

people living with or directly affected by opioid use disorder (OUD). RESULTS/ANTICIPATED RESULTS: Themes emerged around stigma (e.g., constant judgment, majority of interactions focused on addiction, addiction comes from bad choices), the healthcare system (e.g., healthcare system bias and stigma, misalignment of services and timing of need, no support for support network), and relating to recovery (very variable but generally ambiguous and uncertain process and outcomes, importance of peer recovery coaches, importance of community resources). Identified themes were used to create insights that informed the underlying concepts of an engagement strategy including support and resources for recovery coaches, and education materials for mothers with OUD. One of human-centered design's strengths is iteration, and the materials created for this have yet to be tested and refined thoroughly to be meaningful and lasting interventions. DISCUSSION/SIGNIFICANCE OF IMPACT: Considerable insights into the lived experience of those experiencing OUD and those who support these individuals yielded tangible ways to test improved engagement and recruitment of women with OUD at the time of birth.

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### Utilization of quantitative and qualitative methodology to characterize patient-level factors associated with sustained data transmission and clinical benefit from remote patient monitoring over 12 months

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#### OBJECTIVES/GOALS:

1. Identify patient-level factors associated with hemoglobin A1c reduction and sustained device use after 12 months of participation in a diabetes and hypertension remote monitoring program
2. Utilize qualitative methodology to characterize key barriers and facilitators to remote monitoring engagement

METHODS/STUDY POPULATION: All participants in statewide quality improvement initiative utilizing a cellular-enabled device with glucose and blood pressure monitoring capability will be included in quantitative analysis (N = 302 at baseline and N = 125 at 6 months at the time of analysis). We developed multi-level regression analyses to model factors associated with clinical outcome (hemoglobin A1c change) and transmission frequency over time. Focus groups and surveys will be conducted to identify barriers and facilitators to continued data transmission and hemoglobin A1c change over 12 months. Semi-structured interview guides are mapped to Wagner's Chronic Care Model. RESULTS/ANTICIPATED RESULTS: Overall, program participation was associated with 1.8% and 1.3% A1c reduction at 6 (n = 302) and 12 months (n = 125). Regression models showed no association of age, gender, race, income, or insurance with hemoglobin A1c change. Modeling of patient factors associated with sustained transmission frequency or device use is ongoing. Patient focus groups and surveys are currently being scheduled and qualitative data will be analyzed using content analysis. After completing qualitative and quantitative data analyses independently, we will use graphical matrix configurations ("joint displays") to synthesize findings. DISCUSSION/SIGNIFICANCE OF IMPACT: Our goal is to identify variables associated with the likelihood of

patients to engage in and benefit from sustained remote monitoring. Results may inform health policy and guide recruitment approaches, implementation strategies, and methodologic design for future trials. CONFLICT OF INTEREST DESCRIPTION: The authors have no conflicts of interest or disclosures to report

## Mechanistic Basic to Clinical

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### A TL1 Team Approach to Personalization of Donor Human Milk for Preterm Infants

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OBJECTIVES/GOALS: Feeding preterm infants with mother's own milk (MOM) lowers rates of sepsis, decreases necrotizing enterocolitis, and shortens hospital stay. Our objective is to determine whether a similar microbial diversity to MOM can be obtained when fresh or frozen MOM is inoculated in donor human milk (DHM). METHODS/STUDY POPULATION: Subjects included 12 mothers of infants born 100ml of MOM per day and were excluded if they had taken antibiotics within 3 days of the 1-time pumped MOM sample collection. MOM sample was divided into fresh (processed immediately) and frozen (-20°C) for 24h fractions. MOM was inoculated in DHM [referred to as reconstituted milk (RM)] at 10% (RM10) and 30% (RM30) dilutions, then incubated at timepoints: 0h, 2h, 4h at 37°C. At each timepoint, total viable microbial cell counts were performed in differential or selective media along with future 16S rRNA sequencing. RESULTS/ANTICIPATED RESULTS: Microbiota expansion was detected in MOM, RM10 and RM30 over time whether fresh or frozen milk was used as the inoculum. Incubated fresh and frozen MOM had similar bacterial loads when tested on nutrient agar (10<sup>5</sup>-10<sup>6</sup> CFU/mL), mannitol salt (10<sup>6</sup> CFU/mL), MacConkey (10<sup>2</sup>-10<sup>5</sup> CFU/mL), blood agar (10<sup>6</sup> CFU/mL) and MRS (10<sup>4</sup> CFU/mL) plates. Based on these CFU counts, RM30 incubated for 2h and RM10 at 4h showed similar counts to that of MOM at 0h. DISCUSSION/SIGNIFICANCE OF IMPACT: RM, inoculated with fresh or frozen MOM, obtained a similar microbial count compared to MOM at 0h indicates that fresh or frozen MOM can inoculate DHM. 16s rRNA sequencing is ongoing. Future studies are needed to support an inoculation protocol to be used in clinical practice and human milk banking.

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### Acoustic screening for the "wet voice" in a canine laryngeal model

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OBJECTIVES/GOALS: Early dysphagia detection reduces risk of pulmonary complications, length of hospital stay, and overall health-care costs. The biggest limitation for early detection has been the lack of a sensitive, reliable, and noninvasive screening tool. The bedside swallow examination may miss silent aspiration in up to 40% of patients. The objective of this study is to evaluate if acoustic parameters can distinguish normal and wet voice in a canine laryngeal