



From Insight to Impact: A Collaborative Case Study in Digital Mental Health

MEMOTEXT

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Centre for Addiction and Mental Health

Co-designing care. Scaling impact.

Friday, July 25th, 2025

Introduction

App4Independence (A4i) is a mobile digital health intervention co-developed by the **Centre for Addiction and Mental Health (CAMH)** and **MEMOTEXT Corporation**. Designed to address the significant care gaps for individuals living with schizophrenia-spectrum illnesses, A4i is a patient-centered, smartphone-based platform that aims to improve treatment engagement, care coordination, and early identification of relapse risk.

At its core, A4i was created to confront several persistent challenges in schizophrenia care: poor community-based supports, high relapse rates, limited non-pharmacological interventions, and difficulties in maintaining provider engagement. These issues often lead to lengthy and costly hospitalizations, diminished quality of life, and considerable strain on the healthcare system. Schizophrenia in North America is currently \$16.4B and is expected to grow to \$17.2B by 2030¹.

A4i stands apart through its integrative and evidence-informed approach. It offers a suite of features including:

- A **personalized content feed** using ambient and self-reported data
- **Daily wellness and goal check-ins**
- **Medication and appointment reminders**
- A **patented ambient sound detector** to aid users in distinguishing hallucinations from real sounds
- A **peer-to-peer support network**
- And a **provider dashboard** for remote monitoring and collaborative care planning

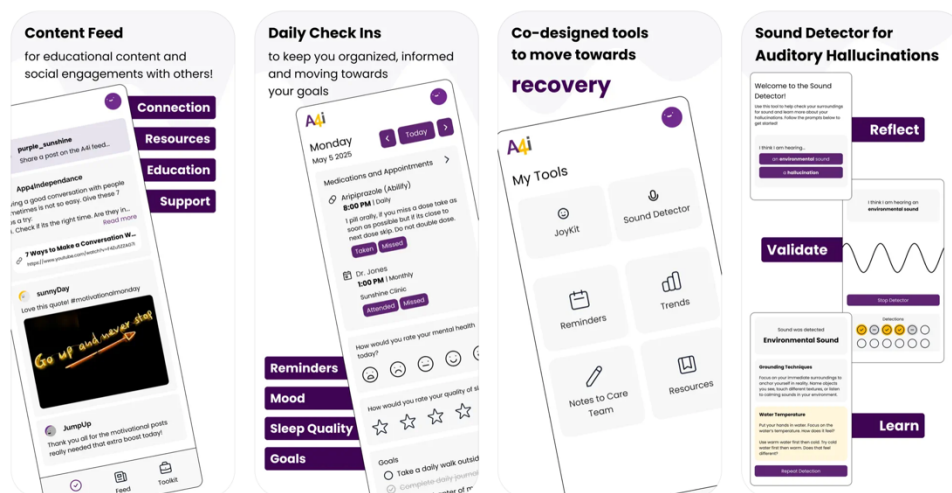


Figure 1.0: A4i Interface: Content, Check-ins, Tools, and Sound Detector

The platform's design methodology combines MEMOTEXT's expertise in digital patient engagement and data-driven personalization with CAMH's leadership in mental health research and care. The result is an intervention that is not only co-designed with patients, but flexible and scalable to meet the needs of various stakeholders, from clinicians to health systems.

This case study is important because it highlights a rare and meaningful collaboration between a Canadian academic health science center and a digital health technology firm. More than just a success story in innovation, A4i presents a model for how co-creation can drive the development of sustainable, real-world digital interventions. The broader impact of A4i stretches beyond schizophrenia care. The A4i framework has been adapted for other high-need populations, including opioid use disorder (OUD). A4i is also establishing a foundation for AI-driven health solutions focused on personalization, empathy, and outcomes.

Through this case study, readers will gain insight into the **co-design and commercialization process**, the **clinical and system-level problems A4i addresses**, and how **collaboration and iterative validation** can lead to improved patient engagement, outcomes, and cost-effectiveness in digital health.

Background

Mental Health Challenges

Schizophrenia-spectrum illnesses present significant healthcare challenges globally. Key issues include inadequate community-based support systems, high medication non-adherence rates, frequent hospital readmissions, and low engagement with providers. Low adherence to treatment is common (averaging 50%), exacerbating the risk of rehospitalization, social isolation, distress, and poor quality of life for individuals living with schizophrenia. Along with profound impacts in the lives of those affected and their families, schizophrenia is very resource-intensive in health systems. Schizophrenia accounts for about 3.8% of hospital admissions in Canada, resulting in substantial healthcare costs—estimated at approximately CAD 6.85 billion annually due to healthcare expenses and lost productivity¹.

Existing Solutions & Gaps

Before the development of A4i, digital health solutions for schizophrenia were significantly underdeveloped compared to those available for conditions like depression and anxiety. Most existing mobile health (mHealth) interventions for schizophrenia were confined to research settings, with limited commercial availability². Prominent examples include the FOCUS and PRIME apps, which showed some positive impacts such as reduced depressive symptoms and increased self-efficacy but were not widely accessible to the public outside of controlled research contexts.

The available solutions suffered from several limitations:

- **Accessibility and usability:** Many interventions required users to be provided with specialized, costly devices or lacked effective integration with personal smartphones.
- **Limited clinical effectiveness:** Existing solutions primarily offered generic text-based reminders and psychoeducational content, failing to address specific schizophrenia challenges such as cognitive impairments and auditory hallucinations.
- **Lack of comprehensive care:** No previous solutions fully integrated the range of care needs, such as peer support, real-time symptom tracking, auditory hallucination feedback tool, and proactive clinical management—that A4i incorporates².

Stakeholder Needs

Stakeholders, including clinicians, researchers, patients, and caregivers, consistently identified gaps in existing approaches. Clinicians faced challenges with patient engagement, adherence monitoring, and timely identification of relapse risks. Researchers at CAMH recognized the urgent need for personalized interventions capable of addressing specific schizophrenia symptoms through data-driven approaches. Patients expressed dissatisfaction with existing support mechanisms, citing needs for more interactive, empathetic, and personalized digital health tools that enable both patient-clinician and peer-peer connectivity.

How MEMOTEXT Got Involved

MEMOTEXT, known for its expertise in developing evidence-based digital patient engagement solutions since 2012, brought a wealth of experience in technology-driven personalization and adherence interventions. With over 50 validated and commercialized digital health interventions, MEMOTEXT was uniquely positioned to translate clinical requirements into a robust, user-centric platform capable of improving patient engagement, adherence, and outcomes.

The Centre for Addiction and Mental Health (CAMH) employs over 5,000 staff, making it Canada's largest mental health hospital and an internationally leading research center. This diverse staff includes physicians, clinicians, researchers, educators, and support personnel, providing care to around 37,000 patients annually. CAMH has a very long track record of developing behavioral and biological interventions across an array of mental illnesses and across the lifespan.

As of 2017, though, CAMH had very limited experience in the digital health space. A4i Co-Founder Dr. Sean Kidd, a Senior Scientist at CAMH, was becoming increasingly frustrated with the technology available to people with schizophrenia. In a resource-constrained care context, where treatment disengagement and suboptimal outcomes are very common, most people with schizophrenia had smartphones and wanted to use them in their care and, in turn, clinicians sought paths for better engagement. Kidd shared this frustration with the Technology Transfer and Industry Partnership group at the hospital.

It was serendipitous that MEMOTEXT CEO Amos Adler met CAMH Commercialization Director Dr. Klara Vichnevetski at the BIO conference in Boston. This led to a series of meetings where it was found that the MEMOTEXT commitment to rigorous co-design and data-driven iteration paired well with Kidd's approach to research and intervention development. Winning the JLABs Quickfire Challenge propelled this partnership into one of CAMH's first joint ventures – App4Independence (A4i) - and the work accelerated from there.

CAMH's collaboration with MEMOTEXT facilitated a co-design process involving iterative feedback loops from patients, family members, clinicians, and case managers, ensuring the intervention's features directly responded to the real-world needs of users.

Before A4i, the market lacked an accessible, evidence-based, comprehensive digital solution tailored specifically for schizophrenia-spectrum illnesses. The partnership between CAMH and MEMOTEXT not only addressed existing gaps but also set a precedent for how collaboration can lead to impactful digital health innovations.

Development & Validation

The development of App4Independence (A4i) was guided by a collaborative, user-centered process that emphasized adaptability, clinical relevance, and inclusivity. This process was structured around multiple phases, incorporating feedback from patients, clinicians, and researchers to ensure that the intervention addressed real-world barriers to care.

Development Process

A4i was developed from the ground up using a co-design approach that prioritized input from patients, families, and providers, as well as clinical utility. Early-stage development began with a series of structured interviews and focus groups with individuals living with schizophrenia, caregivers, and clinical staff. These conversations revealed a shared desire for tools that support autonomy, provide real-time coping strategies, and enable better communication between patients and providers.

Initial concepts were prototyped as paper-based designs, which were reviewed by patients in workshops to determine usability and relevance. As the product matured, these sketches evolved into interactive digital prototypes built in Figma. Users were re-engaged to test these high-fidelity mock-ups, providing feedback on navigation, clarity, and perceived value.

Development decisions were shaped by a balance of user needs and technical feasibility. Given time and resource constraints, features were prioritized based on their anticipated impact and implementation effort. This framework ensured that the highest-value functionalities such as goal tracking, the sound detector, and peer networking were developed early.

After each release, user feedback was collected and synthesized to guide future updates. The most recent version, **v4**, marked a significant infrastructure overhaul. It introduced expanded modularity to accommodate additional clinical use cases (such as opioid use disorder), enhanced personalization, and improved clinician dashboards.

Validation & Testing

A4i has undergone several rounds of feasibility and pilot testing at Canadian and U.S. sites:

- **Waypoint Centre for Mental Health Care (2025):** A4i is currently being deployed across inpatient and outpatient schizophrenia services at Waypoint Centre, one of Ontario's foremost facilities for complex mental illness. Supported by OBIO's Life Sciences Critical Technologies and Commercialization (LSCTC) program, the pilot aims to enhance care continuity, support discharge planning, and improve real-time communication between patients and providers. The implementation focuses on both rural and tertiary care contexts, further validating A4i's adaptability across diverse clinical environments.
- **The Royal Ottawa Mental Health Centre (2023):** In partnership with The Royal and funded by OBIO's Early Adopter Health Network (EAHN™), A4i was piloted in the Ozerdinc Grimes Family Psychosis Clinic. The evaluation confirmed improvements to patient experience, provider insight, and cost-efficiency. The Royal subsequently recommended A4i for procurement and broader implementation.
- **CAMH Opioid Use Disorder Development (2024-2025):** Following an intensive co-design process with people in recovery from opioid addiction and addiction clinicians, we launched an open label pilot testing 1 month of the newly designed A4i-O (used by 14 patients). Findings were promising and very useful for further iteration. A hackathon to iterate on A4i-O is planned for fall 2025.
- **CAMH RCT (2021–2023):** A fully remote, 2-year randomized controlled trial (6 months A4i use vs treatment as usual) conducted at CAMH demonstrated high engagement and retention, with over 90% of patients remaining active at 90 days. This trial focused on individuals with schizophrenia-spectrum illnesses using their own smartphones, supplemented with digital navigation support.
- **CAMH Outpatient Pilot (2021–2023):** A 16-month feasibility study at CAMH's outpatient clinic involved direct onboarding by clinicians and digital navigators. This model facilitated stronger integration into clinical workflows and supported both patient and provider onboarding.

- **Riverside University Health System (RUHS 2021-2024)** : A peer-led pilot program in California demonstrated A4i's adaptability across community-based settings serving individuals with schizophrenia. The implementation was carried out by trained peer specialists, reflecting a strong patient-centered and recovery-oriented approach. The program showed promising levels of engagement, with participants reporting increased motivation and connection to care. Feedback from RUHS highlighted A4i's utility in improving the consistency of peer engagement, identifying symptom trends, and supporting case managers through more timely and structured data collection⁶.
- **Feasibility Study (2019)**: An earlier open trial involving 38 participants found that A4i had high satisfaction rates, zero research attrition, an app retention rate of 52.5%, and demonstrated small-to-medium improvements in several psychiatric symptom domains with better app engagement among those with more severe mental health challenges⁶.

Regulatory Considerations

Data privacy and ethical compliance were integral to A4i's development. The platform was built to be compliant with:

- **PHIPA (Canada)** – Ensuring patient data is stored within Canadian jurisdictions.
- **HIPAA (USA)** – Enforcing secure handling of U.S. patient health information.

All clinical deployments included institutional ethics approvals, and participants provided informed consent. Data governance protocols were emphasized during onboarding, ensuring participants understood what data was collected and how it would be used.

AI & Data Considerations

A4i uses a rules-based personalization engine that is driven by patient segmentation questionnaires. To reduce bias, content and logic trees were vetted by a diverse team of clinicians and tested with users across varying demographics.

Challenges & Solutions

Several challenges arose throughout development:

- **Workflow Inflexibility:** Early versions lacked adaptability across different care settings. This was addressed in **v4**, which adopted a flexibility-first model allowing clinicians to configure dashboards, alerts, and patient views.
- **Balancing Oversight with Autonomy:** Patients expressed a desire for independence while providers required oversight. A4i introduced user-driven features alongside a clinician portal to ensure both needs were met.
- **Implementation Support:** Embedding A4i into clinical workflows required ongoing education and technical support. Digital navigators and tailored onboarding materials played a critical role in driving adoption.

Role of MEMOTEXT

MEMOTEXT played a central role in translating clinical insight into technical execution. Their responsibilities included:

- Designing the backend infrastructure to support personalization, modular content delivery, and user segmentation
- Developing the clinician-facing dashboard and reporting system
- Facilitating integration with health systems and supporting privacy compliance

Leveraging over a decade of experience developing commercialized digital interventions, MEMOTEXT ensured that A4i was not only evidence-based and scalable, but also strategically developed to meet increasing demands. This included building a flexible architecture capable of supporting new clinical use cases, evolving regulatory requirements, and expanding partnership models across diverse healthcare settings.

Commercialization Strategy

A4i Commercialization Story to Date

Initial Pathway: SaMD Digital Therapeutic

A4i was initially conceptualized as a regulated digital therapeutic, with the intent to pursue FDA clearance as a Software as a Medical Device (SaMD). Its unique set of features including a patented ambient hallucination detector, cognitive remediation tools, and predictive relapse risk detection, positioned the platform to meet clinical and regulatory standards within the mental health digital therapeutic landscape.

Strategic Pivot: Tech-Enabled Services & Reimbursement in the US through Medicaid

In response to evolving healthcare environments and feedback from stakeholders, A4i pivoted from a strictly regulated model to focus on real-world clinical integration through tech-enabled services. This allowed for more immediate and scalable deployment, especially within care systems already leveraging existing reimbursement mechanisms.

A4i now supports billing through established clinical engagement codes such as:

- **H0038:** Peer MH Therapeutic Activity & Engagement
- **H0025:** Peer MH Education Group
- **H0050:** Contingency Planning
- **H2017, H2019:** Psychosocial Rehabilitation & Therapeutic Behavioral Services
- **90832, 90834, 90837:** Individual Psychotherapy

This strategy enables providers to deliver reimbursable care while integrating A4i into existing workflows, removing the need for immediate regulatory approval at the device level. The utilization of A4i increases patient engagement, helping optimize patient care and reimbursement for peer support services.

Clinical Validation & Outcomes

The A4i scientific team has conducted numerous tests nested within multiple peer-reviewed publications (e.g., scoping reviews) and presentations assessing the current state of digital health development.

1. **Feasibility Study (2019):** Showed improvements in depression, paranoia, and OCD symptoms among 38 participants⁶.

2. **Randomized Controlled Trial (2021–2024):** CIHR-funded and involving 91 participants, the RCT demonstrated positive outcomes on sustained engagement and provided positive and useful user feedback. The findings have since been published, further validating A4i's clinical utility⁵.
3. **CAMH Opioid Use Disorder Development (2024-2025):** Following an intensive co-design process with people in recovery from opioid addiction and addiction clinicians, we launched an open label pilot testing 1 month of the newly designed A4i-O (used by 14 patients). Findings were promising and very useful for further iteration.
4. **Real-World Pilots:**
 - **CAMH (Canada):** Demonstrated high retention in both remote and in-clinic pilots.
 - **The Royal (Ottawa):** Validated A4i's integration into outpatient schizophrenia care, leading to a recommendation for procurement.
 - **Riverside University Health System (California):** Highlighted the effectiveness of peer-led implementation, with positive impacts on patient motivation and care coordination.
 - **Waypoint Centre for Mental Health Care (Ontario):** Recently launched in June 2025, this pilot will evaluate A4i's utility in tertiary and rural mental health contexts, with a focus on enhancing continuity of care across complex patient journeys.

Funding Strategy

A4i has secured funding through a blended strategy:

- **Non-dilutive Grants:** Including awards from CIHR, OBIO, and TIAP to support clinical validation and feature development.
- **SAFE Notes (Simple Agreement for Future Equity):** Provided early-stage runway without diluting equity prematurely.
- **Public Sector Partnerships:** Such as those with California Mental Health Services Authority, allowing A4i to scale without private capital.

Addressable Market Opportunity (TAM/SAM/SOM)

A4i addresses a significant and growing market for digital interventions in severe mental illness:

- **Total Addressable Market (TAM):** Estimated at \$17.2B in North America by 2030 for digital SMI solutions¹.
- **Serviceable Available Market (SAM):** Encompasses the broader \$50B global market for schizophrenia and behavioral health services¹.
- **Serviceable Obtainable Market (SOM):** Estimated at \$1.8B in digital intervention spend directly from behavioral health providers in North America¹.

These estimates are supported by data indicating that 137 million people globally experience severe mental illness, with 64% of those in North America actively engaged in treatment¹. The intersection with other high-need groups, including those with co-occurring opioid use disorder, further expands A4i's market potential.

Outcomes & Impact

Clinical & Engagement Outcomes

Across both research studies and real-world deployments, A4i has consistently demonstrated improvements in clinical outcomes, treatment engagement, and quality of life for individuals with schizophrenia-spectrum illnesses.

- **Feasibility Study (2019):** Among 38 participants, significant improvements were observed in depressive symptoms ($p < .001$), obsessive-compulsive symptoms ($p = .004$), and paranoid ideation ($p < .001$)⁶. Engagement levels were high, with 100% retention at 7 days and 94% at 20 days⁶. A subsequent machine learning re-analysis in 2022 confirmed the robustness of these findings.
- **Randomized Controlled Trial (2021–2024):** The CIHR-funded trial with 91 participants (43 in the A4i group, 48 in treatment as usual) demonstrated positive outcomes across several metrics, including the Positive and Negative Syndrome Scale (PANSS), Brief Symptom Inventory (BSI), STAR clinician-patient alliance, treatment adherence, and quality of life⁵.

- **Riverside University Health System (RUHS):** Real-world implementation across 9 clinical sites revealed:
 - 84% average retention across cohorts.
 - A 27.1% increase in satisfaction with personal relationships.
 - A 24.3% increase in satisfaction with friendship.
 - 94.6% of participants would recommend A4i to others.
 - 75.6% reported that A4i improved their mental health⁴.
- **CAMH Outpatient Clinics:** Clients and clinicians noted that A4i helped patients complete CBT homework, track wellness, and stay engaged with care. Features such as emojis and peer content enabled personal expression, and clinician dashboards helped inform decision-making.
- **The Royal (Ottawa):** Early implementation findings suggest enhanced coordination of care, improved client check-in rates, and greater clinician-patient communication. A4i supported the optimization of appointment attendance and was recommended for hospital-wide procurement.

User Feedback

Patients have reported that A4i helped them feel more connected, supported their recovery, and made it easier to track personal goals. In surveys:

- 91.9% said A4i was easy to use
- 86.5% found it useful in daily life
- 89.2% would continue using it if given the chance⁴

Clinicians valued A4i's role in bridging communication gaps and reinforcing therapeutic strategies outside session time. The dashboard was particularly helpful in monitoring trends and supporting personalized care planning.

A4i Pilot

A4i Post User Experience Survey continued

User experience with specific features in the A4i app also showed positive experiences. In particular, the Newsfeed feature. The Goal tracking feature showed some positive responses as well. A4i app utilization data showed the Goal tracking feature was used far less often than than the Newsfeed.

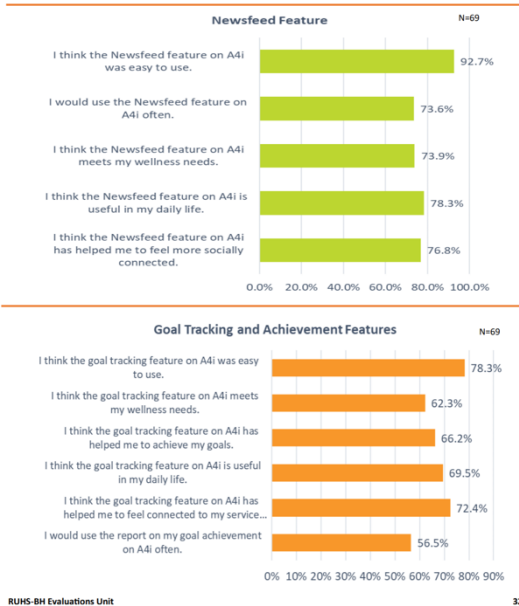


Figure 2.0: A4i Post User Experience Survey Segment⁴

Conclusion & Future Directions

Key Takeaways

The development and deployment of A4i offers a replicable model for co-developing digital mental health interventions that are both evidence-based and grounded in lived experience. Key lessons include the importance of:

- **Flexibility is Key:** Rigid workflows do not serve diverse clinical settings. The latest version of A4i (v4) focuses on configurability and customization.
- **Local Champions Drive Success:** A4i thrives in environments where teams champion its use. Whether through peer specialists, digital navigators, or dedicated clinicians, adoption is strongest when individuals within the care team are passionate, trained, and committed to integrating the platform into day-to-day workflows.
- **Digital Tools Require Culture Change:** For successful adoption, leadership and management buy-in are critical to embed tools like A4i into day-to-day care.

- **Trust, Design & Co-Creation Matter:** Personalization, transparency in data use, and inviting UI/UX are critical for user uptake—but equally important is ensuring that users and care team members are part of the journey. A4i’s development process prioritizes continuous feedback loops, allowing participants to see their input reflected in platform updates. This co-creation approach not only builds trust but also sustains engagement by showing users that their voices shape the future of the tool.

Together, these outcomes demonstrate that A4i is not only feasible and scalable—it is impactful, appreciated by both users and clinicians, and poised to meet the evolving needs of mental health care systems.

What’s Next for A4i

A4i is currently expanding in two key directions:

- **Geographic & Clinical Expansion:** Additional pilots and implementations are underway across North America and globally, including new rural, outpatient, and community mental health contexts. Expansion efforts also target populations with co-occurring conditions such as OUD, bipolar disorder, and anxiety.
- **Product Enhancements:** The platform is undergoing enhancements focused on real-time risk flagging, expanded content personalization, and deeper EMR integrations. New features will also improve the clinician portal’s reporting tools and increase configurability for peer and navigator workflows. The platform architecture is also being strategically developed to accommodate future diagnostic streams, enabling the expansion of A4i to support additional serious mental illness (SMI) indications over time.

Final Reflections from CAMH and MEMOTEXT

The A4i journey underscores the value of co-creation bringing together clinical expertise, patient voice, and technical execution. According to CAMH, the project demonstrated that with the right digital supports, individuals living with schizophrenia can be more actively engaged in their recovery and care planning. For MEMOTEXT, A4i validated that scalable digital solutions are possible when organizations commit to iterative, participatory design.

Both organizations emphasize that AI-driven health tools must be:

- **Grounded in real needs** from the voices of users
- Built with **ethical data practices**
- **Continuously tested** for usability and equity

A4i demonstrates that digital health doesn’t succeed in isolation, but thrives through **collaboration, co-creation, and compassion.**

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