

The Clinical Informatics faculty and fellows are involved in a wide array of operational and quality improvement projects throughout the MetroHealth System. To give you an idea of the breadth of the work, below is a short selection of these projects.

<p>Vaccine Adverse Event Reporting FHIR eHealthExchange/FDA interface</p>	<p>MetroHealth is one of the first Epic customers in the US to have implemented a FHIR (fast healthcare interoperability resources) interface between the MetroHealth Epic electronic health record (EHR) and the FDA (Food and Drug Administration) through the eHealthExchange. This interface allows FDA staff to electronically access MetroHealth EHR data to further investigate reported vaccine adverse events. (David Kaelber, Faculty)</p>
<p>Lyceum</p>	<p>In partnership with the Case Western Reserve University School of Medicine, MetroHealth is the first Epic customer ever to implement Lyceum, Epic’s new training platform specifically geared towards teaching first and second year medical school student electronic health record competencies. (David Kaelber, Faculty)</p>
<p>Gender Differences in EHR Use</p>	<p>There is significant body of literature stating female physicians spend more time in the EHR than their male counterparts. Various EHR customization tools exist to ease the burden of chart review, documentation, and order placement; however, there is variable usage of such tools. It is currently unclear if there is a gender difference in adoption of such tools, and whether this could contribute to EHR time. The objective of this study is to examine physician gender differences in EHR usage and EHR customization. (Kathee Liang, Fellow)</p>
<p>Hepatitis C Treatment in Primary Care</p>	<p>MetroHealth would like to increase access to Hepatitis C treatment. In conjunction with Pharmacy, GI, Infectious Disease, and Family Medicine we are developing education and Epic tools to facilitate treatment in the primary care setting. (Kathee Liang, Fellow)</p>
<p>Inpatient Social Determinants of Health Screening and Referral System</p>	<p>MetroHealth has had a robust ambulatory SDOH screening program for years, however inpatient SDOH screening was limited to a percentage of patients screened during admission. This project, which was a multidisciplinary effort with Case Management/Social Work and Nursing leadership, created a comprehensive inpatient screening and referral system for admitted patients by leveraging Epic’s MyChart Bedside for patient self-administered screening to improve outreach. (Kiron Nair, Fellow)</p>
<p>Standardization and Maintenance of an EMR-Based Organizational On-Call Directory</p>	<p>MetroHealth had a successful implementation of the Epic On-Call-Finder (OCF) in 2020 as the main directory of on-call information for a multitude of services. However, the information was not consistently updated over time to reflect organizational changes, and this affected the accuracy of the directory. This project sought to create and implement a process of scheduled systematic review of the directory information. We also created a standardized naming convention and a systematic workflow to address requests for changes to ensure continued accuracy of the OCF. (Kiron Nair, Fellow)</p>
<p>Risk Adjustment</p>	<p>MetroHealth has implemented two Hierarchical Condition Category (HCC) models for risk adjustment: CMS (Medicare) and HHS (Marketplace). We will be implementing a third model</p>

	<p>– CDPS (Chronic Illness and Disability Payment System) – for the Medicaid population. These are models are used to estimate expected resource utilization for a population of patients, which can play a role in reimbursement under non-fee-for-service payment models. (Peter Greco, Faculty)</p>
Population Health Management	<p>MetroHealth uses bulk orders for Mammography and Fecal Immunochemical Testing, and soon will be starting a pilot with Cologuard. In addition to writing and maintaining the reports which identify patients for whom orders are appropriate, I also have created reports and associated batch processes to find and cancel obsolete bulk orders (defined as orders which are no longer necessary, either because a separate order was resulted, or because the patient no longer needs or wants screening). (Peter Greco, Faculty)</p>
Compliance with DEA Telemedicine Prescribing Regulations	<p>The COVID-19 Public Health Emergency officially ended on 5/11/2023, and with that, certain regulatory flexibilities have ended or will end soon. One is the ability to prescribe controlled substances during telemedicine encounters for patients whom the prescriber has not previously seen in-person. Beginning 11/1/2023, these telemedicine prescribing flexibilities will come to an end, which will disallow certain prescribing of controlled substances outside of an in-person visit. Drs. Bar-Shain and Greco have worked closely with MetroHealth Compliance and Legal experts to ensure that prescribers will know whether or not they can legally prescribe controlled substances within a given telemedicine encounter. (Peter Greco, Faculty)</p>
Durable Medical Equipment (DME) Ordering	<p>In partnership with a DME vendor and stakeholders who frequently interact with DME (physical and occupational therapy, respiratory therapy, and nutrition), we have systematically reviewed, consolidated, and updated common DME orders to improve documentation completeness and reduce insurance denials while streamlining the ordering process. (Nicholas Riley, Faculty)</p>
Lung Cancer Screening	<p>We have studied and refined the design of our lung cancer screening orders and workflow to better integrate this complex preventive care service into our health system. Recent improvements (2023) include an In Basket-based workflow for pended follow-up orders including remediation of inadequate smoking history and persisting exposure information between annual screenings, reducing unnecessary duplicate data entry. (Nicholas Riley, Faculty)</p>
Eliminating Duplicate Referrals	<p>I built an alert that appears when a duplicate referral is being placed. It exposes existing unscheduled referrals and allows an ordering provider to easily provide the patient with scheduling information for their existing referral, helping reduce clutter in referral work queues, or document why the referral is not a duplicate (e.g., multiple referrals to the same specialty for different reasons). It has been highly effective, eliminating approximately 50% of potentially duplicate referrals. (Nicholas Riley, Faculty)</p>

Development of Substance Use Disorder tools in Epic and beyond	<p>The scope of the opioid epidemic and other substance use related morbidity and mortality continue to grow in the US. The Informatics / IT Opioid Strike Force in conjunction with the larger Informatics and IS teams works with stakeholders to enhance tools and resources to improve the care of these patients and reduce ongoing risk using EHR and other informatics tools. We are also partnering with the State of Ohio to pilot the next generation of their PDMP review software. (Jonathan Siff, Faculty)</p>
Creation of a registry for emergency general surgery patient	<p>Working with surgical partners looking to develop a registry of patients engaged by the emergency general surgery team for research and operational tracking. (Jonathan Siff, Faculty)</p>
Implementation of a behavioral health emergency department	<p>As a follow up to opening a behavioral health (BH) hospital we are opening a new BH Emergency Department. This department is a hybrid between ED and inpatient types of care with unique informatics challenges. (Jonathan Siff, Faculty)</p>
OMOP data model implementation	<p>Propping up and supporting an ETL process from our Clarity database to a widely used standardized format for research and reporting. (Yasir Tarabichi, Faculty)</p>
COPD QI initiative (PREVAIL)	<p>A pharmacist driven QI intervention that leverages electronic phenotyping from EHR data to capture patients with COPD who could benefit from further optimizations as well as patients who may be underdiagnosed (i.e. missed). (Yasir Tarabichi, Faculty)</p>
Sepsis CDS	<p>Following our prior success with a strategic predictive-model driven intervention with a locally trained model coupled with more nuanced clinical decision support system deployment. (Yasir Tarabichi, Faculty)</p>
Ovatient	<p>Architecting an integrated Epic based multi-institution virtual care solution. This involves a community connect model, cross country health information exchange, unique HL7 integrations and workflow mapping and engineering. (Yasir Tarabichi, Faculty)</p>
Immunization	<ul style="list-style-type: none"> ▪ Self-scheduled immunizations: When an immunization is due in Health Maintenance, configure MyChart to allow pediatric and adult patients to self-schedule appointments in the appropriate venue. ▪ Risk-based immunization forecasts: Extend our Health Maintenance functionality to detect patient-specific risk factors of vaccine preventable diseases and have that risk impact which vaccines are due and when. ▪ Support for combination vaccine ordering: Collaborating with developers at the Epic Corporation to create improved tools to support ordering of combination vaccines which satisfy multiple Health Maintenance Topics. The functionality will be informed by what we have hard coded at MetroHealth but will be informed by low-code modifications by subject matter experts at local sites. (David Bar-Shain, Faculty)

Improved tracking of preventative care for Women’s Health	<ul style="list-style-type: none"> ▪ New functionality to forecast Automated Breast Ultrasound (ABUS) for patients who need an additional test because of breast tissue density ▪ Improved forecasting of Pap Smears based on the latest cervical cancer screening results. (David Bar-Shain, Faculty)
Adolescent depression screening	<ul style="list-style-type: none"> ▪ Forecast yearly PHQ2 starting at age 12 years with at least a 3-month gap between questionnaires. ▪ Make the questionnaire appear automatically in advance of the visit via MyChart, or on check-in (paper or kiosk). (David Bar-Shain, Faculty)
Development of Inpatient Informatics Council	<p>Multidisciplinary council which meets monthly and has been expanding to include medical, surgical, pediatric, nursing, physician, APP, CI, and operational representatives to form, review and coordinate informatics efforts. Includes two recently created and filled roles for Associate Director of Clinical Informatics for Inpatient Care. (Johnbuck Creamer, Faculty)</p>
Implementation of AdmissionCare software to determine IP/Obs status at the time of hospital bed placement	<p>Work in conjunction with Medical Director for Utilization Review, CI, IS, UR, and clinical stakeholders. Facilitated product testing; determine and advocate for user needs; creation, dissemination/presentation of training materials specific to user groups; liaise with vendor and its project teams. Strategic and tactical planning for timing and scope of product rollout, with initial rollout to medical (IM, FP, Ped) services accomplished 6/2023. Ongoing vendor liaison via its Clinical Advisory Group; ongoing support for users and further strategy development in response to patterns of software usage IP/Obs accuracy. Evaluation and strategy for eventual product rollout to surgical services. (Johnbuck Creamer, Faculty)</p>
Creation of Discharge Order Sets	<p>Stroke and Anticoagulation order sets in progress, others to follow. Our group is coordinating disease- and treatment-specific discharge care needs in consultation with clinical subject matter experts, clinical stakeholders, and technical resources to improve discharge care including elimination of gaps in patient care and improvement of clinical user experience. (Johnbuck Creamer, Faculty)</p>
Standardization of Problem List Preference Lists and Note Templates	<p>Effort to improve clinical documentation by promoting appropriately specific diagnosis entries via the hospital problem list; additional work to leverage outside experience in standardizing note templates also to improve clinical documentation and promote high-value clinical note content and eliminate low-value note content. (Johnbuck Creamer, Faculty)</p>
Improvement of Medication Reconciliation on Hospital Admission and Discharge	<p>Interdisciplinary effort to increase adherence to and quality of medication reconciliation and the time of hospital admission and discharge. Subgroup of recently formed task group to eliminate errors and gaps in communication and care in transitions into hospital and post-hospital care. (Johnbuck Creamer, Faculty)</p>

<p>Oral Health Intervention in Primary Care</p>	<p>Leveraging MetroHealth’s position both as a source of care for many Medicaid patients, as well as our integrated dental care service line, this project seeks to integrate a novel oral health screening, education, and referral system to primary care clinics focusing on patients greater than 55 years old. Informatics has participated in the development of EHR tools that support this workflow. (Eric Kim, Faculty and Alumnus 2023)</p>
<p>Track My Health Patient Entered Vital Signs</p>	<p>With the proliferation of consumer health trackers like cloud connected smart watches, scales, blood pressure cuffs, blood glucose meters and more, remote self-monitoring is now an option for managing a patient’s healthcare. At MetroHealth we seek to connect these cloud services to our EHR, and find ways to meaningfully integrate them into clinical workflows. (Eric Kim, Faculty and Alumnus 2023)</p>
<p>Hypertension Care Companion</p>	<p>Patient portals put many powerful tools in the hands of patients. However, they can be difficult to navigate. MetroHealth is implementing Care Companion, a powerful tool for patient education and care plan organization, giving patients direct access to a care plan with tasks, remote monitoring instructions, and educational materials. (Eric Kim, Faculty and Alumnus 2023)</p>
<p>Tracking patient follow-up after receiving a “positive for malignancy” biopsy result</p>	<p>There are two goals in this project; one is to look back and see how we have been doing with getting patients that fall into this category in for a follow-up visit with one of our oncology services. The second is to look into the future and see how many of the patients that fall into this category have scheduled a follow-up visit with one of our oncology services. The importance of looking ahead is that the patients that have not scheduled a follow-up are ones that we can reach out to and get them scheduled for a follow-up and help them get the care they need. (Deveraux Sellers, Alumnus 2023)</p>
<p>Looking at 10 years of GI biopsy data</p>	<p>Looking at 10 years of GI biopsy data in regards to high grade dysplasia, intramucosal carcinoma, and carcinoma in situ to look at GI management and patient outcomes as the entities that mention “carcinoma” are often treated like invasive cancer when they are not so the patient receives increased surveillance, surgery referrals, etc... when if completely removed during colonoscopy there is no theoretical risk of metastasis so they would not need increased surveillance or surgery. (Deveraux Sellers, Alumnus 2023)</p>