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### Partnered rapid research with K-12 school districts during the COVID-19 pandemic

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**OBJECTIVES/GOALS:** During the COVID-19 pandemic, translational scientists sought to provide scientific and data expertise to school districts serving diverse and disadvantaged students to enable equitable access to in-person learning. **METHODS/STUDY POPULATION:** We showcase two CTSA examples. One is a partnership with the second largest U.S. school district; the second is a national network of scientists and urban and rural school districts. In each example, CSAs assembled expert science teams to support data-driven decision-making. The teams provided honest brokering of COVID-19 science, scientific interpretation that is sensitive to local context, and responses to community-driven questions. The teams collaborated with school district partners to design actionable data displays on key metrics including primary COVID-19 cases, school-acquired cases, quarantines, and missed school. The national ABC Science Collaborative) provided a platform for shared learning and reproducibility and credibility of science using district data. **RESULTS/ANTICIPATED RESULTS:** The CSAs developed easily interpretable and actionable data displays. Partnered school districts observed data in real time to identify signals of change. Districts in the national network were able to learn in real time from variation across districts based on policies and procedures that they adopted, such as quarantine, masking, and physical distancing. **DISCUSSION/SIGNIFICANCE:** This scientific collaboration is a model of rapid CTSA response, informing science and real-time action. The data displays enable school districts to explain decisions regarding student and staff health and safety. These partnerships and data designs are infrastructure that can be quickly mobilized for emergent and for ongoing information needs.

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### Patient Engagement in Diabetes Care: Missed Appointments Among Adults Living with Type 2 Diabetes\*

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**OBJECTIVES/GOALS:** Missed appointments (MAs) negatively impact the health outcomes of adults living with type 2 diabetes mellitus (T2DM), causing disruptions in clinic operation and added financial cost to healthcare providers and systems. This study aimed to identify risk factors for MAs in both in-person and telehealth settings among adults living with T2DM. **METHODS/STUDY POPULATION:** Using a sequential multi-method design guided by the modified Quality-Caring Model, the quantitative phase of this study used electronic health records (EHR) data in Calendar Years 2019 and 2020 with 7,276 encounters made by 2,235 patients with T2DM from four diabetes clinics within a tertiary academic medical

center in Baltimore, MD. Multivariable random effect logistic regression were used to examine the association between MAs and included predictors (i.e., patient characteristics [e.g., age, race, health status], health provider factors [e.g., types of provider], and health system factors [e.g., scheduling lag]). Based on the results of the quantitative phase, a purposive sample of 23 adults with T2DM and 10 providers were then interviewed individually via phone or zoom. **RESULTS/ANTICIPATED RESULTS:** The EHR data found that the following variables decreased the odds of MAs: having an activated patient portal account, patients with age over 46 or with white race. Telehealth was associated with 50% decreased odds of MAs during COVID (after 3/23/2020). On the other hand, longer scheduling lag increased the odds of MAs. Qualitative interviews revealed that MAs were often related to social needs, such as lack of/limited health-related transportation and its associated financial burden. Telehealth helped break these barriers for some adults with T2DM, but technical challenges in telehealth persisted for those with low digital health literacy and people who did not have a digital device and/or with unstable internet connection. Providers worried that these challenges might undermine the quality of diabetes care. **DISCUSSION/SIGNIFICANCE:** Disparities in MAs by age and race were noted, which might reflect the impact of unmeasured social needs in EHR. Perceived convenient telehealth may reduce MAs in T2DM care. However, the persistent technical challenges of telehealth should be addressed to optimize the quality of diabetes care and to promote care continuity for underserved populations.

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### Patients without health insurance and experiencing food insecurity are more likely to suffer from anxiety and depression—a cross-sectional study at a Milwaukee student-run free clinic

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**OBJECTIVES/GOALS:** At the Saturday Clinic for the Uninsured (SCU), a Milwaukee student-run free clinic affiliated with the Medical College of Wisconsin, we screened patients for food insecurity and evaluated associations of food security status with nine separate social determinants of health (SDOH) needs and eight chronic medical conditions influenced by diet. **METHODS/STUDY POPULATION:** This cross-sectional study took place from October 2021-April 2022 at SCU, which only sees uninsured patients. We added the USDA six-item food insecurity form to the clinic's larger SDOH survey, which screens for medication financing, housing stability, energy assistance, legal issues, educational/work opportunities, substance use, mental health, health insurance options, and dental care needs. We then completed chart review for demographic, diagnostic, lab, and medication information pertaining to obesity, hypertension, diabetes, dyslipidemia, chronic kidney disease (CKD), gastroesophageal reflux disease (GERD), anxiety, and depression. We conducted descriptive statistics on demographics and measured associations using both Kendall's tau correlation and odds ratios from binomial regression. **RESULTS/ANTICIPATED RESULTS:** Of the 157 patients seen during this time, most were middle-aged (mean age = 49.4 years  $\pm$  14.5 years), female (n = 98, 62.4%), Black or African American (n = 66, 42%) and resided in Milwaukee County (n = 144, 92.9%). 22 (16%) screened as