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Trauma Care in Nigeria and Recommendations for Sustainable Improvement to Nigeria's Trauma Care System: A Systematic Literature Review

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ABSTRACT IMPACT: This work highlights the significant burden of Trauma in Nigeria and will help inform policy decisions on improving Nigeri's current Trauma care system **OBJECTIVES/GOALS:** To evaluate trauma care delivery at the pre-hospital, hospital and health systems level in Nigeria in order to identify the burden of trauma, gaps in the delivery of trauma care, and interventions, implemented or recommended, to improve upon the limitations to trauma care delivery. **METHODS/STUDY POPULATION:** A two-concept search - one being trauma and the other being Nigeria - of the Pubmed (Medline) and Embase databases, in addition to Global Index Medicus and grey literature was performed between September 2018 and September 2019. The search yielded 3,970 articles that underwent title screening and 331 articles that underwent abstract screening. 101 articles were identified for full text screening and the majority were extracted for inclusion into the review. The extracted literature was grouped into 4 categories - articles outlining the burden of trauma in Nigeria, and articles outlining the delivery of trauma care at the pre-hospital, hospital and health systems level. **RESULTS/ANTICIPATED RESULTS:** Results were classified as an identified challenge or an intervention, recommended or implemented, to address Nigeria's trauma care system. There was a highlighted need for pre-hospital infrastructure, training of frontline providers, continued competency assessments of frontline providers, in-hospital diagnostic resources, and trauma care surveillance systems to guide health policy. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** There is a significant burden of trauma in Nigeria. Coordinated interventions and policies at the pre-hospital level, the hospital level, as well as the health systems level are needed in order to address the gaps in Nigeria's current trauma care system.

Education/Mentoring/Professional and Career Development

11509

Data visualization of scholarly productivity data to evaluate the KL2 training programs

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ABSTRACT IMPACT: This work will help assess the effectiveness of the mentored career development programs. **OBJECTIVES/GOALS:** There is increased attention on assessing the impact of the CTSA in building a research workforce through mentored career development programs. We propose using data visualization to assess and communicate the impact of the programs on the scholars career development. **METHODS/STUDY POPULATION:** Evaluators from two CTSAs collaborated to visualize the KL2 data such as demographics, scholarly productivity (publications, grants, intellectual property), and time to promotion that is already tracked through REDCap at their institutions. Excel, Tableau, and

Microsoft PowerBi were then used to generate trends in scholarly productivity over time. The goal was to compare how different tools can be used to visualize bibliometric data, based on what is available at the respective institutions. **RESULTS/ANTICIPATED RESULTS:** Longitudinal visual summary reports were produced for the entire program as well individual scholar progress. These reports can be used to identify trends such as how long after program completion do participants achieve their next milestone, what type of milestones are achieved, when in their career is their scholarly productivity the highest, etc. Answers to these questions could tell a story of the effectiveness of a mentored development program in the participants' career. It can also highlight gaps and areas of opportunities that the program must address, either by adapting their curriculum or clarifying their intended outcomes. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** Data visualization provides better understanding of the impact of the training programs on the scholars career development. Such insights are otherwise missing when evaluations are only focused on the percentage of scholars who were still engaged in research after completion of the program.

37889

Taking a pragmatic approach to evaluate Miami Clinical and Translational Science Institute's Programs using two models.

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ABSTRACT IMPACT: Practical evaluation approaches using case studies and success stories present a chain of evidence to demonstrate to stakeholders that resources are being used as required and producing desired results and effectively document the impact of clinical and translational research. **OBJECTIVES/GOALS:** This project describes the overall evaluation plan of the Miami CTSI by combining the Translational Sciences Benefits Model (TSBM) and the Kirkpatrick Model to evaluate scientific outcomes and impact of CTSI-supported research, and education and training programs developed by the CTSI. **METHODS/STUDY POPULATION:** Using case studies, the TSBM framework will be applied to CTSI-supported projects to evaluate scientific outcomes and impact on domains that include: clinical and medical; community and public health; economic; legislative and policy. We will apply the framework to projects that have received funding through CTSI's Pilot and Translational Studies and Mentored Translational Scholars KL2 Programs, and that have at least one publication. Application of the Kirkpatrick model will be demonstrated by using the four levels of evaluation - reaction, learning, behavior, and results - to assess training outcomes and impact of the KL2 and the I-Corps Programs. **RESULTS/ANTICIPATED RESULTS:** About 20 pilot projects and 8 KL2 research projects will be assessed using the TSBM framework. We anticipate that all projects will show potential or demonstrated benefits in at least two of the four domains of the model. KL2 Program evaluation was conducted by collecting data on all the four levels of the Kirkpatrick model. Reaction and learning were assessed through feedback from KL2 scholars. Behavior was assessed using semi-annual updates on research and training progress of the scholars and the program. Results were measured using indicators such as program graduates that continue to engage in clinical and translational research and their transition to research independence. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** Our evaluation approach using the two models is well aligned with overall CTSI aims and its three focus areas - infrastructure, education and

culturalization/community engagement and will allow us to conduct a comprehensive yet practical evaluation of Miami CTSI programs.

91348

A mixed methods analysis of hurdles to productivity among T and K awardees

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ABSTRACT IMPACT: Recommendations for increasing trainee productivity will be highlighted. **OBJECTIVES/GOALS:** Using a combination of qualitative (interview) and quantitative (publications tracking) data, we undertook to describe the hurdles and concerns impeding academic accomplishments among T and K awardees at one CTSA hub and to examine whether hurdles at 6 months would predict academic output within one year following completion of the training program. **METHODS/STUDY POPULATION:** Semi-structured interviews were conducted with 29 trainees (28 TL1 and 8 KL2) 6 months into their training. Interview transcripts were analyzed using Atlas.ti to identify hurdles (factors that had already impeded research progress) and concerns (future challenges anticipated by the trainee). PubMed searches yielded the number of publications within one year of exiting the training program. Frequencies of hurdles and concerns were examined to characterize the factors most likely to impact trainee progress during the first 6 months of their training program. Among 18 trainees who had completed their training, the mean number of publications within one year of exiting the program (identified via verified PubMed searches) was compared across the total number of hurdles reported at 6 months (range = 0 to 3). **RESULTS/ANTICIPATED RESULTS:** The thematic analysis yielded 19 categories of hurdles and 14 categories of concerns. The top three hurdles were technological challenges (e.g., issues with equipment or data reduction; reported by 63% of trainees), professional competing responsibilities (40%), and navigating collaborations (30%). The top three concerns were future funding (33%), potential as an independent researcher (27%), and institutional context (e.g., departmental structure; 23%). The number of hurdles reported at 6 months significantly predicted number of publications one year post-exit ($F(3,14) = 3.14, p < .05$). Trainees reporting zero hurdles generated a mean of 8.67 publications; those with 3 hurdles generated a mean of 2.4 publications. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** Future concerns were completely different from past hurdles, suggesting that the issues impeding research progress are not anticipated. Results suggest trainees would benefit from training related to how to balance competing professional responsibilities and navigate collaborations and that early attention to hurdles may enhance productivity.

Health Equity & Community Engagement

14179

Retrospective Case Studies using the TSBM to Evaluate Translation Research Progress

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ABSTRACT IMPACT: This effort will ultimately improve both human and community health and translational science by showing

the impact of CTR services on different types of projects that meet overall CTR missions and aims. **OBJECTIVES/GOALS:** CTRs seek to advance translational research to generate clinical, healthcare delivery, policy and community benefits. We conducted retrospective case studies for selected funded Pilot Projects for the Great Plains IDeA-CTR, focusing on facilitators and barriers to research translation and contrasting community-engaged and other proposals. **METHODS/STUDY POPULATION:** We analyzed 8 CTR-funded projects (4 community-engaged (CE) projects and 4 other pilot awards) focusing on outcome domains of the Translational Science Benefits Model (TSBM): Clinical, Economic, Policy and Community Benefits as endpoints of successful research translation. We adapted an existing TSBM case study template for use with data required by NIH/NGIMS to map progress toward one or more TSBM outcomes. Using email, we posed three brief open-ended questions to investigators: 1) challenges/ barriers for the project; 2) how the CTR helped move research along and (how it could have moved it further); and 3) how research is progressing and how it could progress further. **RESULTS/ANTICIPATED RESULTS:** All investigators reported the CTR advanced their project. Non-CE projects appeared to have a more straightforward trajectory, with 2 investigators reporting no challenges and 2 reporting solely institution-internal ones. In contrast, the 4 CE projects reported both benefit from the engagement of the CTR (most prominently the efforts of the community advisory board (CAB) and community liaisons). Yet, they also reported some challenges beyond the CTR's ability to address, including delays in securing community buy-in and community buy-in of the investigator's research approach. Some barriers appeared beyond the CTR's current immediate ability to provide support to advance the project. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** Findings contribute to efficient approaches for retrospective case studies and emerging information on challenges and opportunities for CE projects. The study will help identify: 1) intermediate milestones and timelines for different projects; 2) advance data for TSBM endpoints; and 3) CTR activities that leverage the translational process.

25309

Applying Community Health Priorities to the Translational Research Agenda

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ABSTRACT IMPACT: This work has begun to provide the foundation for better ensuring that translational research funded and supported by our IDeA-CTR grant is more directly addressing community- and stakeholder-authored health priorities. **OBJECTIVES/GOALS:** In order to effectively engage diverse, societal perspectives, we aimed to determine the relevance and feasibility of purposefully aligning translational research with health priorities adopted by the RI Department of Health, health-focused organizations, and community leaders. **METHODS/STUDY POPULATION:** Individuals from 27 community organizations in RI were asked, 'What are your health related goals for your community' and submitted responses online for 2 weeks. Participants generated 71 goals which they sorted into meaningful clusters and rated for importance and feasibility. Clusters were contrasted with RI health priorities to gauge alignment and saturation. In the next phase of this project, researchers and service users funded by Advance-CTR will be asked in routinely administered surveys how their current work may align with RI health goals and whether their future work can feasibly be connected to those priorities. **RESULTS/ANTICIPATED RESULTS:**