Canadian Stroke Best Practices

CANADIAN STROKE BEST PRACTICE RECOMMENDATIONS

Rehabilitation, Recovery and Community Participation Following Stroke

Part One: Stroke Rehabilitation Planning for Optimal Care Delivery Evidence Tables

Stroke Management in Long-term Care

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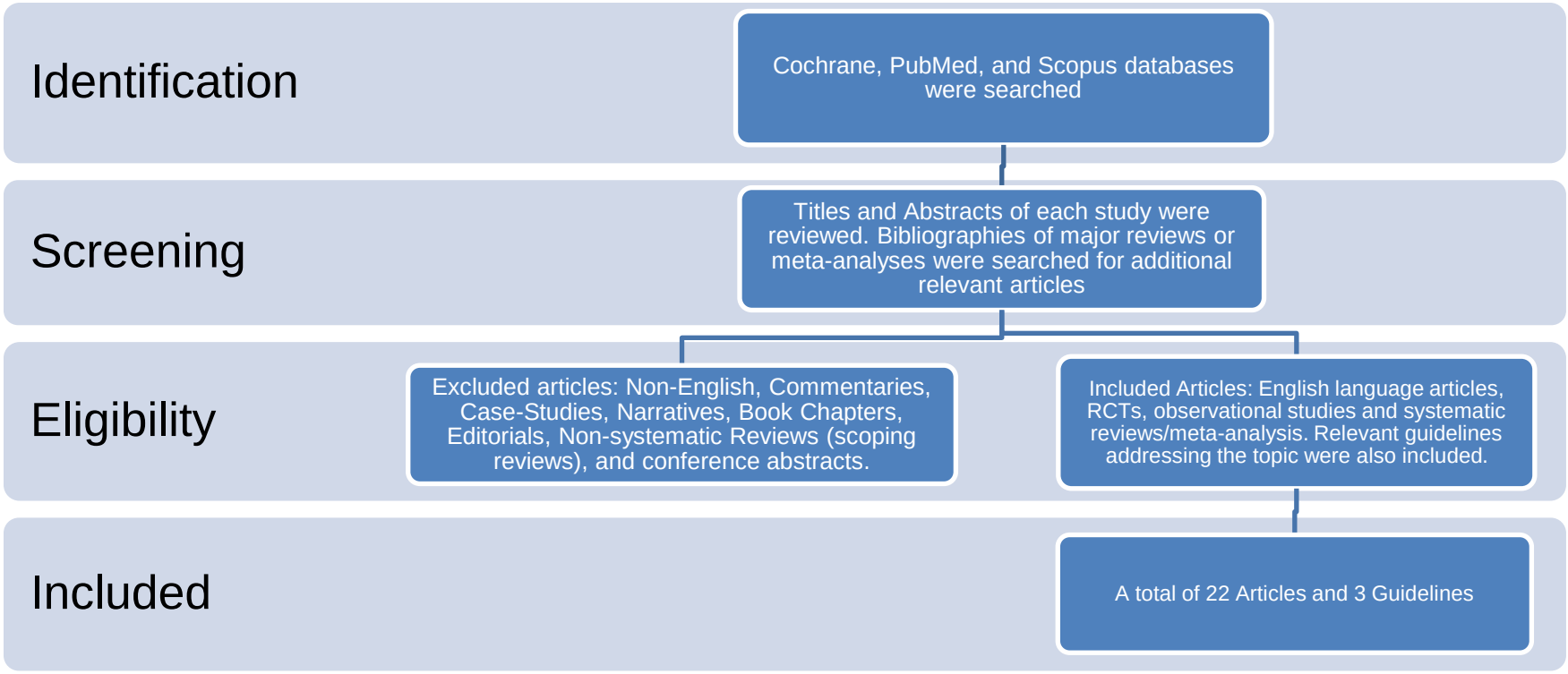
Search Strategy



Cochrane, Pubmed, and Scopus databases were search using terms such as (Stroke OR CVD OR “cerebrovascular disease”) AND “long-term care” OR “nursing home” OR “senior’s home” AND “rehabilitation”. Titles and abstract of each article were reviewed for relevance. Bibliographies were reviewed to find additional relevant articles. Articles were excluded if they were: non-English, commentaries, case-studies, narrative, book chapters, editorials, non-systematic review, or conference abstracts. Additional searches for relevant best practice guidelines were completed and included in a separate section of the review. A total of 22 articles and 3 guidelines were included and were separated into separate categories designed to answer specific questions.

Published Guidelines

Guideline	Recommendations
National Clinical Guideline for Stroke for the UK and Ireland. London: Intercollegiate Stroke Working Party; 2023 May 4. **Available at:** www.strokeguideline.org**.**	**2.17 Recommendations** A. People with stroke living in care homes should be offered assessment and treatment from community stroke rehabilitation services to identify activities and adaptations that might improve quality of life. B. Staff caring for people with stroke in care homes should have training in the physical, cognitive, communication, psychological and social effects of stroke and the management of common activity limitations. C. People with stroke living in care homes with limited life expectancy, and their family where appropriate, should be offered advance care planning, with access to community palliative care services when needed.
Aphasia Therapy in Long-term Care Facilities	
Azios JH & Damico JS. **Clinical practice recommendations for improving life participation for people with aphasia in long-term care.** ***Perspectives of the ASHA Special Interest Groups*. 2020 Apr 24;5(2):384-96.**	The importance of the Life Participation Approach to Aphasia (LPAA) in long-term care is highlighted, using the Framework for Living With Aphasia (A-FROM) as a guide. The focus of the program, which is suitable for all residents with aphasia, regardless of diagnosis, is not on the rehabilitation of language deficits, but on communication competence and avenues for support *Practice Recommendations for Promoting LPAA in LTC* Briefly, the steps include Information gathering and Sharing Collaborative goal setting Pretherapy assessment Therapy
Speech-Language and Audiology Canada Position Paper on The Role of Speech-Language Pathologists in Long-Term Care (July 2023) **Available at: https://www.sac-oac.ca/practice-resources/resource-library/position-papers/**	Evidence-based components of the speech-language pathology (SLPs) role that foster holistic, person-centered care within an interprofessional context, are presented. The role of SLPs in LTC (swallowing and communication) is described and includes assessment, individual and group intervention, interprofessional collaboration and care planning, family, caregiver, and staff counseling and training, and developing and implementing practice initiatives and systems-based quality improvement projects. Barriers to the access and implementation of comprehensive SLP services in LTC are also described.

Evidence Tables

Predictors of Transfer to Long-Term Care Facilities

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Saab et al. 2019 **Canada** **Retrospective study**	NA	227 patients with ischemic stroke discharged from a rehabilitation unit between January 1, 2005 and December 31, 2015. No patient demographics are provided.	Candidate variables considered to develop a predictive model of discharge destination (home vs. LTC) included age at onset of stroke, sex, FIM, and AlphaFIM scores prior to admission and FIM scores at admission and at discharge from rehabilitation and FIM change, residence (living at home versus chronic care facility), independent activities of daily living, right versus left versus both cerebral hemispheres, bladder and bladder incontinence, dysphagia, aphasia, Berg Balance Scale score on admission and at discharge and change, from admission to discharge, ability to transfer at discharge, MoCA score, hemianopsia, the presence of caregiver and having independent financial support for care and common comorbidities, such as diabetes etc.	**Primary outcome:** Independent predictors of discharge to LTC	Patients were more likely to be discharged to LTC if they were older (OR=1.15), living outside of the home before the stroke (OR=14.47), suffered from bowel incontinence (OR=10.6), and had no caregiver available (OR=22.1).

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Burton et al. 2018 **UK** **Systematic review**	NA	18 studies (n=32,139) Including persons who were transferred directly to a long-term care (LTC) facility following an acute hospitalization for stroke. Mean age of participants ranged from 58.9 to 88.9 years.	Factors associated with transfer to LTC, were identified.	**Primary outcome:** Factors related to LTC admission	The median percentage of patients transferred to LTC was 17% (range 7%-39%). The median percentage of patients who died as inpatients was 11% (range 3%- 29%) Age and stroke severity were the strongest predictors of transfer to LTC. The greatest likelihood of LTC was reported for patients ≥ 80 years vs. <60 years (OR=28.5) and for persons with baseline NIHSS scores >16 vs. ≤5 (OR=38.2). Other significant predictors included being single or divorced, poor social support, previous stroke, cardiac disease, dementia and other comorbidities. None of the studies evaluated patient or family preferences, socioeconomic status, availability of social care, costs of care, insurance status, dysphagia, or continence.
Pereira et al. 2014 **Canada** **Retrospective study**	NA	189 patients admitted to a stroke rehabilitation unit of a single hospital following a severe first-ever stroke (i.e FIM scores 12-38). Mean age was 69 years.	Phone interviews were used to establish post-discharge living arrangements	**Primary outcome:** Independent predictors of home discharge	Independent predictors of discharge home were younger age, higher admission FIM score and the availability of a caregiver. 65 patients (34%) were discharge to a nursing home. Fewer patients with the availability of a caregiver were discharged home (45% vs. 99%, p<0.001). The mean age of patients discharged to a nursing home was significantly higher compared with patients discharged home (78.5 vs. 63.8 years, p<0.001). Their mean admission FIM score for inpatient rehabilitation was significantly lower (47.5 vs. 50.4, p=0.012).
Brodaty et al. 2010 **Australia** **Retrospective study**	NA	202 participants, <85 years without dementia who had suffered an ischemic stroke. Mean age was 72 years. 97 persons, recruited from the	Participants were assessed at 3-7 days following stroke at 3-6 months and at 1, 3 and 5 years.	**Primary outcomes:** Mortality and rates of institutionalization at 10 years.	The survival rates for the stroke patients were: 100% at 1 month, 97.2% at 12 months, 92.0% at 2 years, 73.3% at 5 years and 17.5% at 10 years. The mean survival time for the stroke patients was significantly shorter compared with the controls.

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
		community, served as a control group. Mean age was 71 years	Model were developed to predict mortality and institutionalization. Candidate variables included age, development of dementia, mild cognitive impairment, ability to perform ADL stroke severity (European Stroke Scale), marital status, depression (Geriatric Depression Scale), diabetes, education, and number of vascular risk factors		Nursing home admission rates were 24% at 5 years and 32% at 10 years for patients and 0 for controls over 8.9 years follow-up. Independent predictors of nursing home admission were advancing age (HR=1.08, 95% CI 1.01-1.12, p=0.01) and lower performance on ADL (HR=0.81, 95% CI 0.74-0.88, p<0.001).
Walsh et al. 2008 **Ireland** **Retrospective study**	NA	136 patients admitted to a stroke unit of a single hospital. Median age was 77 years. 98% of patients were living at home prior to stroke.	Patient data were obtained through a patient information system. Data collected included age, sex, stroke subtype, patients' residence pre-stroke and discharge medications	**Primary outcomes:** Mortality, rates of institutionalization and stroke recurrence at 4 years.	Mortality at 1 and 4 years was 16.3% and 39.5%, respectively. Stroke recurrence at 1 and 4 years was 1.6% and 8.0%, respectively. At 4 years, 40.3% of patients were institutionalized.
Chuang et al. 2005 **Taiwan** **Prospective study**	NA	714 patients admitted to one of 6 hospitals following acute stroke. Mean age was 71 years. 59% of patients had experience their first stroke.	Data were collected in person during hospitalization and by telephone interviews at 1, 3 and 6 months following discharge. Data points collected included, age, sex, ability to perform ADL, discharge destination, mortality	**Primary outcomes:** Mortality and rates of institutionalization.	At 1 month after discharge, 22.1% of patients could perform ADL 4.5% of patients had died, 10.4% were admitted to a LTC facility. At 3 months after discharge, 25.3% of patients could perform ADL 6.8% of patients had died, 11.2% were admitted to a LTC facility. At 6 months after discharge, 29% of patients could perform ADL 10% of patients had died, 10.3% were admitted to a LTC facility.
Portelli et al. 2005 **UK** **Retrospective study**	NA	2,778 patients randomly sampled from 79 hospitals, who had been admitted with acute stroke.	A 42-item questionnaire was used to collect data on admission and discharge details, prestroke status, stroke severity, resource	**Primary outcomes:** Independent variables predicting institutionalization	349 patients (19%) were discharged from hospital to a nursing home. Of these, 242 (14%) patients lived at home, prior to stroke. 812 patients (29%) died in hospital. At 3 months, 194 patients (74%) remained

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
			utilization, and discharge disposition at 3- and 6-months post stroke.		institutionalized. while 48 (18%) patients had died. Age, Barthel Index at discharge and LOS were significant predictors of institutionalization.

Discharge Planning for Patients Entering Long-Term Care

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Sackley & Pound 2002 **UK** **Consensus panel**	NA	12 members from a multidisciplinary specialized stroke team participated in a panel to discuss priority items for discharge plans for stroke patients entering long term care.	Literature was reviewed and the evidence summarized. 22 discharge process items were identified and categorized into three areas: discharge process, physical care needs, and patient needs. Panel members ranked the items in terms of priority, met to discuss importance of items, and provided a second ranking of items following this meeting.	**Primary outcome:** The development of an evidence-based discharge plan for persons moving from inpatient care to a nursing home facility following a stroke.	In addition to the identification of physical care needs (e.g., details of the methods the patient uses to transfer and mobilize) and care needs (e.g., details of current medications and pain management), priorities for discharge were identified and included: 1. Plans need to be coordinated by a single person 2. A full assessment of needs for aids should be carried out and the findings given to the nursing home 3. Patients should visit the nursing home before discharge 4. Patient information should be recorded in written format 5. Continuing rehabilitation plans should be included 6. Staff at the nursing home should receive teaching on the patient's care before discharge 7. Details of follow-up care should be included 8. Hospital staff should carry out a follow-up visit to the nursing home 9. The patient should be given an outpatient appointment after discharge Overall, there was good agreement on priority items between panel members (Kendall coefficient of

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
					concordance (W)=0.48-0.58).
Sackley & Pound 2002 **UK** **Retrospective Study**	NA	38 stroke patients with Barthel Index scores of <11, three months post stroke who were discharged to a nursing home. Mean age of patients was 81 years.	A content analysis of case notes and discharge letters, completed by nurses and MDs was conducted to determine if the discharge letters contained information related to self-care ability, nursing needs, and risk assessment.	**Primary outcome**: Completeness and accuracy of discharge letters related to patient nursing needs	Nursing care items that were most likely to have been recorded in the discharge letter were related to diet (82%), and self-care ability in bathing (71%) and transfer method (76%). Nursing care items that were least likely to have been recorded in the discharge letter were related to risk assessment (e.g., falls 18%) and depression and pressure care (37% each) and patient's level of communication (37%). Many items deemed to be priority for discharge communication were poorly recorded, and in several cases discharge letters contained inaccurate information regarding patients' abilities (i.e. mobility issues). In two cases, discharge letters were delivered to the nursing care facility months after the patient was discharge from inpatient care. The majority of discharge letters completed by MDs contained no information related to primary diagnosis, long-term care needs or social needs.

Outcomes for Patients Transferred to Long-Term Care

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Jantzi et al. 2014 **Canada** **Retrospective study**	NA	42,089 patients admitted to long-term care facilities in Ontario within 180 days. 7,226 patients (17.2%) had experienced a stroke	The association between various neurological conditions (dementia, seizure disorder, Huntington's disease, multiple sclerosis, Parkinson's disease, stroke, TBI and muscular dystrophy) and incident fractures	**Primary outcome:** Independent predictors of fractures within 180 days of admission	23,788 patients (55.5%) had one of the neurological conditions of interest. Of the entire cohort, 2.6% (1,094) sustained a fracture during the 180 days following admission to LTC. In the fully adjusted model, stroke, as a neurological condition was not an independent predictor of incident fracture (OR=1.12, 95% CI 0.92-1.37).

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
			(hip, spinal, forearm and pelvis) was explored		Within the stroke sub group, independent predictors of incident fracture were: age >64 Years (65-74 years: OR=4.64, 95% CI 1.07-20.2; 75-84 years: OR=5.21, 95% CI 1.27-21.43 and >85 years: OR=7.06, 95% CI 1.73-28.86, compared with patients <65 years), female sex (OR=1.59, 95% CI 1.14-2.22), a score of 5-6 on the Cognitive Performance Scale (OR=2.23, 95% CI 1.15-4.3) a fall in the past 30 days (OR= 1.61, 95% CI 1.14-2.28) and an unsteady gait (OR=1.43, 95% CI 1.04-1.95).
Brajkovic et al. 2009 **Croatia** **Cross-Sectional Survey**	NA	60 patients, living in a private nursing home (n=30) or their own homes (n=30), for at least the previous 9 months. Stroke onset was one year prior to the start of receipt of services. Median age was 81 years for the nursing home group and 79 years for the home care group.	Participants living in the nursing home received 24-hour support including access to psychiatric and internist checkups (2 times per week), exercises with a physiotherapist (daily), massage (1 time per week). Participants living in their home receive care from the same nursing facility but only received nurse, physical therapist and physician's assistance. Questionnaires were administered to all participants with help from researchers.	**Primary outcomes:** Quality of life (World Health Organization Quality of Life Questionnaire – short form WHOQOL-BREF), which includes four domains (physical, psychological, social relationships and environment) **Secondary outcomes:** perception of quality of life, perception of health, and self-assessment of global quality of life.	**WHOQOL-BREF:** Patients living in the nursing home had higher mean scores on the physical domain (28.5 vs. 17.2; p=0.001), psychological domain (22.3 vs. 16.3; P=0.001), social relationships (11.4 vs. 8.3; P=0.001) and environmental domain (32.8 vs. 24.0; P=0.001) compared to patients living in their homes. **Perceived quality of life and health status:** Patients living in the nursing home also had a higher perceived quality of life (78.7 vs. 59.3; p<0.001) and perceived health status (3.6 vs. 2.5; <0.001) compared to patients living in their home.
Leeds et al. 2004 **UK** **Prospective study**	NA	Patients admitted to a stroke rehabilitation unit who had been discharged home (n=65) or to a nursing home (n=65) following stroke. Mean	Patients in each group were matched for age, sex, stroke severity, ADL performance, cognition, mood and	**Primary outcomes:** CAMCOG, Barthel Index (BI), Geriatric Depression Scale (GDS), EQ-5D, number of drugs	Patients in both groups received low amounts of rehabilitation following discharge. A third of patients received none, while 1/5 attended a Day Hospital. Mean baseline GDS score was significantly higher for patients discharged to a nursing home (6.1 vs. 3.4,

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
		age for patients in both groups was 80 years.	HR QoL, and their outcomes compared at baseline and 6 months following discharge from hospital		p=0.003), but there were no significant differences between groups on any of the other measures. At follow-up, patients who had been discharged home had significantly lower mean GDS score (4.2 vs. 5.9, p=0.002), and significantly higher mean CAMCOG (81.4 vs. 75.4, p=0.03), BI scores (14.9 vs. 10.8, p=0.0001) and mean EQ-5D scores (0.60 vs. 0.35, p=0.001). There was no significant difference in the mean number of drugs taken, between groups (5.9 vs. 5.1, p=0.07).
Quilliam & Lapane 2001 **U.S.** **Cross-Sectional Study**	NA	53, 829 patients in 5 states >65 years with stroke who were living in a long- term care facility following stroke. 21% of patients were 65-74 years, 43% were 75-84 years, and 36% were over 85.	Factors associated with the use of drugs for secondary prevention of stroke were assessed using an administrative database (SAGE). Drugs that were classified as preventative agents included: aspirin, dipyridamole, ticlopidine and warfarin	**Primary outcomes:** independent predictors of anticoagulant or antiplatelet usage.	66% of patients were not receiving anticoagulant or antiplatelet therapy. Among the 9042 patients who had been hospitalized within the previous 6 months, independent predictors of reduced likelihood of secondary prevention drug use were: older age (85+ years OR=0.80, 95% CI 0.72–0.89, female sex (OR= 0.92, 95% CI 0.85–0.99), physical dependency (OR= 0.62, 95% CI 0.52–0.74), moderate and severe cognitive impairment (OR= 0.85, 95% CI 0.77–0.93 and OR=0.61, 95% CI 0.55–0.68, respectively), Alzheimer's disease (OR= 0.72, 95% CI 0.57–0.90) and a history of GI bleed (OR=0.51, 95% CI 0.43–0.61) or peptic ulcer (OR=0.58, 95% CI 0.48–0.69). Independent predictors associated with increased likelihood of drug use were atrial fibrillation (OR=1.67, 95% CI 1.54–1.81), HTN (OR= 1.16, 95% CI 1.08–1.25) and depression (OR= 1.16, 95% CI 1.03–1.30).

Rehabilitation Provided in Long-Term Care

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Sackley et al. 2015 **UK** **Cluster RCT (*OCTH trial)***	CA: ☑ Blinding: Patient ☒ Assessor ☑ ITT: ☑	1,042 care home residents from 228 facilities with a history of stroke or TIA. Mean age was 82.9 years, 36% were men. Mean BI score at baseline was 6.4. 47% of patients were severely disabled	Patients were randomized at the facility level to a 3-month program provided by occupational therapists (n=568) or usual care (n=474). Patients in the OT arm participated in individualized program with a focus on improvement or maintenance of functional capacity, adaptations to the environment and included an education component for the care home staff. The frequency and duration of therapy sessions varied based on goals of therapy.	**Primary outcomes:** Barthel Index (BI) 3 months post randomization **Secondary outcomes:** BI, at 6 and 12 months, Rivermead Mobility Index (RMI), Geriatric Depression Scale (GDS) and EQ-5D, assessed at 3, 6 and 12 months	The median length of stay between care home admission and trial randomization was 2.2 years. The mean number of OT visits was 5.1 per participant. At 12 months, 384 patients remained in the OT group and 303 in the control group. There was no significant difference in mean BI scores between groups at 3 months (5.47 vs. 5.29, adjusted mean difference=0.19, 95% CI −0.33 to 0.70, p=0.48), or at 6 or 12 months. There was no significant difference in mean RMI scores between groups at 3 months (2.74 vs. 2.73, adjusted mean difference=0.02, 95% CI −0.28 to 0.31, p=0.90) or at 6 or 12 months. There were no significant differences between groups in mean GDS or EQ-5D scores at 3, 6 or 12 months. There were no differences between groups in subgroup analysis of age, type of care home, baseline MMSE score or baseline BI score. There were no adverse events. The authors concluded there was no evidence of benefit of the program.
Fletcher-Smith et al. 2013 **UK** **Cochrane review**	The included trial was at low risk of selection bias, detection	1 phase II cluster RCT (OTCH trial, n=118) including patients with moderate to severe disability (BI 4-15) following stroke who were living in 12 care homes. Mean age was 87.5 years, 82% were men.	The single trial (Sackley et al. 2006) compared occupational therapy targeted towards improving independence in personal ADL and which included an education component for	**Primary outcome:** ADL, death or poor outcome at the end of follow-up **Secondary outcomes:** ADL, or EADL at the end of intervention,	At the end of scheduled follow-up there was no significant difference between groups in mean BI scores (10.2 vs. 8.1, SMD=0.39, 95% CI -.011-0.90, p=0.13), or in the proportion of patients who were dead, or whose BI score had dropped (51.5% vs. 75.8%, OR=0.34, 95% CI 0.1-1.01, p=0.051).

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
	bias, and attrition bias. The trial was at unclear risk of performance bias		care home staff and carers vs. usual care (i.e. no OT intervention). The intervention was provided for 3 months. The frequency was based on patient goals.	death, global quality of life, mobility, mood, global cognition	The odds of death at the end of scheduled follow-up were significantly lower for patients in the OT group (OR=0.29, 95% CI 0.09-0.98, p=0.047) At the end of the intervention, there was no significant difference between groups in the mean BI scores (10.8 vs. 8.2, SMD=0.48, 95% CI -0.03-0.99, p=0.064). There were no significant differences between groups in mean RMI scores (5.0 vs. 4.5, SMD=0.14, 95% CI -0.36, 0.64, p=0.58). Other outcomes were not estimable (i.e., not assessed). The authors stated there was *insufficient evidence to support or refute the efficacy of OT interventions for improving, restoring or maintaining independence in ADL for stroke survivors residing in care homes.*
Crocker et al. 2013 **UK** **Systematic review & meta-analysis**	No study had a low risk of bias across all the domains assessed	13 RCTs (n=2,379) including persons > 60 years, living in long-term care facilities. Mean age was 84 years, 21% were men. Mean baseline BI scores ranged from 10-14. 1 trial included persons with 100% stroke diagnosis (Sackley et al. 2006)	Trials compared any physical rehabilitation intervention vs. usual care, no intervention or an alternative intervention. Rehabilitation therapies included group exercise classes with a focus on mobility, balance, flexibility, or ADL performance, which were delivered by rehab professionals or carers/ volunteers. 4 interventions were provided by OTs, PTs, or both. The intensity of therapies was judged to	**Primary outcome:** ADL	Rehabilitation interventions were associated with a small benefit in improvement in ADL performance (WMD=0.24, 95% CI 0.11–0.38, p= 0.0005), equating to a mean improvement of 1.3 Barthel Index points. Subgroup analyses based on the duration, delivery mode and intensity of interventions found no significant differences between groups in treatment effect.

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
			be high in 7 trials, low in 3, and unclear in 5 trials.		
Sackley et al. 2009 **UK** **Cluster RCT**	CA: ☑ Blinding: Patient ☒ Assessor ☑ ITT: ☑	249 patients with mobility limitations and Barthel Index scores of 5-16, were recruited from 24 care homes. Mean age was 85 years, 26% were men. 22% of patients had a history of stroke	Patients were randomized 1:1 at the facility level to a 3-month program provided by occupational and physical therapists (n=128) or standard care (n=121). The intervention program was aimed at improving mobility, strength, flexibility, balance, exercise tolerance and the ability to perform ADLs. Functional tasks (e.g., sit to stand) were also practiced	**Primary outcomes:** Barthel Index (BI) and Rivermead Mobility Index (RMI)	The mean number of PT visits was 6.4 per resident (mean contact time of 2.21 hours). The mean number of OT visits was 9.8 per resident (mean contact time of 3.6 hours). There were no adverse events. The mean BI scores for patients in the intervention and control groups were: Baseline 11.1 vs. 12.5 3-months 10.6 vs. 11.8 6-months 10.7 vs. 11.9 There were no significant differences between groups at any assessment point. The mean RMI scores for patients in the intervention and control groups were: Baseline 5.8 vs. 6.9 3-months 5.1 vs. 6.7 6-months 5.2 vs. 6.5 There were no significant differences between groups at any assessment point. BI data at 3 and 6-month data were available for 214 and 187 patients, respectively.
Aphasia Therapy Provided in Long-Term Care Facilities					
Davis et al. 2022 **UK** **Systematic review**	PEDro scores ranged from 3-7 out of a possible score of 10.	22 studies (11 RCTs) including residents of LTC facilities. In 20 studies, the residents had a diagnosis of cognitive impairment or dementia. No resident was identified with a diagnosis of stroke.	Trials examined group-based behavioural interventions delivered in-person for language and communication rehabilitation. Interventions included reminiscence or life review, cognitive stimulation, narrative or storytelling, and	**Primary outcomes:** Measures relating to the domains of language, communication and social interaction	There was evidence of efficacy across all three domains of interest and across all four intervention types, with 16 studies reporting a significant benefit of treatment. Social support and social engagement; and behavioural skills were the most consistently cited mechanisms of action.

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
			multimodal group communication treatment.		
Azios et al. 2018 **USA** **Qualitative study**	NA	4 residents (1 woman) with post-stroke aphasia and in good general overall health who had been residing in LTC facilities for > 2 years.	Data were collected over 6 months using patient observation, ethnographic interviewing and artifact analysis	**Primary outcome:** Not applicable	3 main themes were identified. 1. Lack of support Subthemes included 1) poor physical layout of the facilities (e.g, high ceilings and lack of carpet and wall hangings to absorb sound), 2) a shortage of resources (eg, no resident had received speech therapy during the study period), 3) a lack of knowledge of aphasia by staff members and 4) time and space pressures. 2. Social hierarchy within each LTC facility Subthemes included 1) independence as a metric (residents were divided based upon level of independence, which encouraged labels for residents based upon (dis)ability), and 2) taxonomy of selected partners (e.g, residents recognized partners who would be easier to communicate with and also those who held more authority). 3. There was a focus on specific, predetermined performance variables for both residents and staff members. Subthemes included 1) a focus on completing tasks, 2) physical needs. There was greater concern with meeting resident's physical needs over psychosocial needs and 3) an emphasis on group whereby the needs of the group were often considered more important than individual functioning.

Communication Partner Training

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Eriksson et al. 2015 **Sweden** **Prospective study**	NA	5 dyads (4 stroke, 1 Parkinson's disease) living in nursing homes. Each dyad was composed of a patient with communication difficulty and his or her conversation partner (CP)(nurse). Ages ranged from 72 to 93 years. There were 3 women and 2 men. Time post disease onset ranged from 10 months to 8 years.	The programme consisted of 8 training sessions (7 in one case) conducted by 2 of the authors, both SLPs and PhD students. The aims of the intervention were to increase the participants' knowledge about conversation in general, to raise their awareness of their own communication patterns and to support the development of functional strategies. Each session lasted about 30 min and always included a supervised analysis of filmed natural interaction, recorded at the previous session. Based on analysis of the videorecorded interaction, the SLP would have 5-6 different suggestions of strategies to support comprehension and expression, which would be trialed by the dyads until the next session.	**Primary outcome:** Goal Attainment Scale (GAS), select portions of the communication outcome after stroke scale (COAST) and carer communication outcome after stroke scale (Carer-COAST)	Of 13 goals developed, the mean of the ratings was significantly higher in the intervention phase than in the baseline phase for 12 goals. All reports by the CPs on the GAS reflected perceived improvements in goal attainment at the end of the treatment phase. 4/5 patients reported an improvement in perceived functional communication in the COAST after the intervention. Only two CPs reported improved total scores after intervention in the Carer-COAST.
McGilton et al. 2009 **Canada** **Systematic review**	Using the Amsterdam–Maastricht Consensus List for Quality Assessment's , the scores ranged from 6	6 studies (3 RCTs, 3 quasi-RCTs) published between 1996 and 2005, including healthcare providers (HCP), which included registered nurses, registered practical nurses, health care aides, personal support workers,	Trials evaluated communication intervention aimed at improving healthcare providers (HCP) communication and/or interaction with the resident, resident health and well-being.	**Primary outcome:** Varied across studies (Cohen–Mansfield Agitation Inventory (CMAI) scale, Behavior Management Skills Checklist (BMSC) Computer-Assisted Behavioral Observation	All trials indicated there had been a positive change in HCPs' communicative behavior, skills, and knowledge, upon completion of the intervention. There were significant improvements in communication skills, whereby HCPs used more positive statements, gave more information to residents, used more open-ended questions, and

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
	to 12 out of a possible 13 points.	occupational therapists, occupational assistants, physiotherapists, physiotherapist assistants, dieticians, social workers, speech language pathologists, recreational therapists, recreational therapist assistants, and/or physicians, working in long-term care facilities.	Interventions included informational educational, behavioral, or organizational intervention aimed at changing knowledge, beliefs, and/or behaviors.	Systems (CABOS), plus subjective measures (e.g., verbal behaviors)	were rated as more involved, warmer, and less patronizing and a decrease in negative communication/interaction strategies, such as showing disapproval, decreased.

Abbreviations

ADL: Activity of Daily Living	CI: Confidence Interval
FIM: Functional Independence Measure	LTC: Long-term care
HR: hazard ratio	NA: Not assessed
NIHSS: National Institutes of Health Stroke Scale	OR: Odds Ratio
WMD: weighted mean difference	

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