

of our bup precision dosing approach in terms of clinical utility and attitudes by OUD patients and providers in clinics in PR. We will conduct focus groups and surveys to document patients and providers perceptions, beliefs, attitudes and reception of our bup evidence-based dosing approach. **RESULTS/ANTICIPATED RESULTS:** We seek to answer the following questions: How do OUD providers and patients in PR view, and how will they engage with our buprenorphine precision dosing approach? Will our intervention based in science be accepted by these individuals? What are their attitudes towards this? How they perceive the efficacy of this intervention to be? What are the barriers and facilitators of this evidence based intervention? This knowledge is crucial before clinical implementation is pursued, we expect to comprehend the unique attitudes and perceptions of these population that supports the successful implementation in the nearby future and enhance the innovation uptake of our bup dosing model for OUD in PR. **DISCUSSION/SIGNIFICANCE:** It is important that adequate assessments that assess acceptability and feasibility prior to implementation and while still in developmental phases are conducted to plan ahead for the implementation of interventions since innovation uptake depends largely on contextual factors, not just innovation effectiveness.

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### **Translation of novel multidisciplinary health technologies in the Ontario healthcare system: A case study of pharmacogenomic testing**

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**OBJECTIVES/GOALS:** There is a need for high-quality and efficient translation of health technologies in the Ontario healthcare system. The goal of this project is to understand the decision-making processes of government expert groups developing recommendations for the system-level implementation of pharmacogenomic testing. **METHODS/STUDY POPULATION:** This prospective observational case study includes the Ontario Health Pharmacogenomics (PGx) Working Group focused on developing recommendations for a PGx testing implementation strategy in the province. Ontario Health is the government agency that oversees provincial healthcare planning and service delivery. Using qualitative ethnographic methods, we will observe and document the working group's activities over a 10-month period. Data collection involves meeting recordings, correspondences, researcher field notes, decision-making processes, and group characteristics. Using descriptive statistics and inductive qualitative analyses, the data will be examined to build theory and frameworks for knowledge translation. **RESULTS/ANTICIPATED RESULTS:** The results will be presented through a case report, process maps, decision milestones, visualizations, and procedural recommendations for future expert groups. This study will contribute to the body of foundational knowledge about translational sciences and support the National Center for Advancing Translational Sciences' guiding principles. To enhance translational processes and train the future translational workforce, this research can be used for educational initiatives. In addition, the observed processes will inform a theory about how expert recommendations are developed in public healthcare systems. **DISCUSSION/SIGNIFICANCE:** This research addresses a current gap in understanding around translational processes, government decision-making, and the development of recommendations for

the adoption, implementation, and dissemination of the novel health technologies transforming public healthcare in Canada.

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### **Trends Between Periodontitis and Medial Arterial Calcification in Undiagnosed Type II Diabetes Mellitus.**

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**OBJECTIVES/GOALS:** The overall objective of this study is to determine if medial arterial calcification (MAC) is an independent predictor of diabetes and to evaluate the relationship between MAC, periodontitis and Type II diabetes mellitus. **METHODS/STUDY POPULATION:** A retrospective case-control model analyzing radiographs for periodontitis and MAC to identify potential biomarkers for underlying systemic conditions, such as diabetes. Charts of patients attending UPENN School of Dental Medicine clinics between 2015 and 2022 were reviewed. Demographics, medical and dental history, diabetic status (identified by POC blood glucose level, fasting blood glucose and/or A1C), and medication history were documented amongst other variables. Patients aged 18 years or older with diabetes and having full mouth intraoral radiographs (FMX), panoramic radiographs and CBCTs were included. Patients with radiographs of poor quality were excluded. Multivariate analysis was used to determine possible associations between diabetes and periodontitis among persons with or without MAC. **RESULTS/ANTICIPATED RESULTS:** In our pilot study involving 28 participants, 53% of the population with moderate or severe periodontitis had MAC. By the Fisher's Exact Test, there was an association, meaning those with more periodontal disease are more likely to have MAC ( $p=0.014$ ). Sixty-three percent of patients with diabetes had MAC, while 19% of patients without evidence of diabetes also had MAC, ( $p=0.067$ ). There was not enough evidence of association between diabetes and presence of MAC at this time, due to a small sample size, however there was a high prevalence of MAC among the diabetics. We hypothesized that periodontitis, a condition that shares many risk factors with diabetes would also be associated with incident MAC. Findings from this study will be key for the implementation of preventive screening protocols and referral systems. **DISCUSSION/SIGNIFICANCE:** Diabetes is on the rise and about half of diabetics are undiagnosed. CBCT imaging frequently used in dentistry can detect incidental findings such as MAC. This study has the potential of detecting statistically significant links between MAC, periodontitis and diabetes, hence serving as a sensitive radiographic biomarker for diabetes.

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### **Unitary neural correlates of executive control in pediatric transdiagnostic psychopathology**

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**OBJECTIVES/GOALS:** Childhood psychiatric symptoms are highly comorbid. Their co-occurrence and association with negative life