Alberta Doctors' Digest

Do virtual hospitals work?

In an era of hospital overcrowding and bed shortages, virtual medicine wards are emerging as a transformative approach to inpatient care. These hospital-at-home programs, successfully implemented worldwide, are gaining momentum in Canada.

Since 2018, Alberta Health Services (AHS) has operated the virtual home hospital (VHH) in Edmonton and Calgary, offering eligible patients hospital-level treatment at home through a blend of virtual technology and in-person care. As health care systems struggle to balance capacity constraints and patient-centred care, Alberta's model provides a scalable solution to reduce hospital congestion while improving patient outcomes.

How virtual home hospital works

The virtual home hospital model enables patients to recover at home while receiving physician-led care through video consultations, remote monitoring devices, and in-person visits from nurses, pharmacists and community paramedics. The program is designed for patients who are stable enough to avoid hospitalization altogether or to be discharged earlier than usual, provided they continue receiving acute care in a monitored home setting.

The care team provides:

- Regular virtual check-ins via phone or video.
- Medication management, including intravenous (IV) fluids if required.
- Education and self-management support to help patients navigate their treatment.
- In-person assessments and interventions when needed.

The clinical evidence supporting virtual wards

Virtual medicine wards are not merely a cost-saving measure; clinical evidence suggests they offer comparable – if not better – outcomes than traditional inpatient care. A 2024 CADTH Horizon Scan examined multiple studies evaluating hospital-at-home programs and found:

- Lower or similar mortality rates compared to inpatient care.
- Reduced risk of hospital-acquired complications, including infections, delirium and falls.
- Shorter hospital stays without an increased risk of readmission.
- Higher patient satisfaction, with many preferring home-based recovery.

Moreover, studies indicate that virtual ward models are associated with lower costs due to shorter hospital stays, reduced facility costs and fewer complications. While Canadian cost data is still limited, UK-based evaluations suggest virtual ward programs save an estimated £3,000 to £4,500 per patient – significant financial relief for strained health care budgets.

Challenges and barriers to implementation

Despite the benefits, scaling virtual medicine wards presents logistical and equity challenges. According to the CADTH review, common concerns include:

- **Caregiver burden:** Many patients in virtual wards require support from family members, which can add stress and logistical challenges for unpaid caregivers.
- **Digital divide:** Patients in rural areas or those with limited access to technology may face difficulties participating in virtual care.
- **Care coordination:** Seamless communication between hospital-based teams, home care providers and community paramedics is critical to patient safety.

To address these barriers, Alberta's virtual home hospital integrates community-based providers such as home care and paramedics, ensuring patients receive hands-on care when needed. Additionally, physician training and standardized workflows are essential to streamline referrals and optimize patient management.

Implications for physicians and the future of acute care

For Alberta's physicians, virtual home hospital represents a paradigm shift in acute care delivery. Traditionally, inpatient care has been the default for managing moderate-to-severe illnesses. However, the increasing burden on hospital resources necessitates alternative solutions. The CADTH review emphasizes that virtual wards can help optimize bed utilization while maintaining high standards of care.

With hospital capacity under constant pressure, virtual medicine wards offer a scalable, patient-centered model that prioritizes quality care, patient autonomy and system efficiency.

Editor's note: The views, perspectives and opinions in this article are solely the author's and do not necessarily represent those of the AMA.

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