



## Acute hospital services in the home

### *New role for modern primary health care?*

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**A**cute hospital substitution is the delivery of care and services in the home that would otherwise be provided only in hospital.<sup>1</sup> Different models for delivering hospital-level care in the home exist internationally (termed hospital at home, hospital in the home, or home hospital), with well established programs in Australia, the United Kingdom, and France. Substitution programs care for patients of all ages, including sick children,<sup>2</sup> although they often target the elderly.<sup>3,4</sup>

Hospitals, the most expensive and dominant component of the health system, might not be the best setting for all acute care, particularly short-term acute care (including postsurgical care; rehabilitation; use of technical equipment for chemotherapy, oxygen therapy, diabetes, intravenous therapy, or medication administration; and care to clients with acute serious mental illness). In addition, the demand for hospital services could

outstrip supply. Do we need formal hospital substitution programs in Canada?

The 2003 First Ministers Health Accord recognized that current approaches to acute care delivery needed to be critically examined.<sup>5</sup> The Accord's recent redefinition of home care goals to ensure that "patients receive medically necessary services at home, instead of the hospital" is a major policy move to contain hospitalization rates and unnecessary costs in a demographically aging population. People 65 years and older currently have hospital admission rates more than 2.5 times higher than the whole population<sup>6</sup>; those older than 75 have double that rate again. Yet hospital sector growth is being contained. Nationally, acute inpatient hospital days have been reduced 10.3% from 1995-1996 to 2000-2001.<sup>6</sup> There are concerns that parallel expansion of home care is occurring without formal integration with primary care<sup>7</sup> and with insufficiently developed

work force strategies<sup>8</sup> to include medical care,<sup>7</sup> resources, and organizational reform.<sup>8,9</sup> The potential to covertly shift the costs of care to vulnerable caregivers and families also raises concern.<sup>9</sup>

The international literature demonstrates that a range of acute hospital substitution models, managed by hospital or community institutions, are safe, provide high-quality care, and are preferred in general by patients, although some schemes might burden caregivers.<sup>1,10-12</sup> Comparable or better health outcomes in hospital-at-home care have been consistently demonstrated when contrasted with hospital care for most patient groups.<sup>1</sup> Those recovering from hip replacement surgery reported a significantly greater improvement in quality of life with hospital-at-home care; some postacute stroke patients reported similar improvement, but some did not.<sup>13</sup> A well conducted study found a reduction in typical geriatric complications of hospital admission, such as delirium and urinary and bowel complications (incontinence or retention), as well as significantly higher patient and caregiver satisfaction.<sup>4,14</sup> A trend to fewer deaths, although not reaching statistical significance, has been reported in a large Australian program.<sup>15</sup>

### Possible reasons for delaying substitution

Why has Canada been slow to implement acute hospital substitution? We propose four major reasons: mixed results of Canadian trials, uncertain economic efficiency, lack of recognition and funding, and reports that “We tried it, and it didn’t work.”

**Mixed results of Canadian trials.** Home care agencies have experimented with substituting hospital services with home care in small-scale trials and have had mixed outcomes.<sup>9</sup> For example, the Enhanced Case Management Project,<sup>16</sup> the Integrated Cardiac Home Monitoring Pilot Project,<sup>17</sup> and the Rural Palliative Home Care Demonstration project<sup>18</sup> neither reduced hospital use nor facilitated people dying at home. Other programs, the Home-Based Program for Treatment of Acute Psychosis<sup>19</sup> and the Frail Seniors Service

Delivery Model Evaluation,<sup>20</sup> reported reduced hospital use. The Carelinks project<sup>21</sup> successfully reduced hospitalization: hospitals were closed and resources transferred.

**Uncertain economic efficiency.** Hospital substitution programs might extend care but increase costs or not save money.<sup>9</sup> A Cochrane meta-analysis<sup>1</sup> is currently inconclusive about economic efficiency and concludes results do not support “the development of hospital at home services as a cheaper alternative to in-patient care,” although some authors have shown substantial savings from home-based hospital substitution programs.<sup>22-24</sup>

The Cochrane meta-analysis includes only randomized controlled trials (RCTs). Evaluation and economic assessment of home hospital programs in RCTs have many serious conceptual and practical challenges.<sup>25</sup> These include definitions of acute hospital care and interventions, issues of context, and the choice of comparator; the choice between a short- or a long-run perspective and capacity, and the constraints and size of schemes.<sup>12</sup> Practical problems relate to the time at which schemes are evaluated, the type of clinical setting alongside which studies were conducted, and the types of data available for analysis. Also, RCTs do not evaluate the real costs and benefits of programs with economies of scale.

A case study of Hospital in the Home (HITH) services introduced in 45 hospitals in Victoria, Australia,<sup>15,26</sup> since 1994 provides a longer-term perspective and addresses economies of scale. Demand continues to grow; service expansion treats more patients and new conditions. The average substitution rate (the proportion of hospital bed days provided in the home) was 4.9% for the period July 2000 to February 2001 with up to 10% substitution in certain hospitals.<sup>26</sup> The HITH program has demonstrated feasibility over almost a decade and has been shown to be more efficient than acute hospital care for a range of conditions.<sup>15</sup> Acute hospital substitution can be sustainable and economically efficient according to how programs are implemented. Moreover, innovations such as telehomecare, with two-way interactive remote monitoring of patients’ medical status, provide opportunities for additional efficiencies.<sup>27</sup>

**Lack of recognition and funding.** Publicly financed hospitals do not look after patients at home, and home care agencies do not look after patients who need hospital-level care. Without an institutional base in hospital, family physicians offering home care or primary care have generally not championed acute care substitution in the home, despite their tradition of maintaining continuity and comprehensiveness of care. Reasons include a lack of recognition of home care as part of the health care continuum by policy makers and the very different home care arrangements in various provinces, together with the lack of infrastructure and financial and nursing resources in family practices.<sup>7</sup>

Family physicians are not financially encouraged to attend to and admit hospitalized patients; they feel increasingly less valued in general. This climate cannot foster better models of care by cost shifting and generating savings across institutions and primary care. In Ottawa, our major demonstration trial failed to get off the ground in the mid-1990s, because of budget constraints faced by both the hospital and home care agencies involved, because of nursing shortages, and because of family medicine's lack of a financial and institutional base. As the Ministry of Health and Long Term Care is organized in a manner that separates home care from institutional care, it was complicated to pin down support for an initiative that crossed organizational lines.

**"We tried it, and it didn't work."** Early models were not entirely substitution models and resulted in duplication of home care services,<sup>28</sup> nor were they sustainable because they were not integrated into the health care system. Much has been learned worldwide about how to do this properly: the kind of patient most suited for home-based care, the pros and cons of mixed versus pure home-based programs, addressing caregiver needs,<sup>10</sup> and costing.

### How do we proceed in Canada?

We believe it is time to adapt what has been learned internationally to Canada. New programs of primary health care-based acute hospital substitution

in the home should be implemented on a limited scale and evaluated. Acute hospital substitution will reduce the need for hospital capital expansion such that fewer new beds will need to be made available. Providing better care, reducing waiting lists, and making better use of expensive existing hospital infrastructure would be important outcomes in their own right.

The issue of governance of an intersectoral program is central. A major reason acute hospital substitution in the home worked in Australia is that the government mandated it and offers financial incentives. Hospital in the Home in Victoria, Australia, is funded through the hospital case-mix system and with initial directed start-up money and ongoing funding.

Creating primary health care reform structures in the Ministries of Health is an opportunity to develop new and broader definitions of comprehensive primary health care and fund essential services with greater linkages and integration—particularly in the acute care and home care sectors. Why not allow family physicians to use these new arrangements and oversee and organize clinical care for hospital substitution programs? Adding nurse practitioners to modernized primary health care could address nursing shortages and introduce advanced nursing practice. Physicians working in primary care networks in collaborative arrangements with each other, nurse practitioners, and other appropriate professionals and using the advantages of expanded information and communication technologies, could supply almost all the resources needed.

This would allow innovations in organization and budgets as part of reforms in primary health care and overcome some of the barriers to implementing hospital substitution in the home as called for by the First Ministers Health Accord. Seamless integration would deliver downstream efficiencies and better care, particularly for patients who require a continuum of long-term complex interventions tailored to their individual needs. ❁

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