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A Community Approach to Address Prolonged Hospitalization of Long-Term Ventilation Patients

Skeeta Sobrian-Couroux RN CCRP MScHQ, Andrew Wincen BB, Yan Lu MSc, Tess Palatino MBA, Bernard Lawless MD MHSc, Linda Kostrzewa RN MHSc.

BACKGROUND

Long-Term Ventilation (LTV) in Ontario has been an ongoing concern for the critical care system particularly for medically stable patients with prolonged intensive care unit (ICU) stays. The vision established by Ontario's Ventilation Committee in 2012 was to have no stable mechanically ventilated patient in any ICU in Ontario.

CCSO subsequently developed standards and evidence based best practices in ICUs. While the standards have influenced practice within the acute care setting; partners in care, including the Local Health Integration Network (LHIN) leaders and Centres of Excellence managing chronic ventilation populations have advised that community support systems have been decreasing, resulting in discharge delays in LTV patients[1].

A provincial overview of LTV patients admitted into ICUs over the fiscal years 2014-2015 to 2017-2018 demonstrates that Toronto Central LHIN cares for 23% to 27% of the hospitalized LTV patient population which is utilized by an older age demographic. Approximately 1,400 LTV patients are admitted to Level 3 ICUs and consume 55,981 vented days annually. Each LTV patient has an Average Length Of Stay (ALOS) of 40 days annually in Level 3 ICUs. As a point of reference, non-LTV patients who require mechanical ventilation have an ALOS of 5.75 days in Level 3 ICU.

Medically stable patients experience prolonged ICU stay, or are discharged to community with inadequate supports which could result in repeat ICU admission. Prolonged ICU admissions cost the healthcare system approximately $5,000 per day. In 2017-2018, 3% of LTV patients experienced 2 to 3 repeat ICU admissions.

Historic Level 3 ICU Chronic Ventilation in Ontario (Consecutively Vented >21 Days)

Time Period	No. of patients Age <18	No. of patients Age 18-64	No. of patients Age 65+	Total No. of patients	Total No. of admissions	Total No. of Mechanically vented days	Average Mechanically Vented Days per Patient
01 Apr 2014 to 31 Mar 2015	95	582	730	1407	1467	55545	39.48
01 Apr 2015 to 31 Mar 2016	81	623	719	1423	1478	56953	40.02
01 Apr 2016 to 31 Mar 2017	71	606	724	1401	1452	56128	40.06
01 Apr 2017 to 31 Mar 2018	63	604	732	1399	1440	55298	39.53

[1] *LTV patients are clinically defined as suffering from a severe respiratory impairment who require ventilator support more than 6 hours per day for more than 21 days, but who do not require additional services provided by a critical care unit (i.e., patients who are otherwise medically stable).*

AIM

Develop a strategy to build a provincial integrated system to improve service availability, provide care and maintain medically stable patients in their community. This approach supports *Patients First* objectives with a focus on enhancing access to the right care and supporting LTV patients in the most appropriate setting for each patient.

ACTIONS TAKEN

Stakeholders highlighted the need for focused planning across the continuum of care for LTV patients. The work undertaken was the culmination of three years of engagement with Ontario's LTV and Critical Care communities and the LHINs.

Program Review

CCSO conducted a review of three leading LTV programs in Ontario.

South West LHIN's integrated system of care approach is characterized by coordination of care across professionals, facilities and support systems responsive to patient needs and preferences. It underscored the importance of shared responsibility, governance, and accountability in the provision of care for LTV patients across the care continuum.

Champlain LHIN and The Ottawa Hospital Rehabilitation Centre established the CANVent program (Canadian Alternatives in Non-invasive Ventilation). CANVent is an outpatient model directed at the care of individuals with neuromuscular disease who may be at risk for, or are using ventilator support. The goal is the avoidance of intubation and invasive mechanical ventilation through early identification and education of individuals who may be at risk for failed airway management and respiratory failure.

Toronto Central LHIN's Centres of Excellence, West Park Healthcare and Michael Garron Hospital, have been at the forefront of LTV planning to meet the unique needs of the LTV patients. Its 2011 "Long-Term Ventilation Plan for the Care and Management of Individuals with LTV Needs" utilizes a pull strategy to move patients from academic hospitals to acute care/community hospitals and into community care settings.

Provincial Reference Group

CCSO established a reference group comprised of LHINs, Centres of Excellence, Community Care Access Centers (CCAC) and areas of the Ministry of Health and Long-Term Care (MOHLTC) to:

1. inform the development of a provincial system of care that will map out an effective patient flow of LTV patients;
2. provide guidance on a system of care that includes several branches of the MOHLTC to improve access and flow of LTV patients; and
3. identify opportunities for system improvements.

The reference group developed an integrated model of care outlining major transition points along the continuum of care. Utilizing the tools established by the Provincial LTV Reference Group, CCSO embarked on developing a plan to enhance care delivery for the LTV patient population.

Community Inventory

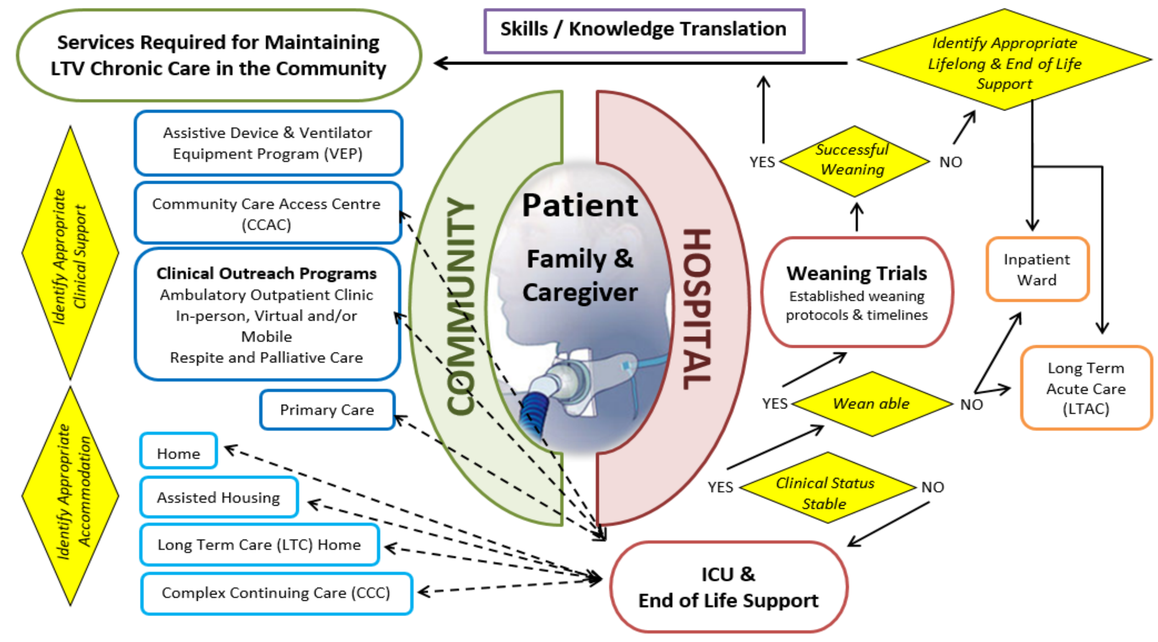
CCSO undertook a LTV Resource Inventory to identify current and required resources to provide care and maintain patients in the community. A package identifying services needed to support LTV patients was disseminated to each LHIN. Each sector identified services that were available, partially available or not available. These services were then prioritized based on need.

The completed LTV Sector Practice Inventory Tool was used to inform a comprehensive, multi-sector business case for MOHLTC funding to support the top priority areas identified by each LHIN in order to achieve leading practice care delivery for LTV patients.

RESULTS

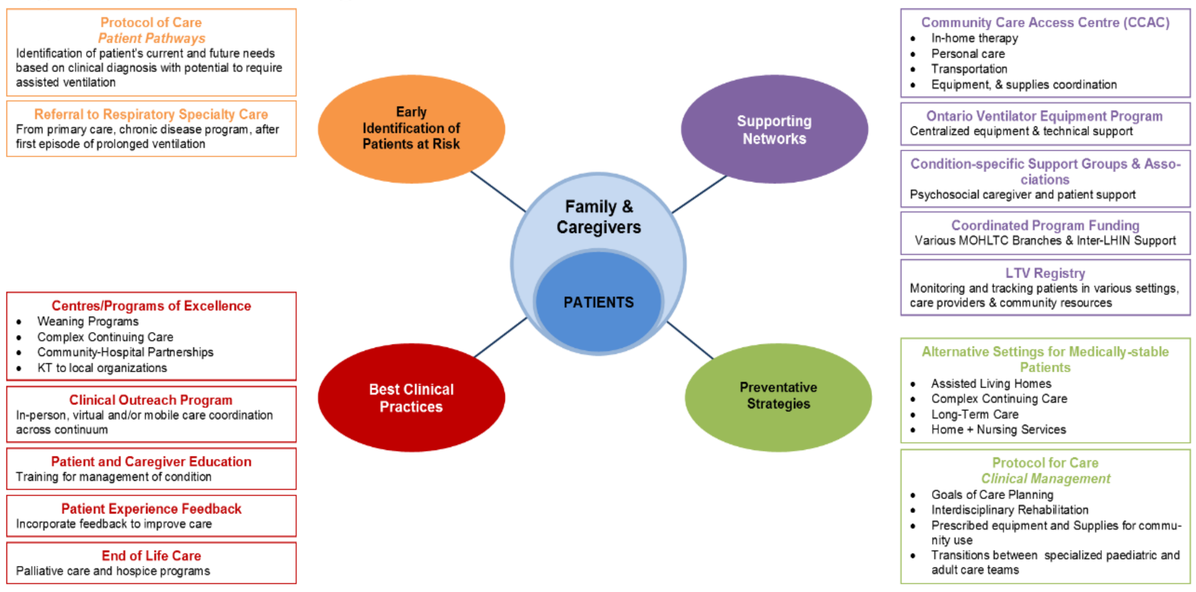
CCSO has developed a network of engaged stakeholders with a common understanding of the issues faced by this patient population, and an extensive understanding of the service needs within each LHIN. This engagement will enable investments to be leveraged towards the common objective of ensuring medically stable LTV patients are no longer "living" in the ICU.

Figure 1: Integrated LTV Patient's Journey



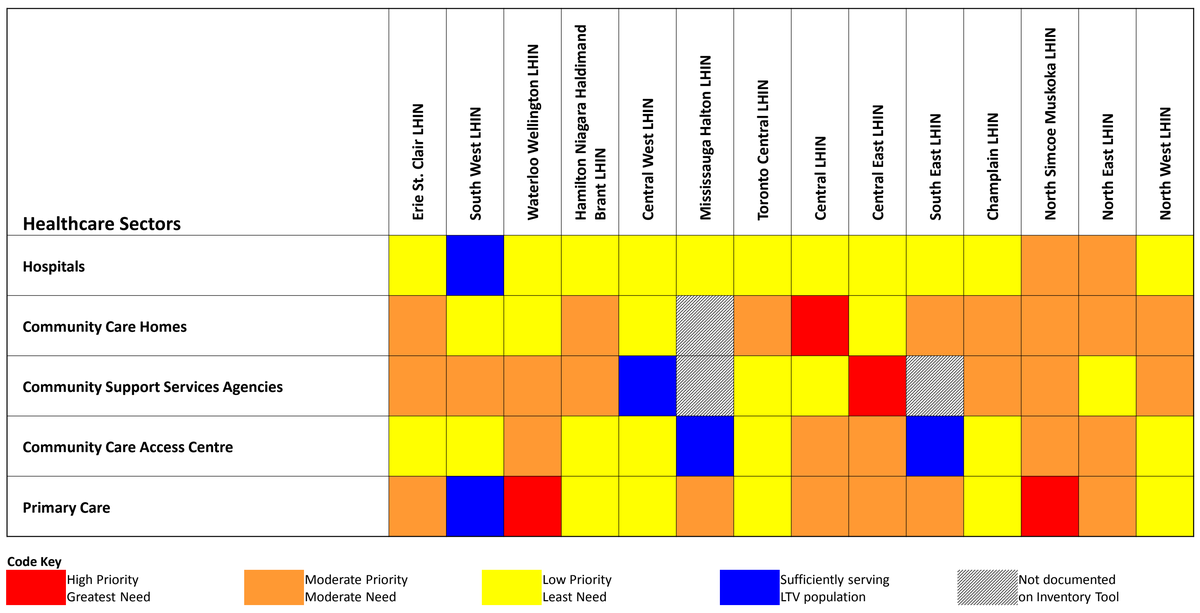
The Integrated Patient's Journey depicts an ideal flow pathway of patients and services. Specialized services such as critical care and End of Life support within the ICU setting can be leveraged to support community services.

Figure 2: LTV Leading Practice Framework



The LTV Leading Practice Framework identifies adaptable best practices and elements required to support LTV patients through the continuum of care.

Figure 3: LTV Community Resource



The community inventory identified areas of excellence and diverse gaps. Many LHINs have functional services within each sector, however no LHIN has a functional cross-sector program to support patients through the care continuum.

In many instances, services within the hospital sector which perform well, often extend beyond their funding sector to support community services.

CONCLUSION

Initiatives towards resolving the prolonged LOS by LTV patients in ICU resulted in the promotion of toolkits and best practices. This had ~~the~~ positive impact of an efficient ICU system able to provide appropriate interventions and stabilize LTV patients. However, despite the excellent clinical care, LTV patients continue to occupy ICU beds with limited discharge disposition and even less community support post-discharge.

This population develops complex co-morbidities as they age, compounding the challenge of appropriate community accommodations. Community homes have rigid intake criteria and limited ventilation capabilities. Investments in healthcare services are prioritized by the LHINs and each LHIN has different needs and invested in varying projects to support the LTV population in the region. A shift in directing resources towards community and leveraging inter-LHIN services is needed to appropriately support LTV patients in the community.

NEXT STEPS

Most regions in Ontario offer some community services to the LTV patients. The strategic program will leverage and enhance already existing initiatives utilizing a phased approach. Continued system-level work and engagement suggest the need for a provincial hub-and-spoke model designed as centres of expertise, strategically situated in areas of the province that can support inter-LHIN spokes and knowledge translation. CCSO will seek to advance and refine discussions on a hub and spoke model through LHIN and cross sector engagement.

Acknowledgements

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For additional information contact CCSO by email: Info@ccso.ca