data from 1988 to 2020 from the National Health and Nutrition Examination Survey, we will examine trends in sociodemographic risk factors and glycemic, blood pressure, and lipid control among adults with CKD and diabetes. Glycemic control will be defined as a hemoglobin A1c (HbA1c)<7%, blood pressure control will be examined at cutoffs of 130/80 and 120/80 mmHg, and lipid control will be defined as a fasting triglyceride level ≥150 mg/dL, a low-density lipoprotein (LDL) <100 mg/dL without atherosclerotic cardiovascular disease (ASCVD), or LDL<70 mg/dL if they have ASCVD. We will assess changes in the use of commonly used antidiabetic, antihypertensive, and lipid-lowering medications. RESULTS/ANTICIPATED RESULTS: We hypothesize that from 1988-2020, blood pressure control has improved while glycemic and lipid control has not improved among adults with diabetes and CKD. We expect decreases in sulfonylurea use and increases in DPP-4 inhibitor, metformin, ACE inhibitor, angiotensin receptor blocker, statin, and insulin use over time among those with diabetes and CKD. In addition, there is likely a significant gap between those who are eligible to use newer medications like SGLT2 inhibitors or GLP-1 receptor agonists and who are currently using them within this subpopulation. DISCUSSION/SIGNIFICANCE: This study will examine adherence to guideline-recommended management and identify gaps in care for adults with CKD and diabetes, which may inform how best to optimize medication use for cardiorenal protection in this high-risk patient population.

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Evaluation of Drug-Resistant Tuberculosis Guidelines and Outcomes by Treatment Site in South Africa

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OBJECTIVES/GOALS: DR-TB care in South Africa includes decentralized treatment with shorter, all-oral regimens. Treatment guidelines direct regular clinical and laboratory evaluation to assess patient improvement. We therefore measured sputum collection frequency and follow-up time to assess fidelity to these guidelines in Gauteng Province, South Africa. METHODS/STUDY POPULATION: We included Rifampicin-resistant (RR) sputum specimens from the South African National Health Laboratory Service, which provides pathology services to 80% of the population, submitted between August 2022-September 2023. Patient data were obtained from a DR-TB registry and additional sputum specimen data were collected from follow-up laboratory worksheets. Follow-up spanned from first sputum collection date (baseline) to patient outcome date (e.g., completion, lost) or study closure date (if still on treatment). Monthly sputum submission rate was measured for those with ≥1 additional sputum submitted. We compared patient data by treatment site: at the specialized hospital vs. any other site, using Wilcoxon ranksum and χ^2 tests. RESULTS/ANTICIPATED RESULTS: Baseline RR-TB specimens were available for 142 patients, of whom 28 (20%) had specimens submitted from the specialized hospital. Patients at the specialized hospital were older (median age 41 vs. 35.5 years, p=0.03), had higher baseline fluoroquinolone resistance (10% vs. 1%, p=0.01), and longer follow-up (median 5.2 vs. 3.5 months, p=0.01) compared to patients elsewhere. Further, 43 (30%) patients had ≥1 additional sputum submitted during follow-up. Among these, monthly sputum collection rates did not differ by site (0.3 vs. 0.3 sputum per month, p=0.89). We anticipate that increased sputum frequency will be associated with successful TB treatment outcomes based on preliminary findings. DISCUSSION/SIGNIFICANCE: These findings highlight ongoing challenges with routine laboratory follow-up according to DR-TB guidelines across treatment sites in South Africa. Future research is needed to determine reasons for low sputum collection rates, such as low patient adherence, variation in practice of healthcare workers, loss to follow-up, and clinical challenges.

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Cross-Disciplinary Education in Biostatistics and Epidemiology in Program Managers for CTSA BERD Cores

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OBJECTIVES/GOALS: The overall goals of this project are: (1) to demonstrate the utility of staff with cross-disciplinary skills in biostatistics and epidemiology as program managers for CTSA BERD Cores, and (2) examine streamlined processes in project triaging, consultations, and data extractions for CTSA service requests when individuals are in this role. METHODS/STUDY POPULATION: Biostatistics and epidemiology are partnered disciplines incorporated in a variety of research areas, especially in human health sciences and health care. For interdisciplinary teams, including individuals trained in both specialties results in efficient research collaborations. When these individuals are program managers for research navigation, processes become more effective and expedited for project timelines and workflows across the CTSA. Examples of this integration are described in vignettes from project triaging, statistical consultations, and data extractions from CTSA service requests. Process comparisons of previous and current workflows are presented to show the advantages of utilizing this type of program manager within these areas of BERD. RESULTS/ANTICIPATED RESULTS: This project defines three areas of integration for a program manager with cross-disciplinary training in biostatistics and epidemiology: (1) project triaging to statistical teams, (2) study design and analysis consultations, and (3) data extractions. Each of these areas demonstrates prior processes that once would require multiple steps in CTSA service requests (including time, resources, and personnel) and identified common issues (slow response to requests, data re-extractions, and challenges providing statistical support) that are now avoided with a manager with cross-training in biostatistics and epidemiology methods. The advantages and disadvantages of integrating these individuals are also described. DISCUSSION/SIGNIFICANCE: BERD Cores seeking improvements to research navigation processes can gain efficiency by incorporating program managers with cross-disciplinary training in biostatistics and epidemiology. BERD Cores may also use this as a case study for translational science with innovation to longstanding challenges in CTSA research workflows.