Rehabilitative Care Alliance

Compendium of Recommendations for Conditions Typically Requiring Rehabilitative Care:

A resource developed to support capacity planning

March 2017/Revised November 2017

Overview

Rehabilitation is provided along a continuum of care ranging from hospital to rehabilitation in the community. It can **improve health outcomes**, **reduce costs** by shortening hospital stays, reduce disability, and **improve quality of life** and the earlier that it begins, the better the functional outcomes that are achieved for almost all health conditions associated with disability. (World Health Organization. World Report on Disability, 2011. Chapter 4, Rehabilitation)

As part of the Rehabilitative Care Alliance's work to support LHINs with capacity planning for rehabilitative care, the RCA has developed this resource, which provides information on a number of conditions typically requiring rehabilitative care. These conditions are being used as a proxy for identifying unmet needs in rehabilitative care.

The information in this compendium is based on a review of current evidence and best practice guidelines, where available for rehabilitative care at the time of publication.

These include:

• Acquired Brain Injury • Amputee • Burns • Chronic Obstructive Pulmonary Disease • Congestive Heart Failure/Coronary Arterial Disease • Developmental Disabilities • Geriatric / Medically Complex	• Hip Fracture • Neurological Conditions • Oncology • Spinal Cord Injury • Stroke • Total Joint Replacement

For each condition, the source of information reviewed, recommendations regarding the use of bedded vs. community-based rehabilitative care and the prevalence/incidence of the condition is provided as available. The compendium is not intended to capture all recommendations on rehabilitative care across all populations and should not be taken as a complete overview of conditions typically requiring rehabilitative care. This compendium is currently under review to reflect the rehabilitative care needs of children and youth, including those transitioning into the adult sector. This information will be incorporated into the next iteration of this document.

Additional comments and suggested updates on this document are welcome for future iterations. Please send comments to info@rehabcarelliance.ca

Conditions Typically Requiring Rehabilitative Care				
Condition	Source	Recommendations re: Bedded vs Community-Based Rehabilitative Care		Incidence/Prevalence
		Bedded Rehabilitative Care	Community-Based Rehabilitative Care	
Acquired Brain Injury (ABI)	Clinical Practice Guideline for the Rehabilitation of Adults with Moderate to Severe Traumatic Brain Injury (October 2016)	– Every individual with traumatic brain injury should have timely, specialized interdisciplinary rehabilitation services – To achieve optimal efficiencies of inpatient rehabilitation, individuals with traumatic brain injury should receive a minimum of 3 hours per day of therapeutic interventions, ensuring focus on cognitive tasks as recommended in C2.3, C2.4 and C2.5. (INESSS-ONF, 2015)	Individuals with ongoing disability after traumatic brain injury should have timely access to specialized outpatient or community-based rehabilitation to facilitate continued progress and successful community reintegration. (Adapted from NZGG 2007, 6.6, p. 116)	– Approximately 10% of all patients discharged alive from acute care with either traumatic or non-traumatic brain injury were discharged to inpatient rehabilitative care – In 2007, 11970 cases of TBI and 31501 cases of non-TBI were identified using patients' associated ICD-10 codes in any diagnosis position in the Discharge Abstract Database (DAD) Source: BMC Neurol. 2012; 12: 76. Published online 2012 Aug 17. doi: 10.1186/1471-2377-12-76 PMCID: PMC3518141 "Direct cost associated with acquired brain injury in Ontario" by Chen et al. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3518141/
Amputee	British Association of Chartered Physiotherapists in Amputee Rehabilitation, Clinical guidelines for the pre- and post-operative physiotherapy management of adults with lower limb amputation, 2006	– Early assessment and planning of rehabilitation can commence at pre-op stage and helps to prepare the patient for rehabilitation. A pre-amputation consultation also enables the physiotherapist to give appropriate advice, information and reassurance; issues such as phantom limb sensation and avoidance of falls may be discussed. However, it is acknowledged that patients who require emergency amputation may not have the opportunity for pre-amputation consultation, assessment and treatment. – Best practices for care of patients with amputated limbs recommends rehabilitation through all levels of care, pre-and post-op with care following the patient and delivered during inpatient care and into the community.		- 6,036 amputations due to diabetes in Canada in 2011 Source: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4307900/ - From 2000 to 2004 in the US, there were 8910 patients with amputated limbs (1.0% of all trauma patients). Source: https://www.ncbi.nlm.nih.gov/pubmed/21140687

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Amputee	GTA Rehab Network Amputee Rehab Definition Framework, June 2009.	– Suitable for individuals in need of an interdisciplinary rehab program and who also require 24-hour hospital care.	- Suitable for individuals who are in need of an outpatient rehabilitation service in a multidisciplinary team or a single specialty area. Services may include assessment only or assessment and treatment. Services may be provided during a one-time visit or multiple visits. Over the course of a patient's stay in an outpatient rehab program, he/she will see most members of the team. However, one member of the team will normally act as the primary care provider, with other team members acting as consultants.	
Burns	GTA Rehab Network. Burn Rehab Definition Framework. May 2010	– Suitable for individuals in need of an interdisciplinary burn rehab program and also require 24-hour hospital care – Intense interdisciplinary rehabilitation should be a continuation of program begun during acute care phase; patients admitted to this program have ongoing, complex rehab and surgical needs and/or infection control issues.	– Op/Amb: Wellness focused rehab programs do not exist in burn rehab. These services are provided by community organizations which often do not have rehab programs. These services are typically accessed via self-referral or referral from facilities. – OP/Amb: Suitable for burn survivors who are in need of an outpatient rehabilitation service in a single specialty area/profession or interdisciplinary teams burn rehab program. Services may include assessment only or assessment and treatment. Services may be provided during a one-time visit or multiple visits.	– In 2009 - 2010, the incidence rate of burns (scald, chemical burn) was 3.0% of the population in Canada Source: http://www.statcan.gc.ca/pub/82-624-x/2011001/article/11506-eng.pdf

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		– Burn Team is an interprofessional rehab team with expertise in burn rehab and access to training to develop and maintain necessary skills and knowledge	– OP/Amb: An interdisciplinary Burn Rehab team is indicated when two or more of the following modalities are needed for more than two weeks' time: Nursing Pain Management Pressure Therapy Splinting Skin Care Social Support (Psych/Counselling) PT/OT to maximize function Ongoing counselling and education specific to burn care. – Community rehab is most appropriate for clients who can be safely supported at home and: 1. Whose rehab needs are sufficiently small that they do not require other services (e.g. did not require inpatient rehab) 2. Who cannot otherwise access required in- or outpatient services due to safety, transportation, medical or social issues	
Burns	Evidence Based Guidelines Group, American Burns Association with Paradigm Health Corporation. Practice Guidelines for Burn Care (American Burn Association, July 2014)		Patients should be considered for outpatient care only if the following considerations have been addressed: – Intravenous fluid resuscitation is completed or not necessary – The patient is able to maintain fluid balance with oral intake – Facilities for wound care on an outpatient basis	

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			are adequate – Facilities for physical therapy on an outpatient basis are adequate – Pain control is adequate using oral medications – Family support and follow-up are arranged and any abuse or neglect issues have been addressed – Follow-up is arranged at a facility with appropriate burn expertise for continued evaluation and treatment of infection, function, wound care, and scarring	
Burns	ACI Statewide Burn Injury Service, Physiotherapy and Occupational Therapy Clinical Practice Guidelines, July 2014	– Burn therapy starts immediately or as soon after presentation for treatment as possible and continues till scar maturation which is commonly 12-18 months. The time to reach scar maturity varies between individuals.	– Burn therapy starts immediately or as soon after presentation for treatment as possible and continues till scar maturation which is commonly 12-18 months. The time to reach scar maturity varies between individuals.	

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Chronic Obstructive Pulmonary Disease (COPD)	Health Quality Ontario; Ministry of Health and Long-Term Care. Quality-Based Procedures: Clinical Handbook for Chronic Obstructive Pulmonary Disease (Acute and Post-acute), (February 2015). February 2015. 88 p.	– Pulmonary rehabilitation is recommended for the management of moderate to severe chronic obstructive pulmonary disease (COPD) in stable patients and for patients following an acute exacerbation (within 1 month of hospital discharge) at an accessible and clinically appropriate location (inpatient, outpatient, community, or home). – A standardized pulmonary rehabilitation program is about 40 hours in total, with 3 sessions per week at 1.5 to 2 hours per session. The intensity and duration of PR programs are similar across outpatient hospital and community settings. – COPD patients who have completed pulmonary rehabilitation are recommended to transition to an exercise program to support the maintenance of functional gains, but parameters of delivery still need to be decided. – The current capacity of Pulmonary Rehabilitation in Ontario can serve less than 2% of all COPD patients (including those classified as stable, moderate-to-severe, or post-exacerbation) who require such a program.		– Based on Ontario administrative data sets, the estimated 2007 age- and sex-standardized prevalence of COPD in Ontario to be 9.5%. The prevalence of COPD appears to be increasing over time. Based on Ontario administrative data sets, the 2007 age- and sex-standardized incidence of COPD in Ontario was 8.5 cases per 1,000 adults. The incidence of COPD appears to be declining since 1996. The age-standardized incidence rate is higher in males than in females (9.4 cases per 1,000 adults vs. 7.8 cases per 1,000 adults, respectively); however, the incidence rate has been declining faster in males than females (% decline since 1996, 32.3% vs. 24.7%, respectively).
		– No specific guidelines for when to refer to bedded rehabilitative care	– Centre-based pulmonary rehabilitation is preferred for access to exercise equipment, additional psychosocial support provided in a group setting, and multidisciplinary team and specialist – Outpatient or community-based pulmonary rehabilitation is more cost-effective than home-	

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Chronic Obstructive Pulmonary Disease (COPD)			based programs. – Home-based pulmonary rehabilitation may be recommended for those with barriers to participation in centre-based programs, and the services can be consolidated under the role of a single health care professional with expertise in pulmonary rehabilitation. – Home-based pulmonary rehabilitation for COPD, when taught by a health care professional and properly conducted may be offered as an alternative to outpatient-based pulmonary rehabilitation to improve access in situations of limited resources and availability. All patients receiving home-based pulmonary rehabilitation should have a formal program of home exercise developed.	
Congestive Heart Failure / Coronary Arterial Disease (CHF/CAD)	Cardiac Care Network. Standards for the Provision of Cardiovascular Rehabilitation in Ontario. Sept 2014		– Focus of this resource is outpatient rehab. – Cardiovascular rehabilitation (CR) is an important specialized component of chronic cardiovascular disease care and chronic disease management that uses a multifaceted approach focused on: reducing cardiovascular risk factors, using behaviour modification strategies to sustain healthy lifestyles and promote pharmacological adherence, and providing therapeutic exercise training	

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Congestive Heart Failure / Coronary Arterial Disease (CHF/CAD)			– CR for persons with established cardiovascular disease shall be provided to (1) individuals with any of the following diagnoses: acute coronary syndrome, chronic stable angina, chronic stable heart failure; (2) following percutaneous coronary or valvular intervention; coronary artery bypass surgery; cardiac valve surgery; cardiac transplantation; ventricular assist device implantation. (p. 7) – CR is also recommended for those who have not had a cardiovascular event but have cardiovascular risk factors (e.g. hypertension, diabetes, and hyperlipidemia) and are high risk for future cardiovascular events. (p. 7) – There is emerging evidence that CR would also benefit patients with atrial fibrillation; peripheral artery disease; cerebrovascular disease and following cardiac resynchronization therapy. (p. 8) – CR programs may operate in a stand-alone community setting or as part of a larger hospital system. To date, the CR literature does not identify an optimal organizational structure or design. (p 21) – CR services shall be provided through an integrated interprofessional team, led by a	

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			program manager (p 23).	
	Cardiac Care Network of Ontario & Ministry of Health and Long-Term Care. Quality-Based Procedures Clinical Handbook for Coronary Artery Disease. September 2014.	– Note: there is a point made that discharge planning should include access to inpatient or outpatient rehabilitation, but there is no breakdown of who should go to which type. (p. 40)	– A systematic referral to community programs for cardiac rehabilitation is vital in improving patient's participation in supervised exercise programs. – In order for patients to obtain optimal benefit from exercise programs, cardiac rehabilitation should commence within 30 days of hospital discharge. - Cardiac rehabilitation is strongly recommended for patients with coronary artery disease particularly those with multiple modifiable risk factors.	
Developmental Disabilities	Stewart, D., et al. The Best Journey to Adult Life For Youth with Disabilities An Evidence-based Model and Best Practice Guidelines For The Transition To Adulthood For Youth With Disabilities, 2009		– The best practice guidelines for the journey to adult life for youth with disabilities are broad and emphasize the key role of multidisciplinary teams, community supports and the importance of setting the goal of the child/youth transition to be an active member in the community. – The child/youth will need different supports at different times, though the focus is on using community and community supports as much as possible in order to provide the best transition and integration into their community	Statistics Canada, Canadian Survey on Disability, 2012: According to the 2012 Canadian Survey on Disability (CSD), 160,500 Canadians aged 15 years and older (0.6% of Canadian adults) were identified as having a developmental disability. It is important to note, however, that this refers only to the population living in private households and does not include those living in institutions. The most prevalent underlying developmental conditions reported on the survey were autism, cerebral palsy, and Down syndrome.

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Geriatric / Medically Complex*	*Note: Determining the incidence or prevalence of patients with medically complex needs requiring rehabilitation is difficult. In the past, age has been used as a proxy for the need for geriatric rehabilitation (including rehab for medically complex needs), however it is recognized that individuals with medically complex needs exist across the age span. It was noted that in the Senior Friendly Hospitals report (2011) that approximately 1 in 3 seniors is admitted to acute care and of those, approximately 50% could benefit from rehabilitative care.			
	NICE Guideline: Mental wellbeing in over 65s: occupational therapy and physical activity interventions (October 2008)	Occupational therapists or other professionals who provide support and care services for older people in community or residential settings and who have been trained to apply the principles and methods of occupational therapy should offer regular group and/or individual sessions to encourage older people to identify, construct, rehearse and carry out daily routines and activities that help to maintain or improve their health and wellbeing. – Physiotherapists, registered exercise professionals and fitness instructors and other health, social care, leisure services and voluntary sector staff who have the qualifications, skills and experience to deliver exercise programmes appropriate for older people should, in collaboration with older people and their carers, offer tailored exercise and physical activity programmes in the community.		
Geriatric / Medically Complex	NICE Guideline: Falls in older people: assessing risk and prevention (June 2013)	Older people in contact with healthcare professionals should be asked routinely whether they have fallen in the past year and asked about the frequency, context and characteristics of the fall/s. Older people reporting a fall or considered at risk of falling should be observed for balance and gait deficits and considered for their ability to benefit from interventions to improve strength and balance. – Older people who present for medical attention because of a fall, or report		More than one third of older adults, 65 and older, will experience a fall.[i] In Canada, between 20% and 30% of seniors sustain a fall each year. Falls remain the leading cause of injury-related hospitalizations among Canadian seniors and the number of falls is expected to increase as seniors make up a greater proportion of the Canadian population.[ii] [i]American Geriatrics Society, & British Geriatrics Society

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		recurrent falls in the past year, or demonstrate abnormalities of gait and/or balance should be offered a multifactorial falls risk assessment. This assessment should be performed by a healthcare professional with appropriate skills and experience, normally in the setting of a specialist falls service. This assessment should be part of an individualized, multifactorial intervention. All older people with recurrent falls or assessed as being at increased risk of falling should be considered for an individualized multifactorial intervention.		(AGS/BGS). (2010). AGS/BGS clinical practice guideline: prevention of falls in older persons. New York, NY: American Geriatrics Society. Retrieved from http://www.medcats.com/FALLS/frameset.htm. [ii]Laurence Z. Rubenstein, MD, MPH (2016). Merck Manuals. Accessed: https://www.merckmanuals.com/professional/geriatrics/falls-in-the-elderly/falls-in-the-elderly
Geriatric / Medically Complex	GTA Rehab Network. Geriatric Rehab Definition Framework. May 2008	– Key differentiating feature between a specialized inpatient geriatric rehab program and a mixed rehab unit (i.e. multiple rehab populations are seen) is that the assessment and treatment of geriatric syndromes and multi-dimensional factors are as much a part of the rehab focus as is the illness or injury which directly led to the most recent hospitalization.	– Suitable for frail, elderly patients residing in the community or who have been recently discharged from hospital and require a moderately intensive interdisciplinary rehab program. Patients typically have complex, multiple co-morbid conditions.	The Auditor General of Ontario, Follow-Up Value-for-Money Report, 2015: – In 2014/15 approximately half of inpatient rehabilitation admissions were for people over 75 years of age. – Demand for rehabilitation services in Ontario is expected to increase significantly, especially after 2021 when the first baby boomers turn 75.

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Geriatric / Medically Complex	Ken Wong BScPT MSC, David Ryan PhD, and Barbara Liu MD FRCPC Regional Geriatric Program of Toronto. Senior Friendly Hospital report (September 2011)	– Utilize senior friendly design resources, in addition to accessibility guidelines, to inform physical environment planning, supply chain and procurement activities, and ongoing maintenance.		– Approximately 20% of seniors aged 90+ are considered to be frail, which is typically associated with higher healthcare utilization and dependence. The proportion of seniors aged 90+ is expected to triple by 2036 to 261,000. – In 2011, across Ontario, the unweighted average alternate level of care (ALC) days for seniors ranged from 71 to 89 percent. In a 2011 article in *JAMA* by Covinsky, Pierluiss and Johnston, hospital rates for seniors were estimated as follows:[i] – At a minimum, 30% of patients aged over 70 years who were admitted for a medical illness are discharged with a new ADL disability. Older, frail seniors have even higher rates of hospital-associated disability. – Approximately 50% of disability among seniors occurs in the hospital setting. [i]Covinsky, K. E., Pierluissi, E., & Johnston, C. B. (2011). Hospitalization-Associated Disability, "She Was Probably Able to Ambulate, but I'm Not Sure". *JAMA, 306*(16), 1782-1793.

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Geriatric / Medically Complex	Regional Geriatric Program of Toronto (2017). The Senior Friendly Care Framework	The Senior Friendly Care Frameworks includes the following defining statement related to Senior Friendly processes of care: – Assessment is holistic and identifies opportunities to optimize the physical, psychological, functional, and social abilities of older adults – Care addresses the physical, psychological, functional, and social needs of older adults – Care is guided by evidence-informed practice – An interprofessional model of care is preferred especially when older adults are frail – Care is integrated and provides continuity especially during transitions – Goals of care may include recovery from illness, maintenance of functional ability and preservation of the highest quality of life as defined by the individual – Older adults are partners with the care team – Care is flexible and aligned with an individual's preferences – Communications and clinical and administrative processes are adapted to meet the needs of older adults – Older adults are provided information in a way that makes it easy to understand so that they can make informed decisions		
Geriatric / Medically Complex	Ministry of Health and Long-Term Care. Assess and Restore Guidelines (October 2014)	– Persons assessed as being at high risk, having restorative potential, and requiring facility-based interventions should be guided to and placed with a program that includes facility-based A&R		– The Assess and Restore Guidelines state that few seniors are frail, and few of these people are high-risk. High-risk seniors are distinguishable in that they have begun to experience serious functional decline and are reaching a stage where that decline threatens to become precipitous and permanent.

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		interventions where an interprofessional, dedicated and coordinated approach with expertise in geriatric care is available.		
Geriatric / Medically Complex	Provincial Findings from MOHLTC Assess and Restore Funded Projects: 2014/15 Summary 2015/16 Summary	– Evidence-based approaches to geriatric care (including interdisciplinary Comprehensive Geriatric Assessment, and comprehensive individualized care plans, informed by assessment of geriatric syndromes) improve health outcomes, and are associated with improved independence, decreased lengths of stay and decreased rates of re-hospitalization. – Integration with primary care, and improved recognition of frailty and restorative potential within primary care, improves earlier identification of risk and can increase capacity of primary care to manage the complexity of frail older adults in the community. – Formalized and evidence-based cross-sectoral partnerships and clinical pathways help facilitate timely access to the right care, in the right place, and are associated with decrease wait times, decrease lengths of stay, and a decrease in ALC days. – Cross-sectoral clinical education to increase awareness and understanding of the functional impact of geriatric syndromes, and the benefits of comprehensive geriatric assessment is essential to increasing capacity, across the continuum, to provide best practice geriatric care.		
Hip Fracture	Health Quality Ontario; Ministry of Health and Long-Term Care. Quality-Based	– All hip fracture patients to receive an active rehabilitation program following discharge from acute care		– In Ontario, the mean age of hip fracture patients admitted to hospital is about 80 years and

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	[Procedures: Clinical Handbook for Hip Fracture Health Quality Ontario & Ministry of Health and Long-Term Care (May 2013)]. Toronto, ON: Health Quality Ontario; 2013 May. 97	– Post-acute rehab to begin no later than Day 6 post-surgery and may occur in: ▪ Bedded settings: inpatient rehabilitation and complex continuing care ▪ Community-based settings: rehabilitation in the home or through outpatient physiotherapy clinics ▪ LTC homes in the case of patients admitted from LTC - There is a high degree of regional variation seen in the types of post-acute care received by hip fracture patients residing in each LHIN, which may be attributed to limitations in physical capacity in some LHINs. As a result, the Clinical Handbook does not make any recommendations regarding the target proportions of patients with hip fracture for each rehab location.		approximately 70% are female. – The incidence of hip fracture increases dramatically with age: ▪ Male: from 22.5 per 100,000 population at age 50 years to 630.2 by age 80 years ▪ Female: from 23.9 per 100,000 population at age 50 years to 1289.3 per 100,000 population by age 80 years – Based on current population aging trends, the annual number of hip fractures in Canada is projected to increase from 23,375 in 1993/1994 to 88,124 in 2041.
Hip Fracture		– Further work should be conducted to define criteria for the appropriate post-acute care setting for the more complex (e.g., medically unstable and/or cognitively impaired) hip fracture patient population	- Hip fracture patients who are medically stable, cognitively intact, and able to mobilize short distances benefit from early supportive discharge home to receive a community-based rehabilitation program	– There were 12,860 hospital admissions for hip fractures in Ontario in the 2011/12 fiscal year. Further research is needed to determine the best post-acute care setting for different subgroups of patients with hip fracture. "Future capacity planning for hip fracture patients [sic] needs to look pragmatically at how best to provide optimal rehabilitative care to these patients given current capacity restrictions and the need to share this capacity with other populations requiring rehabilitation, such as patients recovering from stroke." (p. 84)

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	Healthy Quality Ontario (2017) Hip Fracture Quality Standards	– Quality Standard: "Patients with hip fracture participate in an interdisciplinary rehabilitation program (in an inpatient setting, a community setting, or a combination of both) with the goal of returning to their pre-fracture functional status." – On discharge from the acute care hospital, all hip fracture patients, including patients with cognitive impairment and those residing in long-term care homes, should have the opportunity to participate in an active interdisciplinary rehabilitation program. – Patients with hip fracture should receive rehabilitative care that includes interventions to improve independence in self-care, balance and gait assessment and training, nutritional supplementation, education on safety and fall prevention, a restorative and/or maintenance exercise program, environmental modifications, osteoporosis management and education, and medication management. – Ensure that systems, processes, and resources are in place to allow all hip fracture patients, regardless of cognitive impairment or setting, to participate in a rehabilitation program following surgery.		- About 13,000 people living in Ontario experience a hip fracture every year. Roughly 20% of these people will die within a year of their fracture, another 20% who had been independent before their fracture will be admitted to long-term care, and less than half of those who had previously been living independently will be able to walk without aids following the fracture. - The health care expenditures associated with hip fracture are substantial, accounting for nearly $500 million of health care spending per year in Ontario - Rehabilitative care programs have been shown to improve patient outcomes, including functional status, leg strength, health status, balance, mobility, instrumental activities of daily living, and social functioning.
Hip Fracture	Rehabilitative Care Alliance (2017) Rehabilitative Care Best Practice Guidelines Framework for Patients with for Hip Fracture	– The target length of stay for bedded rehabilitative care, post hip fracture, should be 24-28 days, and dependent on patient need. – Patients should receive PT and/or OT services seven days a week.	– Rehabilitation should commence no later than one week following discharge from the acute-care setting – Duration of care is from 6 weeks to 3 months, averaging 8 weeks, and is dependent on the client's clinical needs – Key components of rehab in the community should include: education on safety and falls	

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		– Rehab intervention should include assessment of transfers and mobility status; education on the use of gait-aids; gait and stair training and progression; mobility, balance and strength progression; and practice and progression of independence with ADLs	prevention; training to improve independence in self-care, transfers, ambulation, and ADLs; balance and gait training; the provision of a progressive strengthening exercise program, and information regarding environmental modifications. – Clients should be discharged from community based rehab based on the achievement of goals, within the context of client's home environment and support systems.	
	LHIN Collaborative Falls Prevention Toolkit (2011)		– There should be an effective LHIN-wide Integrated Falls Prevention program in each LHIN to support the Falls Prevention objective of Ontario to reduce the number and impact of falls for seniors aged 65 (e.g. hip fractures). – The aim of the program is to screen/assess as many seniors aged 65+ as possible within the LHIN to determine any risk for falls. Screening/assessment should be done in a variety of venues to maximize the number of seniors screened/assessed.	– In fiscal year 2009 falls were responsible for: ▪ 95.1% of all hip fractures ▪ age-adjusted ED visit rate in Ontario of approximately 55 ED visits per 1,000 seniors ▪ hospitalization rate of approximately 13 per 1,000 seniors
Neurological Conditions	Ministry of Health and Long-Term Care. Mapping Connections and Understanding of	– No specific recommendations for bedded or community-based rehabilitative care are included in the reference. General comments about the need for integrated health services for individuals with a neurological condition included: – Access to services for individuals with a neurological condition is		Most brain dysfunction/Neurological conditions, prevalence increases with age Alzheimer's and dementia

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Neurological Condition	Neurological Conditions in Canada. October 2014.	sometimes limited by exclusion criteria. Although data could not be differentiated by type of facility, most service providers reported exclusion criteria for accessing their services. This may have been appropriate if the service provider was not equipped to address the needs of the patient. In addition to 33% of reporting facilities having exclusion criteria for psychiatric diagnoses, severe behavioural disorders, or for substance abuse or substance dependence, a further 32% of reporting facilities reported exclusions for medical instability, degenerative medical conditions, or the presence of comorbidities, while 21% reported exclusions on the basis of age. – "Children living with a neurological condition require regular use of health services, but these services are sometimes lacking. Children with newly diagnosed cerebral palsy utilized a range of rehabilitation services, but it was noted that services such as these were often not available when a condition was long-standing or if the condition was combined with a cognitive impairment. In general, the Health Services Project survey of providers found that there were fewer services offered for children (age 0 to 17 years) when compared to those available to adults." (p.44)		– 800 – 37, 218 per 100,000 aged 65+ years (community) – 1948 to 64706 per 100,000 aged 65+ yeas (community +LTC) – ALS: 1.6-7.9 per 100,000 – Cerebral Palsy: 110-390 per 100,000 – Epilepsy: 321-1550 per 100,000 Parkinson's disease: 405 – 19030 per 100,000
	World Health Organization, Neurological disorders : public health challenges, 2006	– No specific recommendations for bedded or community-based rehabilitative care are included in the reference. General comments about the need for integrated health services for individuals with a neurological condition included: – There is a wide range of rehabilitation interventions, programmes and services that have been shown to be effective in contributing to optimal functioning of people with neurological conditions. – Rehabilitation services need to be made available to all people with disabilities, and this includes people with disabilities attributable to neurological disorders.		

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		Accessible public transport and other facilities must be provided for them. – Although options for treatment of multiple sclerosis are relatively limited, sufferers can gain significant improvements in quality of life with neurorehabilitation. – Community-based rehabilitation programmes are a low-cost way to coordinate medical guidance and community resources in the rehabilitation of people with disabilities. – The programmes should be linked to and supported by institutional and hospital-based care, where appropriate, thus creating a comprehensive rehabilitation service.		
Oncology	GTA Rehab Network. Oncology Rehab Definition Framework. June 2009	– Rehab patients with a good prognosis whose primary rehab need is to address general deconditioning pre- or post-cancer surgery/treatment should be referred and transferred directly to a mixed rehab program. – Rehab patients with multiple medical and rehab needs should be referred and transferred to a rehab program with a dedicated oncology team. – Some patients may require a slower-paced rehab program	– Suitable for patients already residing in the community who no longer need 24-hour hospital care and/or patients residing in the community with a specific rehab need, which may be an impairment, performance, activity or participation issue that requires assessment and/or treatment by a health professional.	Canadian Cancer Society's Advisory Committee on Cancer Statistics. Canadian Cancer Statistics 2015. Toronto, ON: Canadian Cancer Society; 2015. – 375.3 cases per 100,000 population as of 2015. Incidence varies with age and sex.

Conditions Typically Requiring Rehabilitative Care				
Condition	Source	Recommendations re: Bedded vs Community-Based Rehabilitative Care		Incidence/Prevalence
		Bedded Rehabilitative Care	Community-Based Rehabilitative Care	
		for a longer duration to maximize rehab potential (e.g. patients undergoing chemotherapy treatment)		
	American Society of Clinical Oncology. Attention, Thinking, or Memory Problems. June 2013.	– Occupational therapy and vocational rehabilitation, to help people with the activities of daily living and job-related skills – Cognitive rehabilitation and cognitive training, to help patients improve their cognitive skills and find ways to cope with cognitive problems.		– Up to 75% of people with cancer experience cognitive problems during treatment. And 35% have issues that continue for months after finishing treatment. These problems vary in severity and often make it hard to complete daily activities. If you experience serious cognitive problems, talk with your health care team about managing those issues.
Oncology	American Society of Clinical Oncology (ASCO). Rehabilitation. (2012)		– Rehabilitation often helps patients regain strength, physical functioning, and independence that they may have lost due to cancer or its treatment. – Talk with your health care team to learn about the rehabilitation services available at your cancer center or in your area. – Depending on your needs, you may visit one or more specialists trained in specific areas of rehabilitation.	
Spinal Cord Injury (SCI)	Spinal Cord Injury Research Evidence	- The "ideal" scenario for modern SCI care is purported to be treatment in specialized, integrated centres with an interdisciplinary team of health care professionals providing care as early as possible following injury and throughout the rehabilitation process with appropriate discharge to the community, with		

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		ongoing outpatient care and follow-up (Donovan et al. 1984; Tator et al. 1995). This is best facilitated within an organized "system" with seamless transitions as patients proceed from acute care through rehabilitation to outpatient care. While it is generally accepted that this "ideal" more specialized, integrated approach should result in better outcomes, there is minimal robust evidence to support this.		
	GTA Rehab Network. GTA Rehab Network Spinal Cord Injury Rehab Definition Framework. August 2009.	– Suitable for individuals in need of an interprofessional rehab program who also require 24-hour hospital care.	– Suitable for individuals in need of an interprofessional rehab program	Spinal Cord Injury Ontario, Fast Facts notes: There are 600 new spinal cord injuries every year in Ontario (more than one a day) and current estimates indicate that there are approximately 33,140 Ontarians living with spinal cord injury.
Stroke	Health Quality Ontario; Ministry of Health and Long-Term Care. Quality-Based Procedures: Clinical Handbook for Stroke (Acute and Post-acute), (December 2016) Toronto: Health Quality Ontario; 2016 December. 132 p	– Patients with moderate or severe stroke who are rehabilitation-ready and have rehabilitation goals should be given an opportunity to participate in inpatient stroke rehabilitation – Stroke patients should receive, via an individualized treatment plan, at least 3 hours of direct task-specific therapy per day by the interprofessional stroke	General Considerations: – Stroke rehabilitation should be provided by an interprofessional team with specialized stroke training and expertise/skills – Resources should be available in the community to encourage timely access and required intensity of service. Physiotherapy, occupational therapy, and speech-language therapy be should each be provided 3 times weekly, for a total of 9 visits over 7 days per week – Mild Stroke: Patients with an early AlphaFIM™ score of > 80 would typically go to outpatient	According to statistics reported in the 2015 Handbook: – Approximately 20,013 stroke/TIA visits to Ontario EDs each year. – Approximately 15,224 inpatient admissions each year for stroke: 69% for ischemic stroke, 17% for TIAs, and 14% for hemorrhagic stroke.

Conditions Typically Requiring Rehabilitative Care				
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Stroke		team for at least 6 days per week. – Moderate Stroke: In general, patients who qualify for inpatient rehabilitation are those with an early AlphaFIM™ score of 40 to 80* – Severe Stroke: Patients presenting to hospital with acute stroke, with early AlphaFIM™ score of <40 to be admitted to inpatient rehab (high or low intensity as tolerance permits)	rehabilitation* or home-based rehabilitation – Early supported discharge (ESD) is "a form of rehabilitation designed to accelerate the transition from hospital to home through the provision of rehabilitation therapies delivered by an interprofessional team in the community. It is intended as an alternative to a complete course of inpatient rehabilitation and is most suitable for patients recovering from mild to moderate stroke. Services should be provided 5 days per week at the same level of intensity as in the inpatient setting, and may act as a transition point to ambulatory or community stroke rehabilitation as appropriate." (p 109) – It is recommended that ESD services be given within 48 hours of discharge from an acute hospital or within 72 hours of discharge from rehabilitation – General Considerations: Make ESD available to all stroke patients in Ontario; ESD does not currently exist in Ontario, and LHINs need to find capacity for this service – Moderate Stroke: Following inpatient rehab, patients with an early AlphaFIM™ score of 40–80 to have home/outpatient based rehab following inpatient rehab, where required.	

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Stroke			– Severe Stroke: Following inpatient rehab, patients with Severe Stroke to have outpatient/home-based rehabilitation, where required.	
		*Age, the availability of a caregiver, the severity of cognitive/perceptual needs, the presence of severe aphasia/dysphagia, and profound inattention/neglect are other considerations		
	Ontario Stroke Evaluation Report 2012 Network: Prescribing System Solutions to Improve Stroke Outcomes (Info is based on review of data from 2003/04 to 2010/11 and 2010/11 Acute Ontario Stroke Audit)	– All patients with stroke admitted to hospital and who require rehabilitation should be treated in a comprehensive or rehabilitation stroke unit by an interdisciplinary team. Survivors of severe stroke should be reassessed at regular intervals for their rehabilitation needs.(National Best Practices-Ref 7, Pg15) – The benchmark* for date of admission to inpatient rehab post stroke onset is 7 days. (p 73)	– People with stroke living in the community who have difficulty with activities of daily living should have access, as appropriate, to therapy services to improve or prevent deterioration in these activities. (National Best Practices-Ref 7, Pg15) – The benchmark* for amount of rehabilitation service visits (occupational therapy, physiotherapy, speech therapy or social work) per client to be provided through homecare is an average of 6.8 rehabilitation visits. (p. 92)	– An increase in the prevalence of stroke/TIA in the current "baby boomers" (i.e. 46-65 year age group) may be expected in the next 10 years as this age group moves into the 66-75 year age group when strokes are most likely to occur. (p. 6) – More than 70% of stroke patients receiving inpatient rehabilitation were over 65 years of age (median 74 years). (p 73) – Women accounted for 47.9% of stroke patients receiving inpatient rehabilitation, and their median age was 77 years compared to 72 years for men. (p 73)

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		– The benchmarks were calculated using the Achievable Benchmarks of Care (ABC) methodology, which summarizes the performance of the top-ranked facilities representing at least 20% of all patients eligible for the appropriate care. The benchmarks were calculated using demonstrated care among a few facilities (i.e., not only the top-ranked facility) and therefore were attainable. (p xiii)		
Stroke	Hall RE, French E, Khan F, Zhou L, Linkewich B, Willems D, Huffman S, Sooley D, Pagliuso S, O'Callaghan C, Levi J, Bayley M. Ontario Stroke Evaluation Report 2016: A Focus on Stroke Rehabilitation. Toronto, ON: Institute for Clinical Evaluative Sciences; 2016.	– Variation in timely access and failure to achieve recommended targets for length of stay in inpatient rehabilitation may be due to limited provision of therapy on weekends, lack of early supportive discharge programs and rehabilitation professional staffing levels below recommended standards. – "Facilities providing inpatient stroke rehabilitation should identify opportunities to align with stroke quality-based procedures in recommended staffing ratios and evidence-based care, including the delivery of rehabilitation to	– Stroke survivors are not receiving the recommended number of home-based therapy provided by Community Care Access Centres (CCAC) after an acute stroke. Patients are receiving, on average, only five visits for all types of therapy combined (occupational therapy, physiotherapy, speech therapy) instead of the recommended QBP-recommended levels of 2–3 visits per type of therapy per week for community programs.	In FY 2014/15 in Ontario: – 14,287 stroke patients were admitted to acute care hospitals in Ontario. Of these, 12,604 patients were discharged alive following acute stroke – Approximately 4,400 stroke patients (35% of 12,604 stroke survivors) were admitted to inpatient rehabilitation ▪ Women represented 45.9% of the stroke inpatient rehabilitation population and were, on average, six years older than men (77 years vs. 71 years). ▪ Among stroke survivors admitted to inpatient rehabilitation, 80% were between 46 and 85 years of age. Men represented 63.6% of those aged 46−65 and 59.2% of those aged 66−75. Women represented 62.8% of the over-85 age group ▪ Following inpatient rehabilitation: o 81.9% of stroke survivors were discharged home with or without services or other community services. o 9.1% of stroke survivors were discharged to complex continuing care or long-term care.

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		stroke survivors that is early, specialized and intensive (i.e., 3 hours a day for at least 6 days a week)". (p 20)		– Approximately 4,000 survivors (32% of 12,604 stroke survivors) had at least one home visit from a rehabilitation professional provided through a Community Care Access Centre.
Total Joint Replacement	Health Quality Ontario; Ministry of Health and Long-Term Care. Quality-Based Procedures: Clinical Handbook for Primary Hip and Knee Replacement, Health Quality Ontario (November 2013). Toronto: Health Quality Ontario; 2014 February. 95 p.	– < 10% of patients in acute care who have had primary, elective TJR will require inpatient rehabilitation. (Episode of Care Model for Primary Hip and Knee Replacement, p. 63)	– > 90% of patients in acute care who have had primary, elective TJR should be discharged home for community-based rehabilitation. (Episode of Care Model for Primary Hip and Knee Replacement, p. 63)	2011/12 inpatient discharges from acute care : Hip replacement - 11,620 ▪ Female 54.6% ▪ Male 45.4% ▪ Age 31.1% - 65–74 ▪ Age 27.8% - ≥ 75 Knee replacement - 21,466 ▪ Female 61.7% ▪ Male 38.3% ▪ Age 34.6% - 65–74 ▪ 26.1% - ≥ 75 Bilateral – 508 ▪ Female 59.4% ▪ Male 40.6% ▪ Age 31.6% - 65–74 ▪ Age 19.2% - ≥ 75
	Rehabilitative Care Alliance (2017) Rehabilitative Care Best Practice Framework for Patients with Primary Hip	– Inpatient rehabilitation should not be the first choice for the typical patient following total hip or knee	– For Total Knee Arthroplasty, rehab should begin within 7 days of discharge from acute care, and should include intensive exercise to achieve range of motion and function throughout the	

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	and Knee Replacement	replacement. – The timing, frequency and intensity of rehabilitative care services provided in a bedded level of care should be defined in consideration of functional tolerance and goals of the patient. – Home exercise program and education should be provided, and ongoing rehabilitation plan should be in place, prior to discharge.	first 12 weeks post-surgery. Treatments should be offered 2-3 times per week. – For Total Hip Arthroplasty, the frequency of rehab will be dependent on the achievement of goals, but are typically offered once per week. 1-2 rehab sessions will be suitable for 75-80% of Total Hip Arthroplasty patients, however 20-25% of patients may require up to 8 individual sessions.	