

## 554 **MyCTSC: An open-source solution to harmonizing multiple data sources to improve managing, evaluating, and marketing the clinical and translational science collaborative (CTSC) of Northern Ohio**

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**OBJECTIVES/GOALS:** MyCTSC harmonizes data from many sources into one database for evaluation, marketing, and CTSC member management to address current disparate collection and siloed use of data. It simplifies report creation with real-time dashboards so administrators and leadership can view progress quickly and plan for improvements based on real-time data. **METHODS/STUDY POPULATION:** MyCTSC is built using open-source software like Python, Django, MariaDB, Bootstrap, and Chart.js, and integrates data from sources such as systems for consult requests, pilot/voucher applications, and REDCap surveys. Each data source is imported into the warehouse either automatically via API, if available, or via manual file upload. De-duplication and other data cleaning are performed as well. Customized, real-time dashboards are developed based on the needs of administrators and leadership. While MyCTSC does not have a study population, it does have the stakeholders mentioned above as well as leadership. The development timeline spans three years: initial development and data warehouse population in Year 1, data cleaning and dashboard creation in Year 2, and full rollout to all CTSC members in Year 3. **RESULTS/ANTICIPATED RESULTS:** MyCTSC aims to create a seamless data and member management system to resolve issues stemming from multiple data sources. Demographic challenges are addressed by implementing data cleaning and consolidating duplicate identities into a single profile. The initiative will enhance stakeholder buy-in by presenting evaluation use cases that show the impacts of CTSC resources. For example, workforce development needs will be met through surveys and integration of a course catalog. MyCTSC will also facilitate targeted resource and event advertising, and support investigator outreach and collaboration by utilizing dashboards and reports. Furthermore, it will serve as the consolidated data source for all CTSC modules, promoting greater interaction and collaboration across administration and modules. **DISCUSSION/SIGNIFICANCE OF IMPACT:** MyCTSC integrates multiple sources, consolidates identities, and simplifies reporting for outreach and collaboration. It enhances interaction with researchers and community members, advancing translational science by linking projects and publications. MyCTSC, built with open-source software, can be made available to other CTSA hubs.

## 555 **Design, development, and implementation of an investigator-focused CRM platform for managing navigation, consults, services, and delivery**

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**OBJECTIVES/GOALS:** Our goal is to develop a CRM platform to streamline support for investigators, optimize resource use, and

enhance service delivery within a CTSA institution. This platform will measure outcomes, improve transparency, and ensure compliance, creating an efficient, supportive research environment. **METHODS/STUDY POPULATION:** Beginning with the design concepts and collecting technical requirements, ensuring alignment with the needs of investigators, administrators, and service units. Apply project management methodologies to iteratively design, prototype, and test features. Focus on user-centric interfaces and seamless integration with institutional systems. Incorporate stringent data security protocols in compliance with regulatory standards. Conduct pilot studies to refine functionalities and gather constructive feedback. Facilitate extensive user training programs and offer continuous support. Regularly monitor performance metrics, iterating based on empirical data and user feedback to ensure continuous enhancement and adherence to institutional objectives. **RESULTS/ANTICIPATED RESULTS:** YCCI successfully designed, developed, and implemented a CRM platform for managing the intake, navigation, consultation, service delivery, and outcomes tracking of the clinical and translational science activities that are supported by and beyond the CTSA-supported infrastructure. The CRM platform has been live in production since roughly July 1, 2024, and YCCI is excited to share data, results, and outcomes with the ACTS community. **DISCUSSION/SIGNIFICANCE OF IMPACT:** YCCI's CRM platform advances the CTS mission by streamlining PI support, enhancing resource utilization, and fostering inter-team collaboration within the research ops and administration teams. Measuring outcomes and service efficiency enables data-driven decisions, ensuring continuous improvement, and impactful translational science.

## 556 **Transforming clinical research administration: The role of generative AI and chatbots**

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**OBJECTIVES/GOALS:** To explore how generative AI and chatbot technologies can transform clinical research administration by improving operational efficiency, reducing administrative burden, and thereby enhancing overall productivity and accuracy in clinical research environments. **METHODS/STUDY POPULATION:** This explores AI's application in enhancing clinical research administration. We specifically address AI's role in QCT/MCA activities, charge master data cleaning, and generating IRB consent forms from award documents. AI algorithms optimize charge master data for accuracy and compliance. Generative AI models are employed to produce IRB consent forms efficiently, incorporating key grant documents. AI also conducts thematic analyses of historical CTSA aims to identify trends and recurring themes. Furthermore, AI-assisted tools enhance study design through innovative approaches to hypothesis generation, sample size calculation, and protocol development. Integrating these AI methods aims to significantly improve efficiency, accuracy, and overall quality in clinical research administration. **RESULTS/ANTICIPATED RESULTS:** Incorporating AI into clinical research administration will yield improvements in efficiency and accuracy. AI-driven QCT/MCA steps are expected to reduce human error and enhance data integrity. Chargemaster data cleaning

via AI prompts will likely result in optimized, error-free data, ensuring compliance with regulations. The use of genAI for creating IRB consent forms from grant documents should significantly streamline the IRB approval process, reducing preparation time and administrative burdens. Thematic analysis of CTSA aims by AI will provide deep insights into historical trends and recurring themes, aiding in strategic planning. AI-assisted study design tools are anticipated to optimize sample estimation, protocol development, and advance the quality of clinical research administration. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The significance lies in enhancing efficiency, accuracy, and quality in clinical research administration. By streamlining processes, reducing errors, and providing strategic insights, AI supports the CTSA mission to accelerate translational research, thus improving public health outcomes and scientific innovation.

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### Uncovering bias in digital recruitment for neurologic research: Demographic and socioeconomic influences on participant engagement

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**OBJECTIVES/GOALS:** Digital recruitment can improve participant engagement in medical research, but its potential to introduce demographic and socioeconomic biases is unclear. This study investigates pathways participants took during a digital recruitment workflow in neurology, examining potential associations with socioeconomic and demographic factors. **METHODS/STUDY POPULATION:** As part of an ongoing study aiming to remotely capture speech from patients with neurologic disease, most participants seen in neurology on our campus are invited to complete a self-administered speech examination. We exported participant data from Epic (semi-automated identification and invitation), Qualtrics (eligibility screening), the participant tracking database (consent), and the recording platform (completion) for March to July 2024. Data visualization was performed using a Sankey diagram. Socioeconomic status was assessed using the housing-based socioeconomic status (HOUSES) index and area deprivation index (ADI) national rank. Kruskal-Wallis and Wilcoxon rank-sum tests were used to compare the median age, socioeconomic indices, and time taken to reach different steps of the study. **RESULTS/ANTICIPATED RESULTS:** Of the 5846 invited participants, 57% were from urban areas, 23% from rural areas, and 20% from urban clusters. Most did not read/respond (2739) or declined (1749) the initial invitation via Epic. Of the 1358 interested participants, 415 completed the study. Participants from urban areas completed enrollment steps faster than those from rural areas and urban clusters, though the variance was large ( $42.6 \pm 41.4$  days vs.  $50.6 \pm 42.2$  days and  $50 \pm 43.9$  days, respectively;  $p = 0.030$ ). Female participants took longer to complete enrollment than males ( $48.7 \pm 44$  days vs.  $40.5 \pm 38.8$  days;  $p = 0.026$ ). Participants who successfully finished the study had significantly lower ADI national ranks compared to other common pathways ( $40.6 \pm 19$ ;  $p = 0.0021$ ). No associations were found with the HOUSES indices. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Our findings support differences in participant engagement, with urban participants and males more likely to complete enrollment steps. Those who finished the study were less disadvantaged suggesting potential bias in digital

recruitment. These findings can inform strategies to improve digital recruitment in neurology research.

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### Translational science in practice: A case study of the clinical research support center's collaborative model

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**OBJECTIVES/GOALS:** Conduct an evaluation of the Clinical Research Support Center (CRSC) model using a structured methodology, leverage insights to drive continuous improvement and evolution, and broadly disseminate outcomes to promote knowledge sharing and best practices for similar translational science initiatives. **METHODS/STUDY POPULATION:** We will utilize a structured case study approach, including adapting a translational science case study evaluation approach to assess impact as well as support practices, barriers, and facilitators that influence research translation. We will collect data from diverse sources. Primary data will come from structured interviews with stakeholders and a survey of a random sample of faculty and research staff. Secondary data includes grant applications, reports, and publications; public stories/media related to research supported by CRSC; scientific publications; and organizational documents. **RESULTS/ANTICIPATED RESULTS:** The case study will identify the CRSC model's impact on the research enterprise. Findings will articulate the specific strategies and practices the CRSC implemented to support clinical research; key factors, people, and resources that helped develop, improve, and promote CRSC services; significant milestones in evolution of the CRSC; and specific ways in which support services impact clinical research infrastructure and outcomes. The findings will highlight both strengths and areas for improvement. Early results show historical challenges with operational silos and resource limitations. Findings suggest CRSC facilitators include a team science approach with institutional support. **DISCUSSION/SIGNIFICANCE OF IMPACT:** This case study will provide insights related to benefits, challenges, and facilitators of a translational science support model. Insights will guide the CRSC's evolution and be broadly disseminated to promote knowledge sharing and best practices for future translational science applications.

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### Improving social media advertising campaigns for participant recruitment for clinical trials and other health research studies

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**OBJECTIVES/GOALS:** This continuous quality improvement project focuses on the efficiency and effectiveness of social media campaigns for clinical trials and other health research. We analyzed data from 160 studies that recruited via social media campaigns on Meta and used the results to make improvements to MICHR's Participant Recruitment social media campaigns. **METHODS/STUDY POPULATION:** Data on 440 ad buys purchased for Meta