

Behavioral Intervention Trials (ORBIT) model, an optimization framework focused on intervention development and refinement. In line with this framework, three major steps were followed. First, qualitative interviews were conducted with 16 rural women who were currently or had recently been pregnant to identify barriers, facilitators, and desired resources for gestational weight management. A template analysis approach was applied to the resulting interview transcripts to identify pertinent themes. Second, themes derived from the initial interviews were used to inform the development of an online intervention prototype. Third, feedback on this prototype was sought from an additional sample of 15 rural women who were currently or had recently been pregnant. **RESULTS/ANTICIPATED RESULTS:** Themes from the initial interviews highlighted numerous barriers, facilitators, and desired resources for rural gestational weight management that aligned with common social determinants of health (e.g., neighborhood and built environment, social and community context) and pregnancy-specific factors. Women also described wanting an online gestational weight management program that included a user-friendly interface, psychoeducation, tailored health recommendations, accountability, and simple behavior-logging tools. Using this feedback, an online intervention prototype was developed. Results from the feedback interviews are currently being qualitatively analyzed for themes and will be used to further refine the prototype prior to feasibility testing. **DISCUSSION/SIGNIFICANCE:** This study used an optimization framework to develop an online intervention aimed at supporting healthy maternal weight outcomes in rural communities. Because rural women experience notable weight disparities compared to their urban peers, this intervention has the potential to promote more equitable maternal health outcomes in rural areas.

Regulatory Science

LinkedIn Marketing Strategies to Drive NJ ACTS Regulatory Core Engagement

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OBJECTIVES/GOALS: Our purpose is to promote traffic toward the NJ ACTS Regulatory Cores recently launched website and increase investigator engagement through marketing strategies on LinkedIn. Landscaping to characterize the profiles of researchers on LinkedIn was also completed to estimate the feasibility of engaging with a target population on LinkedIn. **METHODS/STUDY POPULATION:** Insight gathering was performed to analyze what percentage of researchers possessed a LinkedIn profile and actively used their accounts. A sample population consisting of 284 NJ ACTS members were analyzed to summarize the type of researchers on LinkedIn, and their likelihood of responding to LinkedIn marketing campaigns. Efforts to launch a company LinkedIn page and collect followers were completed. Different methods of promotion were evaluated, including direct vs. mass email outreach to over 600+ researchers at Rutgers. Effectiveness of our platform was measured by comparing/overlying Regulatory website traffic with LinkedIn traffic, as well as tracking the metrics of LinkedIn posts. **RESULTS/ANTICIPATED RESULTS:** Among 284 NJ ACTS members, 76% (n=215) possess a LinkedIn profile, but only 21% (n=59) are actively

interacting with material on LinkedIn, such as creating, commenting, or sharing posts. Among the NJ ACTS LinkedIn users, 27% of individuals (n=57/215) responded to a direct outreach. Retention of the created organizational page was strong, as most users who visited the Regulatory Core page were likely to become followers. Massive email outreach to 600+ researchers within RBHS did not yield a strong LinkedIn following, however it did result in strong signals of website traffic during the days after the promotion was sent. Engagement with posts on LinkedIn can also be amplified and messaging proliferated when colleagues reshare Regulatory posts on their personal feeds. **DISCUSSION/SIGNIFICANCE:** 3/4 of academic researchers are likely to be on LinkedIn but may not be active users of the platform. The most effective outreach is through direct messaging as opposed to broader, less individualized tactics (including mass email outreach). Evidence suggests potential to utilize LinkedIn to proactively engage in regulatory-related activities.

Research Management, Operations, and Administration

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Understanding Distinctions in the Implementation of Learning Health System (LHS)

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OBJECTIVES/GOALS: The LHS concept has been promoted as a means for health systems to improve quality, safety, efficiency and equity. NAMs definition has been widely adopted, but is broad and has led to variation in how LHS is operationalized. Drawing on a taxonomy developed through a review of literature, we developed a tool that shows how LHSs are implemented in practice. **METHODS/STUDY POPULATION:** The LHS Implementation Assessment Tool (LHS-IAT) will indicate which forms of work are being carried out by a health system that purports to operate a LHS. LHS-IAT is based on the LHS Consolidated Framework (LHS-CF); which was developed through a qualitative analysis of LHS literature. LHS-CF contains 38 primary elements¹ and 56 secondary elements² that have been associated with the LHS construct. These elements are organized into 5 bodies of work• (e.g.; translating evidence into practice) and 4 enabling conditions• (e.g.; supportive culture). LHS-IAT assesses whether a health system operating as an LHS is implementing each of the key elements in LHS-CF. The usefulness of LHS-IAT will be demonstrated by applying the tool to 5 LHSs that have been described in the literature. **RESULTS/ANTICIPATED RESULTS:** LHS-IAT produces a quantitative profile for any given health system operating as a LHS; each LHS element is assessed as either emphasized; otherwise present; or absent. With this information, we create profiles for each implementation of LHS, using spider graphs. Systems that emphasize different elements will have different shapes for their spider graphs. Based on our initial coding of publications, we expect at least 4 distinct profiles within our sample, reflecting differences in emphasis on factors such as: continuous improvement practices, adoption of internally and externally tested interventions, research conducted to address patient care issues prioritized by institutional leaders, investigator-initiated research, clinician-engaged research, and engagement of patients and families. **DISCUSSION/SIGNIFICANCE:** The LHS-IAT will show differences in how health systems are translating the LHS concept into practice. This will allow for a shared language for those studying and/or implementing LHS. With the ability to map out an approach, health system

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leaders will have a tool to clarify intent and gain consensus as to which LHS model they want to implement and invest in.

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myRESEARCHpath: an interactive roadmap for navigating research process, resources, and policies at Duke University

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OBJECTIVES/GOALS: In 2021, Duke University expanded the myRESEARCHsuite (MRS) of research support services with the launch of myRESEARCHpath (MRP), an interactive roadmap for navigating the project lifecycle. MRP integrates with the existing MRS services, which include a personalized research portal (myRESEARCHhome) and team of experts (myRESEARCHnavigators). **METHODS/STUDY POPULATION:** MRP was developed as a collaborative effort to centralize essential research-related information across Duke University into one location. MRP provides a web-based platform to integrate policies, processes, and resources from over 40 research support offices, organized into topic-based pages throughout the project lifecycle. Each topic-based page provides integrated guidance, categorized related resources, and contact information for personalized support from subject matter experts. Additional features of MRP include a curated search function, and filters that refine the topic-based pages and related resources to only those applicable to selected project inclusions and organizational unit. **RESULTS/ANTICIPATED RESULTS:** Since the launch of MRP in January 2021 through the third quarter of 2021, 5,947 unique users accessed MRP for a total of 17,452 sessions. The most commonly accessed topic-based pages during this time period were: Activity disclosures (Other Support and Current and Pending) – 3,231 pageviews Animal welfare – 1,882 pageviews Proposal review and submission – 1,306 pageviews NIH research grants (R series) – 686 pageviews Proposal planning – 669 pageviews The most frequently searched terms (including spelling variants) were Other Support, Biosketch, NIH, and no-cost extensions. **DISCUSSION/SIGNIFICANCE:** This data suggests users are accessing MRP for guidance on new or recently updated requirements. Maintaining clear, unified, and current site content should be prioritized to continue emphasizing MRP as a central location for research-related information. Duke also plans to explore further integration of MRP with the other MRS services.

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The Research Unit Network (RUN) as a Learning Research System

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OBJECTIVES/GOALS: CTRUs support clinical research. RUN is a Learning Research System that is created to enhance CTSA and non-CTSA research units capacity through implementing, assessing, and disseminating discoveries in methods, approaches, education, and training in clinical and translational science. **METHODS/STUDY POPULATION:** The RUN association began in July 2018 with eight universities. The association has grown to 44 hospitals,

research, and academic institutions (including 36 CTSA institutions). A RUN Discussion Forum has been approved by the National Center for Advancing Science (NCATS) and utilized by RUN. The Discussion Forums are created with the goal of advancing CTSA Program objectives in high priority areas of clinical and translational science. RUN actively engages members through in depth scheduled monthly meeting discussions with various relevant topics regarding the development and evaluation of clinical trials metrics, benchmarks, and scholarly publication and presentation activities. **RESULTS/ANTICIPATED RESULTS:** Topics covered in RUN monthly meetings include research units general budget guidelines, staff recruitment and retention strategies, EPIC use in scheduling CRU research visits, and PPE for investigational drugs in context of USP800 requirements. RUN members vary in geographic location, type of clinical research (outpatient vs inpatient), resources, and research subject volume. They are engaged in online discussion and learning opportunities to improve translational science practices. A recent article titled “Impact of COVID-19 on Clinical Research Units (CRUs)” in JCTS is an example of best practices learned by RUN members and shared with the broader research community. **DISCUSSION/SIGNIFICANCE:** RUN as a Learning Research System enhances clinical and translational research unit capacity and efficiency, encouraging collaboration to contribute with improving public health. This network is aligned with the CTSA’s mission of developing innovative solutions to improve translational science.

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CTSA Search Solutions

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OBJECTIVES/GOALS: CTSA Search Solutions (<https://ctsa-search.rutgers.edu/search/>) is a database that allows users to systematically conduct structured searches among the 60+ CTSA hub websites for information related to NCATS goals and CTSA hub activities. It was created with the objective of providing a novel process to evaluating and benchmarking CTSA hubs. **METHODS/STUDY POPULATION:** The CTSA Search Solutions database is an information tool that includes structured search terms relating to 3 main CTSA categories: NCATS goals, CTSA activities, and COVID 19 information. Subcategories from these topics were also identified and organized. Each CTSA hub website was systematically searched for content related to each of the identified terms and categories. The uniform resource locator (URL) for the primary webpage that provided content for each term was collected and stored in the CTSA Search Solutions database for user friendly access. URLs are validated monthly for changes or discrepancies. **RESULTS/ANTICIPATED RESULTS:** The final database includes access to 63 CTSA Hub websites with 89 structured search term options and over 800 links collected, organized, and published. Hub content can be searched by state, region, or even hub age to make detailed comparisons with the data identified. The CTSA Search Solutions tool allows researchers, administrators, evaluators, and community partners to find the needed links, to learn about specific CTSA hub program highlights as well as conduct research into program hub outputs and best practices across the nationwide CTSA continuum. **DISCUSSION/SIGNIFICANCE:** On the most practical level, CTSA Search Solutions has the potential to help hub evaluators identify the content of hubs in their first cycle compared to those in their 3rd Cycle. It can help core leads determine common best practices.