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Bridging the Gaps in Adolescent Mental Health: An Integrated Digital Health and EHR Approach

Background and Problem Statement

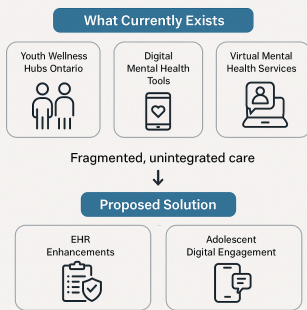
- **Prevalence of Mental Health Disorders:** Between 15% and 25% of Canadian youth experience at least one mental health challenge or illness before age 19. [moodle8.camhx.ca](#)
- **Suicide Rates:** Suicide is the second leading cause of death among youth and young adults aged 15–34 in Canada. [CASP+2Canada.ca+2Mental Health Commission of Canada+2](#)
- **Impact of COVID-19:** The proportion of youth aged 12–17 rating their mental health as "fair" or "poor" increased from 12% in 2019 to 26% in 2023. [Statistics Canada](#)
- **2SLGBTQ+ Youth Disparities:** 56% of 2SLGBTQ+ youth met criteria for a mental health or substance use disorder in the past year, compared to 29% of their cisgender, heterosexual peers. [Statistics Canada](#)
- **EHR Limitations:** Current Electronic Health Records (EHRs) often lack fields for social determinants of health (SDOH), psychosocial risks, and referral histories, hindering comprehensive adolescent mental health care.
- **Fragmented Care Systems:** Lack of integration between healthcare providers, schools, and community services leads to delayed interventions and poor care coordination.
- **Digital Engagement Gap:** Adolescents increasingly turn to digital platforms for mental health information, yet traditional care models struggle to engage them effectively.

Current Market Landscape

- **Youth Wellness Hubs Ontario (YWHO):** Integrates mental health, substance use, primary care, and social services into one location for youth aged 12–25. However, these hubs are regionally limited and face long wait times for specialized services.
- **Digital Mental Health Tools** (e.g., MindBeacon, Inkblot Therapy, Wellin5): Offer online therapy and self-help modules but operate outside traditional healthcare systems and lack integration with EHRs.
- **Virtual Mental Health Services** (e.g., Kids Help Phone, BounceBack Ontario): Provide crisis support or coaching but do not offer continuity of care tied to a patient's formal health record.

Current Gaps

- No standardized integration of SDOH data into clinical workflows.
- Minimal coordination between primary care, schools, and community services.
- Adolescent engagement strategies are fragmented and often disconnected from formal care systems.
- Lack of predictive tools (e.g., AI risk stratification) based on comprehensive social and behavioral data.



Possible Solutions

Provider-Focused Enhancements:

- Standardized SDOH data collection integrated into EHRs.
- AI-driven risk alerts to flag high-risk adolescents.
- Cross-sector real-time data sharing between providers, schools, and community services.

Adolescent-Focused Engagement:

- Chatbots, mood tracking, CBT modules, virtual peer support.
- Self-help tools embedded within healthcare pathways.
- Caregiver resources to bridge the support gap.

Objectives

- Identify the limitations of current electronic health records (EHRs) in supporting adolescent mental health, particularly regarding the integration of social determinants of health (SDOH) and psychosocial data.
- Assess adolescents' preferences and barriers when engaging with digital mental health tools.
- Develop an integrated model that combines enhanced EHR functionalities with a digital health platform to improve care coordination and outcomes for adolescents.
- Gather and analyze stakeholder perspectives to ensure the proposed solution addresses the needs of all key groups, including adolescents, caregivers, healthcare providers, and community organizations.

Approach to Solution

- **Stakeholder Mapping:** The team will identify all relevant stakeholders, such as adolescents, parents, healthcare providers, and community organizations.
- **Stakeholder Engagement:** Through interviews and consultations, the team will collect requirements, success criteria, and expectations from each group. This process ensures that diverse perspectives shape the solution.
- **Iterative Design:** Insights from stakeholders will inform the development of a prototype that integrates enhanced EHR features (such as SDOH fields and risk assessments) with a user-friendly digital health platform for adolescents.
- **Feedback and Refinement:** The prototype will be refined through continuous feedback cycles, allowing for adjustments based on real-world needs and priorities.
- **Evaluation:** The solution's effectiveness will be assessed through stakeholder feedback and pilot implementation, focusing on usability, feasibility, and impact on care coordination.

Milestones

- **June 14**
 - ♦ **Stakeholder Engagement Findings**
→ Map stakeholders, conduct interviews, and present key engagement findings.
- **June 25**
 - ♦ **Needs Assessment & Gap Analysis**
→ Analyze engagement results to identify system gaps.
- **July 12**
 - ♦ **Draft Architecture Presentation**
→ Present integrated system architecture draft.
- **July 30**
 - ♦ **Co-Design Workshops & Prototype Start**
→ Run design workshops and start prototype.
- **August 8**
 - ♦ **Prototype Testing & Feedback**
→ Conduct usability testing with stakeholders.
- **August 13**
 - ♦ **Final Project Presentation**
→ Deliver full project presentation.
- **October 18**
 - ♦ **Pitch Presentation for Scaling/Advocacy**
→ Create and deliver final advocacy pitch.

Stakeholder and Justifications

- **Adolescents**
 - Primary users, co-design contributors
- **Caregivers/Families**
 - Support engagement and care adherence
- **Healthcare Providers**
 - Inform EHR design and clinical workflows
- **Health IT / EHR Vendors**
 - Enable technical integration and usability
- **Schools**
 - Enable early identification and data-sharing
- **Community Organizations**
 - Bridge health and social support systems
- **Privacy / Ethics Experts**
 - Ensure youth-specific consent and safeguards
- **Policy & Advocacy Groups** (e.g., CAMH, MHCC, Kids Help Phone)
 - Guide system alignment and future scale-up

Next Steps : From Research to Real World Implementation

Stakeholder Engagement & Mapping (May–June 2025)

- > Engage with adolescents, caregivers, healthcare providers, schools, and community organizations to gather input on needs, barriers, and preferences.
- > Conduct interviews and focus groups to inform the design of the integrated EHR and digital engagement platform.

Data Integration Design & Prototype Development (June–July 2025)

- > Develop a prototype integrating standardized SDOH frameworks within EHRs and digital health tools.
- > Use AI-powered models for risk detection based on behavioral and social patterns.
- > Begin designing the youth-centered digital engagement tools (chatbots, mood tracking, CBT, peer support).

Co-Design Workshops & Feedback Loops (July–August 2025):

- > Hold co-design workshops with stakeholders to refine platform features (youth engagement tools, caregiver resources).
- > Test initial prototypes with key groups (adolescents, caregivers, providers) and gather feedback.

Grant Applications & Funding (June–October 2025):

- > Apply for grants to support pilot implementation, focusing on integration with provincial EHR systems and alignment with national mental health initiatives.
- > Secure funding for scalability, focusing on long-term sustainability and policy integration.

Pilot Implementation & Evaluation (August 2025–January 2026):

- > Implement the integrated solution in a selected region, incorporating real-time risk stratification and cross-sector data integration.
- > Monitor engagement, user experience, and effectiveness through ongoing feedback and metrics collection.

Short-Term Outcomes (By Project End)

- **Enhanced Understanding of EHR Gaps:** Clear identification of missing adolescent mental health and SDOH fields in current EHR systems.
- **Stakeholder-Informed Design Requirements:** Insights from adolescents, caregivers, providers, and community organizations inform system and platform design.
- **Prototype Development:** Creation of an initial model integrating enhanced EHR features with a digital engagement platform.
- **AI Risk Detection Concept Identified:** Defined key data elements and patterns to inform AI models for future risk stratification.
- **Framework for Cross-Sector Data Integration:** Initial strategy developed for sharing data securely between health, education, and community services.
- **Usability and Feasibility Feedback:** Collection of initial end-user feedback on prototype functionality and relevance.
- **Pilot-Readiness:** Roadmap prepared for future pilot testing and grant applications.

Long-Term Outcomes (Post-Implementation & Scale-Up)

- **Improved EHR Systems:** Adoption of EHR enhancements across healthcare organizations to better document adolescent psychosocial and social risk factors.
- **Sustained Youth Engagement:** Increased use of youth-centered digital mental health tools integrated into clinical care pathways.
- **Enhanced Early Intervention:** Earlier identification and proactive support for at-risk youth through AI-driven risk detection embedded in care workflows.
- **Predictive Care Models:** Deployment of predictive analytics tools to support proactive, data-driven adolescent mental health interventions.
- **Integrated Youth Mental Health Ecosystem:** Stronger collaboration between healthcare, education, and social services to deliver seamless mental health support.
- **System-Level Change:** Influence on health policy and funding decisions to support integrated, youth-centered digital mental health infrastructure.
- **Scalability and National Expansion:** Expansion of the solution across provinces, supporting national mental health priorities for adolescents.