



# CANADIAN STROKE BEST PRACTICE RECOMMENDATIONS

## **Rehabilitation and Recovery following Stroke Evidence Tables** ***Outpatient and Community-Based Stroke Rehabilitation;*** ***Early Supported Discharge***

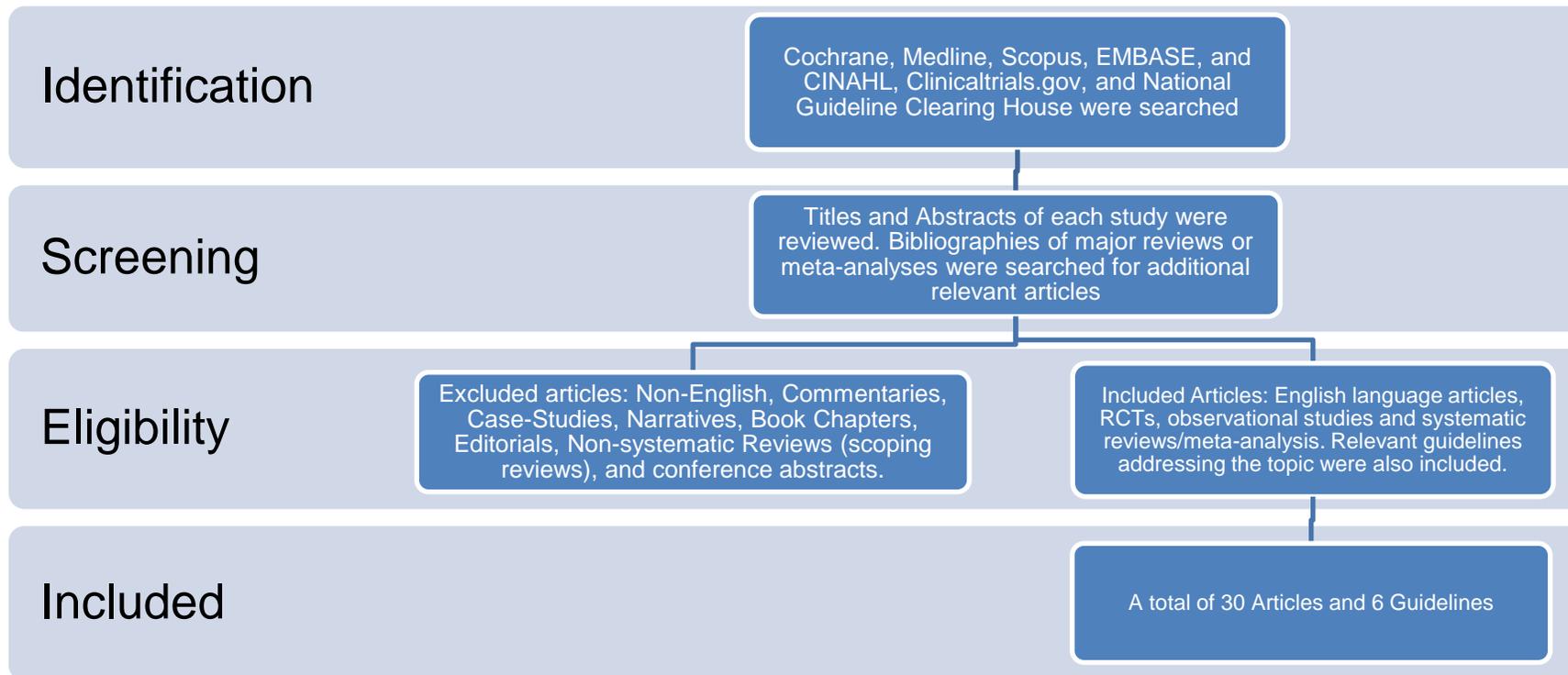
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## Search Strategy



Cochrane, Medline, Embase, Scopus, CINAHL, and clinicaltrials.gov were searched using the keywords: Stroke AND (“early supported discharge” OR outpatient OR community OR home) AND (rehabilitation OR therapy OR intervention). 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 30 articles and 6 guidelines were included and were separated into categories designed to answer specific questions.

## Published Guidelines

Guideline	Recommendations
<p><b>Clinical Guidelines for Stroke Management 2017. Melbourne (Australia): National Stroke Foundation. Section 4. Rehabilitation</b></p>	<p>Where appropriate stroke services are available (see Practical information section), early supported discharge services should be offered to stroke patients with mild to moderate disability. Strong recommendation.</p> <p>Home-based rehabilitation may be considered as a preferred model for delivering rehabilitation in the community. Where home rehabilitation is unavailable, stroke patients requiring rehabilitation should receive centre-based care. Weak recommendation.</p>
<p><b>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.</b></p> <p><b>Guidelines for adult stroke rehabilitation and recovery: a guideline for healthcare professionals from the American Heart Association/American Stroke Association.</b></p> <p><i>Stroke</i> 2016;47:e98–e169</p>	<p>ESD services may be reasonable for people with mild to moderate disability. Class IIb; LOE B.</p> <p>Organized community-based and coordinated interprofessional rehabilitation care is recommended in the outpatient or home-based settings. Class 1; LOE C</p> <p>After completion of formal stroke rehabilitation, participation in a program of exercise or physical activity at home or in the community is recommended. Class 1; LOE A</p>
<p><b>National Clinical guidelines for stroke” 5<sup>th</sup> Edition 2016; Intercollegiate Stroke Working Party. Royal College of Physicians</b></p>	<p><b>2.4.1 Recommendations</b> K- A facility that provides treatment for in-patients with stroke should include: close links and protocols for the transfer of care with other in-patient stroke services, early supported discharge teams and community services</p> <p><b>2.7.1 Recommendations</b> A-Hospital in-patients with stroke who have mild to moderate disability should be offered early supported discharge, with treatment at home beginning within 24 hours of discharge.</p> <p>B-An early supported discharge team should care predominantly for people with stroke and should provide rehabilitation and care at the same intensity as would be provided if the person were to remain on a stroke unit.</p> <p>C- A stroke early supported discharge team should be organised as a single multi-disciplinary team</p> <p>D- A stroke early supported discharge team should include: – a co-ordinated multi-disciplinary team that meets at least once a week for the exchange of information about people with stroke in their care; – information, advice and support for</p>

Guideline	Recommendations
	<p>people with stroke and their family/carers; – management protocols for common problems, based upon the best available evidence; – close links and protocols for the transfer of care with in-patient stroke services, primary care and community services; – training for healthcare professionals in the specialty of stroke.</p> <p><b>6.4.1 Recommendations</b> A-Commissioners should commission stroke rehabilitation services in accordance with the recommendations in this guideline to provide: – a specialist early supported discharge service to enable people with stroke to receive rehabilitation at home or in a care home;</p>
<p><b>Stroke Rehabilitation. Long-term rehabilitation after stroke. Issued: June 2013. National Institute for Health and Care Excellence.</b></p>	<p><b>Transfer of care from hospital to community</b> 1.1.8 Offer early supported discharge to people with stroke who are able to transfer from bed to chair independently or with assistance, as long as a safe and secure environment can be provided.</p> <p>1.1.9 Early supported discharge should be part of a skilled stroke rehabilitation service and should consist of the same intensity of therapy and range of multidisciplinary skills available in hospital. It should not result in a delay in delivery of care.</p>
<p><b>Scottish Intercollegiate 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. p.50-51</b></p>	<p><b>Recommended</b> Early supported discharge for mild/moderate stroke (A) Multidisciplinary ESD teams (B)</p> <p><b>Insufficient evidence</b> ESD in remote rural locations (more research needed)</p>
<p><b>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. P.52</b></p>	<p>The severity of the patient’s impairment, the rehabilitation needs, the availability of family/social support and resources, the patient/family goals and preferences and the availability of community resources will determine the optimal environment for care. (I)</p> <p>Where comprehensive interdisciplinary community rehabilitation services and caregiver support services are available, early supported discharge services may be provided for people with mild to moderate disability. (B)</p>

## Evidence Tables

### Early Supported Discharge

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
<p><b>Langhorne et al. 2017</b></p> <p><b>Early Supported Discharge Trialists</b></p> <p><b>UK</b></p> <p><b>Cochrane Review</b></p>	N/A	<p>17 RCTs (n=2,422) patients who had been admitted to hospital with clinical diagnosis of a stroke.</p> <p>Mean age of patients in all studies ranged from 60-80 years. 13% to 70% (median 33%) of patients were eligible for ESD services within each trial. The typical patient had an initial Barthel Index (BI) score of 14/20.</p>	<p>Patients were randomized to receive usual care or an alternative service that aimed to decrease LOS.</p> <p>3 treatment contrasts were identified. The control condition in all trials was inpatient stroke rehabilitation:</p> <p>1) ESD using a multidisciplinary team which coordinated discharge from hospital, post-discharge care, and provided rehabilitation and patient care at home. Team on a regular basis to plan patient care (n=9).</p> <p>2) ESD team coordination in which discharge home and the immediate post-discharge care was planned and supervised by a coordinated multidisciplinary team, but care was then handed over to existing community-based agencies who provided continuing rehabilitation and support at home, typically using a non-multidisciplinary team approach (n=4).</p>	<p><b>Primary Outcomes:</b> Composite of death or dependency at end of scheduled follow-up</p> <p><b>Secondary Outcomes:</b> Death, death or need for institution care, extended ADL scores, satisfaction with services, LOS, readmission to hospital.</p>	<p>The odds of the primary outcome at end of scheduled follow-up (median duration of follow-up was 6 months) were significantly lower for patients receiving ESD services (OR=0.80, 95% CI 0.67 to 0.95). Results from 16 trials included. The associated NNT per 100 patients was 5. The benefits were greatest among patients with mild-moderate disability (initial BI score 10-20 vs. BI&lt;9)</p> <p>There was no reduction in the odds of death associated with ESD (OR=1.04, 95% CI 0.77- 1.40) at the end of scheduled follow-up. Results from 16 trials included.</p> <p>There was a significant reduction in the odds of death or the need for institutional care associated with ESD (OR=0.75, 95% CI 0.59- 0.96) at the end of scheduled follow-up. Results from 12 trials included. The associated NNT per 100 patients was 5.</p> <p>ESD was associated with slightly greater improvement in extended ADL performance (SMD= 0.17, 95% CI 0.04-0.30). Results from 11 trials included.</p> <p>Patients who received ESD services were more likely to report being satisfied with services (OR= 1.60, 95% CI 1.08-2.38). Results from 5 trials included.</p> <p>ESD was associated with a significantly shorter LOS (MD=-5.5, 95% CI -2.9 to -8.2 days). Results from 16 trials included.</p> <p>ESD was not associated with a significantly greater likelihood of readmission to hospital (OR= 1.09,</p>

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			3) No ESD team coordination-therapies were provided by uncoordinated community services or by healthcare volunteers (n=4).		95% CI 0.79-1.51). Results from 6 trials included.
<b>Santana et al. 2016</b> <b>Portugal</b> <b>RCT</b>	CA: <input checked="" type="checkbox"/>  Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/>  ITT: <input checked="" type="checkbox"/>	190 patients aged, 25-85 years admitted to the stroke unit (SU) of a single facility, who had some residual disability (max FIM score of 100 permitted). Patients with major speech and language problems, major psychological illness or dementia or severe comorbidity, were excluded. Mean age was 67 years, 53% were men. 33% of screened patients were eligible to participate.	Patients were randomized 1:1 to an ESD group or usual care. Patients in both groups received early rehabilitation. Patients in the ESD group had a case manager who coordinated the ESD team members (OT, PT and a psychologist). Patients were treated by ESD therapists during their hospital SU stay, and following discharge home. Patient received approximately 8 home visits over a one-month (maximum) period. Patients and carers also received information on secondary prevention and resources available in the community.	<b>Primary outcome:</b> FIM  <b>Secondary outcomes:</b> Frenchay Activity Index (FAI), the World Health Organization WHOQOLBREF quality of life assessment (WHOQOLBREF), Short Form-6D, BI and MMSE	There was no significant difference between groups in mean FIM scores at baseline (69.0 vs. 70.5, p=0.59), 2 months (104.6 vs. 105.6, p=0.80) or 6 months (107.4 vs. 106.6, p=0.82).  There was no significant difference between groups in mean LOS on the SU (9.8 vs. 10.0 days, p=0.80).  There were no significant differences between groups in mean FAI scores between groups at baseline or 6 months.  The results for the remaining secondary outcomes are not reported.  34 patients were lost to follow-up.
<b>Gjelsvik et al. 2014</b> <b>Norway</b> <b>RCT</b>	CA: <input checked="" type="checkbox"/>  Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/>  ITT: <input checked="" type="checkbox"/>	167 patients admitted to a stroke unit within 7 days of stroke, and 5 days of admission to the stroke unit, who lived at home prior to stroke, had a NIHSS score of 2–26, and had no serious comorbidities. Mean age was 72 years, 55% were men. Mean baseline BI	Patients were randomized to one of three groups: 1) ESD and day unit rehabilitation (n=52); 2) ESD and home rehabilitation (n=60); and 3) control group (n=55).  Day unit and home rehabilitation services were primarily facilitated	<b>Primary Outcome:</b> Postural Assessment Scale for Stroke (PASS).  <b>Secondary Outcomes:</b> Trunk Impairment Scale-modified Norwegian version (TIS-modNV), functional ambulation categories (walking ability), Timed Up-and-Go (TUG) test, 5m	There were no significant differences in median PASS scores between groups: Group 1 (0, IQR 4, 95% CI -0.25–1.51) vs. Group 2 (1, IQR 2, 95% CI 0.29–2.13) vs. Group 3 (1, IQR 3, 95% CI 0.24–2.10); p=0.832.  There were no significant differences in TIS-modNV scores in pair-wise comparisons between groups.  There were no significant differences between groups in mean TUG test or 5mTW.

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		was 95. 18.2% of screened patients participated.	by PT and OT for body functioning and task-oriented training. The treatment lasted up to 5 weeks post discharge from the stroke unit.  The control group was discharged as normal and provided with outpatient therapy on an as-needed basis.	Timed Walk (5mTW), and self-report of activity and body related functioning (NRS 0–10; 0=best, 10=worst).  Outcomes were assessed at baseline and 3 months post discharge.	Self-report activity and body-related functioning: Patients in Group 1 reported significantly greater improvement in walking compared to the control group (p=0.004). Group 2 reported significantly greater improvement in ADLs compared to the control group (p=0.006). There were no significant differences in self-report balance, physical activity, pain or tiredness scores between groups.
<b>Langhorne et al. 2005</b>  <b>UK</b>  <b>Patient-level meta-analysis</b>	NA	Data from 11 trials (n=1,597) including patients recruited from hospital with a clinical diagnosis of stroke. Selection of patients in the included trials were based on residual disability, medical stability and practicality (i.e living locally). Mean/median ages ranged from 68-78 years.	RCTs compared conventional care vs. an ESD intervention. ESD services were initiated with the first 2 days of discharge and continued for up to 6 months. When team composition was described, all trials included OT/PT, and SLP. The control condition in all trials was multidisciplinary inpatient rehabilitation.  Prespecified subgroup analyses included patients' age, sex, presence of a carer, and initial stroke severity	<b>Primary outcome:</b> Death or dependency (BI score of 19/20 or a Rankin score of <2) at the end of follow-up.  <b>Secondary outcomes:</b> Death, place of residence, ADL score, extended ADL score, subjective health status, mood or depression score, outcomes for carers (mood and subjective health), and satisfaction of patients and carers.	Median duration of follow-up was 6 months.  The risk of the primary outcome was reduced significantly for patients in the ESD group (OR= 0.79, 95% CI 0.64-0.97, p=0.02).  There was a significant subgroup interaction by team ESD coordination (p=0.04). Services with coordinated multidisciplinary ESD team showed significantly reduced odds of the primary outcome compared with ESD without team coordination.  There was no significant reduction in the risk of death associated with ESD (OR=0.90, 95% CI 0.64-1.27, p=0.56).  The odds of death or institutionalization were significantly lower for patients in the ESD group (OR=0.74, 95% CI 0.56-0.96, p=0.02)  There were no significant differences between groups in ADL scores, patients' subjective health status or mood scores.  There were no significant differences between groups in carers' subjective health status or mood scores.  ESD group LOS was significantly shorter (WMD= – 7.7, 95% CI –10.7 to –4.2, p< 0.0001)

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
<p><b>Indredavik et al. 2000</b></p> <p><b>Fjaertoft et al. 2011 (5-year outcome)</b></p> <p><b>Norway</b></p> <p><b>RCT</b></p>	<p>CA: <input checked="" type="checkbox"/></p> <p>Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/></p> <p>ITT: <input checked="" type="checkbox"/></p>	<p>320 patients admitted to an inpatient stroke unit within 7 days of symptom onset, with Scandinavian Stroke Scale (SSS) scores of 3-56, and who were living at home prior to stroke. Mean age was 74 years, 53% were men.</p>	<p>Participants were randomized 1:1 to receive care on an enhanced stroke unit service (ESUS) that consisted of acute and rehabilitation services with an ESD component provided by a mobile team, or an ordinary stroke service (OSUS).</p>	<p><b>Primary Outcome:</b> Independence (BI <math>\geq</math>95 and mRS <math>\leq</math>2) at 26 weeks post discharge</p> <p><b>Secondary Outcomes:</b> BI and mRS scores at 6 weeks post discharge, the proportion of patients who were at home, institutions of deceased at 6 and 26wk, and LOS.</p>	<p>The odds of independence at 26 weeks (defined by mRS criteria) were significantly higher for ESUS patients (65% vs. 51.9%, OR=1.72, 95% CI 1.10–2.70; p=0.017, but not when BI criteria were applied (60.0% vs. 49.4%, OR=1.54, 95% CI 0.99 to 2.39).</p> <p>There were no significant differences between groups in the number of patients who were independent at 6 weeks using either the mRS or BI criteria (54.4% vs. 45.6%, p=0.118, and 56.3% vs. 48.8%, p=0.179, respectively).</p> <p>At 6 weeks, a significantly higher number of patients in the ESUS group were living at home (74.4% vs. 55.6%; p=0.00010), while significantly fewer were institutionalized (23.1% vs. 40.0%; p&lt;0.001).</p> <p>By 26 weeks, there were no significant differences between groups in place of residence or mortality (home: 78.8% vs. 73.1%; p=0.239; Institution: 13.1% vs. 17.5%; p=0.277; dead: 8.1% vs. 9.4%; p=0.692).</p> <p>The mean LOS was significantly shorter in the ESUS group (18.6 vs. 31.1 days; p=0.0324).</p> <p><b>5-year outcomes</b> There was no significant difference between groups in the proportion of patients who were independent using mRS criteria (35% vs. 29%, p=0.213).</p> <p>A significantly larger proportion of patients in ESUS group showed improvement in mRS scores from 1 year to 5 years (16% vs. 9%; p=0.048).</p> <p>A significantly higher proportion of ESUS patients were living at home (46.5% vs. 34.4%; p=0.022)</p> <p>At one year there were 5 dropouts (all (OSUS)). At 5 years, there were 14 (n=5, ESUS; n=9, OSUS).</p>
<p><b>Bautz-Holter et al. 2002</b></p>	<p>CA: <input checked="" type="checkbox"/></p> <p>Blinding:</p>	<p>82 patients admitted to an acute stroke unit within 6 days of symptoms onset.</p>	<p>Participants were randomized to receive either ESD (n=42) or</p>	<p><b>Primary Outcome:</b> Nottingham Extended ADL (NEADL) at 3- and 6-months</p>	<p>The median LOS was non-significantly shorter for patients in the ESD group (22 vs. 31 days, p=0.09).</p>

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
<b>Norway</b> <b>RCT</b>	Patient: <input checked="" type="checkbox"/> Assessor: <input checked="" type="checkbox"/>  ITT: <input checked="" type="checkbox"/>	Patients were eligible for inclusion if they were medically stable, home-dwelling prior to stroke, and not severely disabled (BI 5–19, 72 hours post stroke). Median age was 78 years, 45% were men.  20.2% (n=88) of patients screened were eligible for inclusion, and 82 agreed to participate.	usual care (n=40).  Both groups received acute care for 3–12 days on the stroke unit and were then transferred to the stroke rehabilitation unit. In the ESD group, immediate preparation for discharge and co-ordination of community-based rehabilitation was made.	post stroke  <b>Secondary Outcomes:</b> General Health Questionnaire (GHQ), Montgomery Asberg Depression Rating Scale, mortality, patient and career satisfaction, and place of residence.	There were no significant differences between groups in median scores of individual items or total scores of the NEADL, at either 3- or 6-months post stroke.  At 3 months, the median GHQ scores were significantly lower for the ESD patients 19.5 vs. 26, p=0.02), but not at 6 months (24 vs. 22, p=0.74).  There were no significant differences between groups in the proportions of patients alive/dead or home/institutionalized at either 3 or 6 months.  There were 5 losses to follow-up in the control group and 6 in the ESD group.
<b>Mayo et al. 2000</b> <b>Canada</b> <b>RCT</b>	CA: <input checked="" type="checkbox"/>  Blinding: Patient <input checked="" type="checkbox"/> Assessor: <input checked="" type="checkbox"/>  ITT: <input checked="" type="checkbox"/>	114 patients with stroke onset within the previous 28 days, with moderate disability, living with a caregiver and who were medically stable. Patients with cognitive impairment, disabling coexisting conditions, and those who required the assistance of >1 person to walk at 28 days post stroke, were excluded. Mean age was 70 years, 38% were men.  12.6% (n=194) of patients with stroke admitted to acute care were eligible for inclusion. 114 agreed to participate.	Participants were randomized to receive either a home intervention (n=58) or usual care (n=56).  Patients in the intervention group received an intensive, individualized home rehabilitation program, provided by a multidisciplinary team for 4 weeks, following accelerated discharge from hospital.  Patients in the control group were to receive inpatient rehabilitation services (but only 27% of patients received home care or inpatient rehabilitation)	<b>Primary Outcome:</b> Physical component of the Short Form-36 (SF-36), assessed at one- and 3-months post stroke.  <b>Secondary Outcomes:</b> Canadian Neurological Scale, Stroke Rehabilitation Assessment of Movement, SF-36 Mental Health component, Barthel Index, Reintegration to Normal Living, Timed Up and Go, Older Americans Resource Scale for IADLs.	Duration of acute hospital stay was significantly shorter for patients in the intervention group p (9.8 vs. 12.4 days, p<0.05).  The mean SF-36 physical component scores were significantly higher in the intervention group at 3 months (42.9 vs. 37.9, p=0.018). There was no significant difference between groups at one month (i.e immediately following the intervention).  Patients in the intervention group achieved significantly greater gains on IADL and RNL scores from months one to 3. There were no other significant differences between groups for any of the other secondary outcomes.  There were 7 dropouts in the home intervention group and 11 in the usual care group.
<b>Anderson et al. 2000</b>	CA: <input checked="" type="checkbox"/>  Patient: <input type="checkbox"/>	86 admitted to hospital and requiring rehabilitation following an	Participants were randomized to receive either ESD with home-	<b>Primary Outcome:</b> Short Form-36 (SF-36) at 6 months.	Mean time from stroke onset to randomization was 14 days.

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
<b>Australia</b> <b>RCT</b>	Blinding <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/>  ITT: <input checked="" type="checkbox"/>	acute stroke. Patients were eligible for inclusion if they were medically stable, capable of participating in a community-based rehabilitation program, their home environment was suitable for simple modifications, and the community rehabilitation team and a general practitioner were available to provide care. Mean age was 72 years, 56% were men. Median BI score at baseline was 85.  21.6% (n=86) of patients with stroke admitted to hospital were eligible for inclusion.	based rehabilitation (n=42) or conventional care (n=44).  Participants in the intervention group were discharged from hospital within 48 hours of randomization and received individually tailored treatment from a community rehabilitation team within the participants' home. Maximum and minimum durations of treatment were not specified. Participants in the control group received inpatient rehabilitation.	<b>Secondary Outcomes:</b> Nottingham Health Profile, Modified Barthel Index, Mini-Mental State Examination, General Health Questionnaire-28 (GHQ-28), Adelaide Activities Profile, McMaster Family Assessment Devise (General Functioning Subscale).	Participants in the intervention group received home rehabilitation for a median duration of 5wk (range: 1–19wk).  Mean length of stay was significantly shorter for patients in the ESD group (15 vs. 30 days, p<0.001, 95% CI for difference: -22.0 to -6.0).  At the 6 months follow-up, there were no differences between groups in any mean components scores of SF-36 items.  There were no significant differences between groups for any of the secondary outcomes at 6 months.  Caregivers of patients in the home group had significantly lower mean SF-36 mental health sub scores at 6 months (69.6 vs. 82.0, p=0.01).

## Outpatient & Community-Based Rehabilitation

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
<i>Systematic reviews &amp; meta-analyses</i>					
<b>Fens et al. 2013</b> <b>Netherlands</b> <b>Systematic Review</b>	N/A	14 trials (n=2,389) including participants ≥18 years, residing in the community after hospitalization or inpatient rehabilitation patients following stroke. In 11 trials the mean age of patients was >70 years.	Trials examining multidisciplinary outpatient programs were included. Four types of interventions were identified: assessment performed (n=2), assessment combined with follow-up care (n=8), rehabilitation (n=3), and education (n=1).	<b>Outcomes:</b> Measures of ADL and social participation	Duration of follow-up ranged from 3 and 12 months.  Outpatient therapy was not associated with significantly greater improvements in measures of ADLs in any of the included trials. The most commonly-used measures included BI (n=9), Frenchay Activities Index (n=4), and extended ADL (n=3).  No trials assessed measures of social participation.

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		In 13 studies, patients were recruited immediately following discharge from hospital (acute n=12, rehabilitation, n=1), while in one trial, patients were included $\geq$ 18 months post stroke.	Therapy duration ranged from 3 weeks to 12 months.  Control conditions were usual care (n=13) and less-intensive therapy (n=1)		Outpatient therapy was associated with significantly greater improvement in measures of Quality of Life in 2/8 trials (one trial of assessment combined with follow-up care' studies, reported significantly better mean SASIP-30 scores, and one study of rehabilitation interventions reported significantly higher mean EQ-5D score).
<b>Hillier &amp; Inglis-Jassiem 2010</b>  <b>Australia</b>  <b>Systematic Review &amp; Meta-Analysis</b>	N/A	11 RCTs (n=1,711) including patients $\geq$ 18 years who were discharged from inpatient rehabilitation or hospital to home. Mean/median ages ranged from 53 to 78.3 years.	Trials compared home-based rehabilitation with hospital-based services (day hospital or outpatient), usually composed of a multidisciplinary team.  Duration and intensity of treatment: treatment lasted for 3 weeks to 6 months, or as long as required. Treatment intensity was not stated in 4 of the included trials, and was based on individual need in one trial. In the remaining trials, therapists visited patients an average of 1–3x/wk.	<b>Primary Outcome:</b> Functional independence  <b>Secondary Outcomes:</b> Carer satisfaction/stress.  Duration of follow-up ranged from 3 to 12 months.	Overall, no significant differences in outcomes were reported in 4 trials, with the reporting of some benefits in favour of home-based group in 7 trials (lower cost, less carer strain, lower readmission). No trials reported any benefits in favour of centre-based rehabilitation.  Pooling of data were possible for BI scores only. At 6-8 weeks and 3-6 months post intervention, home-based rehabilitation was associated with significant mean difference in BI scores (MD=1.00, 95% CI 0.12–1.88; p=0.03; and MD=4.07, 95% CI 0.81-7.93, p=0.01, respectively). Results from 2 studies included.  At 6 months, there was no significant difference in BI scores (MD= 0.65,95% CI -0.50 to -1.81; p=0.27. Results from 6 trials included).
<b>Outpatient Service Trialists 2003</b>  <b>UK</b>  <b>Cochrane Review</b>	N/A	14 trials (n=1,617) including patients who were living at home prior to stroke and within 1 year of stroke onset.  Mean ages ranged from 55 to 75 years, percentages of men ranged from 37 to 67%. The mean/median LOS in hospital was reported in 6	Service interventions included those that were home-based (n=2), or day hospital or outpatient clinic based (n=12), were provided by OT/PT or multidisciplinary staff, whose aim was to improve task-oriented behavior. In most of the trials the comparison was usual or routine care.	<b>Primary Outcome:</b> Death or poor outcome (deterioration, dependency, need for institutionalization), and performance of ADL.  <b>Secondary Outcomes:</b> Death at end of scheduled follow-up, death or need for institutional care, death or physical dependence, EADL, and mood.	Mean duration of follow-up ranged from 3 to 12 months  Outpatient services were associated with a significant reduction in the risk of death or poor outcome (OR=0.72, 95% CI 0.57–0.92; p=0.009). Results from 12 trials included.  Outpatient services were not associated with a significant reduction in the risk of death at end of follow-up (OR=1.10, 95% CI 0.76–1.59; p=0.60. Results from 14 trials included) or a significant

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
		trials and varied from 7–85 days.	<p>The focus of treatment was ADL performance, leisure (OT) n=8; mobility (PT) n=2 and was provided by a multidisciplinary team in 4 trials.</p> <p>Therapy duration ranged from 5 weeks to 6 months.</p> <p>In 12 trials, patients were recruited following discharge from hospital. In 4 of these trials, patients had received a course of rehabilitation. In 2 studies, patients were recruited from home.</p>	.	<p>reduction in the risk of death or institutionalization at end of scheduled follow-up (OR=0.81, 95% CI 0.54–1.21; p=0.30. Results from 6 trials included).</p> <p>Outpatient services were not associated with a significant reduction in the risk of death or dependency at end of scheduled follow-up (OR=0.93, 95% CI 0.70–1.22; p=0.60). Results from 7 trials included.</p> <p>Outpatient services were associated with significantly greater improvements in ADL, EADL and mood scores (SMD=0.14, 95% CI 0.02–0.025; p=0.02, SMD=0.17, 95% CI 0.04–0.30; p=0.01 and SMD=0.11, 95% CI -0.04–0.26; p=0.02, respectively.)</p>
<i>Clinical Trials</i>					
<p><b>Olaleye et al. 2014</b></p> <p><b>Africa</b></p> <p><b>RCT</b></p>	<p>CA: <input checked="" type="checkbox"/></p> <p>Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/></p> <p>ITT: <input checked="" type="checkbox"/></p>	<p>52 patients with stroke levity scale (SLS) score <math>\geq 6</math>, who had been discharged from inpatient care within the previous 2 weeks. Mean age was 61 years. There were significantly more males in the home group (63 vs. 28%, p=0.01)</p>	<p>Patients were randomized to one of two groups: 1) primary health centre group (n=25), or 2) home group (n=27).</p> <p>Patients in both groups underwent task-specific rehabilitation consisting of strength (free weights), balance, and gait exercises. Number of sets and repetitions were tailored based on patient tolerance and performance. Treatment duration and intensity for both groups was: 2x/week (45–60min/session) for 10 weeks.</p>	<p><b>Primary Outcomes:</b> Modified Motor Assessment Scale (MMAS), Short Form-Postural Assessment Scale (SF-PASS), Reintegration of Normal Living Index (RNLI), and 10-metre walkway.</p> <p>Outcomes were assessed every 2weeks</p>	<p>There were no statistically significant differences between the primary health centre group or the home-based group in motor function (p=0.94), balance (p=0.65), level of handicap (p=0.90) or walking speed (p=0.69 at baseline; p=0.73 at week 10).</p> <p>Both groups experienced statistically significant improvements in within group scores for motor function, balance, level of handicap and walking speed (p=0.01).</p>

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
<p><b>Bjorkdahl et al. 2006</b></p> <p><b>Sweden</b></p> <p><b>RCT</b></p>	<p>CA: <input checked="" type="checkbox"/></p> <p>Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/></p> <p>ITT: <input checked="" type="checkbox"/></p>	<p>58 patients admitted consecutively to an inpatient rehabilitation unit following first-ever stroke, who were discharge home. Median age was 53 years, 75% were men. Mean LOS in acute care was 28 days and 65 days on rehabilitation unit.</p>	<p>Patients were randomized to participate in a 3-week program of continued rehabilitation (9hr/wk) either at home (n=30), or in a hospital-based day clinic (n=29). Patients in the home group were offered training based on their own needs (i.e. personal care, shopping) while those in the day clinic group received care that that was more impairment oriented. Patients in the home group received the services of an OT/PT while patients in the day clinic were treated by a multidisciplinary team.</p>	<p><b>Primary Outcome:</b> The Assessment of Motor and Process Skills (AMPS)</p> <p><b>Secondary Outcomes:</b> FIM, Instrumental Activity Measure (IAM), 30-metre walk test, NIHSS, Barrow Neurological Institutes Screening (BNIS), costs.</p> <p>Assessments were conducted at baseline (discharge), 3 weeks, 3 months and 1 year following discharge.</p>	<p>There were no significant differences between groups on any of the outcomes assessed. Both groups achieved modest gains in most of the outcome measure assessed.</p> <p>The costs associated with home group rehabilitation were lower (€1,830 vs. €4,410).</p> <p>There was a single loss to follow-up.</p>
<p><b>Lincoln et al. 2004</b></p> <p><b>UK</b></p> <p><b>RCT</b></p>	<p>CA: <input checked="" type="checkbox"/></p> <p>Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/></p> <p>ITT: <input checked="" type="checkbox"/></p>	<p>421 patients <math>\geq 16</math> years, requiring the intervention from more than one rehabilitation discipline, following a stroke, sustained within the previous 2 years. Mean age was 72 years, 52% were men.</p>	<p>Patients were randomized to receive routine care (n=232; day hospital, outpatient services) or care from the community stroke team (n=189). Care was provided for as long as was required by a multidisciplinary team. Patients in the community stroke team (CST) groups received a median of 18 sessions, including an average of 4.8 hours of PT, 3.8 hours of OT, 2.0 hours SLP therapy, 1.9 hours with a mental health nurse and 0.5 hours with a rehabilitation support worker</p>	<p><b>Primary Outcome:</b> Barthel Index score at 6 months after referral</p> <p><b>Secondary Outcomes:</b> Extended ADL (EADL), General Health Questionnaire (GHQ-12) by patient and carer, Carer Strain Index (CSI), and EuroQoL</p>	<p>There was no significant difference between groups in median (IQR) BI scores</p> <p>BI (mobility): 16 (12–18) vs. 16 (12–19); p=0.83. BI (domestic): 3 (0–9) vs. 2.5 (0–8); p=0.70. BI (leisure): 6 (3–9) vs. 7 (3–9); p=0.34.</p> <p>There were no significant differences between groups in median (IQR) EADL scores: 24 (13–38) vs. 25.5 (11–39); p=0.94.</p> <p>There were no significant differences between groups in median (IQR) GHQ-12: 13 (10–21) vs. 15 (11–230); p=0.79.</p> <p>There were no significant differences between groups in median (IQR) Euro-QoL scores except emotional support (favouring the community stroke team group) Knowledge: 8 (2–3) vs. 2 (1–3); p=0.24. Practical help: 3 (2–3) vs. 3 (2–3); p=0.39. <b>Emotional support: 3 (2–3) vs. 2 (2–3); p=0.02.</b></p>

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
					<p>Overall satisfaction: 3 (2–3) vs. 2 (2–3); p=0.08.</p> <p>Median Carer Strain Index scores were significantly lower in the CST group 8 (5-10) vs. 10 (6-12), p=0.03 Overall carer satisfaction was significantly better in the CST group.</p> <p>Losses to follow-up and dropouts: n=101 (community stroke team), n=132 (routine care).</p>
<p><b>Gilbertson et al. 2000</b></p> <p><b>Gilbertson &amp; Langhorne 2000</b></p> <p><b>UK RCT</b></p>	<p>CA: <input checked="" type="checkbox"/></p> <p>Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/></p> <p>ITT: <input checked="" type="checkbox"/></p>	<p>138 patients who planned to return home following discharge from hospital with a diagnosis of stroke, who required additional OT services. Median age was 71 years, 44% were male. Mean time from stroke onset to randomization was 26 days.</p>	<p>Patients were randomized to receive either 6 weeks of domiciliary occupational therapy (n=67) comprising 10 visits lasting 30–45min each, tailored to recovery goals identified by patient or to receive routine post-stroke follow-up care. Routine care (n=71) included inpatient rehabilitation, a home visit prior to discharge, support services and equipment, regular review at a stroke clinic, and referral to day hospital for selected patients.</p>	<p><b>Primary Outcomes:</b> Nottingham EADL, deterioration in function, and death.</p> <p><b>Secondary Outcomes:</b> Barthel Index, Canadian Occupational Performance Measure (COPM) London Handicap Scale (LHS), and Dartmouth COOP Charts.</p> <p>Assessments were conducted at baseline, 8 weeks and 6 months</p>	<p>At 6 months, there were no significant differences between groups in median (IQR) scores in EADL: 28 (15–38) vs. 21 (14–38), p=0.48; BI: 17 (15–19) vs. 17 (13–18), p=0.25, or LHS: 0.41 (0.38–0.53) vs. 0.45 (0.29–0.64); p=0.57.</p> <p>Change in BI: 0 (-2–2) vs. -1 (-3–0); p=0.04.</p> <p>Deaths: 2 (OT group) vs. 1 (control group).</p> <p>Change in COPM (satisfactions cores) from baseline to 7weeks: 1.63 (0–3) vs. -0.4 (-2–1); p=0.0001.</p> <p>Change in COPM from baseline to 7 weeks (performance scores): 1 (0–2.8) vs. 0 (-2.5–1); p=0.0006.</p> <p>Dartmouth COOP charts (scores at 7weeks): Physical condition: 5 (4–5) vs. 5 (5–5); p=0.19. Emotional condition: 2 (2–4) vs. 3 (2–4); p=0.02. Social activities; 4 (2–4) vs. 3 (2–40); p=0.93. Quality of Life: 3 (2–3) vs. 3 (2–3); p=0.35.</p> <p>Losses to follow-up: n=7 (OT group), n=5 (control group).</p>
<p><b>Walker et al. 1999</b></p> <p><b>2001 (1-year follow-up)</b></p>	<p>CA: <input checked="" type="checkbox"/></p> <p>Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/></p> <p>ITT: <input checked="" type="checkbox"/></p>	<p>185 patients who sustained a stroke within the previous month and who had not been admitted to hospital. Mean age was 74 years, 55% were men. Median</p>	<p>Patients were randomized to receive up to 5 months of OT (n=94) at home at a frequency of service that was agreed upon by patient and therapist, or to a no</p>	<p><b>Primary Outcome:</b> Nottingham EADL score</p> <p><b>Secondary Outcomes:</b> Barthel Index, Carer Strain Index, and General Health Questionnaire (0–84) (GHQ).</p>	<p><b>6-month outcomes</b></p> <p>Patients in the OT group had significant higher median (IQR) EADL and BI scores (16 [11–18.75] vs. 12 (6–17), p=0.009; and 20 [18–20] vs. 18 [16–20], p=0.002, respectively.</p> <p>Median Carer Strain Index (IQR) scores were</p>

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
<b>UK RCT</b>		BI score at baseline was 18. 29% of patients had sustained a previous stroke.	intervention control group (n=91), although patients could access existing services in the community.  On average, patients in the OT group received 5.8 visits (range 1–15), lasting an average of 52 minutes.		significantly lower in the OT group 1 (0–4) vs. 3 (1–6), p=0.02.  There was no significant difference between groups in median GHQ-28 (patient): 20 (14–30) vs. 23 (15–35), p=0.29.  <b>One-year outcomes:</b> Patients in the OT group had significantly higher median EADL scores 13 (13–18) vs. 11 (4–17), p=0.04.  There were no significant differences between groups in median BI scores (19 [16–20] vs. 18 [15–20], p=0.16) or GHQ 28 (patient): 20 (15–30) vs. 18 (13–31), p=0.62.  There were 22 losses to follow-up: n=10 (OT group), n=12 (control group).
<b>Gladman et al. 1993 (3 and 6-month outcomes)</b>  <b>Gladman et al. 1994 (one-year outcomes)</b>  <b>UK RCT (DOMINO study)</b>	CA: <input checked="" type="checkbox"/>  Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/>  ITT: <input checked="" type="checkbox"/>	327 patients with acute stroke discharged from 2 acute and 3 rehabilitation units. All patients were to discharged home. Patients spent a median of 20 days in hospital prior to randomization. Mean age was 70 years, 52% were men. Median admission BI score was 16.5.	Patients were randomized by strata (discharge from the Health Care of the Elderly wards, General Medical wards or the Stroke Unit) to receive domiciliary care (n=162), provided by occupational and physical therapists for up to 6 months, or to routine care (hospital-based geriatric day hospital; n=165). The number of treatment sessions received between groups were similar.	<b>Primary Outcome (at 6mo):</b> Extended ADL.  <b>Primary Outcomes (at 1yr):</b> Mortality, requirement for institutional care, NHP score $\geq$ 30, Barthel Index, and Extended ADL.  <b>Secondary Outcomes:</b> Barthel Index and Nottingham Health Profile (NHP).	<b>3 and 6-month outcomes</b>  There were no significant differences between groups in median total extended ADL scores (overall or grouped by strata) at either 3 or 6 months.  Within the stroke unit stratum, patients in the home-based therapy group had significantly higher median extended ADL sub scores at 6 months (household: 5 vs. 3, p<0.05, leisure 2.5 vs. 2, p<0.05).  There were no significant differences between groups at 3 or 6 months in median BI scores of NHP scores at 6 months (overall or grouped by strata)  There were trends towards increased risks of death and poor outcome (death/institutionalization) in the home-based therapy group at 6 months (RR=2.3, 95% CI 1.0–5.05; p=0.05, and RR=1.7, 95% CI 1.0–5.05; p=0.05).  <b>One-year outcomes:</b> The percentage of patients experiencing a poor outcome did not differ significantly between groups

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
					<p>(27 vs. 19%, <math>p&gt;0.05</math>).</p> <p>There were no significant differences in median BI or EADL scores between groups (BI: 17 vs. 18; <math>p&gt;0.05</math>, and EADL: 8 vs. 10; <math>p&gt;0.05</math>).</p> <p>There was no significant difference between groups in the proportion of patients with NHP scores <math>&gt;30</math> (39 vs. 29%, <math>p&gt;0.05</math>).</p> <p>Losses to follow-up: None.</p>
<p><b>Young &amp; Forester 1992</b></p> <p><b>UK</b></p> <p><b>RCT</b></p> <p><b>Bradford Community Stroke Trial</b></p>	<p>CA: <input checked="" type="checkbox"/></p> <p>Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/></p> <p>ITT: <input checked="" type="checkbox"/></p>	<p>124 patients <math>&gt;60</math>yr who were about to be discharged from hospital following a recent stroke with persistent disability.</p>	<p>Patients were stratified by time interval between stroke onset and discharge and by disability at discharge, and randomized to attend a geriatric day hospital (n=61) 2x/wk for post-stroke care or to be treated at home (n=63) by one of five experienced community physiotherapists.</p>	<p><b>Primary Outcome:</b> Barthel Index (BI) at 6 months following discharge home</p> <p><b>Secondary Outcomes:</b> Motor Club Assessment (MCA), Frenchay Activities Index (FAI), Nottingham Health Profile (NHP), and General Health Questionnaire (GHQ).</p>	<p>At 6 months, 52% of the day hospital patients were still receiving treatment compared with only 21% of the patients in the home physiotherapy group (<math>p=0.002</math>).</p> <p>Patients in the day hospital group attended a median of 31 times compared with a median of 15 visits received by patients in the home physiotherapy group (<math>p&lt;0.0001</math>).</p> <p>The median (IQR) BI and MCA scores at 6 months were significantly higher in the home physiotherapy group (15 (12–18) vs. 17 (15–19); <math>p&lt;0.01</math>, and 39 (32–43) vs. 41 (37–44); <math>p=0.01</math>, respectively).</p> <p>There were no significant differences between groups in the median scores of other secondary outcomes (FAI: 5 (3–11) vs. 9 (3–16); <math>p=0.07</math>; NHP: 21 (9–38) vs. 15 (5–40); <math>p=0.32</math> and GHQ (carers): 3 (0–7) vs. 1 (0–5); <math>p=0.22</math>).</p> <p>16 patients were lost to follow-up: n=9 (hospital group), n=7 (home physiotherapy group).</p>

## Home-based Exercise Programs

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
<i>Upper-Extremity Focused</i>					
<p><b>Barzel et al. 2015</b></p> <p><b>Germany</b></p> <p><b>Cluster RCT</b></p> <p><b>HOMECIMT</b></p>	<p>CA: <input checked="" type="checkbox"/></p> <p>Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/></p> <p>ITT: <input checked="" type="checkbox"/></p>	<p>156 patients ≥18 years, cognitively intact with mild to moderate impairment of arm function, associated with a stroke sustained at least 6 months earlier, who had a caregiver prepared to be a non-professional coach. Mean age was 63 years, 40% were women.</p>	<p>71 practices were stratified by region, and randomized 1:1 to either home constraint-induced movement therapy (CMIT, n=85 patients) or standard therapy (n=71 patients) for 4 weeks. In the home CIMT group, therapists conducted 5 home visits to instruct the patient and the coach in the principles of home CIMT, set goals and work through exercises, focusing on everyday practice. Patients were instructed to train in their home environment for 2 h each day, accompanied by a coach and to wear a mitten to immobilize their non-affected hand during the exercises. Patients in the standard therapy groups received 5 hours of routine therapy provided by a therapist.</p>	<p><b>Primary outcomes:</b> Motor Activity Log (MAL), Wolf Motor Function Test (WMFT), assessed after the intervention</p> <p><b>Secondary outcomes:</b> Motor Activity Log (MAL), Wolf Motor Function Test (WMFT), assessed at 6 months, 9-Hole Peg Test, ADL, IADL</p>	<p>At the end of treatment, patients in both groups had significantly improved MAL (QOM) scores, but the change in scores from baseline was significantly greater for patients in the CIMT group (adjusted mean change from baseline (0.56 vs. 0.31, MD=0.26, 95% CI 0.05–0.46, p=0.0156).</p> <p>Both groups improved on the WMFT (performance time) from baseline to 4 weeks, although the difference between groups was not significant (-25.6% vs. -27.5%, MD=2.65% (-17.94 to -28.40, p=0.815).</p> <p>At 6 months follow-up, the mean difference from baseline in MAL (QOM and AOU sub scores) was significantly greater for CIMT patients.</p> <p>At 6 months follow-up there were no significant differences between groups in mean change from baseline for WMFT (performance time) or WMFT (functional ability).</p> <p>At 6 months follow-up there were no significant differences between groups in mean change from baseline for any of the other secondary outcomes.</p> <p>9 patients were lost to follow-up (5 CIMT, 4 standard therapy)</p>
<p><b>Coupar et al. 2012</b></p> <p><b>UK</b></p> <p><b>Cochrane review</b></p>	<p>N/A</p>	<p>4 RCTs (n=166) that recruited patients living in their homes following a stroke. Mean age ranged from 53 to 70.2 years.</p>	<p>Trials comparing a home-based exercise program which targeted the upper extremity under the supervision of healthcare professional, compared with usual care or placebo, were examined. Treatment contrasts included an exercise program that was</p>	<p><b>Primary outcomes:</b> Measures of ADL and functional movement</p> <p><b>Secondary outcomes:</b> Extended ADL and motor impairment</p>	<p>The Barthel Index was used as an ADL measure in 2 trials. At neither the end of the treatment period, nor at the end of follow-up, were home-based exercise programs associated with a significant difference in scores (MD=2.85; 95% CI -1.43 to 7.14, and MD=-1.70, 95% CI -5.51, to 2.11; results from 1 RCT).</p> <p>The Wolf Motor Function test was used to assess functional arm/hand movement. Results from 2 subgroups from the same trials, were pooled.</p>

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
			<p>designed to improve strength, balance and endurance, and to encourage more use of the affected extremity vs. usual care (n=2) and trials that compared virtual reality + telerehabilitation at home vs. either virtual reality training in hospital with a therapist present or conventional therapy (n=2).</p> <p>Duration of the programs ranged from 4 to 12 weeks.</p>		<p>Home-based exercise program was not associated with significantly higher scores (MD=2.24, 95% CI -0.24–4.73).</p> <p>The Lawton Instrumental ADL Scale points was used to assess Extended ADL performance in 2 trials. Home-based therapy was not associated with significantly higher scores (MD= 0.83 95% CI -0.51 to 2.17).</p> <p>The Fugl Meyer was used to assess motor impairment in 3 trials. At the end of the treatment period, home-based exercise programs were not associated with significantly higher scores (MD=1.46; 95% CI -0.58 to 3.51).</p>
<p><b>Harris et al. 2009</b></p> <p><b>Canada</b></p> <p><b>RCT</b></p> <p><b>Graded Repetitive Arm Supplementary Program (GRASP)</b></p>	<p>CA: <input checked="" type="checkbox"/></p> <p>Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/></p> <p>ITT: <input checked="" type="checkbox"/></p>	<p>103 patients recruited from one of participating centres within 2 weeks of acute stroke. Patients were eligible for participation if they had a Fugl-Meyer Upper Limb Motor Impairment Scale score of 10-57, and had evidence of an active scapular elevation against gravity and palpable wrist extension (grade 1). Mean age was 69 years, 57% were men.</p>	<p>Patients were randomized to either the GRASP group (n=53) or the control group (n=50). Patients in the GRASP group participated in a 4-week home-based, self-administered program designed to improve ADL skills through strengthening, ROM and gross/fine motor skills exercises. Patients in the control group received a non-therapeutic education program (n=50).</p>	<p><b>Primary Outcome:</b> Chedoke Arm &amp; Hand Activity Inventory-9 (CAHAI)</p> <p><b>Secondary Outcomes:</b> Action Research Arm Test (ARAT), Motor Activity Log (MAL), hand grip strength, Short Form-12 (SF-12), pain (11-point VAS), Fatigue Severity Scale</p> <p>Outcomes were assessed before and after treatment and at 3 months post treatment.</p>	<p>At the end of the treatment period, patients in the GRASP group had significantly higher CAHAI scores (32.6 to 46.7 vs. 32.7 to 40.1; mean change from baseline: 14.1 vs. 7.9; p&lt;0.001). The improvement was maintained at 3 months (mean total score: 50.4 vs. 45.4; p=0.037). Completion rate was 60/103 (58%).</p> <p>At the end of the treatment period, patients in the GRASP group had significantly higher ARAT and MAL scores and grip strength (ARAT: 31.1 to 42.8 vs. 31.0 to 38.0, p=0.025; grip strength (kg): 9.0 to 13.1 vs. 8.8 to 10.8, p=0.027; MAL (AOU): 2.0 to 3.3 vs. 1.9 to 2.8; p=0.023; MAL (QOU): 2.0 to 3.2 vs. 1.8 to 2.7; p=0.007).</p> <p>Adverse events: pain (n=15).</p>
<i>Lower-extremity Focused</i>					
<p><b>Koc et al. 2015</b></p> <p><b>Turkey</b></p> <p><b>RCT</b></p>	<p>CA: <input checked="" type="checkbox"/></p> <p>Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/></p>	<p>72 patients with subacute ischemic stroke, sustained within the previous 30 to 90 days, with baseline BI scores of 60–80, who</p>	<p>Patients were randomized to a home-based exercise (intervention) group or usual care (UC) group. The home-based</p>	<p><b>Primary outcome:</b> BI score at end of treatment period</p>	<p>The mean baseline BI scores for patients in the intervention and control groups were 66.2 and 67.8, respectively (p=1.00).</p> <p>There was significant within-group improvement in mean BI scores over the treatment period, assessed</p>

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
	ITT: <input checked="" type="checkbox"/>	were ambulatory with supervision and/or an assistive device, and were living at home.	<p>exercises were designed to improve strength, balance, and endurance and to encourage use of the affected extremity. The program was delivered by a nurse researcher (one hour/visit, 2 visits/week for 12 weeks).</p> <p>Patients in the UC group received home visits by the research staff every 4 weeks for health education and to check their vital signs.</p>		<p>at baseline, 4, 8 and 12 weeks, for patients in the intervention group, but not the UC group.</p> <p>At 12 weeks, the mean BI score was significantly higher for patients in the intervention group (82.0 vs. 69.5, <math>p &lt; 0.0001</math>).</p> <p>There were no dropouts.</p>
<p><b>Nadeau et al. 2013</b></p> <p><b>USA</b></p> <p><b>RCT</b></p> <p><b>Locomotor Experience Applied Post Stroke (LEAPS)</b></p>	<p>CA: <input checked="" type="checkbox"/></p> <p>Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/></p> <p>ITT: <input checked="" type="checkbox"/></p>	<p>408 patients recruited from one of 6 inpatient rehabilitation centres, within 45 days of stroke with residual paresis in the lower extremity, ability to walk 10 feet with no more than 1-person assistance, a self-selected 10-m walking speed <math>&lt; 0.8</math> m/s, and living in the community. Mean age was 62 years, 55% were men.</p>	<p>Patients were randomized to one of 3 programs: 1) Locomotor training program (LTP; <math>n=139</math>), 2) Home exercise program (HEP; <math>n=126</math>), or 3) Usual Care (UC; <math>n=143</math>).</p> <p>1) LTP: 20–30min at 3.2km/hr of treadmill training with partial body weight support and 15min walking program.</p> <p>2) HEP: flexibility, range of motion, strength, coordination and balance exercises were provided by a physical therapist in the patient's home.</p> <p>Both LTP and HEP programs were of similar duration and intensity (90-minute sessions, 3</p>	<p><b>Primary Outcome:</b> Improvement in functional level of walking at 6 months</p> <p><b>Secondary Outcomes:</b> Other walking measures (walking speed during 10m walk, 6-minute walk distance, number of steps taken per day), Fugl-Meyer, Berg Balance Scale (BBS), Activities-specific balance confidence (ABC), Instrumental ADLs (IADL), Stroke Impact Scale (SIS), and mRS</p>	<p>Mean time from stroke to randomization was 63.8 days.</p> <p>At 6 months, 50.4% of LTP, 49.2% of HEP, and 32.2% of UC patients had improved to a higher functional walking level.</p> <p>Compared with the UC group, the odds of achieving a higher walking level, were greater in the HEP group (OR=2.04, 95% CI 1.22–3.42; <math>p=0.007</math>). There were no significant differences between the LTP and HEP groups.</p> <p>Patients in all 3 groups had significantly improved their walking speed, performance on the 6-minute walk distance, and number of community steps taken/day. The improvements in the LTP and HEP group were significantly greater compared with UC (<math>p &lt; 0.0001</math>).</p> <p>Compared with the UC group, patients in the HEP group showed significantly greater improvement in BBS score, ABC Scale score, and physical mobility (<math>p &lt; 0.0014</math>).</p> <p>There were 11 losses to follow-up in the LTP group,</p>

Study/Type	Quality Rating	Sample Description	Method	Outcomes	Key Findings and Recommendations
			times/week) for 12-16 weeks, for a total of 30 to 36 exercise sessions.		6 in the HEP group and 7 in the UC group.
<b>Duncan et al. 2003</b> <b>United States</b> <b>RCT</b>	CA: <input checked="" type="checkbox"/>  Blinding: Patient <input checked="" type="checkbox"/> Assessor <input checked="" type="checkbox"/>  ITT: <input checked="" type="checkbox"/>	92 patients > 50 years, with stroke onset of within 30 to 150 days, able to ambulate 25 feet independently with mild to moderate stroke deficits defined by a Fugl-Meyer score of 27-90 for upper and lower extremities, an Orpington Prognostic Scale score of 2.0-5.2, and palpable wrist extension on the involved side. Mean age was 69 years, 54% were men.	Patients were randomized to the control group (n=48) or the intervention group (n=44).  The experimental group received visits from an occupational or physical therapist in the home for 12–14 weeks (total of 36 sessions, each lasting 90 minutes). The intervention focused on range of motion, flexibility, strengthening, balance, upper extremity use, and endurance.  Patients in the control group received routine care as specified by their family physician.	<b>Primary Outcomes:</b> Fugl-Meyer Motor Score, Wolf Motor Function Test, 10-metre walk, Six-Minute Walk and Berg Balance Scale.  Outcomes were assessed at baseline and 3 months (post intervention)	Patients in both groups improved over the treatment period.  Patients in the intervention group experienced significantly greater gains in Berg Balance Scale scores, 6-minute walk distance, and gait velocity, after adjusting for baseline scores:  Berg balance score: Mean difference in change between groups 2.72 (SE 0.79); p<0.001.  10-m gait velocity: Mean difference in change between groups 0.08m/s (SE 0.04); p<0.05.  6-min walk distance: Mean difference in change between groups 28.21m (SE 12.52); p<0.05.

### Abbreviations

ADL = Activity of Daily Living	CA = Concealed Allocation
CI = Confidence Interval	ESD = Early Supported Discharge
FIM=Functional Independence Measure	IADL=Instrumental Activities of Daily Living
IQR = Interquartile Range	ITT = Intention to treat
N/A = Not Applicable	OR = Odds Ratio
OT=Occupational Therapist	PT=Physiotherapist
RCT= Randomized Controlled Trial	SMD = Standardized Mean Difference

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