

Satellite Dialysis in Ontario

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In this issue of *CJASN*, Lindsay *et al.* (1) describe fallbacks of patients from community-based satellite hemodialysis (HD) units to regional centers in Ontario, Canada. Fallbacks require adequate resources at the regional center. Despite this, the patient failure rate is low.

To put the piece by Lindsay *et al.* in context, readers in the United States know that in that country, approximately 88% of long-term HD patients undergo dialysis in community-based facilities, often in a for-profit chain (2). This contrasts with the current configuration of dialysis in Canada, where most HD patients undergo dialysis in a hospital.

The Canadian health care system is universally funded by taxation and is centrally administered by each province (3). Hospitals are publicly funded and not for profit. Costly, high-technology medical treatments are initially approved by government, and subsequently new programs are initiated in the university teaching hospitals. Such was the case with dialysis in the 1960s and 1970s. As the epidemic of ESRD took hold, dialysis slowly diffused out to community-based hospitals, especially in the more populous provinces such as Ontario.

The challenge of providing ESRD therapy for nonurban populations has been met in Canada by use of home peritoneal dialysis. This peaked in 1993 at 37.4% of all prevalent dialysis but has been in decline ever since, falling to 18.0% in 2005 (4). Home HD, especially daily home HD, holds promise for future growth but currently is used for only 3.2% of Canadian HD patients (4). Non-hospital-based HD accounted for 23.8% of all HD treatment in 2005, with hospital-based therapy being used for 73.1% of patients (4).

Especially as the economy of North America comes under stress, governments are increasingly concerned about out-of-control health care costs. In Ontario, the Liberal government is attempting to transform the system. One aspect is to “right size” acute care hospitals and to move chronic disease management from hospitals to the community. Dialysis services would seem to be ideally suited for such a shift.

The important article by Lindsay *et al.* (1) shows that the satellite model in Ontario is safe and effective. What are the implications for expansion of the model? Would the 25 hospitals now functioning as the regional center hub in the hub-and-spoke model welcome this shift?

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It seems that the severe budgetary pressures that hospitals face would make them desire to reduce the dialysis services that they now provide. In Ontario, the facility funding formulas are from the late 1990s and are less than the cost. Furthermore, hospitals are required to sign accountability agreements that guarantee that they will not run a deficit. Hospitals are increasingly negative toward new dialysis programs or expansions.

One concern about non-hospital-based HD in Ontario has been called “comorbidity creep.” Initially satellites were intended for only very stable patients, because the facility would not have an on-site nephrologist; however, over time, less stable patients have preferred to take the risk of undergoing dialysis in a local satellite, rather than travel longer distances to a regional center. Unlike dialysis in the United States, where the Centers for Medicare and Medicaid Services has mandated weekly HD patient visits by a nephrologist or an alternative qualified provider, there are no such policies in Canada. Ontario has a weekly modality-independent team fee paid to nephrologists, which does not require weekly MD visits (5). Community-based patients are usually reviewed face to face and in detail by a nephrologist only during a special clinic visit every second month. Day-to-day problems must be handled through communication between the satellite and regional hospital staff and, if required, transfer of the patient. The article by Lindsay *et al.* provides reassurance that patients with multiple comorbidities can safely receive satellite services, without frequent physician supervision.

Lindsay *et al.* (1) describe two different models of satellites. The traditional one is where the satellite is an extension of the regional center, often in a small community-based hospital. The regional hospital receives the funding, establishes policies, and takes responsibility for the HD services. The funding challenges described herein are even more severe, because without economies of scale, satellites tend to cause substantial deficits in the regional centers.

The alternative model is for the government to license and fund “independent health facilities.” As currently configured, these are seven small, privately owned facilities intended to provide dialysis for stable, full-care HD patients. They are integrated such that they have defined relationships with hospitals and hospital-based nephrologists but are publicly funded for operations and are managed completely outside the hospital system. Capital requirements can be raised through private channels, which is increasingly attractive to the hospitals and Ministry of Health. Non-hospital-based facilities can promote prevention, a wellness model of high-quality care for all stages

of CKD, and home dialysis for suitable patients, all at less total cost than hospitals.

For community-based dialysis to become a dominant strategy in both urban and rural parts of Ontario will require confronting the historical accident that led to a hospital-based system in the first place. Because Ontario maximizes home dialysis for suitable patients, most stable and independent patients enter home programs. Hospital-based programs have mostly less stable and less independent patients. This leaves few stable patients left for community-based HD. The key is to redesign the system to enable safe provision of community-based care to an expanded pool of less stable patients, with hospital-based care available but only for the most unstable. Both the satellite and independent health facilities models could be significantly expanded to include a broader mix of HD patients, home dialysis, general nephrology and predialysis clinics, and vascular services, with nephrologists on site or available by telemedicine during operating hours. Modern electronic medical record capabilities also can further enhance integration and quality of care.

No dialysis delivery system is perfect, and all must evolve to incorporate new technology and to keep up with changing economic and social trends in health care. Ideally, empirical methods to evaluate objectively the impact of change should be included in the design and implementation of new initiatives. Lindsay *et al.* (1) are to be commended for providing just this

kind of evaluation so that colleagues can consider the merits of similar approaches.

Disclosures

D.C.M. is a principal in “Nephrolife,” a not-for-profit corporation formed by a group of nephrologists who are seeking to expand the independent health facility kidney care model in Ontario.

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See related article “An investigation of satellite hemodialysis fallbacks in the province of Ontario,” on pages 603–608.