News

# Could bringing the hospital home expand acute care capacity?

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With many Canadian hospitals running at or above capacity, some are delivering acute care in patients' homes.

Hospital-at-home programs provide exactly what the name suggests — hospital-level therapies, tests and monitoring for patients who are sick enough to require acute care but stable enough to receive it at home.

While other forms of home care may not provide or integrate well with acute care, and may not be covered entirely publicly, hospital-at-home patients are registered and treated like hospital inpatients.

"Everything is delivered from the hospital system as if the patients were in a physical ward," explained Sean Spina, director of special programs at British Columbia's Island Health authority.

## Beyond bricks and mortar

Island Health launched a hospital-at-home program in 2020 when health systems across Canada were scrambling to accommodate surging COVID-19 admissions. But work on the program predated the crisis, according to Shauna Tierney, who co-led the initiative.

"The Ministry of Health told the hospital administration here that they should be expecting a steady increase in the need for inpatient beds over the next several decades," Tierney said. "Hospital-at-home was floated as one potential way to tackle that."

Australia, Spain, and France have had hospital-at-home programs for at least two decades. Studies on the model, including several Cochrane reviews, indicate it provides similar care to traditional brick-and-mortar hospitals — in some cases, reducing patients' length of treatment, readmissions, and risk of ending up in residential care within six months.

Island Health's program provides home visits, remote monitoring, and 24/7 access to a team of health professionals for patients with mild to moderate conditions, such as flare-ups of congestive heart failure or chronic obstructive pulmonary disease.

Officials in B.C. estimate roughly 5%–10% of all hospital inpatients could be eligible for the program as it scales up.

Alberta Health Services launched a similar "Complex Care Hub" program in Calgary before the pandemic, offering patients the option to receive acute care at home from a team including community paramedics.

The program aims to reduce readmissions among older patients, marginalized populations and people with chronic conditions — all of whom may frequently visit emergency departments because they can't access care elsewhere.

"We needed a way to give them an alternative, so they weren't living their lives in hospital… and see if we can do a little bit of prevention to reduce the number of exacerbations or readmissions they have," said medical lead Michelle Grinman.

The program's community paramedics provide a wide range of services, from bloodwork, electrocardiography, and IV medications to wound care medication reconciliation, and home safety assessments identifying practical issues, Grinman said, "like this person doesn't have food in the fridge."

Patients also receive a remote monitoring kit including a blood pressure cuff, oximeter, thermometer, scale, and digital tablet for tracking their vital signs and communicating with care providers.

While some patients receive daily visits for a short period, others receive fewer visits but longer monitoring, Grinman noted, "because there's something that will fall through the cracks or maybe they need a certain type of infusion in a few weeks."

## Promising early outcomes

Preliminary data from the first two years of Alberta's program suggest the model reduced pressure on hospital services while achieving high levels of patient and provider satisfaction, with no unexpected deaths. Participants tended to be older women with high medical complexity and were hospitalized at home for eight days on average.

The program also "broke even" within six months by reducing readmissions among patients who were discharged early to finish their recovery at home, Grinman said.

"From an economic standpoint, you usually get more bang for your buck the earlier in the admission [that a patient is transferred home]," she explained. "But with this health care crisis, even early facilitated discharge [to hospital-at-home] takes some of the patients who would be long stays and helps them to get out of the hospital."

Most economic analyses of hospital-at-home programs show the model reduces the cost of care, although at least one recent review cautioned that these studies likely overestimate the potential savings. Still, the authors noted that hospitalization at home can have other advantages even if projected savings are not realized.

Notably, in Victoria, Australia, the model added the equivalent capacity of a 500-bed hospital without building a brick-and-mortar facility.

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News

Meanwhile, an often-cited meta-analysis of 61 clinical trials published in 2012 found that one death was averted for every 50 patients transferred to hospital-at-home.

A more recent review of nine randomized clinical trials published in 2021 found that patients with chronic diseases who were hospitalized at home had a similar risk of death and longer length of treatment compared to hospital inpatients, but a 26% lower risk of readmission, as well as a lower risk of subsequent admission to long-term care.

"The beds are important, but it's not just about the health care crisis," Grinman said. "Are you providing a service that makes patients happier, that maybe actually saves their lives?"

Conventional hospitalization can inadvertently make older patients sicker as they spend most of their time in bed, leading to rapid muscle loss and increased risk of discharge to long-term care or death, she noted. By contrast, patients hospitalized at home spend less time in bed and can keep their normal routines.

"They have to get up to make their meals. They get to watch their TV shows. They get to see their friends. And they're not exposed to [hospital-acquired] infections," Grinman said. "Particularly during the pandemic, patients were so happy because they got to be around family [who otherwise couldn't visit them in the hospital owing to COVID restrictions]."

Poorer patients may reap the greatest benefits from the model, as health providers visiting them at home can more easily address social determinants like food insecurity or accessibility issues.

Hospital-at-home also provides an alternative for people who've experienced discrimination and abuse in institutional settings, according to Jessica Sault, an elder from Nuuchahnulth Nation in B.C. whose Mohawk/Anishinaabe husband participated in Island Health's program.

"My husband has dealt with trauma from residential school, and this trauma was slowly surfacing when he was in hospital. This program embraces his comfort and allows him dignity."

## Slow uptake in Canada

Even so, hospital-at-home programs have been slow to gain traction in North America.

In the United States, hospitals were previously limited by restrictions on where they could provide publicly reimbursed services until a Medicare waiver program removed that barrier during the pandemic. But Canadian hospitals face no such restrictions, according to Samir Sinha, director of geriatrics at Sinai Health and University Health Network in Toronto.

In 2012, Sinha published one of the first Canadian reports recommending the adoption of hospital-at-home. Since then, he said, "we haven't seen much in the way of demonstration projects or pickup of this model in Canada, other than in British Columbia and Alberta."

Sinha made a business case for a hospital-at-home program in Toronto, but implementation proved complicated, not least because of multiple conflicting information systems at different hospitals and difficulties bridging different parts of the health system.

Compared to Alberta and B.C.'s more centralized health authorities, which oversee most elements of the health system, from hospitals and home care to employment and reimbursement, Ontario's health care system is "much more fragmented," Sinha said. "That makes it very hard to bring multiple different players together because the incentives aren't necessarily aligned, and different parts of the system are paid very differently."

A 2022 survey of hospital-at-home leaders, physicians and researchers from around the world suggests that these problems aren't unique to Canada. They identified gaps in research on implementing and scaling the model, regulatory and payment issues, the comparative effectiveness of different hospital-at-home programs and ethical issues.

"Multiple research questions in this sphere remain unanswered," Bruce Leff and coauthors wrote in the *Journal of the American Geriatrics Society*. "For instance, does [hospital-at-home] care privilege one group over another? Do different groups experience different outcomes under [hospital-at-home] care? If so, how can this be ameliorated?"

Without proper resourcing, hospital-at-home "is not going to solve the health care crisis," Grinman acknowledged. But even small programs can make a meaningful difference at a time of chronic overcrowding and hallway medicine. "Ten beds aren't 100, but it is still ten beds that you didn't have to pay for the capital cost, like the actual bricks and mortar."

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