

MHI2015Y

Health Informatics Project

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Assignment-5

Shaping the Policy Landscape

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Project Title:

**Personalized Multi-Domain Digital Platform for Dementia
Prevention – PMD2P:**

A Proactive Approach to Dementia

Tackling Dementia with Digital Interventions: A Groundbreaking Approach to Prevention

Dementia is a growing public health crisis, with global cases expected to nearly triple by 2050, reaching over 152.8 million, including more than 1.3 million Canadians. The burden extends beyond the emotional toll on families, costing Canada an estimated \$40.1 billion annually, a figure projected to rise sharply without timely intervention. Current healthcare systems remain largely reactive, focusing on managing dementia after diagnosis instead of preventing it—a missed opportunity to delay or even avert this devastating disease. Recent data reveals that modifying dementia risk factors can prevent up to 40% of incident cases in the future.

The Problem and Its Impact

For affected individuals, dementia is not just a distant possibility; it's a looming threat that can disrupt their golden years. Dementia affects memory, cognition, and independence, creating emotional and financial strain for families. By 2040, individual care costs in Canada could reach \$93,830 annually. Without proactive measures, this growing crisis will overwhelm families and healthcare systems alike.

Proposed Solution: The PM(DP)*2 Platform

The Personalized Multi-Domain Digital Platform for Dementia Prevention (PM(DP)*2) offers a transformative solution. This platform integrates data from electronic health records, wearable devices, and environmental factors to create personalized risk profiles. Using machine learning and generative AI, it recommends tailored strategies targeting modifiable risk factors such as lifestyle, cardiovascular health, and mental well-being.

The Vision

The PM(DP)*2 envisions a world where individuals at-risk of dementia can detect and address dementia risks early. By empowering users and engaging caregivers, healthcare providers, and policymakers, the platform promotes a proactive healthcare paradigm shift, reducing dementia prevalence and improving lives.

Evidence of Feasibility and Scalability

Studies, including the Lancet Commission reports, validate the effectiveness of targeting modifiable risk factors in reducing dementia risk. PM(DP)*2 leverages these findings to ensure scalability.

Economic Rationale

The economic benefits of preventing dementia are substantial. Early interventions reduce long-term healthcare costs, alleviate caregiver burdens, and allow individuals to remain productive for longer. Every dollar invested in prevention yields significant savings in care expenses, benefiting both individuals and society. Even a modest 5% reduction in dementia onset among at-risk individuals could save \$2.5 billion annually in healthcare costs.

Policies to Drive Progress

Implementing PM(DP)*2 requires strategic policies, including funding for digital health infrastructure, incentives for preventive care adoption, and public health campaigns. Integrating the platform into healthcare frameworks ensures accessibility and equity, making dementia prevention achievable for all.

Stakeholders for Success

The success of PM(DP)*2 hinges on collaboration among individuals at risk, caregivers, healthcare providers, policymakers, insurers, and technology developers. Each stakeholder plays a critical role in supporting, funding, and scaling the platform.

Persona: *Helen's Journey with PM(DP)*2*



*Meet Helen, a 60-year-old retired teacher from Ontario who values her independence and active lifestyle. Like many, she's unaware that her health habits and vascular issues are putting her at an increased risk for dementia. Through her healthcare provider, Helen begins using the PM(DP)*2 platform, which analyzes her lifestyle and health data, identifying modifiable risk factors early.*

The platform detects that Helen has high blood pressure, a sedentary lifestyle, and is a smoker—key contributors to her dementia risk. It provides personalized, evidence-based recommendations, including smoking cessation programs, a tailored physical activity plan, and strategies to better manage her blood pressure. With regular monitoring and adjustments guided by the platform, Helen adopts healthier habits. By addressing these risks earlier, she significantly reduces her likelihood of developing dementia, empowering her to maintain her independence and quality of life.

Call to Action

Dementia prevention is no longer a distant goal—it's a pressing need. The PM(DP)*2 platform offers a proactive, personalized solution to help individuals like Helen manage modifiable risks and delay or prevent dementia. By investing in this vision today, we can build a future with fewer cases, reduced costs, and healthier communities. Together, we can change the narrative on dementia—starting now.