Position Statement | November 2025

Advancing Information Technology and Artificial Intelligence in Long-Term Care Homes

Introduction

Canada's long-term care (LTC) homes are facing unprecedented challenges. With an aging population, increasing resident complexity, and persistent staffing shortages, the sector requires innovative approaches to maintain and improve quality care. Information technology modernization and artificial intelligence (AI) offers a transformative opportunity to support both residents and care providers by enhancing operational efficiency, supporting clinical decision-making, and enabling more personalized care. However, to realize this potential, strategies must explicitly consider long-term care as a distinct priority, rather than being applied solely to healthcare more broadly. Population aging is having a profound impact on the healthcare system, and LTC is at the forefront of these pressures.

The integration of information technology (IT) and artificial intelligence (AI) in LTC homes has become an essential consideration for the future of how safe, modern, and efficient care is delivered. Modernized IT systems, standardized data, and responsible AI adoption can enhance operational efficiency, support workforce planning, enable personalized resident care, and strengthen system-level intelligence for evidence-based policy and resource allocation. To achieve these outcomes, LTC must be explicitly included in Canada's digital health strategy, with interoperable systems, robust cybersecurity, ethical AI adoption, and workforce development.

Current State

Information in LTC is currently collected across clinical, workforce, and operational domains. Clinical data, such as resident health outcomes, are measured using tools like InterRAI LTCF and reported to the Canadian Institute of Health Information (CIHI). Workforce data is developing through national reporting initiatives led by CIHI and Health Workforce Canada, while operational data, such as financial and infrastructure metrics, is supported in a limited number of LTC homes through CIHI's Management Information System (MIS) framework.

These available data sources often operate in silos, disconnected from the broader health system. This limits their usefulness for coordinated planning, informed decision-making, and seamless care transitions. Policymakers lack a clear, comprehensive picture of the LTC sector, which constrains efforts to address staffing shortages, operational challenges, and resident needs.

Improving Data in Long-Term Care

Access to reliable, validated, and standardized data is foundational to effective care. Resident data, collected through InterRAI LTCF assessments, is the global gold standard, especially for residents with dementia, and integrates directly with CIHI for near real-time policy insights. This data supports person-centered care planning, allows operators to assess aggregate acuity, and helps allocate staff and resources to areas of greatest need.

However, LTC homes face challenges related to using InterRAI as the mandatory upgrade to the LTCF version unfolds. The challenges largely relate to the need for more time for implementation, the need for funding supports for staff training, and inadequate internet and technological infrastructure. Work is moving forward but offers insight into what resources are needed and must be planned for with national scale adoption of an IT initiative in long term care homes. Workforce and operational data present additional challenges. Health human resources are the number one issue facing Canada's health and LTC sectors, yet fully understanding the situation for long term planning is challenging due to limited workforce data that is currently available, although this is advancing with work being done by Health Workforce Canada and others in the research community. Improving workforce data is therefore critical to addressing both immediate and long-term human resources challenges. Going forward, comprehensive data is needed to understand staffing demographics, skill gaps, geographic disparities, and overall workforce sustainability.

Opportunities for Technology and AI in LTC

The integration of IT and AI in LTC presents transformative opportunities. Interoperable systems that connect LTC homes with hospitals, primary care, and public health allow for comprehensive, comparable data that supports system-level planning, resource allocation, and emergency preparedness. CIHI's Pan-Canadian Health Data Content Framework and provincial initiatives, such as Ontario's Project Amplify, provide models for achieving interoperability.

Cybersecurity is a critical concern as LTC homes adopt digital technologies. National standards must evolve alongside digital health implementation to protect sensitive resident data and ensure continuity of care. Cyber risks in can lead to service disruptions, data breaches, and compromised resident safety, making robust cybersecurity measures essential.

AI has the potential to improve care and operational efficiency in multiple ways. Clinical decision support tools can use predictive analytics to identify residents at risk of hospitalization, enabling proactive interventions. Workforce management tools can optimize staff scheduling and reduce burnout, while administrative automation can free staff to focus on direct care. Current applications of AI in LTC include monitoring systems using low-power radio signals to enhance resident safety, social robots providing companionship, nutritional analysis tools, and AI-enabled scheduling platforms. All AI deployment must adhere to the Pan-Canadian AI for Health Guiding Principles, ensuring transparency, equity, accountability, and human augmentation rather than replacement.

Operational efficiency can also be enhanced through IT and AI by improving reporting, resource planning, and care coordination. Quality improvement collaboratives have demonstrated that collaborative approaches can build capacity in LTC homes and accelerate adoption of best practices.

Challenges

Despite these opportunities, LTC homes face significant barriers. Many operate with outdated infrastructure and limited funding. The reporting burden is high, and digital literacy among staff remains uneven. Successful transformation also requires engagement with stakeholders, education, coaching, and change management. Finally, the sector lacks a clear national vision for digital integration, creating uncertainty and fragmentation.

Policy Recommendations

To address these challenges and fully leverage the potential of IT and AI, the CALTC Board of Directors calls on the federal government, working with Provinces, Territories, and health system partners to develop a comprehensive strategy that includes LTC as a priority, that includes:

- Development of a national vision for digital health and AI in LTC, that algin's with broader healthcare transformation and ensures integration into all federal digital health initiatives, including CIHI, Canada Health Infoway, and Health Workforce Canada. Planning and implementation must engage technology companies, LTC providers, and researchers to ensure solutions are tailored to the sector's unique needs.
- Investment in infrastructure, workforce, and change management is critical. LTC homes must be supported in upgrading IT and AI systems, providing staff training and coaching, and ensuring ongoing technical support so systems are resilient to cyber threats and protect sensitive resident and employee data.
- Standardized resident and workforce data collection should be prioritized, support given for the InterRAI LTCF upgrade that provides additional time and funding for staff training, investment in technology, and consideration of the Management Information System (MIS) for implementation in LTC homes to improve operational data availability.
- AI adoption should be ethical and responsible, augmenting human expertise and not replacing human resources, protecting privacy, and demonstrating measurable improvements in care quality and operational efficiency. Pilot projects can showcase benefits and guide scaling across the sector.
- CALTC further recommends dedicated federal support for LTC data, infrastructure, and workforce under bilateral agreements to provide funding envelopes for LTC homes for systems implementation, upgrade internet infrastructure and funding for staff training and time for data collection. Funding should also support informatics leads within homes to manage privacy, data-sharing agreements, collection, analysis, and reporting.

These measures will ensure LTC homes have the tools, infrastructure, and expertise to collect accurate, timely data, enable evidence-based planning, support workforce sustainability, and improve resident outcomes.

Conclusion

Information technology and artificial intelligence provide a transformative opportunity to strengthen resident well-being, improve operational efficiency, and support LTC staff in delivering compassionate, high-quality care. By prioritizing interoperability, cybersecurity, standardized data collection, ethical AI adoption, workforce development, and collaborative leadership, Canada can ensure its LTC sector is fully equipped for the digital health transformation of the 21st century.

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