ALBERTA INNOVATES

Accelerating Innovations into CarE – Market Access Program (AICE-MAP)

Hip dysplasia ultrasound screening using artificial intelligence: a feasibility study

PROJECT FAST FACTS

PARTNERS: MEDO.ai, Westview Physician Collaborative, Edmonton Health City
AWARD: $300,000
AWARD DATE: June 1, 2020
PROJECT DURATION: 24 months

THE PROBLEM

Developmental hip dysplasia (DDH) is the #1 reason for hip replacement surgery in women aged <40 years and is 30 times more common in Indigenous Canadians. If detected in infancy, DDH is treatable by a simple brace with 95% success. Unfortunately, current DDH screening tools (clinical examination and 2D ultrasound) are not reliable enough to be recommended for universal DDH screening. This leads to diagnosis of DDH being missed in many infants, resulting in premature osteoarthritis, pain often managed by opioids, disability and surgery. It is estimated that each day in Alberta 4 infants are born with DDH, and 2 adults receive hip replacement surgery for arthritis caused by untreated DDH.

THE SOLUTION

Screening infants age 0-8 weeks for DDH using artificial intelligence (AI) analysis of ultrasound (US) images could reduce this burden of hip arthritis. MEDO, an Alberta-based technology startup, has developed AI-based technology ("Aria") to detect DDH in hip ultrasound images, even when obtained by relatively untrained users. In an academic setting this AI/US analysis has accuracy and reliability equal to or better than expert radiologists.

PROJECT OBJECTIVES

MEDO and Westview Primary Care Network will work together to pilot artificial intelligence ultrasound (AI/US) developmental hip dysplasia (DDH) screening in primary care clinics. It is known that the AI/US analysis is highly accurate in an academic research setting, so the goals of this project will be to:

1. Determine how AI/US can fit most smoothly into routine infant visits at busy medical clinics.
2. Confirm that clinic staff (e.g. nurses) can perform US scanning well enough to reliably detect DDH.
3. Evaluate the benefits and costs of DDH screening to determine if this is practical to implement more broadly.

"This project will provide valuable insights and metrics that will directly shape many facets of our product and go-to-market plan. Integrating the product into everyday workflows of our users will further enlighten us in pricing and market messaging of our product when going to market." ***– Dornoosh Zonoobi, CEO at MEDO.ai***

"Missing a child's dysplastic hip is a disaster, because it results in a lifetime of disability and early arthritis. We believe that this technology will allow us to identify hip dysplasia accurately and cost-effectively, and this project enables us to test this in a real-world setting." ***– Jacob Jaremko, Co-Founder and Clinical Strategist at MEDO.ai***

ABOUT THE AICE-MARKET ACCESS PROGRAM

AICE - MAP is designed to accelerate health innovations that face evidentiary hurdles in achieving market access. The Program supports small to medium-sized enterprises and real-world testing sites in carrying out clinical trials and feasibility studies of innovative health technologies. Successful Projects are designed to generate key evidence that will facilitate commercial progression and market adoption. If you'd like to learn more, please check out our AICE website.

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