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A longitudinal study on the effects of diabetes on the neurodevelopment of infants

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OBJECTIVES/GOALS: An association has been found between maternal diabetes and neurodevelopmental disorders (NDDs), such as autism spectrum disorders (ASD), attention-deficit/hyperactivity disorder (ADHD), and intellectual disabilities. Our objective is to observe the effects of type 2 diabetes mellitus (T2DM) on the neurodevelopment of infants. **METHODS/STUDY POPULATION:** A prospective study was performed on thirty infants who were evaluated using four neonatal neurodevelopmental assessments. Thirteen of these infants were from mothers with T2DM and seventeen of them were from mothers without diabetes. We used the Hammersmith Neonatal Neurological Examination (HNNE), Dubowitz exam, The Capute Scales, and The General Movement Assessment (GMA) to assess the neurodevelopment of these infants. HNNE assesses posture, reflexes, tone, and movement of infants. The Dubowitz exam is used to measure tone and reflexes to get an estimated gestational age (GA) of the infant. The Capute Scales has two subsections, one measures language (receptive and expressive) and the other measures visual-motor development. Lastly, the GMA was used to observe the general movements of the infant. **RESULTS/ANTICIPATED RESULTS:** Cochran-Mantel-Haenszel determined between-group differences. HNNE, Dubowitz, and the Capute Scales had no significant difference between groups. HNNE results: 4 T2DM below cutoff; 9 controls below cutoff. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Offspring of T2DM mothers show a risk of motor delays in infancy and later language/cognition delays. Offspring of T2DM mothers should be followed due to the risk of motor delays. Early intervention could mitigate delays. This would be the first novel use of these four tools to evaluate 1-month-olds.

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Who you gonna call? The Data Group: Creating a team and process for responding to evolving data needs of a limited health benefits program

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World Trade Center Health Program

OBJECTIVES/GOALS: The World Trade Center (WTC) Health Program (Program) Data Group was formed to address the increasing volume and complexity of analytics requests and to improve the Program's data management capacity. Over time, the Group's role expanded to include comprehensive data leadership and providing data-based support for decision-making. **METHODS/STUDY POPULATION:** The Program provides medical monitoring and treatment for WTC-related conditions to those directly affected by the 9/11 attacks. These activities generate an abundance of administrative and surveillance data. The Data Group was formed to

establish structures and processes that would be adaptable and efficient in leveraging these data. We created a unified workflow including a shared inbox, a standardized request form, and a request-managing tracker. We established communication channels to distribute requests efficiently. We designed a request form to balance the administrative burden on requestors with the need to gather useful information for analyses. We also developed a documentation system to extract key details from forms and incorporate other relevant data to support evaluation and record-keeping. **RESULTS/ANTICIPATED RESULTS:** From November 2021 through the end of 2023, the Data Group processed and fulfilled 93 data requests. These requests covered a multitude of functional areas essential to the administration of a limited health benefits program. The following top five functional areas made up two-thirds of all requests: Contract Management (n = 30), Research and Quality (n = 15), Operations (n = 11), Medical Policy (n = 10), and Communications (n = 7). Leveraging data collected through our request tracker, the Group conducted annual evaluations and developed visualizations to analyze trends in these requests. The evaluations helped us identify knowledge gaps, highlight areas for improvement – across the Program and within our own processes, and continue to guide and support future Program priorities. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The creation of the Data Group and unified workflow fulfilled the Program's increasing analytic needs, enhanced oversight of data quality and usage, and facilitated data-driven Program decision-making. Continual optimization of the group's processes enables opportunities to identify gaps in and support a range of health care delivery initiatives.

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Feasibility of the MyIBD care plan to improve care quality in pediatric IBD practice

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OBJECTIVES/GOALS: Youth with IBD have preventive, psychosocial, and acute care needs beyond those of peers, yet receipt of services does not match those needs. Our objectives are to assess the feasibility of (1) an individualized care plan intervention to improve perceived and measured care quality and (2) a pragmatic trial design embedded in pediatric IBD practice. **METHODS/STUDY POPULATION:** This is a pilot rollout-design randomized trial (n = 60) at a regional academic medical center. Eligible patients are 13–19 years old with IBD for at least 3 months and scheduled for a follow-up visit during the trial. Research staff recruits from one cluster at a time until goal enrollment (14–16). Enrollees are randomized 1:1 to intervention (MyIBD now) or control (MyIBD after the trial). MyIBD combines a tabular summary of individualized acute, chronic, and preventive care needs with nurse facilitator support for patients to use the information. Surveys at baseline, 6 and 12 months measure care quality (Patient Assessment of Chronic Illness Care scale, vaccines, health services) and patient self-management skills (Partners in Health scale). Implementation outcomes are collected via chart review. **RESULTS/ANTICIPATED RESULTS:** To date, 44 subjects have been randomized. Among subjects, the mean

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Translational Science 2025 will take place in Washington, DC from **April 14-17, 2025**. We can't wait to welcome you all back for the biggest event on the ACTS calendar!