Clinician's Commentary on Imam et al.¹

Lower limb amputation (LLA) is a life-altering event that can negatively influence many aspects of an individual's life, such as his or her ability to move around the home and community, physical and mental health, and ultimately quality of life.^{2,3} The rate of persons who will require an LLA is expected to increase dramatically over the coming decades as a result of the diabetes epidemic,⁴ and these patients will require adequate rehabilitation to optimize their well-being. Successful prosthetic fitting can optimize the physical and emotional outcomes for those who have undergone an LLA.

The study by Imam and colleagues,¹ which describes publicly funded prosthetic rehabilitation services for LLA patients across Canada, provides some important insights into the capacity of the Canadian health care system to meet the initial rehabilitation care needs for this population. As the authors noted¹, there is a dearth of evidence-based data on this topic; strong national data are similarly lacking on other key characteristics of this population. Only a handful of other studies have provided a national perspective on LLA, including a recent study by the same group of authors, which found that 44,430 LLAs were performed in Canada between 2006 and 2012.⁵

Similarly, data show that 5,342 LLAs were performed in Canada (not including Quebec) between 2006 and 2009,⁶ and that the length of rehabilitation stay varied, on the basis of a number of factors.⁷ Specifically, having an orthopedic surgeon perform the amputation, undergoing the surgery in the province of Manitoba, being of advanced age, and having a history of ischemic heart disease or congestive heart failure were all predictive of a longer rehabilitation stay.⁷

The high response rate (90.8%) by the rehabilitation sites analyzed in Imam and colleagues¹ provides an initial depiction of the national landscape while flagging further lines of inquiry. There appear to be consistent rehabilitation lengths of stay across sites, indicating some uniformity of care. The rate of clients admitted to in-patient and outpatient rehabilitation care who had been fitted with a prosthesis (77.0% and 90.6%, respectively) was high—much higher than in other studies of LLA and prosthetic fitting.⁸ It is possible that the high proportion of sites with a multidisciplinary team (physical therapist, occupational therapist, physiatrist, social worker, nurse) facilitated these high rates of fitting or that patients not receiving a prosthesis have limited access to rehabilitation in Canada. It may also be that the survey used by Imam and colleagues¹ was biased toward prosthetic rehabilitation and missed those facilities offering amputation rehabilitation to patients who were not candidates for prosthetics.

Not all LLA patients are candidates for prosthetics. Those with several comorbidities, including the presence of a cognitive impairment (e.g., dementia), end-stage renal disease, or significant cardiac disease, present many barriers to being fitted with a prosthesis,⁹ which can negatively influence quality of life. Non-prosthetic rehabilitation can aid in improving patients' independence when they use a wheelchair and provide emotional support for limb loss. Future studies addressing rehabilitation capacity should work to determine the proportion of patients with LLA who are referred to centers but who are not accepted into the programme or who are not fitted with a prosthesis.

Also, data regarding the patients' etiology (dysvascular, cancer, trauma, etc.) would be useful, as would more details of the type of rehabilitation services being provided. For instance, it is unclear whether the facilities are providing just prosthetic rehabilitation or providing comprehensive rehabilitation programmes but only to those who are prosthetic candidates.

The acknowledged limitations of Imam and colleagues'¹ study are symptomatic of the lack of robust datasets available (or being accessed). Moreover, the gaps in knowledge (e.g., lack of data from private clinics, unverified data to support site responses, lack of provincial comparisons) flagged in the article relay important considerations that the field should work to address to gain a better sense of the services and care being provided to this population across the country. In many provinces, traumatic LLA rehabilitation takes place in centers funded by workers' compensation insurance or motor vehicle collision insurance.

Other patient populations have engaged in a number of initiatives to capture the rehabilitation capacity across Canada (e.g., the spinal cord injury Environmental Scan¹⁰), thereby contributing to greater national cohesion, which elevates the ability to advocate for beneficial clinical and policy changes. The study by Imam and colleagues,¹ and other recent findings,⁵⁻⁷ provide a much-needed catalyst for moving forward the national dialogue on how the country's clinicians might work together to optimize care for persons with an amputated lower limb.

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