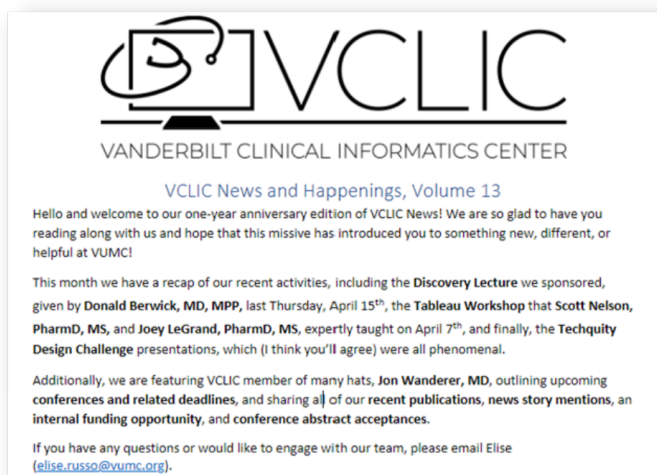VCLIC offered educational initiatives, including:

- A monthly speaker series, with internal and external speakers, focused on topics like equity and health, OpenNotes, telemedicine, and careers in clinical informatics. Epic CEO, **Judy Faulkner, MS**, joined the series, talking about the founding of Epic and current issues and opportunities in clinical informatics.
- Three hands-on workshops: a Health Disparities-focused Data Lab, an overview of visualization using Tableau, and a SMART on FHIR training session.
- A VUMC Discovery Lecture, featuring **Don Berwick, MD, MPP**, founder of the Institute for Healthcare Improvement.

INFRASTRUCTURE

VDAWGs

The Vanderbilt Database Access Working Group, which VCLIC administers, provides a pathway for faculty to access VUMC's Clarity data warehouse and a community for exchanging ideas and techniques for data science. VDAWGs attend Epic training and apply for participation through VCLIC. We currently have 7 active VDAWGs.

VCLIC News and Happenings

VCLIC publishes a monthly newsletter to members and stakeholders across VUMC. The newsletter covers current VCLIC projects and activities, newly added how-to articles, impactful work published or presented by center members, deadlines for upcoming conferences, and a monthly member spotlight.

Knowledge Base

VCLIC assembled a [Center Knowledge Base](). Anyone at VUMC can view the knowledge base and contribute to articles. It currently contains how-to articles on a variety of topics, including how to get trained on Epic, how to get access to VUMC's data warehouses, including Clarity, and where to disseminate clinical informatics research. The knowledge base also includes examples of common database queries and recordings of VCLIC workshops. VCLIC also tracks dissemination and evaluation efforts, as well as student research opportunities, in the knowledge base.

Data Request Program

VCLIC staff help VCLIC members and others at VUMC access data for research and QI projects. We assisted with 1-2 requests per week on topics including:

- Blood product utilization
- Family history documentation
- Clinical decision support alert performance
- COVID

VCLIC serviced 36 requests between September 15th, 2020 and April 15th, 2021.

PROJECT SPOTLIGHTS

Melinda Aldrich, PhD, MPH, and **Kim Sandler, MD**, led an effort to improve smoking status documentation in eStar, including novel tools for collecting data from patients, to enable better decision support for lung cancer screening. They first engaged with VCLIC through the design challenge, winning first place, and are now engaged with HealthIT to implement their solution in VUMC outpatient clinics. This team worked with VCLIC mentors, including **Will Martinez, MD, MS**, and **Adam Wright**, **PhD,** as well as the VUMC Paperless Clinic initiative. When complete, their approach will allow VUMC to collect accurate and complete smoking histories from patients, and ensure that patients who need them get potentially life-saving screenings for lung cancer.

With COVID-19, VUMC rapidly shifted outpatients from in-person clinic visits to telemedicine. VCLIC member **Sara Horst, MD, MPH**, assembled a team of staff and faculty, and a cadre of Vanderbilt medical students, to support these efforts and ensure a seamless patient experience. Medical students met with patients before their visits to help troubleshoot technical issues and ensure the patients were ready for a safe and productive visit. VCLIC partnered with the team to obtain data they needed to assess predictors of success and highlight potential issues, leading to multiple abstracts and papers. The team is now bringing in health literacy data and geoeconomics data to better understand the project and make sure that telehealth initiatives at VUMC and beyond are safe, effective, and equitable.

VCLIC member **Scott Nelson, PharmD, MS**, leads VUMC's medication reconciliation task force and medication alert working group. He participates in many VCLIC initiatives, and won the first round of Clickbusters for exceptionally effective work improving alerts related to medication reconciliation. Scott employed VCLIC tools and processes, and conducted a user-centered design process that helped him identify areas of user uncertainty around the medication reconciliation process. He then designed and implemented new ways of visualizing the process so that users could tell what had already been done, and what they needed to do next. Over several rounds of changes, Scott made 26 improvements to the alerts. Medication reconciliation is an essential safety process, and Scott's innovative work made medication use at Vanderbilt safer.