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Canadian Stroke Best Practice Recommendations
Rehabilitation, Recovery, and Community Participation Following Stroke, Part Three: Optimizing Activity and Community Participation Following Stroke, 7th Edition Update, 2025

Jennifer K. Yao, MD,[1,2] Nancy M. Salbach, PT, PhD,[3,4] M. Patrice Lindsay, RN, MEd, PhD, FWSO,[5] Michelle L.A. Nelson, PhD,[6,7] Jing Shi, MD,[8,9] Colleen O'Connell, MD,[10,11] Ruth Barclay, PhD, MHSc, BMR (PT),[12,13] Diana Bastasi, BSc (PT), MBA,[14] Mark I. Boulos, MD, CSCN (EEG), MSc,[15] Joy Boyce, OT Reg (NS), BScOT, BA,[16] Geneviève Claveau, MD,[17,18] Heather L. Flowers, PhD, SLP (C), Reg CASLPO, CCC-SLP,[19] Norine Foley, MSc,[20] Urvashy Gopaul, MSc, PhD, PT,[4] Esther S. Kim, PhD, RSLP, CCC-SLP,[21] Alto Lo, MD,[22] Alison M. McDonald, BScPT,[23] Amanda McIntyre, PhD, RN,[24] Colleen O'Connor, PhD, RD,[25] Kara K. Patterson, PT, PhD,[3,4] Tricia Shoniker, OT Reg (Ont), BSc OT, MOT,[26] Theodore Wein, MD,[27] Janice Wright, MS, ACNP(c), RN-EC,[28] Brenda Yeates, MSW, RSW,[29] Jeanne Yiu, OTR, BSc (OT), MSc,[30] Chelsy Martin, PT, MScPT,[31] Rebecca Lund, MSc (OT),[31] Sarvenaz Mehrabi, MD, MSc,[32] Dylan Blacquiere, MD, MSc,[33] Debbie Timpson, BSc (PT), MD,[34] Richard H. Swartz, MD, PhD,[35,36] Eric E. Smith, MD, MPH,[37] Gail A. Eskes, PhD, RPsych,[38] Aravind Ganesh, MD, DPhil,[37,39] R. Stewart Longman, PhD,[40] Treena Blake, PhD, RPsych,[2] Sabrina Celarie, MN, RN,[41] Lee-Anne Greer, PhD, CPsych,[42,43] Jasmine Masse, BSW, RSW,[44] Ronak Patel, PhD, CPsych, ABPP-CN,[45] Gayla Tennen, MD,[46] Manav Vyas, MBBS, MSc, PhD,[47,48] Benjamin Ritsma, MD,[49,50] Ada Tang, PT, PhD,[51] Louis-Pierre Auger, OT, PhD,[52] Jenna Beaumont, RSLP, MRSc,[53] Rebecca Bowes, HBA,[54] Imane Samah Chibane, MD,[55] Sarah J. Courtice, MD,[1,2] Rhina Delgado, BScOT,[56] Melanie Dunlop, NP, BScN, MN, BA,[23] Kimia Ghavami, MD,[57] Teresa Guolla, OTReg (Ont), MHA, BScOT,[58] Deborah Kean, OT (R)NL,[59] Sandra MacFayden, PT,[60] Phyllis Paterson, PhD,[61] Elyse Shumway, SLP, MA,[62] Alda Tee, MHS, BSCPT reg PT,[63] Clinton Y.H. Tsang, MPH, MSc, RSLP,[64] Stacey Turnbull, RN CRN,[65] Katie White, BScPT, MSc,[31] Anita Mountain, MD,[66,67] and on behalf of the Canadian Stroke Best Practice Recommendations Advisory Committee, in collaboration with the Canadian Stroke Consortium, Canadian Neurological Sciences Federation, and CanStroke Recovery Trials Platform

Abstract: The 7th edition update of the Rehabilitation, Recovery and Community Participation module is presented in three parts. Part Three of the series reflects the current research evidence focused on person-centered care, optimizing an individual's return to their community and engaging in active and meaningful participation. Emphasis is placed on regular healthcare follow-up, maximizing secondary prevention strategies, assessment, diagnosis, and management of mood disorders and cognitive status, sleep health, and post-stroke fatigue. Personal issues that are important and meaningful to individuals with stroke are addressed, including returning to driving, vocational roles, relationships, sexuality, life roles, leisure, social participation, advance care planning, and palliative care. This module highlights the need for coordinated and seamless systems of care that extend beyond the first few months after stroke, building on progress achieved during the initial recovery, to support seamless longer-term recovery. The main goal of these recommendations is to help individuals with stroke achieve as much independence as possible in meaningful life roles and leisure activities. Successful planning across transitions requires integrated and coordinated people-centered efforts by all stroke team members and the broader community. Active engagement of the individual and family at all stages of planning and goal setting is essential.

Key Words: Clinical Practice Guideline, Community Participation, Post-stroke Mood and Depression, Post-stroke Fatigue, Cognitive Rehabilitation, Driving following Stroke, Sexuality and Relationships, Vocations, Life Roles, Functional Health

(*Am J Phys Med Rehabil* 2025;00:00–00)

From the [1]Division of Physical Medicine and Rehabilitation, University of British Columbia, Vancouver, Canada; [2]Acquired Brain Injury Program, G.F. Strong Rehab Centre, Coastal Health, Vancouver, Canada; [3]Department of Physical Therapy, University of Toronto, Toronto, Canada; [4]The KITE Research Institute, Toronto Rehabilitation Institute-University Health Network, Toronto, Canada; [5]MarcLind Health Consulting, Toronto, Canada; [6]Lunenfeld-Tanenbaum Research Institute, Sinai Health, Toronto, Canada; [7]University of Toronto, Institute of Health Policy, Management and Evaluation, Toronto, Canada; [8]Department of Physical Medicine and Rehabilitation, University of Saskatchewan, Saskatoon, Canada; [9]Saskatoon City Hospital, Stroke Rehabilitation Program, Saskatoon, Canada; [10]Stan Cassidy Centre for Rehabilitation, Horizon Health Network, Fredericton, Canada; [11]Dalhousie University Faculty of Medicine, Dalhousie Medicine New Brunswick, Fredericton, Canada; [12]Department of Physical Therapy, University of Manitoba, Winnipeg Canada; [13]Riverview Health Centre, Winnipeg, Canada; [14]The McGill University Health Centre, Montreal, Canada; [15]Hurvitz Brain Sciences Research Program, Sunnybrook Research Institute, Sunnybrook Health Sciences Centre, Toronto, Canada; [16]Nova Scotia Health Authority Early Supported Discharge Program, Halifax, Canada; [17]Stroke and Non-Traumatic Brain Injury Program, Institut de réadaptation Gingras-Lindsay de Montréal, Montreal, Canada; [18]Department of Physical Medicine and Rehabilitation, Université de Montréal, Montréal, Canada; [19]University of Ottawa, School of Rehabilitation Sciences, Faculty of Health Sciences, Ottawa, Canada; [20]Workhorse Consulting, London, Canada; [21]Department of Communication Sciences and Disorders, University of Alberta, Edmonton, Canada;

[22]Department of Medicine in the Faculty of Medicine & Dentistry, University of Alberta, Edmonton, Canada; [23]Nova Scotia Rehabilitation & Arthritis Center, Halifax, Canada; [24]Arthur Labatt Family School of Nursing, Western University, London, Canada; [25]Brescia School of Food and Nutritional Sciences, Western University, London, Canada; [26]Fanshawe College, School of Health Sciences, London, Canada; [27]Division of Neurology and Neurosurgery, McGill University Faculty of Medicine, Montreal, Canada; [28]Department of Rehabilitation and Restorative Medicine, Hotel Dieu Shaver Hospital, St. Catherines, Canada; [29]Queen Elizabeth II Health Centre Ambulatory Care Centre, Grand Prairie, Canada; [30]Department of Occupational Science and Occupational Therapy, University of British Columbia, Vancouver, Canada; [31]Heart and Stroke Foundation of Canada, Toronto, Canada; [32]Department of Physical Medicine and Rehabilitation, Lawson Research Institute, St. Joseph's Health care London, London, Canada; [33]Division of Neurology, Department of Medicine, University of Ottawa, Ottawa, Canada; [34]Department of Rehabilitation, Pembroke Regional Hospital, Pembroke, Canada; [35]University of Toronto Institute of Health Sciences, Toronto, Canada; [36]North East GTA Regional Stroke Program, Toronto, Canada; [37]Department of Clinical Neurosciences, University of Calgary, Calgary, Canada; [38]Dalhousie University, Departments of Psychiatry and Psychology & Neuroscience, Halifax, Canada; [39]Department of Clinical Neurosciences, University of Calgary, Cumming School of Medicine, Calgary, Canada; [40]Alberta Health Services, Foothills Medical Centre, Calgary, Canada; [41]Carewest Dr. Vernon Fanning Neuro Rehabilitation, Calgary, Canada; [42]Queen Elizabeth Hospital, Charlottetown, Canada; [43]PEI Organized Stroke Care Program, Charlottetown, Canada; [44]Community Stroke Care Service, Winnipeg, Canada; [45]University of Manitoba, Max Rady College of Medicine, Rady Faculty of Health Sciences, Winnipeg, Canada; [46]Department of Psychiatry, University of Toronto, Faculty of Medicine, Toronto, Canada; [47]St. Michael's Hospital-Unity Health Toronto, Toronto, Canada; [48]University of Toronto Faculty of Medicine; Toronto, Canada; [49]Department of Rehabilitation, Providence Care Hospital, Kingston, Canada; [50]Department of Physical Medicine and Rehabilitation, Queens University, Kingston, Canada; [51]McMaster University, School of Rehabilitation Science, Hamilton, Canada; [52]Institute of Health Sciences Education, Faculty of Medicine and Health Sciences, McGill University, Montreal, Canada; [53]Stroke Services BC, Provincial Health Services Authority, Vancouver, Canada; [54]West GTA Stroke Network, Trillium Health Partners, Mississauga, Canada; [55]Department of Neurosciences, Université de Montréal, Montréal, Canada; [56]Stroke Program Edmonton Zone, Alberta Health Services, Edmonton, Canada; [57]Division of Neurology, University of British Columbia, Vancouver, Canada; [58]Vision Loss Rehabilitation Canada, Inc., Ottawa, Canada; [59]Primary Health Care, NL Health Services, St. John's, Canada; [60]Provincial Ambulatory Stroke Clinic, Queen Elizabeth Hospital, Charlottetown, Canada; [61]University of Saskatchewan, College of Pharmacy and Nutrition, Saskatoon, Canada; [62]Clinical and Education Services, Aphasia Institute, Toronto, Canada; [63]Central East Stroke Network, Royal Victoria Regional Health Centre, Barrie, Canada; [64]University of British Columbia, School of Audiology and Speech Sciences, Vancouver, Canada; [65]Provincial Ambulatory Stroke Rehabilitation Services PEI, Charlottetown, Canada; [66]Division of Physical Medicine & Rehabilitation, Department of Medicine, Dalhousie University, Halifax, Canada; and [67]Acquired Brain Injury Program, Queen Elizabeth II Health Sciences Centre, Halifax, Canada.

All correspondence should be addressed to: Dr. M. Patrice Lindsay, RN, MEd, PhD, FWSO, MarcLind Health Systems Consulting, 11 Woodbank Road, Toronto, Ontario M9B 5C3, PH: +1-416-432-8721. Email: patrice@marclind.ca; Rebecca Lund, Msc (OT), Manager, Stroke, Heart and Stroke Foundation of Canada, 2300 Yonge Street, Suite 1200, Toronto, ON, M4E 3H4, PH: +1- 416-386-3732. Email: strokebestpractices@heartandstroke.ca.

The development of the CSBPR is funded in its entirety by Heart & Stroke. No funds for the development of these guidelines come from commercial interests, including pharmaceutical and device companies. All members of the recommendation writing groups, and external reviewers are volunteers and do not receive any remuneration for participation in guideline development, updates, and reviews. All participants complete a conflict-of-interest declaration prior to participation.

Consent was not required for this clinical practice guideline.

The following authors have identified actual or potential conflicts of interest, which have been mitigated through the design of a multidisciplinary writing group model and additional measures by the advisory committee as required: Jennifer K Yao (first author, co-lead) receives support for attending meetings and/or travel from Heart and Stroke Foundation of Canada, reimbursement to self for conference travel; leadership or fiduciary role with Canadian Stroke Best Practice Recommendations Advisory Committee, member. Nancy M Salbach (second author, co-lead) receives support from Toronto Rehabilitation Institute Chair at the University of Toronto, payment to institution; grant or contracts with Canadian Institutes of Health Research, payment to institution; honorarium for a lecture with Canadian Institutes for Health Research. M Patrice Lindsay (corresponding author, senior editor) receives consulting fees from Canadian Neurological Sciences Federation, paid to self; honorarium from CHEP PLUS, paid to self; advisory board member with Canadian Institutes of Health Research—ICRH IAB, unpaid. Michelle LA Nelson receives support from March of Dimes Canada, World Stroke Organization, American Stroke Association; research grants from the Canadian Institutes for Health Research, Walton's Trust, AMS Healthcare; honorarium for speaking with International Foundation of Integrated Care; Editorial Board International Journal of Integrated Care; leadership role with World Stroke Organization, American Stroke Association, International Foundation for Integrated Care. Jing Shi receives grants from the Saskatchewan Health Research Foundation, with all funds directed to research activity costs; leadership or fiduciary role with the Saskatchewan Stroke Expert Panel Advisory Board and as medical director of stroke rehabilitation at Saskatoon City Hospital as part of the academic clinical alternative payment (ACFP) physician contract. Colleen O'Connell receives payments for lectures provided from MT Pharma; leadership or fiduciary role as Chair of Canadian Physiatry Research and Development Foundation, volunteer role. Ruth Barclay receives grant from CIHR, not related to manuscript; Support for attending meetings and/or travel from CIHR—CIHR reviewer, not related to manuscript; leadership or fiduciary role on editorial board of the Journal of Aging and Physical Activity until January 2025, unpaid. Mark I Boulos receives grants or contracts from Canadian Institutes of Health Research; Alternative Funding Plan from the Academic Health Sciences Centres of Ontario; Heart & Stroke Foundation of Canada; Division of Neurology at the University of Toronto; Sunnybrook Education Advisory Council and Education Research Unit; Ontario Genomics; Toronto Dementia Research Alliance, paid to my institution; consulting fees from Precision AQ, paid to self; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Paladin Labs; Jazz Pharmaceuticals; Eisai, paid to self; Receipt of equipment, materials, drugs, medical writing, gifts or other services from Braebon Medical Corporation, In-kind support to Dr. Boulos' research program. Joy Boyce holds a Leadership or fiduciary role with the Atlantic Canada Stroke conference committee, co-chair and member. Geneviève Claveau has received of equipment, materials, drugs, medical writing, gifts or other services from AbbVie, Merz, Ipsen that included free lunches, educational material (handbooks) and participation in local conferences, educational sessions organized by them. Esther S Kim receives grants or contracts from SSHRC, CIHR—unrelated to this manuscript, payment to institution; support for attending meetings and/or travel with University of Alberta and Canadian Stroke Congress, conference travel support (reimbursements); leadership or fiduciary role as chair of the Council of Chairs of Canadian University Programs in Speech-Language Pathology and Audiology (CCUP), unpaid; other financial or nonfinancial disclosures, salary from University of Alberta. Alto Lo received payment for expert testimony from Lambert Law; Brownlee LLP, payments to self; Support for attending meetings and/or travel from AbbVie Canada, Ipsen Canada, Merz Canada, air travel and accommodations arranged directly by entities above. Kara K Patterson receives grants or contracts from Canadian Institutes of Health Research project grant; Heart and Stroke Grant in Aid; Rehabilitation Science Research Network for COVID catalyst grant, payments made to KITE Research Institute; support for attending meetings and/or travel from Heart and Stroke—Grant in Aid reviews, Stroke Cog for Canadian Stroke Congress, travel expense reimbursement; leadership or fiduciary role as board member of the International Society for Posture and Gait Research. Theodore Wein receives research grant, consulting fees, honoraria, honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events, support for attending meetings and/or travel, plane ticket provided from AbbVie, Ipsen; participation on a Data Safety Monitoring Board or Advisory Board, Pharmazzz, Syneos, Artivion, payment to self. Brenda Yeates receives support for attending meetings and/or travel from Alberta Health Services, paid wages to attend Writing Group Zoom Meetings as they took place during work time. Jeanne Yiu receives support for attending meetings and/or travel from Vancouver Coastal Health during work hours. Sarvenaz Mehrabi receives support funded by St. Joseph healthcare London and Heart & Stroke foundation of Canada. Dylan Blacquiere receives payment or honoraria from Healthing (honorarium), Heart and Stroke Foundation of New Brunswick (lecture honorarium), payment to self; payment for expert testimony from Burchells LLP, payment to self; participation on a Data Safety Monitoring Board or Advisory board with AbbVie—advisory board payment to self; leadership or fiduciary role with Heart and Stroke Foundation of Canada Stroke Best Practice Guidelines; Canadian Stroke Consortium—unpaid advisory/executive board. Debbie Timpson has a leadership or fiduciary role with Canadian Stroke Best Practice Recommendations Advisory Committee, member. Richard H Swartz receives Grants from Ontario Brian Institute, Canadian Institutes for Health Research, National Institute of Health, payments made to institutions; participation on Roche Advisory Board 2023, payments made to self; Stock with Follow MD Inc. Gail A Eskes receives grant funds from Nova Scotia Health (NSH), Canadian Institutes for Health Research, Innovacorp–NSH, Innovacorp operating grants paid to university; Canadian Institutes for Health Research training grant; honoraria for lectures and thesis review from LaTrobe University, Parkinson Canada, Mt. Allison University; reimbursement for travel and attending meetings from CanStim, Canadian Platform for Research in Non-Invasive Brain Stimulation; patents planned, issued, or pending—UK Patent application with the University of Birmingham/Dalhousie for cognitive enhancement technology. Aravind Ganesh receives grants from Canadian Institutes of Health Research, Alberta Innovates, Campus Alberta Neuroscience, Government of Canada–INOVAIT Program, Government of Canada–New Frontiers in Research Fund, Microvention, Alzheimer Society of Canada, Alzheimer Society of Alberta and Northwest Territories, Heart and Stroke Foundation of Canada, Panmure House, Brain Canada, MSI Foundation, France-Canada Research Fund, payments made to institution; consulting fees from Servier Canada, paid to self; payment for lectures, presentations, speakers bureaus, manuscript writing or educational events from

Stroke is a sudden and often life-altering condition that presents significant challenges for individuals and their families. In Canada, over 108,000 individuals with stroke present to hospitals annually,[1] and in 2022/23, there were 969,095 people 20 yrs of age and older estimated to be living with the effects of stroke in Canada.[2] Navigating the healthcare system to optimize recovery requires access to timely rehabilitation, support for community reintegration, and assistance in resuming meaningful life roles.[3,4]

Effective stroke recovery and successful outcomes extend beyond the acute phase and depend on seamless, coordinated people-centered care to help individuals achieve independence, resume meaningful life roles, engage in leisure activities, and participate actively in their communities.[5]

The Canadian Stroke Best Practice Recommendations, 7th edition update of the *Rehabilitation, Recovery, and Community Participation* module is presented in three parts, two of which have been published previously.[6,7] This publication represents the third and final installment. This staged approach was used to comprehensively address body structure, function, activity, participation, and environmental factors that influence recovery.[8]

This publication, *Part Three* of the series, focuses on essential recovery aspects often underaddressed in clinical practice, including mood and depression, sleep health and post-stroke fatigue, cognitive function, returning to driving and vocational roles, relationships, sexuality, leisure activities, and social participation, which are fundamental to an individual's identity and quality of life after stroke. Throughout this series, emphasis is placed on the active involvement of individuals with stroke and their families in identifying their recovery needs, setting goals and developing individualized rehabilitation, recovery, and participation plans.

Notable updates to these guidelines from the previous version include reorganization of the topics included to align with the International Classification of Functioning, Disability and Health framework for improved clarity and flow; conversion to GRADE methodology for evaluating the strength of each recommendation and the quality of the available evidence; evidence supporting multiple recommendations throughout this module was upgraded to a higher level of evidence coupled with a strong recommendation; and the scope of healthcare professionals engaged as part of the stroke recovery team has been broadened. New sections have been included for the management of medical issues; relationships, intimacy, and sexuality in the rehabilitation context; as well as the expansion of the section on leisure activities and community participation. Increased emphasis has been placed on the use of validated assessment tools across the continuum of rehabilitation care.

GUIDELINE DEVELOPMENT METHODOLOGY

The CSBPR development and update process follows a rigorous framework[9,10] and addresses all criteria defined within the AGREE Trust model.[11] The methodology for development and updates to the CSBPR has previously been published[12] and detailed methodology can be found on the Canadian Stroke Best Practices website at www.strokebestpractices.ca. A broad

Alexion, Biogen, payments to self; patents planned, issued, or pending for US17/317,771, System for patient monitoring and cuff-based therapies; participation on a Data Safety Monitoring Board or Advisory Board with Eisai, payment made to self; stock options with SnapDx Inc, Collavidence Inc (Let's Get Proof). Gayla Tennen receives grants or contracts from Alzheimer's Drug Discovery Foundation, Weston Foundation, supportive investigator for agitation in dementia trials grant or contracts from Alzheimer's Drug Discovery Foundation, Weston Foundation, supportive investigator for agitation in dementia trials. Manav Vyas receives grants from Heart and Stroke Foundation of Canada and Canadian Institutes of Health Research. Benjamin R Ritsma holds grants or contracts from SEAMO (Southeastern Ontario Academic Medical Organization) Endowed Scholarship and Education Fund, University Hospitals Kingston Foundation (UHKF), Brain Canada—Platform Support Grants (PSG), Heart & Stroke—Grant-in-Aid (GIA) Program Grant, Canada Research Coordinating Committee (CRCC)—New Frontiers in Research Fund (NFRF)—Exploration Grants. All funds directly to research activity costs. Leadership or fiduciary role with Stroke Rehabilitation Advisory Committee (co-chair)—Ontario Health–CorHealth, Stroke Network of Southeastern Ontario (member)—Regional Stroke Steering Committee (RSSC), Community Stroke Rehabilitation (CSR) Initiative—Expert Panel—Ontario Health–CorHealth Ontario, Community Stroke Rehabilitation (CSR) Initiative–Executive Committee–Ontario Health–CorHealth Ontario, Stroke Leadership Council—Ontario Health–CorHealth Ontario. All unpaid. Ada Tang receives Grants or contracts from Canadian Institutes of Health Research, Heart & Stroke, Physiotherapy Foundation of Canada, Paid to institution; payment or honoraria for from Canadian Society for Exercise Physiology, Canadian Physiotherapy Association Neurosciences Division, paid to self; support for attending meetings and/or travel for Work Congress for Neurorehabilitation, paid to self; participation on a Data Safety Monitoring or Advisory board with CanStim Recovery Trials. Louis-Pierre Auger receives support for the present manuscript—Fonds de recherche du Québec, Santé, Doctoral scholarship and postdoctoral fellowship; grants or contracts from Fonds de recherche du Québec–Santé for postdoctoral fellowship. Jenna Beaumont receives support from Stroke Services BC (provincial government) to attend meetings. Rebecca Bowes receives support for attending meetings and/or travel from Trillium Health Partners, West GTA Stroke Network, paid by employer for guideline participation, paid as part of work role/duties. Imane Samah Chibane receives consulting fees from Merz, consultant as a moderator for an educational program. Sarah J Courtice holds leadership or fiduciary roles as medical manager for the ABI and TRU programs at GF Strong Rehabilitation Centre and Physician leadership within health authority. Melanie Dunlop receives support for attending meetings and/or travel—funding from NS Health to attend and present at ICN APN conference; not related to stroke practice. Kimia Ghavami receives payment or honoraria for lectures provided to students and residents as part of teaching commitment with the University of British Columbia; holds a leadership or fiduciary role with Stroke Services BC, Acute Medical Chair. Teresa Guolla receives consulting fees from the Canadian National Institute for the blind for consulting on visual accessibility of the environment, payments directly to self; payment or honoraria from the Ontario stroke network (SE, NW, SW), Montfort Hospital, Ontario Society for Occupational Therapists, The Ottawa Hospital, Sunnybrook Hospital, Ottawa Home and Community Support, Queen's University Occupational Therapy Program, Ontario Regional Rehabilitation Coordinators, Sudbury General Hospital, small honoraria were paid either to my institution (Vision Loss Rehabilitation Canada) or to self; leadership or fiduciary role in other board, society, committee or advocacy group, with the Academy for Certification of Vision Rehabilitation Specialists (ACVREP) committee on certification standards for occupational therapists—unpaid. Jasmine Masse received support for attending meetings and/or travel from Winnipeg Regional Health Authority, have been supported by my workplace but only through payment of regular wage during scheduled work hours when attending meetings for CSBPR. Phyllis G Paterson receives grant or contracts from CIHR, Saskatchewan Flax Development Commission—payments made to institution. Anita Mountain (senior author) receives support for the present manuscript from the Heart and Stroke Foundation of Canada, no payment; grants or contracts —qualified site investigator for research supported by Brain Canada, Heart and Stroke Foundation of Canada, Canadian Partnership for Stroke Recovery/CIHR/Governors of the University of Calgary, no payments made to self; support for research coordinator and research activities related to research grants from primary organization; leadership or fiduciary role as rehabilitation co-chair for Canadian Stroke Best Practice Recommendations Advisory Committee, no payments. The following authors have no conflicts of interest to declare: Diana Bastasi, Norine Foley, Heather L Flowers, Urvashy Gopaul, Alison M McDonald, Amanda McIntyre, Colleen O'Connor, Tricia Shoniker, Chelsy Martin, Rebecca Lund (co-corresponding author), Eric E Smith, R Stewart Longman, Treena Blake, Sabrina Celarie, Lee-Anne Greer, Ronak Patel, Rhina Delgado, Deborah Kean, Sandra MacFayden, Elyse Shumway, Alda Tee, Clinton Y H Tsang, Stacey Turnbull, Katie White, and Janice Wright.

Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's Web site (www.ajpmr.com).

ISSN: 0894-9115
DOI: 10.1097/PHM.0000000000002845

interdisciplinary group of experts was convened and participated in reviewing, drafting, revising, and voting on all recommendation statements that were then reviewed by external experts. A group of individuals with lived experience of stroke also actively participated in the review and update process in a parallel review process through our Community Consultation and Review Panel. The literature for this module was current to March 2025.

A copy of the manuscript and online supplement translated in French are available as a Supplementary Files (http://links.lww.com/PHM/C857, http://links.lww.com/PHM/C858, http://links.lww.com/PHM/C859).

CANADIAN STROKE BEST PRACTICE RECOMMENDATIONS. REHABILITATION, RECOVERY AND COMMUNITY PARTICIPATION FOLLOWING STROKE, *PART THREE: OPTIMIZING ACTIVITY AND COMMUNITY PARTICIPATION FOLLOWING STROKE, 7TH EDITION UPDATE, 2025*

Refer to Online Supplement Appendix 1, https://links.lww.com/PHM/C859 for terminology, definitions and descriptions used throughout these recommendations.

SECTION 1: MOOD AND DEPRESSION

Post-stroke mental health disorders, including depression and anxiety, are highly prevalent following stroke. Approximately one-third of all individuals will exhibit symptoms of depression at some time post-stroke.[13] The reported prevalence of depression following stroke is substantially higher than in the general population (24% vs. 8%).[14] Anxiety and apathy have been reported in 20%–30% of people who have experienced stroke, either alone or in combination with a diagnosis of post-stroke depression.[15,16] Post-stroke depression (PSD) can be treated with pharmacological agents, of which selective serotonin reuptake inhibitors are most frequently used.[17] Nonpharmacological approaches for the treatment of PSD include different forms of psychotherapy, physical activity, noninvasive brain stimulation, and acupuncture.[17] Selective serotonin reuptake inhibitors can also be used to treat anxiety and other mental health symptoms, such as emotional lability and apathy, following stroke.

Section 1 Mood and Depression Recommendations

Refer to Online Supplement Appendix 1, https://links.lww.com/PHM/C859, for definitions and descriptions related to this section.

1.0 General Recommendations

i. Individuals who have experienced a stroke should be considered at risk for post-stroke depression, which can occur at any stage of recovery [Strong recommendation; High quality of evidence].
ii. Individuals with stroke, their family, and caregivers should be given information and education about the potential impact of stroke on mood as well as be provided with applicable resources and supports to manage altered mood states following stroke [Strong recommendation; Low quality of evidence].
iii. Individuals with stroke, their family, and caregivers should be provided with the opportunity to talk about the impact of stroke on their lives and mental health at all stages of care [Strong recommendation; Low quality of evidence]. *Refer to the CSBPR Stroke Systems of Care Module for further information on Patient and Family Education, and Community Follow-up.*[18]

1.1 Screening for Post-Stroke Depression

i. All individuals with stroke should be screened for post-stroke depression if deemed medically appropriate given the high prevalence of post-stroke depression and the evidence for treating symptomatic depression post-stroke [Strong recommendation; Moderate quality of evidence]. *Note: 'Medically appropriate' excludes individuals with stroke who are unresponsive or who have deficits that interfere with screening for mood disorders. Any pre-stroke mental health or cognitive diagnoses should be taken into consideration during the screening process.*
ii. Screening should be undertaken by trained professionals using a validated screening tool [Strong recommendation; Moderate quality of evidence].
iii. Stroke assessments should include evaluation of risk factors for depression, particularly a history of depression to ensure adequacy of assessment and access to appropriate treatment [Strong recommendation; Low quality of evidence]. *Refer to note below for list of risk factors.*
iv. For individuals who experience some degree of communication challenge or deficits following stroke, appropriate screening strategies that do not rely on verbal communication should be implemented for possible post-stroke depression to ensure adequate screening and assessment and access to appropriate treatment [Strong recommendation; Low quality of evidence].

Note: Common risk factors associated with post-stroke depression include increased stroke severity, functional dependence, presence of cognitive impairment, and history of previous depression. Increased functional dependence (e.g., requiring help with activities of daily living) and having a history of pre-stroke depression may be the two most salient risk factors for the development of post-stroke depression. Communication deficits and social isolation may also be considered as possible risk factors for depression. Refer to CSBPR Stroke Systems of Care Module for information on depression in family and informal caregivers of people with stroke.[18]

Section 1.1 Clinical Considerations: Timing of Screening for Post-stroke Depression

1. Screening for post-stroke depression may take place at various stages throughout the continuum of stroke care, especially at transition points, as time of onset for post-stroke depression can vary and include:
   a. At transfer from an inpatient acute setting to an inpatient rehabilitation setting;
   b. From an inpatient rehabilitation setting before return to the community;
   c. During secondary prevention clinic visits;
   d. Following discharge to the community, during follow-up appointments with consulting specialists, and during periodic health assessments with primary care practitioners.

2. Screening for depressive symptoms could be considered during the initial acute care stay, if deemed medically appropriate, particularly if evidence of depression or mood changes are noted, or if risk factors for depression are present, as outlined in section 1.1, iii.
3. Repeated screening may be required since the ideal timing for screening for post-stroke depression is unclear.

1.2 Assessment for Post-Stroke Depression

i. Individuals with stroke who have screening results that indicate a risk for depression should be assessed in a timely manner by healthcare professionals with expertise in diagnosis, management, and follow-up of depression [Strong recommendation; Moderate quality of evidence].

1.3 Non-Pharmacological Management of Post-Stroke Depression

i. It is reasonable to consider psychological interventions (such as cognitive-behavioral therapy, interpersonal therapy, problem-solving therapy, motivational interviewing, acceptance, and commitment therapy), as one of the first line treatments for depressive symptoms post stroke as a monotherapy, provided individuals with stroke have sufficient cognitive and language skills to actively engage in therapy [Strong recommendation; Moderate quality of evidence].
ii. Treatment for post-stroke depression may include psychological interventions in combination with antidepressants for appropriate individuals [Strong recommendation; Moderate quality of evidence].
iii. Supervised exercise, ideally performed at least three times per week, is recommended to reduce depressive symptoms in people post-stroke with mild depressive symptoms [Strong recommendation; High quality of evidence] and moderate depressive symptoms [Strong recommendation; Moderate quality of evidence].[19]

Section 1.3 Clinical Considerations

1. Other approaches to adjunctive treatment of post-stroke depression are emerging, with research in very early stages. These may include mindfulness and recreational therapies such as music therapy, and pet therapy. These therapies could be considered on an individual basis at the discretion of the treating healthcare professional in consultation with the individual with stroke and their family if appropriate.
2. Other therapies including repetitive transcranial magnetic stimulation, or, for severe refractory depression, electroconvulsive therapy, or deep brain stimulation. These have all been suggested in the literature but lack sufficient evidence for routine use and require more research. *Note these interventions are not yet available/approved specifically for use in post-stroke depression in Canada.*

1.4 Pharmacotherapy for Post-Stroke Depression

i. Individuals with stroke with mild depressive symptoms or those diagnosed with minor depression may initially be managed by "watchful waiting" [Strong recommendation; Moderate quality of evidence]. *Refer to Online Supplement Appendix 1 for definition of watchful waiting (https://links.lww.com/PHM/C859).*
   a. Pharmacological treatment should be considered and started if depression is persistent or worsens and interferes with clinical goals [Strong recommendation; Moderate quality of evidence].
ii. People diagnosed with a depressive disorder following stroke should be considered for a trial of antidepressant medication [Strong recommendation; High quality of evidence].
iii. No one drug or drug class has been found to be superior for post-stroke depression treatment. Side effect profiles, however, suggest that some selective serotonin reuptake inhibitors may be favored in this patient population [Strong recommendation; Moderate quality of evidence].
   a. Choice of an antidepressant medication will depend upon symptoms of depression, potential side effects of the medication, patient medical profile, and possible drug interactions with other current medications and medical diagnoses [Strong recommendation; Moderate quality of evidence].
iv. Response to treatment should be monitored regularly by a health professional. Monitoring should include evaluation of any changes in the severity of depression, review of potential side effects, and update of ongoing management plans [Strong recommendation; Moderate quality of evidence].
v. If a good response is achieved, treatment should be continued for a minimum of 6–12 mos [Strong recommendation; Moderate quality of evidence].
   a. If the individual's mood has not improved 2–4 wks after initiating treatment, assess individual adherence to medication regime. If compliant, then consider increasing the dosage, adding an additional medication, or changing to another antidepressant [Strong recommendation; Moderate quality of evidence]. *Refer to CANMAT Mood and Anxiety guidelines on pharmacotherapy.*[19]
   b. Following the initial course of treatment, ongoing pharmacological treatment could be considered on an individual basis (consider previous history and risk factors for recurrence of depression) [Strong recommendation; Low quality of evidence].
   c. If a decision is made to discontinue an antidepressant, it should be tapered over one to 2 mos [Strong recommendation; Low quality of evidence].
vi. Following initial treatment for post-stroke depression, individuals should continue to be monitored for recurrence of depression [Strong recommendation; Low quality of evidence].

Note: Examples of a "good response" may be indicated by positive changes in thoughts and self-perceptions (e.g., hopelessness, worthlessness, guilt), emotional symptoms (e.g., sadness, tearfulness), neurovegetative symptoms (e.g., sleep, appetite), and improved motivation to carry out daily activities.

Section 1.4 Clinical Considerations

1. The involvement and feedback of individuals with stroke, their family, and caregivers are an important component of ongoing monitoring for post-stroke mood changes and conditions.

2. Counseling and education should include information about potential recurrence of symptoms, emerging symptoms to be aware of, the importance of adherence with prescribed medication regime, and contacting their primary care physician or mental health expert should those signs reappear.

1.5 Prophylactic Treatment for Post-Stroke Depression

i. While prophylactic pharmacotherapy has been shown to prevent post-stroke depressive symptoms [Strong recommendation; High quality of evidence], its impact on function is less clear. At this time, routine use of prophylactic antidepressants for ALL individuals with stroke is not recommended as the risk-benefit ratio has not been clearly established [Strong recommendation; Moderate quality of evidence].
ii. Psychological interventions (such as problem-solving therapy, cognitive-behavior therapy) have been shown to have efficacy for prophylactic treatment for post-stroke depression and should be considered where appropriate [Strong recommendation; Moderate quality of evidence].

Section 1.5 Clinical Considerations

1. Further research is required to determine individuals who have experienced a stroke who are at higher risk for mood disorders, choice of antidepressant agents, optimal timing, and duration of intervention.

1.6 Other Mental Health States

i. Screening for anxiety may be considered in individuals with stroke as increased prevalence has been demonstrated following stroke [Strong recommendation; Moderate quality of evidence].
   a. A validated screening tool should be used to detect presence of pre-existing or new anxiety [Strong recommendation; Moderate quality of evidence].
   b. Individuals who have had a stroke with resulting communication limitations should be screened for anxiety using appropriate methods validated with individuals experiencing aphasia [Strong recommendation; Moderate quality of evidence].
ii. Psychological interventions (such as cognitive-behavior therapy) have been shown to have efficacy for anxiety and should be considered for individuals following stroke [Strong recommendation; Moderate quality of evidence].
iii. Anxiety may appear in people who have experienced a stroke who are not clinically depressed. It also frequently co-exists with depression following stroke. For individuals with stroke with marked anxiety with or without clinical depression, it is reasonable to offer pharmacotherapy [Strong recommendation; Low quality of evidence].
iv. Apathy may appear in people who have experienced a stroke who are not clinically depressed. It also frequently co-exists with depression following stroke. For individuals with stroke with marked apathy, with or without clinical depression, it is reasonable to offer nonpharmacological intervention such as exercise or music therapy [Strong recommendation; Low quality of evidence].
   a. Psychostimulants may be considered in select individuals; however, evidence remains limited [Strong recommendation; Low quality of evidence].
   b. Although evidence is limited in individuals with stroke, psychotherapy may be considered as an adjunct to pharmacotherapy [Strong recommendation; Low quality of evidence].
v. Pseudobulbar affect: In cases of severe, persistent tearfulness, emotional incontinence or lability, a trial of antidepressant medication should be considered [Strong recommendation; High quality of evidence].
   a. Some selective serotonin reuptake inhibitors may be considered over others for this population due to side effect profiles [Strong recommendation; Low quality of evidence].
   b. There is no evidence for nonpharmacologic interventions for this condition [Strong recommendation; Low quality of evidence].

SECTION 2: SLEEP HEALTH AND POST-STROKE FATIGUE

Post-stroke fatigue (PSF) is highly prevalent, affecting approximately 30%–70% of individuals.[20] PSF is associated with poorer functional outcomes, greater dependence in activities of daily living, increased risk of depression, and reduced return to work and social activities.[21] Management strategies include pharmacological and nonpharmacological interventions. While no medications are currently approved specifically for the treatment of PSF, pharmacological agents that have been used with some success include selective serotonin reuptake inhibitors (e.g., fluoxetine)[22] and modafinil,[23,24] a central nervous system stimulant that promotes wakefulness and is used to treat excessive daytime sleepiness. Among the nonpharmacological treatments, cognitive behavioral therapy,[25] mindfulness stress reduction,[26] and cognitive treatment combined with graded activity training[27] have been used.

Section 2 Sleep Health and Post-Stroke Fatigue Recommendations

Refer to Online Supplement Appendix 1, https://links.lww.com/PHM/C859, for definitions and descriptions related to this section.

2.0 General Recommendations

i. Individuals should be monitored for post-stroke fatigue throughout the trajectory of stroke recovery as it is a common and disabling condition [Strong recommendation; Moderate quality of evidence].
ii. Healthcare professionals should anticipate the possibility of post-stroke fatigue in individuals with stroke, and mitigate fatigue through assessment, education of the individual and their family, and interventions throughout the stroke-recovery continuum [Strong recommendation; Moderate quality of evidence].

2.1 Screening and Assessment

i. Prior to discharge from acute care or inpatient rehabilitation, individuals with stroke, their family, and caregivers

should be provided with information regarding sleep patterns and post-stroke fatigue [Strong recommendation; Moderate quality of evidence].

ii. Following return to the community, individuals with stroke should be periodically screened for post-stroke fatigue during follow-up healthcare visits (e.g., primary care, home care, and outpatient prevention or rehabilitation clinics) [Strong recommendation; Low quality of evidence].

iii. Individuals who experience post-stroke fatigue should be screened for common and treatable comorbidities, conditions, and for medications that are associated with and/or exacerbate fatigue or impact sleep [Strong recommendation; Low quality of evidence].
   a. Individuals with stroke should be screened for the possible presence of sleep apnea [Strong recommendation; Low quality of evidence].
   b. If sleep apnea is suspected, individuals with stroke should be referred to a healthcare provider with expertise in sleep health for further assessment and management to improve outcomes including ability to participate in other aspects of stroke rehabilitation [Strong recommendation; Moderate quality of evidence].

Section 2.1 Clinical Considerations

1. Comorbid conditions that may impact sleep and fatigue may include signs of depression or other mood-related conditions; sleep disorders or factors (e.g., sleep apnea, pain) that decrease quality of sleep; other common post-stroke medical conditions and medications (e.g., infections such as urinary tract infections, dehydration, sedating drugs, hypothyroidism, anemia, nutritional deficiencies) that increase fatigue.

2.2 Management of Post-Stroke Fatigue

i. Individuals with stroke should be cared for by healthcare professionals who are knowledgeable in the symptoms of fatigue and its management [Strong recommendation; Low quality of evidence].

ii. Modafinil may be considered as a treatment for post-stroke fatigue [Conditional recommendation; Low quality of evidence].

iii. Antidepressant medication is not recommended for the treatment of post-stroke fatigue in the absence of other comorbid indications such as depression and anxiety [Strong recommendation; Moderate quality of evidence].

iv. Cognitive behavioral therapy may be considered as an adjunct treatment for post-stroke fatigue [Strong recommendation; Low quality of evidence].

v. Mindfulness based stress reduction may be considered as an adjunct treatment for post-stroke fatigue [Strong recommendation; Low quality of evidence].

vi. Progressive exercise and graded return to activity are recommended to improve deconditioning and physical tolerance [Strong recommendation; Low quality of evidence].

vii. Counseling and education should be provided to individuals with stroke, their family, and caregivers on post-stroke fatigue, and energy conservation strategies that consider optimizing daily function in high priority activities (e.g., daily routines and modified tasks that anticipate energy needs and provide a balance of activity and rest) [Strong recommendation; Low quality of evidence]. *Refer to Online Supplement Box 2, https://links.lww.com/PHM/C859, for additional information on energy conservation strategies.*

viii. Encourage individuals who experience post-stroke fatigue to communicate energy status and rest needs to family members, caregivers, healthcare providers, employers, and social groups as a mechanism to increase self-management [Strong recommendation; Low quality of evidence].

2.3 Sleep Hygiene

i. Counseling and education for individuals post-stroke and their family on the establishment of good sleep hygiene behaviors is recommended [Strong recommendation; Low quality of evidence].

SECTION 3: COGNITIVE REHABILITATION FOR INDIVIDUALS WITH STROKE

The incidence of post-stroke cognitive impairment during the first year following stroke is estimated at 38%[28] and may be affected by factors such as pre-stroke cognition, stroke severity, stroke type, and assessment method. Cognitive rehabilitation interventions typically focus on common deficits of attention, memory or executive function. In general, these interventions aim to either: 1. reinforce or restore previous cognitive-behavioral skills or functions (e.g., remediation of working memory through targeted computerized exercises) or 2. teach compensatory strategies, which may include internal strategies (e.g., metacognitive and problem-solving strategies) or use of external strategies or tools (e.g., electronic alerts for specific reminders or environmental modification).[29] Structured, task-specific interventions focusing on attention and executive function have shown moderate benefits, while memory training yields mixed results.[30]

Section 3 Cognitive Rehabilitation for Individuals With Stroke Recommendations

Notes:

- *Evidence supporting rehabilitation for cognitive challenges related to vascular cognitive impairment (VCI) is growing, but current evidence is in general derived from investigations with a limited number of patient groups, including stroke, acquired brain injury (ABI), mild cognitive impairment (MCI), or mixed dementia. Studies with these mixed populations were included if they specified inclusion of individuals with a vascular etiology.*
- Overall, specific cognitive interventions fall into two broad approaches, emphasizing either teaching compensation strategies or providing direct remediation and cognitive skill training.
  - **Compensation** focuses on teaching strategies, behaviors and/or external tool use to manage impairments and is often directed at specific activity limitations to promote

independence. It can include changes in the physical and social environment or changing the way one performs an activity.
- o **Direct remediation** focuses on providing intensive specific cognitive skill training to directly improve the impaired cognitive domain, with the goal of generalization or transfer of benefits to those activities that rely on that domain. It can include therapist-directed adaptive exercises, usually via computer or tablet-based tools directed at specific deficits.
- o Note that commercial brain games are not included in these recommendations. Evidence for functional benefit or impact on activity and participation limitations is limited and requires more research before being integrated into these guidelines.

Refer to the CSBPR7 Vascular Cognitive Impairment module for additional information on assessment, management and rehabilitation for individuals with vascular cognitive impairment.[31]

3.0 Cognitive Rehabilitation for Individuals with Stroke

i. Individuals presenting with stroke or TIA should be screened for any changes in cognition following stroke compared to their pre-stroke cognitive status. [Strong recommendation; Moderate quality of evidence]. *Note, changes can be reported by the individual, family members, caregivers or clinicians. Refer to the CSBPR7 Vascular Cognitive Impairment module Appendix 1 for additional information on the presenting signs and symptoms of VCI.*[31]

ii. All individuals with stroke should be assessed to determine their need for cognitive rehabilitation using validated assessment tools where available [Strong recommendation; Low quality of evidence].

iii. Individuals with stroke and cognitive impairments, their family, and caregivers should be engaged in the development of a cognitive rehabilitation treatment plan that addresses current impairments and limitations, is goal-oriented and involves shared decision-making [Strong recommendation; Low quality of evidence].
   a. Cognitive rehabilitation treatment plans should consider the evolving nature of VCI and be regularly reviewed and adapted as the individual's cognitive status changes [Strong recommendation; Low quality of evidence].
   b. Interventions should be individualized, based on the best available evidence, and have the long-term aim to facilitate resumption or continued safe participation of desired activities (e.g., self-care, home and financial management, leisure, driving, return to work) [Strong recommendation; Low quality of evidence].
   c. Interventions should consider pharmacological and nonpharmacological approaches [Strong recommendation; Low quality of evidence].

iv. The healthcare team should use a multipronged approach for cognitive rehabilitation that includes both domain specific (e.g., attention, memory, executive function) and global strategies (e.g., physical activity and exercise) [Strong recommendation; High quality of evidence].

v. Individuals with stroke and VCI who also have communication limitations should be assessed for cognitive rehabilitation using appropriate validated methods particularly for individuals with aphasia [Strong recommendation; Moderate quality of Evidence].

Section 3.0 Clinical Considerations

1. A comprehensive assessment of cognitive strengths and weaknesses is required to consider the impact of challenges (such as impaired visuo-perceptual function, learning abilities, awareness, and insight of changes) on motivation, ability to engage in planning and treatment, and specific approaches to treatment delivery.
2. For treatment planning, consider the prognosis for cognitive recovery or decline, and the potential impact of other effects of stroke and existing comorbidities (such as fatigue, pain, depression/or anxiety) on the individual's ability to participate in and benefit from cognitive rehabilitation.
3. When engaging individuals with VCI, their family, and caregivers in cognitive rehabilitation treatment, consider:
   a. Interactive education about cognitive strengths and weaknesses, and implications for treatment, function, safety, as well as prognosis.
   b. The prognosis for cognitive recovery or decline that may impact treatment planning and delivery (e.g., related to the time post stroke, severity of vascular pathology).
   c. The availability of social support and the existing physical environment may impact participation, safety, and outcomes. Modifying the social and/or physical environment and embedding structure and routine may be considered to optimize specific cognitive rehabilitation techniques.
4. Both compensatory and remediation approaches may be applied in a person-centered approach to optimize function.
5. In addition to interventions tailored for specific cognitive domains, other approaches that directly impact brain function or health (e.g., noninvasive brain stimulation, physical activity) have received growing attention as modulators of cognition.
6. Multimodal approaches (e.g., diet, social activities, music, health education) may be considered to improve cognitive performance or to prevent cognitive decline.
7. Virtual reality has been studied to address post-stroke attention, memory, and executive function impairments and may be considered, but its efficacy has not been established (further research is required).
8. Computer based interventions may be considered as an adjunct to clinician-guided treatment. Research in this area continues to evolve rapidly.
9. Evidence for the impact and outcomes of treatment on activity or participation limitations is limited and requires more research.

3.1 Executive Function

Note: This section includes interventions for the cognitive domain of executive function (planning, organization, self-monitoring, and awareness). In most cases this should be considered for mild to moderate executive dysfunction.

i. Cognitive rehabilitation that focuses on executive function deficits may be addressed with both compensatory and remediation strategies that are appropriate to the individual's needs and clinical profile [Strong recommendation; Low quality of evidence].
ii. **Compensation** strategies may include:
   a. Metacognitive strategy training and formal problem-solving strategies, under the supervision of a trained therapist, should be considered for individuals with mild to moderate cognitive deficits [Strong recommendation; Moderate quality of evidence].
   b. In individuals with reduced self-awareness, the use of skill-specific training and explicit feedback may be considered to promote performance of specifically trained functional tasks [Strong recommendation; Low quality of evidence].
   c. Modifications to the environment and external strategies (e.g., written or electronic cues), should be considered for those individuals with mild to severe executive dysfunction [Strong recommendation; Low quality of evidence].
iii. **Remediation** using targeted computer-assisted executive skill training facilitated and guided by a therapist may be considered [Strong recommendation; Low quality of evidence].

3.2 Attention

Note: This section includes interventions for the cognitive domain of attention (e.g., vigilance, working memory). In most cases, this should be considered for mild to moderate attention deficits.

i. Cognitive rehabilitation that focuses on attention deficits may be addressed with both compensatory and remediation strategies as appropriate to the individual's needs and clinical profile [Strong recommendation; Low quality of evidence].
ii. **Compensation:** Modifications of cognitive demands by adapting the environment, tasks or treatment sessions (e.g., duration, planned rests, reducing distractions) may be considered [Strong recommendation; Low quality of evidence].
iii. **Remediation:** Targeted cognitive training directed by a therapist, such as time pressure management, attention process training, or computer-assisted cognitive rehabilitation, may be considered for appropriate individuals [Strong recommendation; Low quality of evidence].
   a. Working memory deficits may be remediated using targeted computerized working memory skill training facilitated and guided by a therapist [Strong recommendation; Moderate quality of evidence].

3.3 Memory

i. Compensation strategies may be considered for individuals with stroke and memory difficulties or impairments including:
   a. Using strategies that provide *external* cues or support (e.g., assistive electronic and nonelectronic devices) [Strong recommendation; Moderate quality of evidence].
   b. Using *internal* strategies, for those with mild memory difficulties or impairments. These strategies are taught to the individual and could include strategies to increase memorability (e.g., visual imagery, association, and semantic organization) and training techniques (e.g., self-efficacy training, and spaced retrieval practice) [Strong recommendation; Moderate quality of evidence].
   c. For those with moderate to severe memory impairments, errorless learning applied to specific functional tasks (e.g., preventing mistakes in repeated practice with cues that are reduced as learning is successful) is recommended as an additional training technique [Strong recommendation; Moderate quality of evidence].

Section 3.3 Clinical Considerations

1. Treatment for memory difficulties or impairments may be provided individually or in a group setting.

3.4 Aerobic Exercise

i. Aerobic exercise should be considered where appropriate as a modality to improve attention, working memory, and executive function [Strong recommendation; Moderate quality of evidence]. *Refer to CSBPR Rehabilitation, Recovery and community Participation Part Two, Section 4.4. for additional information on aerobic training.*
ii. **Multimodal approaches:** Aerobic exercise may be combined with cognitive rehabilitation training to improve attention, working memory, and executive function in individuals with VCI [Strong recommendation; High quality of evidence]. *Refer to CSBPR Rehabilitation, Recovery and community Participation Part Two, Section 4.4. for additional information on aerobic training.*

SECTION 4: HEALTH MANAGEMENT, AND RETURN TO DRIVING AND VOCATIONAL ROLES

Functional Health Management: Functional health management is a wholistic and proactive approach to maintaining and improving an individual's ability to perform activities of daily living and to fully engage in social roles across the lifespan, particularly in the presence of chronic conditions, such as stroke and its related disability, or aging-related changes. Targeted interventions such as home-based rehabilitation[32] and exercise programs,[33,34] cardiorespiratory program, or resistance training[35] can be helpful to promote independence, prevent decline, and enhance quality of life.

Community-based Palliative Care: No trials specific to stroke have been published on the topic of palliative care interventions. A Cochrane review[36] included the results from 4 randomized controlled trials(1234 participants, mainly with a diagnosis of cancer) and evaluated the effectiveness of home-based end-of-life care compared to inpatient hospital or hospice care. At 6 to 24 mos, individuals who received end-of-life care at home were significantly more likely to die at home, aligning with many patients' preferences. However, home-based care was not associated with a significant reduction in unplanned hospital admission.

Advance Care Planning: Although no stroke-specific studies have been published that examine the effectiveness of

advance care planning, several studies exist that include patients with mixed diagnoses, as well as those who are healthy.[37–39] In a recent systematic review,[37] advance care planning interventions demonstrated limited impact on quality of life or healthcare use but were consistently associated with improved communication, reduced decisional conflict, and increased alignment between patient and caregiver preferences. Results from two smaller RCTs demonstrated that structured advance care planning interventions significantly increased the likelihood that an individual's end-of-life wishes were known and respected and improved family satisfaction and emotional outcomes following death.[38,39]

Return to Driving: Since driving is a part of many individuals' daily routine prior to stroke, returning to driving is often a high priority for individuals with stroke and their families. Interventions to help individuals with stroke improve driving skills have not been well studied. A Cochrane review[40] included the results from 4 RCTs. The interventions examined included driving simulators and skills development using the Dynavision device and Useful Field of View training. No pooled analyses of the primary outcome, performance (pass/fail) during on-road assessment, were possible. Based on the results from a single trial, there was no significant difference in the mean on-road scores between groups at 6 mos (mean difference [MD] = 15.0, 95% CI = −4.6 34.6, $P = 0.13$), although participants in the intervention group had significantly higher scores on road sign recognition test (MD = 1.69, 95% CI = 0.51–2.87, $P = 0.0051$).

Return to work (RTW): Return to work is a key concern for many people, particularly younger individuals recovering from stroke. Several trials have evaluated interventions aimed at facilitating RTW after stroke, though evidence remains limited and inconclusive. The RETurn to work After stroKE (RETAKE) trial,[41] a multicenter randomized controlled trial that assessed the effectiveness of Early Stroke Specialist Vocational Rehabilitation in addition to usual care, found that ESSVR was not associated with an improvement in the odds of RTW (64.2% vs. 59.4%; adjusted odds ratio = 1.12, 95% CI = 0.8 to 1.87). Ntsiea et al.[42] reported that participation in a 6-wk individualized workplace intervention program was associated with an increase in the number of individuals who had returned to work following a recent stroke (<8 wks), compared with those who received usual care, at 6 mos (60% vs. 20%, $P < 0.001$).

Section 4 Health Management, and Return to Driving and Vocational Roles Recommendations

4.0 Individuals with stroke, their families, and caregivers should be provided with information, education, training, support, and access to services throughout transitions to the community to optimize the return to life roles, activities, and social participation [Strong recommendation; Moderate quality of evidence].

4.1 Health Management Following Stroke

i. Individuals living in the community following stroke should have access to regular and ongoing healthcare follow-up appropriate to their individual needs, which may address evaluating progress of recovery, preventing deterioration, maximizing functional and psychosocial outcomes, preventing stroke recurrence, and improving quality of life [Strong Recommendation; Moderate Quality of evidence].
   a. Initial review with primary care providers would ideally occur within the first month following hospital discharge and address the key secondary prevention, medical and functional issues, and provide ongoing follow-up as required [Strong recommendation; Low quality of evidence]. *Refer to CSBPR Secondary Prevention of Stroke module for additional information and the* post-stroke *checklist.*[43]

ii. Individuals presenting with stroke or TIA should be screened for any changes in cognition following stroke or TIA compared to their pre-stroke cognitive status. [Strong recommendation; Moderate quality of evidence]. *Note, changes can be reported by the individual, family members, caregivers or clinicians. Refer to CSBPR Vascular Cognitive Impairment module Appendix 3 for more information on the presenting signs and symptoms of VCI.*[31]

iii. Individuals presenting with stroke or TIA should be screened for any changes in mood and anxiety following stroke compared to their pre-stroke mental health status. [Strong recommendation; Moderate quality of evidence].

iv. Secondary prevention of stroke should be optimally managed and risk factor reduction strategies optimized in all settings including long-term care [Strong Recommendation; High Quality of Evidence]. *Refer to CSBPR Secondary Prevention of Stroke module for additional information.*[43]

v. Referrals to appropriate specialists should be made to support and manage specific vascular risk factors and lifestyle behaviors and choices where required [Strong Recommendation; Low Quality of Evidence]. *Refer to CSBPR Secondary Prevention of Stroke module for additional information.*[43]

4.2 Functional Health Management

i. Individuals with stroke living in the community who experience a decline in functional status should receive targeted interventions, as appropriate [Strong Recommendation; Moderate Quality of Evidence] even if the change occurs many months/years post-stroke. *Refer to appropriate topics within this module for targeted interventions.*

ii. Processes should be in place for individuals following a stroke to re-access rehabilitation or other supports and services as required based on changing needs during longer-term recovery [Strong Recommendation; Moderate Quality of Evidence].

iii. Individuals with stroke should have access to evidence-based community exercise programs as appropriate [Strong recommendation; High quality of evidence].[44]

4.3 Advance Care Planning

i. The healthcare team should ensure that individual goals of care and advance care planning decisions are reviewed periodically (e.g., annually) with the individual with

stroke, their family, and caregivers as appropriate, and updated when needed, such as when there is a change in health status [Strong recommendation; Low quality of evidence]. *Refer to CSBPR Stroke Systems of Care Module Section 8 for additional information.*[18]

ii. Advance care planning may include a substitute decision-maker and should reflect provincial legislation [Strong recommendation; Low quality of evidence].
   a. Advance care planning discussions should be documented and reassessed regularly, including at transition points or when there is a change in health status, with the active care team and the individual with stroke or substitute decision-maker, and included on the transition (discharge) summary [Strong recommendation; Low quality of evidence].

iii. Respectful advance care planning should be integrated as part of a comprehensive care plan, taking into consideration values and preferences with information regarding the individual's health status, understanding, prognosis, medically appropriate treatments, and future medical care [Strong recommendation; Low quality of evidence].

4.4 Community-Based Palliative Care

i. Referral and liaison with community-based hospice or palliative care services should be coordinated as appropriate based on the individual's goals of care and condition [Strong recommendation; Low quality of evidence]. *Refer to Stroke Systems of Care module for additional information.*[18]

4.5 Driving following Stroke

4.5.1 Education and Screening

i. Individuals should be advised to stop driving for at least 1 mo after a stroke, in accordance with the Canadian Council of Motor Transport Administrators Medical Standards for Drivers [Strong recommendation; Moderate quality of evidence].

ii. The individual with stroke should be made aware whether the local licensing authority has been informed that they have had a change in their medical status that may negatively impact their ability to safely drive [Strong recommendation; Moderate quality of evidence].

iii. Individuals who have had one or multiple TIAs should be instructed to stop driving until a comprehensive neurological assessment is completed, and findings indicate no residual loss of functional ability and discloses no obvious risk of sudden recurrence that could create a hazard while driving, in accordance with the Canadian Council of Motor Transport Administrators Medical Standards for Drivers [Strong recommendation; Moderate quality of evidence]. *Refer to individual provincial and territorial laws for requirements for reporting an individual's fitness to drive to driving authorities, and requirements to return to driving.*

iv. Individuals with stroke may be screened for their interest in returning to driving at points of transitions and follow-up visits [Strong recommendation; Low quality of evidence].

4.5.2 Assessment for Fitness to Drive

i. Individuals interested in returning to driving following stroke should be assessed for residual impairments, driving abilities and rehabilitation needs using valid and reliable methods in accordance with provincial/territorial criteria for return to driving [Strong recommendation; Moderate quality of evidence].
   a. Sensory-perceptual assessment should consider vision, visual fields, visual attention, and neglect [Strong recommendation; Moderate quality of evidence].
   b. Motor assessment should consider strength, range of motion, coordination, and reaction time [Strong recommendation; Moderate quality of evidence].
   c. Cognitive assessment should consider problem solving, speed of decision making, attention, concentration, impulse control, judgment, and reading/symbol comprehension [Strong recommendation; Moderate quality of evidence].

ii. For individuals who have residual neurological deficits impacting driving ability following stroke, a full comprehensive driving evaluation, including a government-sanctioned on-road assessment, should be considered to determine fitness to drive [Strong recommendation; Moderate quality of evidence].

4.5.3 Rehabilitation and Management for Return to Driving

i. Following a stroke, individuals who have the functional potential and interest in returning to driving should be offered appropriate rehabilitation therapies as required to address functional, sensory-perceptual, motor, and cognitive issues and increase the likelihood of being able to return to driving [Strong recommendation; Moderate quality of evidence].

ii. Individuals with stroke who have the functional potential and interest in return to driving may be referred to validated training programs to help prepare for return to driving [Strong recommendation; Moderate quality of evidence].

iii. Individuals with stroke unable to return to driving should be informed about and assisted to access transportation alternatives [Strong recommendation; Low quality of evidence].

iv. Individuals with stroke unable to return to driving should be offered support and/or counseling on coping with the loss of the ability to drive [Strong recommendation; Low quality of evidence].

4.6 Vocational Roles

i. Following a stroke, an individual should be screened for vocational roles and interests, including both paid and unpaid work such as employment, school, or volunteering [Strong recommendation; Low quality of evidence].
   a. This screening should take place early in the rehabilitation phase and be reassessed at points of transitions as appropriate [Strong recommendation; Low quality of evidence].
   b. Findings should be considered in planning for early and ongoing rehabilitation and included in individualized

goal setting when appropriate [Strong recommendation; Low quality of evidence].

ii. A detailed cognitive and perceptual assessment with appropriate healthcare professionals should be considered to assist with determining the individual's ability to meet the needs of their current or potential employment requirements and contribute to vocational planning [Strong recommendation; Low quality of evidence].

iii. Individuals with stroke should be encouraged to resume their vocational interests where possible and desired. A gradual resumption could occur when appropriate and adjustments made to accommodate any limitations or residual challenges (such as vision, communication) [Strong recommendation; Low quality of evidence].

iv. Referrals to vocational or educational services, and/or counseling should be initiated and facilitated if an individual with stroke has a goal to return to work or school, to assist with the process of returning to vocational activities as part of transitions to the community [Strong recommendation; Low quality of evidence].
   a. Individuals with stroke should be provided counseling and information about employment benefits and legal rights as required [Strong recommendation; Low quality of evidence].

v. Financial concerns and benefit options should be reviewed and revised, and assistance to create and implement a sustainable financial plan should be provided as needed, during admission and/or prior to discharge, and later in follow-up assessments and transitions [Strong recommendation; Low quality of evidence].

vi. Individuals with stroke should be supported with return to work and education plans, which may include engagement with employers/educators and recommendations on work modifications, accommodations, and/or graduated return. [Strong recommendation; Low quality of evidence].

SECTION 5: PARTICIPATION IN SOCIAL AND LEISURE ACTIVITIES FOLLOWING STROKE

Resuming social and leisure activities after a stroke can be challenging due to limited mobility, weakness, communication or sensory difficulties, fatigue, and cognitive impairments. Community-based interventions focusing on leisure therapy, leisure therapy plus physical activity or leisure education have been reported to improve measures of quality of life, mood, and satisfaction with leisure activity.[45,46]

Stroke often leads to a decline in sexual activity due to physical, psychological, emotional, social, and relational changes. Women are more likely to report reduced sexual desire and satisfaction, while men report sexual dysfunction.[47,48] Only a few small trials examining interventions designed to address issues relating to sexuality post stroke have been published. Interventions that have been examined include a structured sexual rehabilitation session, pelvic muscle floor training, and oral sertraline to prevent premature ejaculation.[49]

Section 5 Participation in Social and Leisure Activities Following Stroke Recommendations

Notes:

Recreation and leisure refer to activities that individuals engage in for enjoyment, relaxation, and personal fulfillment. These activities can range from hobbies, sports, or the arts, and they play a vital role in promoting mental and physical health. For stroke survivors, engaging in recreational activities can aid in physical rehabilitation by enhancing motor skills and coordination, while also providing a sense of accomplishment and joy.

Social participation encompasses the ways individuals connect with others and engage in community life. For stroke survivors, maintaining social connections is essential for combating feelings of isolation and depression, which can often accompany the recovery process. Social engagement can also facilitate the sharing of experiences and resources, fostering a supportive network that aids in emotional recovery.

5.1 Recreation, Leisure and Social Participation

i. Individuals with stroke should be screened for goals specific to recreation, leisure, and social participation [Strong recommendation, Moderate quality of evidence].

ii. A comprehensive assessment for interest and abilities to resume previous or new recreation, leisure, and social activities should be performed using validated assessments when available. [Strong recommendation, Moderate quality of evidence].

iii. Individuals with stroke who experience difficulty engaging in recreation, leisure, and social activities should receive individualized plans and therapeutic interventions developed through collaborative goal setting with their healthcare team [Strong Recommendation; High quality of evidence].

iv. Individuals with stroke should be provided with information and referral to community-based resources to meet ongoing physical, social, emotional, intellectual, and spiritual needs [Strong recommendation; Moderate quality of evidence].

5.2 Relationships and Sexuality

i. Individuals with stroke, their family, and caregivers should be educated and counseled on the potential impact of stroke on interpersonal relationships including spousal, familial, and other close relationships [Strong recommendation, Moderate quality of evidence].
   a. Topics to address in discussions may include coping, adapting, and adjusting; changed family roles, parental relationships; disrupted social identity, loss of social opportunities, emotional difficulties, impact of post-stroke fatigue on social participation; loneliness; and social isolation [Strong Recommendation, Low Quality of evidence].

ii. All individuals with stroke should be given the opportunity to discuss intimacy, sexuality, and sexual functioning at all stages of stroke care and recovery at a time appropriate for the individual [Strong recommendation; Moderate quality of evidence].
   a. Topics to address in discussions may include safety concerns, changes in sexual desire, and the potential impact of stroke on sexuality (e.g., physical, emotional, cognitive and/or communication) and resuming sexual activity [Strong recommendation; Moderate quality of evidence].

iii. Education sessions for individuals with stroke and/or partners may address potential changes in intimacy and

sexuality, resumption of intimacy and sexual activities, and frequently asked questions regarding relationships following a stroke [Strong recommendation, Low quality of evidence].

iv. Referral to a sexual health specialist may be considered for individuals with complex and/or persistent sexual difficulties [Strong recommendation, Low quality of evidence].

Section 5.2 Clinical Considerations

1. When addressing intimacy, sexual function, and sexuality, the following factors should be considered regardless of current relationship status, sexual orientation, or gender identity and should be available for all individuals with stroke:
   a. Ensure conversations occur in an environment that prioritize privacy, safety, and comfort for the individual with stroke and includes their close relationships if preferred.
   b. Establish a therapeutic relationship prior to discussing sensitive topics.
   c. Tailor verbal and written information to the individual's cognitive, sensory, and communication abilities.
   d. Initiate these discussions before, and continue them after transitions back to the community, including in supported living environments.
   e. Address the influence of factors such as pain, mood, anxiety, sensorimotor function, communication ability, medication, and spasticity on sexual function.
   f. Discuss indications, contraindications, and side effects of medications to improve sexual function

5.3 Support for Community Participation

i. Healthcare team members across settings should share information and linkages about local support services and disability benefits with individuals with stroke, their families and caregivers [Strong recommendation; Moderate quality of evidence].

a. Healthcare team members, individuals with stroke, their families, and caregivers should work together to develop an **accessibility plan** that identifies and helps them to overcome any barriers to participation prior to transition to a home or community-living setting [Strong recommendation; Moderate quality of evidence].

b. This plan should consider the individual's physical function, communication, emotional, cognitive, and perceptual abilities and impairments following stroke focused on the individual's goals for community participation [Strong Recommendation, Moderate quality of evidence].

c. Regional disability legislation and guidelines should be explained to individuals with stroke, family members, and caregivers as appropriate to support transitions and access to required services [Strong recommendation, Low quality of evidence].

d. Healthcare team members should ensure timely completion of documentation and applications by healthcare team members as required in collaboration with individuals with stroke, their families, and caregivers, which can help minimize delays with accessing eligible services and funding [Strong recommendation, Low quality of evidence].

SUMMARY

The 7th update of the *Canadian Stroke Best Practice Recommendations for Optimizing Activity and Community Participation following Stroke* provides evidence-informed recommendations that reflect the growing and changing body of research evidence available focused on person-centered care, optimizing an individual with stroke's return to their community, longer-term stroke recovery, and engaging in active and meaningful participation. In Canada, optimizing recovery requires navigating a complex and fragmented healthcare system that encompasses acute care, inpatient rehabilitation, and community services. This module emphasizes the need for coordinated and seamless systems of care that extend beyond the first few months following stroke, building on progress achieved during the initial recovery stages, to support seamless community reintegration. These recommendations are intended to support individuals with stroke to achieve as much independence as possible and successfully resume meaningful life roles and leisure activities. Successful long-term planning across all transitions requires integrated and coordinated people-centered efforts by all members of care teams involved with individuals who have had a stroke, their families and caregivers, and the broader community.

Active engagement of the individual and their family at all stages of planning and goal setting is essential. These recommendations have been guided by empirical evidence and the experiences and insights of people with lived experience. Individuals with lived experience reported that the topics covered in this module are often overlooked and seem to be less important than addressing functional deficits. Consequently, stroke team members may be too busy or unprepared to raise these issues or have meaningful conversations to identify potential issues requiring further exploration.

There is an urgent need to address the gap in supporting social and community participation—health systems must ensure equitable access to services and resources that facilitate not just physical recovery, but also the resumption of social roles, leisure activities, and community engagement that are critical for optimal long-term wholistic health outcomes and adaptation after stroke.

A comprehensive and integrated approach to addressing topics such as mood, cognition, sleep and life roles requires coordinated systems to be in place in all regions of Canada; a challenge given the vast geographical area with many smaller, and in some cases, isolated communities. Virtual care modalities represent a promising approach to overcoming geographical barriers and a potential mechanism for engaging family members in rehabilitation and transition planning. However, they must be implemented with careful attention to digital literacy, access to technology, and the need for some in-person assessment and treatment components.

Looking toward the future, several emerging trends are shaping the landscape of stroke recovery. Technology and assistive devices are emerging at a rapid pace and may play a key role in supporting activity and community participation following stroke. Continuing to develop community-based programming that enables people post stroke to optimally participate in exercise, social, vocational, and leisure activities can ease the transition to community living and contribute to a sense of well-being and health-related quality of life.[50]

The goal of disseminating these recommendations is to increase the implementation of evidence-based stroke care across Canada, to reduce practice variations in care delivery, and to narrow the gap between current knowledge and clinical practice. These recommendations are reviewed and updated every three to 5 yrs, as new evidence emerges that requires changes in practice.

ACKNOWLEDGMENTS

Heart & Stroke gratefully acknowledges the Rehabilitation, Recovery and Community Participation following Stroke: Part Three: Optimizing Activity and Community Participation following Stroke writing group leaders and members, all of whom have volunteered their time and expertise to develop these new recommendations; M. Patrice Lindsay RN, PhD for her expertise and efforts as senior writer and editor of these recommendations, module and manuscript; and the senior advisors Dr. Anita Mountain, Dr. Debbie Timpson and Dr. Colleen O'Connell. Members of the Canadian Stroke Consortium, Can Stroke Recovery Trials Platform, Canadian Neurological Sciences Federation and the Evidence-based Review of Stroke Rehabilitation team were involved in the development of these recommendations. These recommendations underwent external review, in whole or specific parts respective of expertise, by Paula Barker, Joyce Chen, Jill Congram, Kenneth Curtis, Luciana de Olivera Nerves, Celina Ducroux, Hillel M Finestone, Margaret Grant, Mary Halpine, Anne Harris, Sylvie Houde, Zainab Al lawati, Dorothy Kessler, Jaylyn Leighton, Swati Mehta, Stuart Miller, Jennifer Milliken, Asha Shelton, Shamala Thilarajah, Ankur Wadhwa, Ismalia De Sousa, Marika Demers, Sarah J. Donkers, Kate Hayward, Alyson Kwok, Alexander Lo, Lauren Mai, Susan Marzolini, Erin McHattie, Catherine Sackley, Lisa Sheehy, Hardeep Singh, and Ricardo Viana. We thank the Canadian Stroke Best Practices Advisory Committee members: Anita Mountain (co-chair), Dylan Blacquiere (co-chair), Eric E. Smith (past chair), Gord Gubitz, Dar Dowlatshahi, Margie Burns, Emma Ferguson, Thalia S. Field, Farrell Leibovitch, Christine Papoushek, Michael D Hill, Pascale Lavoie, Erin McHattie, Colleen O'Connell, Debbie Timpson, Manraj Heran, Katie Lin, Richard H Swartz, Adam Kirton, Ruth Whelan, Trish Helm-Neima, Katharine McKeen, Shannon Bayluk, Janice Daitchman, and Katie White. System implications were reviewed by Mary-Lou Halabi, Leslie James, and Geoffrey Law. The performance measures were reviewed and updated by members of the Heart & Stroke health systems quality council including Patrice Lindsay, Debbie Timpson, Sacha Arsenault, Shannon MacDonald, Raed Joundi, Alison McDonald, Colleen O'Connell and Amy Yu. We acknowledge and thank members of the CSBPR Vascular Cognitive Impairment 7th edition, 2024 writing group for their contributions. We acknowledge and thank Norine Foley and the evidence analysis team at workHORSE; Laurie Charest of Heart & Stroke for her coordination of the CSBPR teams and processes; and Francine Forget Marin and the Heart & Stroke internal teams who contributed to the development and publication of these recommendations (Translation, Communications, Knowledge Translation, Engagement, Health Policy, and Digital Solutions).

Community Consultation and Review Panel: Heart & Stroke is especially grateful to the members of the *Stroke Rehabilitation Planning for Optimal Care Delivery and the Delivery of Stroke Rehabilitation to Optimize Functional Recovery* Community Consultation and Review Panels who worked in tandem with the scientific writing group for this module and shared their personal experiences and insights on living with stroke and optimizing recovery and health outcomes. Community Consultation and Review Panel members include Allan Beaver, Suzanne Belanger, Suzanne Cady, Sheila Farrell, Katie Fung, Margie Hesom, Elizabeth Pease, Wes Reinhardt, Lori Beaver, Glen Brouwer, Maureen Brouwer, Janice Daitchman, Lilli Law, Ed Mitchell, Jennifer EJ Monaghan, Urainab Peerbhoy, Alda Tee (writing group liaison), and Kara Patterson (writing group liaison).

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