Canadian Stroke Best Practices

CANADIAN STROKE BEST PRACTICE RECOMMENDATIONS

Transitions and Community Participation Following Stroke Evidence Tables

Discharge Planning & Interprofessional Communication

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Transitions and Community Participation Following Stroke Writing Group

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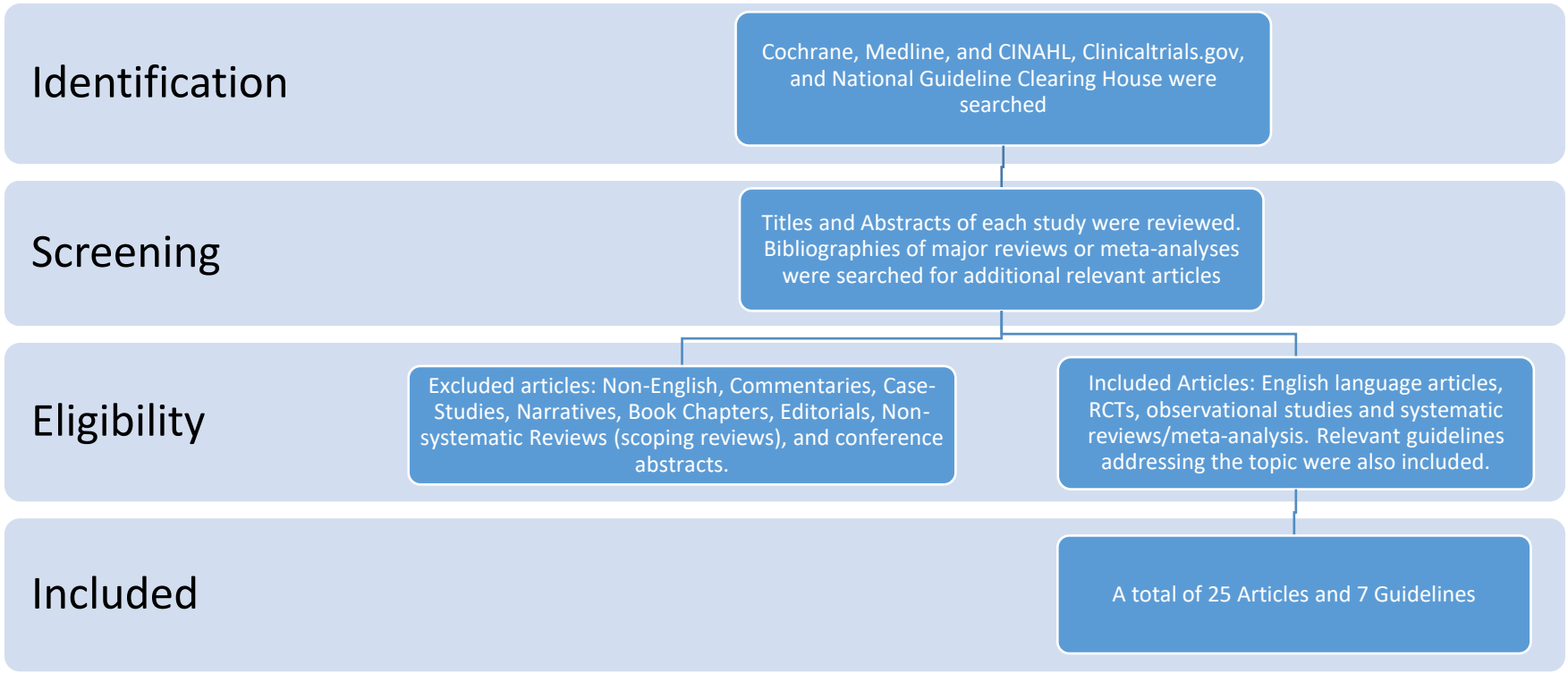
Search Strategy



Cochrane, Medline, and CINAHL, Clinicaltrials.gov, and National Guideline Clearing House were search using medical subject. 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 25 articles and 7 guidelines were included and were separated into separate categories designed to answer specific questions.

Published Guidelines

Guideline	Recommendations
Clinical Guidelines for Stroke Management 2017. Melbourne (Australia): National Stroke Foundation.	Strong Recommendation Comprehensive discharge care plans that address the specific needs of the stroke survivor should be developed in conjunction with the stroke survivor and carer prior to discharge Consensus-based recommendations A discharge planner may be used to coordinate a comprehensive discharge program for stroke survivors. To ensure a safe discharge process occurs, hospital services should ensure the following steps are completed prior to discharge: • Stroke survivors and families/carers have the opportunity to identify and discuss their post-discharge needs (physical, emotional, social, recreational, financial and community support) with relevant members of the multidisciplinary team. • General practitioners, primary healthcare teams and community services are informed before or at the time of discharge. • All medications, equipment and support services necessary for a safe discharge are organised. • Any necessary continuing specialist treatment required has been organised. • A documented post-discharge care plan is developed in collaboration with the stroke survivor and family and a copy provided to them. This discharge planning process may involve relevant community services, self-management strategies (i.e. information on medications and compliance advice, goals and therapy to continue at home), stroke support services, any further rehabilitation or outpatient appointments, and an appropriate contact number for any post-discharge queries. A locally developed protocol or standardised tool may assist in implementation of a safe and comprehensive discharge process. Prior to hospital discharge, all stroke survivors should be assessed to determine the need for a home visit, which may be carried out to ensure safety and provision of appropriate aids, support and community services.
Intercollegiate Stroke Working Party. National clinical guideline for stroke, 5th edition. National Institute for Health and Clinical Excellence London: Royal College of Physicians, 2016.	**2.3.1 Recommendations** Acute stroke services should have management protocols for the admission pathway including links with the ambulance service, emergency stroke treatments, acute imaging, neurological and physiological monitoring, swallowing assessment, hydration and nutrition, vascular surgical referrals, rehabilitation, end-of-life (palliative) care, secondary prevention, the prevention and management of complications, communication with people with stroke and their family/carers and discharge planning. **2.7.1 Recommendations** People with stroke and their family/carers should be involved in decisions about the transfer of their care out of hospital, and the care that will be provided. G Before the transfer of care for a person with stroke from hospital to home (including a care home) occurs: – the person and their family/carers should be prepared, and have been involved in planning their transfer of care, if they are able; – primary healthcare teams and social services should be informed before or at the time of the transfer of care; – all equipment and support services necessary for a safe transfer of care should be in place; – any continuing treatment the person requires should be provided without delay by a coordinated, specialist multi-disciplinary service; – the person and their family/carers should be given information and offered contact with relevant statutory and voluntary agencies. H Before the transfer home of a person with stroke who is dependent in any activities, the person's home environment should be assessed by a visit with an occupational therapist. If a home visit is not considered appropriate they should be offered an access visit or an interview about the home environment including photographs or videos taken by family/carers. I People with stroke who are dependent in personal activities (e.g. dressing, toileting) should be offered a transition package before

Guideline	Recommendations
	being transferred home that includes: – visits/leave at home prior to the final transfer of care; – training and education for their carers specific to their needs; – telephone advice and support for three months. J Before the transfer of care for a person with stroke from hospital to home (including a care home) they should be provided with: – a named point of contact for information and advice; – written information about their diagnosis, medication and management plan. K People with stroke, including those living in care homes, should continue to have access to specialist services after leaving hospital, and should be provided with information about how to contact them.
Winstein CJ, Stein J, Arena R, Bates B, Cherney LR, Cramer SC, Deruyter F, Eng JJ, Fisher B, Harvey RL, Lang CE, MacKay-Lyons M, Ottenbacher KJ, Pugh S, Reeves MJ, Richards LG, Stiers W, Zorowitz RD; on behalf of the American Heart Association Stroke Council, Council on Cardiovascular and Stroke Nursing, Council on Clinical Cardiology, and Council on Quality of Care and Outcomes Research. **Guidelines for adult stroke rehabilitation and recovery: a guideline for healthcare professionals from the American Heart Association/American Stroke Association.** ***Stroke* 2016;47:e98–e169**	**Transitions in Care and Community Rehabilitation** It is reasonable to consider individualized discharge planning in the transition from hospital to home. Class IIa; LOE B It is reasonable to consider alternative methods of communication and support (eg, telephone visits, telehealth, or Web-based support), particularly for patients in rural settings. Class IIa; LOE B. **ADLs, IADLs, and Disability Measurement** It is recommended that all individuals with stroke be provided a formal assessment of their ADLs and IADLs, communication abilities, and functional mobility before discharge from acute care hospitalization and the findings be incorporated into the care transition and the discharge planning process. Class I; LOE B.
Shamji H, Baier RR, Gravenstein S, et al. Improving the quality of care and communication during patient transitions: best practices for urgent care centers. *Jt Comm J Qual Patient Saf* 2014;40:319-24	1. Ask patients for the name of their Primary Care Physician (PCP). 2. Ask patients for the name of their home care provider. 3. Send summary clinical information to the PCP upon visit completion. 4. Send summary clinical information to the home care provider upon visit completion. 5. Send summary clinical information to the ED physician upon patient referral. 6. Perform modified medication reconciliation upon visit completion. 7. Provide patient with effective education upon visit completion. 8. Provide patient with written discharge instructions upon visit completion.
Scottish Intercollegiate	3.3.3. Stroke unit teams should conduct at least one formal multidisciplinary meeting per week at which patient problems are

Guideline	Recommendations
Guidelines Network (SIGN). Management of patients with stroke: rehabilitation, prevention and management of complications, and discharge planning. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2010 June.	identified, rehabilitation goals set, progress monitored and discharge is planned. 5.1.2 Pre-discharge home visits should be undertaken for patients who require them. 5.2.1. At the time of discharge, the discharge document should be sent to all the relevant agencies and teams.
Management of Stroke Rehabilitation Working Group. VA/DoD clinical practice guideline for the management of stroke rehabilitation. Washington (DC): Veterans Health Administration, Department of Defense; 2010.	<u>Transfer to Community Living:</u> 1. Recommend that all patients planning to return to independent community living should be assessed for mobility, ADL and IADL prior to discharge (including a community skills evaluation and home assessment). 2. Recommend that the patient, family, and caregivers are fully informed about, prepared for, and involved in all aspects of healthcare and safety needs. [I] 3. Recommend that case management be put in place for complex patient and family situations. [I] 4. Recommend that acute care hospitals and rehabilitation facilities maintain up-to-date inventories of community resources, provide this information to stroke patients and their families and caregivers, and offer assistance in obtaining needed services. Patients should be given information about, and offered contact with, appropriate local statutory and voluntary agencies. [I] <u>Discharge from Rehabilitation:</u> 1. Recommend that the rehabilitation team ensure that a discharge plan is complete for the patient's continued medical and functional needs prior to discharge from rehabilitation services. 2. Recommend that every patient participate in a secondary prevention program (see Annotation D). [A] 3. Recommend post-acute stroke patients be followed by a primary care provider to address stroke risk factors and continue treatment of co-morbidities. 4. Recommend patient and family are educated regarding pertinent risk factors for stroke. 5. Recommend that the family and caregivers receive all necessary equipment and training prior to discharge from rehabilitation services. [I] 6. Family counseling focusing on psychosocial and emotional issues and role adjustment should be encouraged and made available to patients and their family members upon discharge.
Snow V, Beck D, Budnitz T, et al. Transitions of Care Consensus Policy Statement American College of Physicians-Society of General Internal Medicine-Society of Hospital Medicine-American Geriatrics Society-American College of Emergency Physicians-Society of Academic Emergency Medicine. *J Gen*	Detailed Recommendations related to: • Coordinating Clinicians • Care Plans/Transition Record • Communication Infrastructure • Standard Communication Formats • Transition Responsibility • Timeliness • Community standards • Measurement

Guideline	Recommendations
***Intern Med* 2009;24:971-76**	

Evidence Tables

Discharge Care Planning

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Andrew et al. 2018 **Australia** **Survey**	NA	200 patients ≥18 years, discharged directly home from one of 35 hospitals after an acute admission for stroke. Participants were part of the Australian Stroke Clinical Registry (AuSCR). Median age was 72 years, 69% were men.	Participants were recruited 3-9 months following discharge. Eligible participants were sent a survey containing 3 questionnaires, including 2 related to the discharge process, (PREPARED questionnaire), and 2 questions related to their discharge process. Quality scores for PREPARDED were calculated across 4 domains: (1) support structures and information exchange; (2) medication and management issues; (3) concerns with community management and preparedness to deal with unexpected issues; and (4) control of discharge circumstances, with scores ranging from 1-100% for each domain	**Primary outcome:** Factors related to obtaining a score of ≥80% on PREPARED questionnaire	Response rate was 46%. PREPARED domain quality scores ranged from a mean of 71% to 81%. Overall mean score was 73% 18% of participants received all measured aspects of discharge care planning (i.e. score of 100%). Independent predictors of obtaining a score of ≥80% included hospital specific information (OR=5.7, 95% CI 2.7, 12.4), and referral to a local support group (OR=2.5, 95% CI 1.1, 5.9). Most participants reported feeling reasonably well prepared for discharge. Negative experiences included feeling rushed, encountering unexpected problems following discharge, reporting a lack of information relating to lifestyle modifications and poor organization of follow-up appointments for outpatient care and community services.
Gonçalves-Bradley et al. 2016	NA	30 trials (n=11,964) that included all patients who had been admitted	Trials evaluated discharge plans, which included assessment,	**Primary Outcomes:** Hospital LOS, readmission rates and	The use of discharge plans was associated with a significantly reduced LOS for older patients admitted with medical conditions: (MD − 0.73, 95% CI − 1.33 to −

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UK **Cochrane Review**		to any type of hospital (acute, rehabilitation or community) with any medical or surgical condition. In 21 RCTs patients were admitted with medical conditions, 2 trials admitted patients following a fall, 5 trials recruited patients with a mix of medical and surgical conditions, and 2 trials recruited participants from psychiatric wards. One trial included patients with stroke	planning, implementation and monitoring phases, which were initiated at some point prior to discharge vs. usual care in most cases.	discharge destination **Secondary outcomes:** Complications, place of discharge, mortality, patient health status, including psychological health, patient satisfaction, caregiver and healthcare professional satisfaction, psychological health of care givers and costs	0.12). The results from 12 studies were included. At 3 months following discharge, the use of discharge planning was associated with a significant reduction in unscheduled readmissions for older patients admitted for a medical condition (RR= 0.87; 95% CI 0.79 to 0.97). The results from 15 trials were included. Discharge destination was reported as an outcome in 7 trials. Data from 2 trials were pooled. Patients in the intervention group were not more likely to be discharged home (RR=1.03, 95% CI 0.93-1.14). At 6-9 months following discharge, the risk of death for older patients with a medical condition in the intervention group was not significantly lower (RR=1.02, 95% CI 0.93-1.27). Results from 7 trials were included. The results from too few studies were available for pooled analysis of the remaining secondary outcomes.
Olson et al. 2011 **USA** **Agency for Healthcare Research and Quality Report**	NA	62 articles published ≥ the year 2000, representing 44 studies that included adults ≥ 18 years old who were discharged, or were preparing to be discharged from a hospital following acute stroke (ischemic or hemorrhagic) and acute MI. Components of transition of care services included: Case management, discharge planning, self-management tools, care pathways, systems for shared access to patient information,	Studies examined post-acute hospitalization transition of care services as well as prevention of recurrent stroke or MI.	**There were 5 key questions:** *Key Question 1* was related to identifying the key components of transition of care services, if they can be grouped in a taxonomy, and if they are they based on a particular theory. *Key Question 2* asked if transition of care services improve functional status and quality of life and reduce hospital readmission, morbidity, and mortality up to 1-year post event.	**KQ1:** Transition of care interventions were grouped into four categories: (1) hospital-initiated support for discharge was the initial stage in the transition of care process, (2) patient and family education interventions were started during hospitalization but were continued at the community level, (3) community-based models of support followed hospital discharge, and (4) chronic disease management models of care assumed the responsibility for long-term care. **KQ2:** There was moderate evidence to support the benefit of early supported discharge for stroke patients. ESD was associated with a reduction in hospital length of stay without negative impact and may also reduce caregiver strain and improve some aspects of quality of life among patients as well as caregivers. **KQ3:** Insufficient evidence to determine. **KQ4:** Insufficient evidence to determine. **KQ5:** No evidence that benefits or harms of transition of

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		referrals to specialty care providers, included as part of the transition of care service and referral back to primary care providers.		*Key Question 3* asked about potential adverse events associated with transition of care services *Key Question 4* asked if transition of care services improve other aspects of care, such as more efficient referrals, more timely appointments, better provider communication, and improved coordination among multiple providers. *Key Question 5* asked if the benefits and harms associated with transition of care services varies by sub group (e.g. disease etiology and severity, comorbidities)	care services varied on the basis of patient characteristics, except a greater benefit of services was noted among patients with less severe strokes.
Johnston et al. 2010 **USA** **Cluster RCT** ***Quality Improvement in Stroke Prevention (QUISP*****)**	CA: ☒ Blinding: Patient☒ Assessor☒ ITT: ☑	3,361 patients ≥40 years, discharged from one of 12 hospitals following acute ischemic stroke. Mean age was 73 years, 47% were men. 40.1% were discharged home.	Hospitals were randomized to use a recently-developed template for discharge orders that included a statin prescription for all patients regardless of cholesterol level, antihypertensive medications for those with hypertension, and a warfarin prescription for patients with atrial fibrillation (n=6) vs. usual care (n=6)	**Primary outcome:** Optimal treatment at 6 months, (defined as taking a statin, having blood pressure <140/90 mmHg, and receiving anticoagulation if atrial fibrillation was diagnosed)	In the primary analysis, the odds of optimal treatment were non-significantly higher in the intervention group (OR=1.39, 95% CI 0.71–2.76, p= 0.27). The same pattern was evident for the 3 individual components: Statin use: OR=1.26; 95% CI 0.70–2.30; p= 0.36 Blood pressure control: OR=1.18, 95% CI 0.77– 1.79; p= 0.37 Warfarin use: OR=1.79, 95% CI 0.63– 5.06; p= 0.21. At the individual patient level, the odds of optimal treatment were significantly higher for patients in the intervention group following the implementation of the initiative vs. before its implementation (OR=1.42, 95%

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					CI 1.15–1.76, p<0.001).
Shyu et al. 2008 **Shyu et al. 2010 (1-year follow-up)** **Taiwan** **RCT**	CA: ☒ Blinding: Patient☑ Assessor☒ ITT: ☒	201 patient / informal caregiver dyads. Patients ≥65 years with a primary diagnosis of stroke with high-demand discharge needs who were to be discharged home. 12% of those screened were eligible for inclusion. At one year, 158 patient/caregiver dyads remained in the study.	Within 48 hours of admission to an acute-care hospital, patient/caregiver dyads were randomized to one of 4 wards where they received a caregiver-oriented discharge planning program (n=97, 2 wards) or routine discharge planning (n=104, 2 wards). The discharge planning program was conducted by trained research nurses who evaluated caregiver needs during hospitalization and used results to guide individualized interventions, which included both health education and referral services. Once discharged, carers were contacted within one week by telephone and two home visits were made (one week, one month) to advise and support caregivers in the home environment.	**Outcomes:** Nurse Evaluation of Caregiver Preparation Scale, Preparedness for Caregiving Scale (caregiver self-evaluation), Caregiver Discharge Needs Assessment Scale, Perception of Balance Between Competing Needs Scale. Assessments were conducted at admission, discharge, and one-month following discharge. (Not all measures were administered at all assessment points). **Follow-up study outcomes**: Health-related quality of life (HRQoL; SF-36), quality of care (Family Caregiving Consequence Inventory), health service utilization (readmission, length of stay, and institutionalization), and self-care ability (Barthel Index). Assessments were conducted at 3, 6 and 12 months after discharge.	From admission to discharge, there were significant improvements in the nurse's evaluation and caregiver's self-evaluation of preparedness among caregivers in the intervention group (p<0.001). Among caregivers in the control group, although the nurses reported significant improvement in preparedness, caregivers did not. Caregivers in both groups reported increased Satisfaction in Caregiver Needs Satisfaction Scale from discharge to the one-month follow-up (p<0.001). Caregivers in the intervention group demonstrated significantly greater caregiver preparedness on both nursing and self-reported evaluations at discharge (both at p<0.01). At the one-month follow-up, those in the intervention group demonstrated significantly greater satisfaction with discharge needs than those in the control group (p<0.001). There were no differences in Perception of Balance Between Competing Needs Scale scores between groups. Dropouts: Intervention group=25 (26%); Control group=18 (17%). **Follow-up study:** No significant between-group differences in HRQoL scores for patients or carers were reported. Carers in the intervention group reported significantly better quality of care at 6 months (p<0.01) but not at any other assessment point; however, overall quality of care was reported to be significantly superior in the intervention group over the 1-year follow-up period (p<0.05). No significant group differences were reported with respect to self-care ability or hospital readmissions. However, patients in the intervention group were significantly less likely to be institutionalized between 6 and 12 months post-discharge, compared to those in the control group (p<0.05).

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Allen et al. 2009 **USA** **RCT**	CA: ☑ Blinding: Patient☒ Assessor☑ ITT: ☑	380 patients admitted to the stroke unit of an acute care hospital with ischemic stroke, NIHSS score>0, discharged home directly, or within 8 weeks of discharge from hospital following a short stay in a skilled nursing facility	Patients were randomized to receive enhanced post discharge care (n=190) or standard care (n=190). An advanced practice nurse (APN) performed an in-home assessment within 1 week of discharge, the results of which were used to by the multidisciplinary team to form a care plan that was provided to the patient's GP. Follow-up by the APN continued for 6 months (including home visits and telephone calls) in collaboration with the GP to ensure that all aspects of care were coordinated and delivered. Patients in the standard care group received care by their MD.	**Outcomes:** NIHSS, Timed Up & Go test, mortality and institutionalization, QoL, recurrent stroke, blood pressure, depression (CES-D scale), Hgb A_{1c}, cholesterol, self-reported fall, incontinence, stroke knowledge and lifestyle modification (assessed using an investigator-generated questionnaire). All assessments were conducted at baseline and at 6 months	There were no significant differences between groups on any of the outcomes of interest except for significantly increased percentage of patients in the intervention group who could correctly identify stroke symptoms (79% vs. 76%) and risk knowledge (53% vs. 48%). Informal tests for potential interactions revealed that persons with a prior history of stroke, TIA or atrial fibrillation, benefited more from the intervention in terms of improved neuromotor function. Most of the APN time was spent on issues related to self-management and medical management issues.
Mayo et al. 2008 **Canada** **RCT**	CA: ☑ Blinding: Patient☒ Assessor☑ ITT: ☑	190 stroke patients discharged home from 1 of 5 acute care hospitals who were identified as having a specific need for health care supervision following discharge, such as living alone or having a medical comorbidity.	Participants were randomized to receive either a case management intervention (n=96) or care as usual (n=94). The intervention involved coordination with the patient's personal physician through telephone contact and home visits	**Primary Outcome:** The Physical Component Summary of the Short-Form-36 (SF-36). **Secondary Outcome:** Health Care Utilization, the Medical Component of the SF-36, the EuroQuol EQ-5D, the Preference-Based Stroke Index, the	The mean number of nurse visits was 4.8 and the mean number of telephone contacts was 7.4. 60% of the patients had suffered moderately-disabling strokes. Patients were discharged home an average of 12 days following admission. There were no significant differences between groups on any of the primary or secondary outcomes at any of the assessment points.

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		65% of those screened for eligibility were randomized.	with the patient over 6 weeks. Persons in the usual care group were instructed to make an appointment with the patient's personal physician as soon as possible	Reintegration to Normal Living Index, the Barthel Index, the Geriatric Depression Scale, Gait Speed, and the Timed Up and Go Test, healthcare utilization. Assessments were conducted at discharge, following the intervention, and 6-months post stroke.	From the 6-week to 6-month follow-up, patients in case management group had attended fewer mean specialist outpatient visits (2.2 vs. 3.4, p<0.01). Lost to Follow-up: Intervention group=15 (16%); Control group=18 (19%).
Torp et al. 2006 **Denmark** **RCT**	CA: ☑ Blinding: Patient☒ Therapist☒ Assessor☑ ITT: ☑	189 patients admitted acutely to hospital following a stroke, with functional impairments that required a hospital stay of >1 week beyond their acute stay	Patients were randomized to a control group that received standard treatment (n=188) or an intervention group (n=185) who received additional care from a multidisciplinary team through home visits following discharge for up to 30 days and whose home-based care with local home care services was also coordinated by one of the team members.	**Primary outcome:** LOS **Secondary outcomes:** Barthel Index (BI), Frenchay Activities Index (FAI), MMSE, Geriatric Depression Scale, SF-36 Assessments were conducted at baseline, discharge, 6 months and 1 year.	There was no significant difference between groups in mean LOS (35.2 days, intervention vs. 39.8 days, control). There were no significant differences between groups in readmissions, GP visits, outpatient visits, or contacts with primary healthcare providers. There were no differences between groups in any of the secondary outcomes at either 6 months, or 1 year. Therapists spent an average of 6.5 hours on home visits and 3.3 hours on transportation per patient. At 12 months 89 patients remained in the intervention group and 87 in the control group.
Grasel et al. 2005 **Grasel et al. 2006 (long-term follow-up)** **Germany** **Controlled Study**	CA: ☒ Blinding: Patient☒ Therapist☒ Assessor☑ ITT: ☒	71 patients who had suffered an ischemic or hemorrhagic stroke and required rehabilitation following the acute admission and their carers	Patients were assigned to a standard transition group (control) or an intensified transition group. Patients (and carers) in this group participated in a single psycho-educational seminar (education related to caregiving and resource availability), 3 sessions	**Patient outcomes:** Barthel Index (BI), FIM, Frenchay Arm Test, Ashworth Scale, SF-36, Timed Up & Go (TUG), evidence of paresis (upper and lower), gait disturbance (none, mild, major) **Carer outcomes:** Giessen Symptom List	At 6 months there were no significant differences (in change scores) between groups for any of the patient outcomes, expect that more patients in the intervention group could complete the TUG (94% vs. 76%, p=0.04). At 6 months there were no significant differences (in change scores) between groups for any of the carer outcomes. 4 weeks after discharge, patients in the intervention group had developed significantly fewer new illness (6% vs. 245, p=0.044). By 6 months, there were no

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			(45-60 minutes each) dedicated to skills training for the carer, and a weekend leave of absence which was supervised by an outpatient care service provider. A 3-month telephone counselling session was also provided.	(GSL-24), Zerssen Depression Scale, Burden Scale for Family Caregivers Assessments were conducted at baseline (discharge), and 6 months **Follow-up study outcomes:** Family carers were contacted by telephone an average of 31 months following inclusion of the first patient in the study to enquire whether the patient was still alive, and if so if they were still residing at home, or in a nursing home	longer significant differences between groups (15% vs. 21%). Readmission rates and deterioration in general health were similar between groups at 4 weeks (9% vs. 7%) and 6 months (28% in both groups). **31-month follow-up:** Significantly more patients in the intervention group were alive and living at home (83% vs. 54%) and fewer patients were living in nursing homes (6% vs. 14%). Participation in the intervention group was an independent predictor of remaining at home.
Sulch et al. 2000, 2002a), 2002b) **UK** **RCT**	CA: ☑ Blinding: Patient☒ Therapist☒ Assessor☒ ITT: ☑	152 patients with persistent deficits requiring inpatient rehabilitation, who had experienced a stroke within the previous 2 weeks.	Participants were randomized to the Integrated Care Pathway group (ICP; n=76) or the conventional care group (n=76). The ICP intervention was developed by members of the multidisciplinary team using an evidenced-based approach to identify therapeutic activities associated with best practices, key short-term goals and the time needed to	**Primary outcome:** LOS **Secondary outcomes:** Mortality, institutionalization, Length of stay, Barthel Index, Hospital Depression and Anxiety Scale (HADS), Rankin, and EuroQol Quality of Life Scale. Assessments were conducted at baseline, 1, 4, 12, and 26 weeks (not all measures were assessed at the 1 and 4 week follow-up).	72-76% of patients were continent, able to dress independently and were mobile, prior to stroke. There was no significant difference in mean LOS between groups (50 vs. 45 days, p=ns). There were no significant differences between groups in 6-month mortality (13% vs. 8%) or institutionalization (13% vs. 21) Median BI, Rankin scores and HADS scores were similar between groups at all assessment points. Patients in both groups received similar amount of occupational and physical therapy. **2002a)** A higher number of caregivers in the conventional care group had their needs assessed separately and their need for skills training assessed

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			achieve them. The progress of patients in the conventional care group was reviewed in weekly meetings, where short-term goals were set based on progress made to date (i.e. not defined in advance).	**2002a) outcomes:** Proportion of patients receiving recommended interventions **2002b) outcomes:** EurolQol, caregiver strain, patient and carer satisfaction, all assessed at 6 months	(65% vs. 44%, p=0.021). Patient's GPs were notified within 24 hours of discharge more often in the ICP group (80% vs. 45%, p<0.001). Follow-up arrangements were made more often among patients in the ICP group (89% vs. 70%, p=0.024). **2002b):** Data for 82% (ICP) and 78% (conventional care) were available. Median total EuroQol scores were significantly higher in the conventional care group (72 vs. 63, p<0.005). Patients in the conventional group scored significantly higher on the social functioning domain, while those in the ICP group scored significantly higher on the self-care domain. There were no significant differences between groups on the 3 remaining domains. There were no significant differences between groups in caregiver or patient satisfaction with care. Median caregiver strain index score was non-significantly higher in the ICP group (5.9 vs. 4.6, p=0.054).

Stroke Navigators

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Dewan et al. 2014 **UK** **Pilot study**	NA	Over a one-year period (April 2011-2012), 55 adult stroke survivors who had been discharged from a hyperacute stroke unit.	6-weeks following discharge, patients (and caregivers, if available) attended a home-based review clinic conducted by a stroke navigator and a stroke consultant, which assessed patients' medical, health, social and secondary stroke prevention needs. Education and	**Primary outcomes:** Hospital readmission, patient satisfaction questionnaires, Stroke Impact Scale (SIS), Depression Intensity Scale Circle (DISC), Barthel Index Service user satisfaction questionnaires	There were no readmissions for new stroke at 6 weeks and 6 months following discharge. An informal caregiver attended 53% of the reviews. The majority of participants found the stroke navigator services easy to access, helpful, increased their knowledge and would recommend the service to others. The most common referrals recommendations were for blood pressure management (88%), community-based exercise program (65%), medical issues (35%), and

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			information were provided and referrals for needed services were made. 2-4 patients attended each session		social service intervention (22%)
Poston et al. 2014 **USA** **Retrospective study**	NA	Patients discharged home with self-care from one hospital following acute ischemic stroke	During a 4-month feasibility phase, a nurse navigator ensured that prior to discharge, there was a follow-up appointment made with the patient's primary care physician (PCP), or a PCP was established for those without providers, and ensured that discharge summaries were transmitted to PCPs. In the final months of the intervention, 2 additional components were added- targeted education (self-care, stroke warning signs, prevention) and confirmed the medication plan.	**Primary outcomes:** 30-day readmissions and Emergency Department (ED)visits	During the 24-month period prior to the intervention, there were 20.8 ischemic stroke discharges per month. The average 30-day readmission rate during this time was 9.39%. (The average 30-day readmission rate to all state hospitals was 9.80%) During the feasibility phase, an average of 19.3 patients were discharged each month. The average 30-day readmission rate was 2.63%, which was the same as for all state hospitals. During the 4 months after the feasibility phase, an average of 21.3 patients were discharged each month. The average 30-day readmission rate was 3.24%, which was the same as for all state hospitals. Mean ED visits for the pre-intervention, feasibility phase and 4-month period after the feasibility phase were 6.9%, 6.8% and 4.24%, respectively. Mean ED visits for all state hospitals during these same periods were 16.36%, 12.11% and 12.08, respectively.
Manderson et al. 2012 **Canada** **Systematic review**	NA	15 publications, representing 9 RCTs examining system navigation models for older adults living with multiple chronic diseases making transitions across healthcare settings	Narrative synthesis	Economic, psychosocial and function	Most studies examined the transition from hospital to home. Regardless of their navigation titles (e.g. case manager, care coordinator), most roles were filled by nurses. Services were provided for up to 18 months following discharge. Services provided included care planning, coordination of care, phone support, home visits, liaison with medical and community services, and patient and caregiver education

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
					8 studies included some form of economic evaluation (e.g hospital costs, health service utilization, hospital readmissions). Of these, 5 were positive (i.e. lower costs) 5 studies included at least one psychosocial outcome (e.g. QoL, depression). Of these, 4 were positive (i.e. at least one of the psychosocial evaluations was significantly improved relative to control group on one or more occasions) 6 studies included at least one functional outcome (e.g. ability to perform ADLs). Of these, one was positive (i.e. functional outcomes were significantly better in intervention compared with control group)
Egan et al. 2010 **Canada** **Single group intervention study**	NA	51 stroke survivors (mean of 4.7 years post stroke) and 32 care partners, recruited through a stroke survivors' organization.	A community stroke navigation service was provided by an occupational therapist. Following pre-test assessments, the community Stroke Navigator interviewed the participant and caregiver if available, to identify the greatest concerns and then developed a care plan to enhance community reintegration. The intervention was composed of 6 components (case coordination, support, "just in time" education, coaching, accompaniment, and advocacy	2-Minute Walk Test (patient and carer), HADS (depression sub scale, patient only), General Well-Being Schedule (carer only), Reintegration to normal Living (RNLI, patient and carer), qualitative interviews Assessments were conducted pre-intervention and 4 months following initiation of the service	During the 4-month intervention period, contacts made by the Stroke Navigator included 1-8 visits, phone calls, and written correspondence There was a significant increase in the mean, daily functioning subscale of the RNLI among patients (54.1 to 59.3, p=0.02) There were no significant changes on any of the standardized assessments for patients or carers

Interprofessional Communication

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
Kattel et al. 2018 **USA** **Systematic review**	NA	19 studies describing hospital discharge (D/C) communication between hospital-based providers and primary care physicians (PCPs), or studies describing interventions to improve communication at hospital-discharge between hospital and PCPs	Data are presented descriptively.	**Primary outcomes:** Timeliness of completion, availability, contents of discharge summaries, and the effectiveness of interventions aimed at improving timeliness, availability, content, or readability	*Timeliness and content of D/C summaries* A median of 55.1% of hospital D/C communications were transferred to the PCP within 48 hours, while a median of 67.4% of hospital physicians had completed D/C summaries within 48 hours. 8.5% of discharge summaries never reached the PCP. Information that was absent from discharge summaries included diagnostic test results (61%), pending tests at discharge (25%), and follow-up plans (41%). PCP received notification of D/C in 23% of cases. *Interventions to improve delivery of hospital D/C summaries to PCP* Email use was associated with faster delivery of D/C summaries to PCP. Electronic D/C summaries and quality improvement initiatives were effective methods to ensure summaries were completed in a timely manner. *Interventions to improve the quality of the D/C summary* Quality improvement initiatives helped to improve the quality of D/C summaries. *Interventions to improve discharge readiness and communication with PCPs* The use of D/C software resulted in improved patient perception of discharge preparedness in one trial. Audit-feedback and financial incentives resulted in improved documentation of communication with PCPs in one trial.
Mitchell 2015 **USA** **Controlled study**	NA	Data were collected from 3,248 hospitals	The association between MD/nurse communication with the patient regarding discharge instructions and readmission was explored	**Primary outcome:** 30-day medical readmissions	A mean of 84% of patients reported receiving discharge instructions. Hospitals that had smaller bed numbers, were non-profit and located in non-urban areas were more likely to provide discharge instructions. Patients reported that, on average, nurses and doctors communicated well with them 78% and 82% of the time.

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					Controlling for other factors, increasing frequency of communication surrounding discharge instructions was associated with significantly lower number of hospital admissions (-5.5).
Tielbur et al. 2015 **USA** **Pilot project**	NA	226 patients admitted to a neurological stroke service before the initiation of the intervention (baseline cohort) and 188 patients admitted after its initiation.	A program of multidisciplinary team discharge meetings (huddles) was implemented with the aims of identifying follow-up care placement, increasing referrals into affiliated follow-up care options, predicting a discharge date and eliminating barriers to discharge. Each case manager and social worker was provided a cellular phone with texting capabilities. All members of the team were provided tablet computers.	**Primary outcomes:** Hospital LOS, and percentage of patients discharge destination	Prior to the initiation of the huddle, the mean LOS was 5.9 days. At discharge, 18% of patients were serviced by affiliated care partners (inpatient rehabilitation, outpatient rehabilitation, and home care). After the initiation of the huddle pilot, the mean length of stay was reduced significantly to 4.4 days (25% reduction). Discharges into affiliated partners increased from 18% to 28% ($p < .05$). The number of patients being sent home without services decreased from 47% to 35%. Results from 196 staff surveys indicated they found the discharge huddle was helpful and that they believed they were more efficient in discharging patients. The technology was heavily utilized and was reported to be helpful.
Kripalani et al. 2007 **USA** **Systematic Review**	NA	73 studies examining communication deficits between hospitals and primary care providers (n=55) and interventions to improve communication during this transition (n=18, 3 RCTs)	Narrative synthesis Interventions varied across studies. The most common were: hand delivery of D/C letter by patient to GP vs. mailed delivery (n=2); Database or computer-generated D/C summary vs. dictated D/C summary (n=7); standardized format for D/C summary vs. narrative D/C summary (n=2)	**Studies examining communication deficits:** Timeliness and type of information missing from a discharge letter or summary arriving to a primary care physician for a patient discharged from hospital. **Intervention studies to improve communication:** Not stated *a priori*	**Timeliness of discharge letter or summary:** A median of 53% of discharge letters (range 30%-94%) were received by the primary care physician from hospital within 1 week; 14.5% (range 9% to 20%) of discharge summaries were received within 1 week. Median of 82% (range 77% to 85%) of discharge letters were available in the hospital medical record; 85% (range 82% to 93%) of discharge summaries. **Prevalence of Missing Information**: Main Diagnoses: A median of 13% (range 2% to 31%) of discharge letters; 17.5% (range 10% to 39%) of discharge summaries were missing main diagnoses. In Hospital Treatment Details: A median of 29.5% (range 22% to 45%) of discharge letters; 14.5% (range 7% to 22%) of discharge summaries were missing

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					treatment details. Medications at Discharge: A median of 25% (range 7% to 48%) of discharge letters; 21% (range2% to 40%) of discharge summaries were missing medication details. Plans for Follow-up: A median of 30% (range 23% to 48%) of discharge letters; 14 (range 2% to 43%) of discharge summaries were missing details of a follow-up plan. Patient or family counseling: A median of 92% (range 92% to 97%) of discharge letters; 91% (range 90% to 92%) of discharge summaries were missing notes on any patient or family counseling. **Statistically significant results reported in Intervention Studies**: i) RCTs: A higher percentage of D/C summaries that were hand delivered were received by week 4 following discharge (80% vs. 57%, p<0.001). GPs that received D/C plans from institutions with enhanced D/C planning group had a better understanding of hospital management (96% vs. 62%, p=0.005) and a higher percentage of the GPs rated the quality of the D/C summaries as good or extremely good (96% vs. 48%, p<0.001). ii) Non RCTs with concurrent controls: D/C summaries that were hand-delivered were received by the GP sooner (median 2.5 vs. 7.5 days, p<0.001) and a higher percentage of computer-generated D/C summaries were easier to read and perceived to be of higher quality. iii) Non RCTs with pre-post designs: The overall quality of the D/C summaries was perceived to be higher and the summaries were longer when computer generated, using a standard template, and were received by the GP sooner.
Halasyamani et al. 2006	NA	NA	A discharge checklist designed to identify the critical components in	NA	32 studies were identified that were specific to discharge elements, including adverse events and the use of standardized tools to assemble pertinent

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USA **Checklist development**			the process when discharging elderly patients from hospital was developed by a Hospital Quality & Safety committee. The process included a literature review, development of a draft checklist by an expert committee, peer review and ratification of final checklist		information at the time of discharge. Most of the studies were related to medication-associated adverse events The final checklist includes 3 types of discharge documents: the discharge summary, patient instruction and communication on the day of discharge to the receiving care provider. Data elements included on the final checklist were: Problem that precipitated hospitalization, key findings and test results, final primary and secondary diagnoses, condition at discharge (functional and cognitive), discharge destination, discharge medications, follow-up appointments, list of pending lab results and person to whom results will be sent, recommendations of sub-specialty consultants, documentation of patient education and understanding, identification of atypical problems and suggested interventions, 24/7 call-back number, identification of referring and receiving providers, resuscitation status.
Roy et al. 2005 **USA** **Prospective study**	NA	2,644 consecutive patients discharged from 2 tertiary care hospitals	Pending test at the time of discharge were tracked for 14 days, using an electronic medical record. Abnormal test results were identified and sent to one of 4 physicians for review to determine (subjectively) if the test results were potential actionable, based on data contained in the discharge summary and any related test results. A result was considered potentially actionable if it could change the management of the patient in any way (e.g. by requiring a new	**Primary outcomes:** Prevalence of potentially actionable results returning after discharge, awareness of the results by inpatient and PCP. Inpatient physicians were surveyed 72 hours after a test result became available while PCP were surveyed 14 days later.	Out of 2033 pending results, 877 (43%) were abnormal. Of these, 191 (9.1%) were potentially actionable. 155 surveys were sent to the associated physicians, of which 105 surveys were returned. 61.6% of physicians were unaware of the test result. A higher percentage of inpatient physicians were unaware compared with PCP (71% vs. 46%, p=0.02). 33.3% of physicians were unaware that the test in question had been ordered. A higher percentage of PCPs were unaware (45.8% vs. 24.6%, p=0.006).

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
			treatment or diagnostic test, or discontinuation of a treatment). Inpatient or primary care physicians (PCP) were surveyed to determine if they were aware of the test result.		
Van Walraven et al. 2003 **Canada** **Retrospective study**	NA	888 patients discharged from a single hospital following an acute stay admission for a medical condition. The most common reasons for admission were pneumonia (14.3%), congestive heart failure (9.7%) and asthma/COPD (8.4%). 3.6% of patients were admitted for stroke. The mean age was 65.7 years, 50.2% were women.	The discharge summaries of patients were reviewed to determine the date of discharge and the physician to whom the summary was sent. The investigators determined whether the discharge summary had been received by the physician and if so, if it had been received in time for review prior to a follow-up outpatient visit.	**Primary outcome:** Independent predictors of readmission 3 months following discharge	Median LOS was 4 days. Over the 3 months patients had a median of 4 outpatient visits. Discharge summaries were sent to a median of 2 physicians/patient. The discharge summary was available for 568 of 4,639 outpatient visits (12.2%). There were 240 (27.0%) of patients readmitted urgently to the hospital during the study period. Independent predictors of hospital readmission were: presence of a regular family physician (OR=2.26, 95% CI 1.20-4.29) increasing LOS during first hospital admission (OR=1.31, 95% CI 1.18-1.47), cancer diagnosis (OR=1.55, 95% 1.04-2.29). Independent factors associated with decreased odds of readmission were higher income (OR=0.87, 95% CI 0.77-0.98) and a D/C summary being received by at least one physician (OR=0.74, 95% CI 0.50-1.11).

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