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EQUATOR network implementation science reporting and adherence challenges for learning health systems

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OBJECTIVES/GOALS: The Standards for Reporting Implementation Studies (StaRI) are the Enhancing the Quality and Transparency of Health Research (EQUATOR) Network 27-item checklist for Implementation Science. This study quantifies StaRI adherence among self-defined Implementation Science studies in published Learning Health Systems (LHS) research. METHODS/STUDY POPULATION: A medical librarian-designed a search strategy identified original Implementation Science research published in one of the top 20 Implementation Science journals between 2017 and 2021. Inclusion criteria included studies or protocols describing the implementation of any intervention in healthcare settings. Exclusion criteria included concept papers, non-implementation research, or editorials. Full-text documents were reviewed by two investigators to abstract and judge StaRI implementation and intervention adherence, partial adherence, or non-adherence. RESULTS/ANTICIPATED RESULTS: A total of 330 documents were screened, 97 met inclusion criteria, and 47 were abstracted including 30 research studies and 17 protocols. Adherence to individual StaRI reporting items ranged from 13% to 100%. Most StaRI items were reported in >60% of manuscripts and protocols. The lowest adherence in research studies was noted around economic evaluation reporting for implementation (16%) or intervention (13%) strategies, harms (13%), contextual changes (30%), or fidelity of either the intervention (34%) or implementation (53%) approach. Subgroup analyses were infrequently contemplated or reported (43%). In protocols, the implications of the implementation strategy (41%) or intervention approach (47%) were not commonly reported. DISCUSSION/SIGNIFICANCE OF IMPACT: When leveraging implementation science to report reproducible and sustainable practice change initiatives, LHS researchers will need to include assessments of economics, harms, context, and fidelity in order to attain higher levels of adherence to EQUATOR's StaRI checklist.

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A guide to successful management of data science collaborative partnerships in academic health centers

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OBJECTIVES/GOALS: To design a flexible, comprehensive framework for Data Science Units to cultivate sustainable, long-term relationships with Clinical and Translational Science Research Units. Best practices for managing Data Science collaborations are presented to improve the quality and efficiency of research conducted throughout academic health centers. METHODS/STUDY POPULATION: Leaders of Data Science Units across six institutions formed a workgroup to develop guidance and best practices for Data Science Units to establish long-term, sustainable collaborations with Clinical and Translational Science Research Units. This guidance is based on tools and protocols developed and employed by the participating units, which range from larger groups with over 20 partnerships to a unit with three partnerships that is actively working to expand. Importantly, partnerships are highly variable, with some partnerships at one institution representing engagement with over 500 faculty, whereas some partnerships at another institution involve the lab of a single investigator. RESULTS/ANTICIPATED RESULTS: We offer guidance in three domains: (1) Identifying the needs for a new partnership, including assessing required effort and data science expertise, setting partnership priorities, developing formal agreements, and identifying goals and metrics; (2) managing data science teams by implementing regular meetings, creating project intake and prioritization processes, and effort monitoring; and (3) evaluating the successes and failures/gaps of the collaboration by measuring the metrics mapped to the goals. For each domain, we provide specific suggestions on which parties should be involved and how frequently the processes should occur. This guidance is applicable both to larger collaborative partnerships and to smaller, single faculty or staff partnerships, whether they are new or well-established. DISCUSSION/SIGNIFICANCE OF IMPACT: Effective collaboration between data scientists and clinical and translational investigators is key to advancing data-driven research. The guidance and resources are presented to support Data Science Units in successfully managing long-term collaborations through goal-development, evaluation, and adapting to evolving research needs.

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A CTS team approach for SHINE-VH barrier technology: Design and application of a novel vaginal mucosal barrier against bacterial vaginosis

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OBJECTIVES/GOALS: Develop a cervicovaginal mucus replacement to prevent bacterial vaginosis (BV) in pregnant women. Our therapeutic, specialized hydrogel in natural enhancement for vaginal health (SHINE-VH), is formulated through polymer chemistry, tested for efficacy and safety through microbiology, and translated through clinical and translational science. METHODS/STUDY POPULATION: We will develop SHINE-VH with optimized viscoelastic and mucoadhesive properties intended to mimic healthy vaginal mucus. SHINE-VH will be synthesized via robust photoiniferter methods and investigated through shear rheology, sugar binding, and permeability studies. To evaluate the biocompatibility and safety profile of SHINE-VH, we will utilize a series of in vitro models to test its impact on the viability and cytotoxicity of human vaginal epithelial cells. In addition, we will assess the capacity of SHINE-VH to fortify vaginal barrier integrity and modulate anti-inflammatory activities in a 2D epithelial barrier model exposed to BV-associated pathogens. Lastly, employing organ-on-a-chip technology, vaginal swabs from both healthy and suspected BV pregnant patients will be treated with SHINE-VH. RESULTS/ANTICIPATED RESULTS: SHINE-VH will mimic the protective, hydrophilic gel network of natural mucins. The viscoelastic properties of our formulation

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