Services for reducing duration of hospital care for acute stroke patients (Review)

Fearon P, Langhorne P, Early Supported Discharge Trialists

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[Intervention Review]

Services for reducing duration of hospital care for acute stroke patients

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ABSTRACT

Background

Stroke patients conventionally receive a substantial part of their rehabilitation in hospital. Services have now been developed which offer patients in hospital an early discharge with rehabilitation at home (early supported discharge (ESD)).

Objectives

To establish the effects and costs of ESD services compared with conventional services.

Search methods

We searched the trials registers of the Cochrane Stroke Group (January 2012) and the Cochrane Effective Practice and Organisation of Care (EPOC) Group, MEDLINE (2008 to 7 February 2012), EMBASE (2008 to 7 February 2012) and CINAHL (1982 to 7 February 2012). In an effort to identify further published, unpublished and ongoing trials we searched 17 trial registers (February 2012), performed citation tracking of included studies, checked reference lists of relevant articles and contacted trialists.

Selection criteria

Randomised controlled trials recruiting stroke patients in hospital to receive either conventional care or any service intervention which has provided rehabilitation and support in a community setting with an aim of reducing the duration of hospital care.

Data collection and analysis

The primary patient outcome was the composite end-point of death or long-term dependency recorded at the end of scheduled follow-up. Two review authors scrutinised trials and categorised them on their eligibility. We then sought standardised individual patient data from the primary trialists. We analysed the results for all trials and for subgroups of patients and services, in particular whether the intervention was provided by a co-ordinated multidisciplinary team (co-ordinated ESD team) or not.

Main results

Outcome data are currently available for 14 trials (1957 patients). Patients tended to be a selected elderly group with moderate disability. The ESD group showed significant reductions ($P < 0.0001$) in the length of hospital stay equivalent to approximately seven days. Overall, the odds ratios (OR) (95% confidence interval (CI)) for death, death or institutionalisation, death or dependency at the end of scheduled follow-up were OR 0.91 (95% CI 0.67 to 1.25, $P = 0.58$), OR 0.78 (95% CI 0.61 to 1.00, $P = 0.05$) and OR 0.80

(95% CI 0.67 to 0.97, P = 0.02) respectively. The greatest benefits were seen in the trials evaluating a co-ordinated ESD team and in stroke patients with mild to moderate disability. Improvements were also seen in patients' extended activities of daily living scores (standardised mean difference 0.12, 95% CI 0.00 to 0.25, P = 0.05) and satisfaction with services (OR 1.60, 95% CI 1.08 to 2.38, P = 0.02) but no statistically significant differences were seen in carers' subjective health status, mood or satisfaction with services. The apparent benefits were no longer statistically significant at five-year follow-up.

Authors' conclusions

Appropriately resourced ESD services provided for a selected group of stroke patients can reduce long-term dependency and admission to institutional care as well as reducing the length of hospital stay. We observed no adverse impact on the mood or subjective health status of patients or carers.

PLAIN LANGUAGE SUMMARY

Services for reducing duration of hospital care for acute stroke patients

Early supported discharge services aim to allow patients to return home from hospital earlier than usual and receive more rehabilitation in the familiar environment of their own home. Early supported discharge services are provided by teams of therapists, nurses and doctors. This review, which identified 14 trials with 1957 participants, found that patients who received these services returned home earlier and were more likely to remain at home in the long term and to regain independence in daily activities. The best results were seen with well organised discharge teams and patients with less severe strokes.

BACKGROUND

Description of the condition

Stroke is a global healthcare problem and in most countries is one of the leading causes of death and acquired adult disability (Warlow 2008). Stroke is also expensive and consumes 5% of all health service resources within the UK National Health Service (Saka 2009). Despite major advances in the medical management of stroke, the majority of patients continue to rely on post-stroke rehabilitation interventions (Langhorne 2011). Conventionally, rehabilitation after stroke is provided in hospital. Thus in-patient care of disabled stroke patients accounts for much of the substantial economic costs (Warlow 2008).

Rehabiliation in hospital can achieve good clinical outcomes. A recent systematic review evaluating in-patient stroke care has indicated that organised in-patient (stroke unit) care is effective in reducing death and disability (SUTC 2007). However, many important questions about stroke service provision remain unanswered. In particular, are there effective alternatives to in-patient care and how can care be best provided after discharge from hospital?

Description of the intervention

A previous review (Langhorne 1999) focused on those systems of care which have been set up as complete alternatives to in-patient care, i.e. services such as 'hospital at home', which aim to prevent stroke patients being admitted to hospital. A second approach has been to develop services which may accelerate the discharge of patients already admitted to hospital. These services have variously been termed 'early supported discharge schemes', 'early home supported discharge services', 'accelerated discharge schemes' and 'post-discharge support services', and form the basis of this review. This review focuses on the effectiveness of such early supported discharge services.

OBJECTIVES

We addressed the following questions of services which offered stroke patients in hospital an alternative to conventional systems of care through a policy of early discharge from hospital with community-based rehabilitation (early supported discharge).

1. Can these alternative services accelerate the return home of stroke patients who are admitted to hospital?

2. Can such care produce equivalent or better patient and carer outcomes than conventional care?

3. Which approaches are most satisfactory to patients and carers?

4. What are the resource implications of such services?

METHODS

Criteria for considering studies for this review

Types of studies

We included all randomised trials that compared conventional hospital care and discharge procedures with alternative services which aimed to accelerate the patient's discharge from hospital. Therefore, randomisation will have taken place relatively early after hospital admission and before discharge.

Types of participants

Any patient who has been admitted to hospital with a clinical diagnosis of stroke (defined as an acute focal neurological deficit caused by cerebrovascular disease). Where possible, we tried to record stroke severity (level of disability) at randomisation using activities of daily living (ADL) status.

Types of interventions

We included trials evaluating any intervention that aimed to accelerate discharge from hospital with the provision of support (with or without a 'therapeutic' rehabilitation intervention) in a community setting (early supported discharge). We recorded the specific type of intervention but this was not used as an exclusion criterion. We aimed to include trials that focused largely or entirely on stroke patients. Prespecified subgroups were derived from recognised indicators of in-patient stroke service quality, in particular whether care was planned and provided by a specialist team whose work was co-ordinated through regular multidisciplinary meetings.

Types of outcome measures

Primary outcomes

The primary patient outcome was the composite end-point of death or long-term dependency recorded at the end of scheduled follow-up. The main focus of the individual patient data analysis was therefore on the patient outcomes of:

1. death;
2. physical dependency (i.e. dependent on help for transfers, mobility, washing, dressing or toileting); and
3. place of residence.

The primary resource outcome was the length of the index hospital stay. We planned to record other resource outcomes (i.e. readmission to hospital, number of readmissions, number of readmission days, cost of in-patient stay, total cost of service interventions) but in the end were limited to length of the index hospital stay, readmission to hospital, and total cost of service interventions.

Secondary outcomes

Secondary outcomes (recorded at the end of scheduled follow-up) included the following:

1. activities of daily living (ADL) score;
2. extended ADL score;
3. subjective health status;
4. mood (mood or depression score);
5. carer outcomes (carer mood and subjective health status);
6. patient and carer satisfaction and/or service preference.

Search methods for identification of studies

See the 'Specialized register' section in the Cochrane Stroke Group module. We searched for trials in all languages and arranged translation of relevant papers published in languages other than English.

Electronic searches

We searched the trials registers of the Cochrane Stroke Group (January 2012) and the Cochrane Effective Practice and Organisation of Care (EPOC) Group (Febraury 2012). In addition, in collaboration with the Cochrane Stroke Group Trials Search Co-ordinator, we searched MEDLINE (2008 to February 2012) (Appendix 1), EMBASE (2008 to February 2012) (Appendix 2) and CINAHL (1982 to February 2012) (Appendix 3). To avoid duplication of effort we restricted the searches of MEDLINE and EMBASE from January 2008 as these databases have already been searched to that date for all stroke trails and relevant trials added to the Cochrane Stroke Group Trials Register.

We searched the following registers of ongoing trials using the keyword 'stroke' (February 2012):

- ClinicalTrials.gov (http://clinicaltrials.gov/);
- The Australian New Zealand Clinical Trials Registry (www.anzctr.org.au);
- CenterWatch Clinical Trials Listing Service (www.centerwatch.com);
- Chinese Clinical Trial Register (www.chictr.org);
- Community Research & Development Information Service (of the European Union) (cordis.europa.eu/en/home.html);
- Current Controlled Trials *metaR*egister of Controlled Trialls (mRCT) - active and archived registers (www.controlled-trials.com/mrct) and International Standard Randomised

Controlled Trial Number Register (www.controlled-trials.com/isrctn/);

- WHO International Clinical Trials Registry (www.who.int/trialsearch);
- Hong Kong clinical trials register (www.hkclinicaltrials.com);
- Clinical Trials Registry - India (CTRI) (www.ctri.in);
- Nederlands Trialregister (www.trialregister.nl/trialreg/index.asp);
- South African National Clinical Trial Regster (www.sanctr.gov.za);
- UK Clinical Research Network Portfolio database (portal.nihr.ac.uk/Pages/Portfolio.aspx);
- UK Clinical Trials Gateway (www.controlled-trials.com/ukctr);
- UK National Research Regsiter (NRR) (trials and other research - archived September 2007) (portal.nihr.ac.uk/Pages/NRRArchive.aspx);
- University Hospital Medical Information Network (UMIN) Clinical Trials Registry (for Japan) (www.umin.ac.jp/ctr/);
- The Internet Stroke Center - Stroke Trials Registry (www.strokecenter.org/trials);
- Clinical Trials Results register (www.clinicaltrialresults.org).

Searching other resources

In an effort to identify further published, unpublished and ongoing trials we:

1. performed citation tracking using Web of Science Cited Reference Search for all included studies;
2. searched the reference lists of included trials and all relevant articles;
3. obtained further information from individual trialists.

Data collection and analysis

Selection of studies

One review author (PF) read the titles and abstracts of the records obtained from the electronic searches and excluded obviously irrelevant studies. We obtained the full copy of the remaining studies and two review authors (PF, PL) independently selected studies for inclusion based on the following eligibility criteria:

1. randomised controlled trial;
2. service intervention providing rehabilitation or physical support, or both, in a community setting;
3. service aim is to accelerate discharge home from hospital (i.e. randomisation takes place during hospital admission);
4. trial of stroke patients.

We then contacted the trialists and invited them to join an individual patient data review of all comparable trials.

Data extraction and management

Our primary aim was to obtain individual patient data from the trialists. We contacted the co-ordinators of the eligible trials and invited them to join a collaborative group. We asked them to provide a detailed description of their intervention and control services and also to provide basic individual patient data particularly concerning the primary patient outcomes and pre-planned subgroup analyses. Where these were not available in an appropriate format we sought standardised (tabular) outcome data. Where data had to be taken from published sources, two review authors (PF, PL) independently extracted the data using a standard data extraction form. We collected descriptive information about service characteristics using a standard questionnaire prior to the identification and analysis of outcome data.

Assessment of risk of bias in included studies

We assessed risk of bias using The Cochrane Collaboration's risk of bias tool as described in Chapter 8 of the *Cochrane Handbook for Systematic Reviews of Interventions* (Higgins 2011). We identified the method of concealment of treatment allocation, the presence of an intention-to-treat analysis, and the presence of blinding of outcome assessment as potentially important factors for sensitivity analyses, but we did not use them as exclusion criteria.

Measures of treatment effect

The primary patient outcome was the composite end-point of death or long-term dependency recorded at the end of scheduled follow-up. Where death, dependency or institutionalisation after the end of scheduled follow-up were reported, we analysed these using the odds ratio (OR) and 95% confidence interval (CI).

We sought data on initial stroke severity using the most widely available marker of functional ability (Activities of Daily Living (ADL) score during the first week post stroke). Most trials could easily provide this as the Barthel Index at randomisation. However, in two trials (Adelaide 2000; London 1999) randomisation frequently took place later (up to four weeks post stroke). In these cases, we estimated the initial Barthel assuming a typical recovery of one Barthel point per week, e.g. Barthel of 14/20 at week four indicates an initial score of 10/20.

Many secondary outcomes were expressed as continuous outcome scores. We aimed to analyse these as the mean and standard deviation of the score. Where only medians were available we assumed these were approximate to the mean. Where only interquartile ranges (IQR) were reported we inferred the standard deviation as follows: the IQR will incorporate 50% of the distribution of data compared with standard deviation which can be expected to include 70% (+ or - 35%) of the distribution. Therefore, assuming a normal distribution then one standard deviation should equal the IQR/(2 x 0.7). Where no other data were provided with the mean value, we inferred the standard deviation as being at least as large as the comparable trials using the same measure.

Unit of analysis issues

We planned the analysis on an individual randomised patient level. However, this update identified one cluster randomised trial. In view of the modest contribution to the combined analysis we have not adjusted the analysis for clustering but we have performed a sensitivity analysis excluding cluster randomised trials.

Dealing with missing data

Where data were missing for the primary outcome, we assumed the patient to be alive, independent and living at home. We explored the implications of this in a sensitivity analysis.

Assessment of heterogeneity

We planned to determine heterogeneity using the I^2 statistic. Significant heterogeneity was defined as an I^2 of greater than 50%. Where significant heterogeneity occurred, we explored potential sources using pre-planned sensitivity analyses.

Assessment of reporting biases

We employed a comprehensive search strategy in an effort to avoid reporting biases. To identify unpublished studies we searched trial registers and contacted trialists and other experts in the field.

Data synthesis

We checked all individual patient data for internal consistency and consistency with published reports. One review author entered data into the Review Manager software (RevMan 5.1) (RevMan 2011) and a second review author checked the entries. We analysed binary outcome data using the OR and 95% CI. We used a fixed-effect model first but replaced this with a random-effects model if there was significant heterogeneity. If possible, we analysed continuous outcome data (e.g. ADL scores) using the mean difference (MD) and 95% CI for identical outcomes and the standard mean difference (SMD) where different measurement techniques were used to measure the same outcome domain. We used a fixed-effect model first but replaced this with a random-effects model if there was significant heterogeneity. We had to reverse several outcome scores (e.g. mood scores) to ensure all scores compared were operating in the same direction. This was done by subtracting the observed score from the maximum possible score.

Subgroup analysis and investigation of heterogeneity

We based pre-planned subgroup analyses on patient characteristics of age, gender, presence of carer, and stroke severity (Barthel Index in the first week). We based subgroup analyses of service characteristics on the early supported discharge (ESD) characteristics (whether based on a co-ordinated multidisciplinary team), ESD service base (hospital out-reach or community in-reach), and the nature of the control service (based on a stroke unit or other service). We initially trichotomised stroke severity and age but subsequently collapsed these into two groups for simplicity and consistency with previous reviews (SUTC 2007). We analysed subgroup comparisons by deducting the sum of the Chi^2 values for each subgroup from the Chi^2 value for the full analysis (where degrees of freedom = number of subgroups - 1).

Sensitivity analysis

We planned sensitivity analyses around the method of randomisation (concealment of treatment allocation), an intention-to-treat analysis, and blinding of outcome assessment.

RESULTS

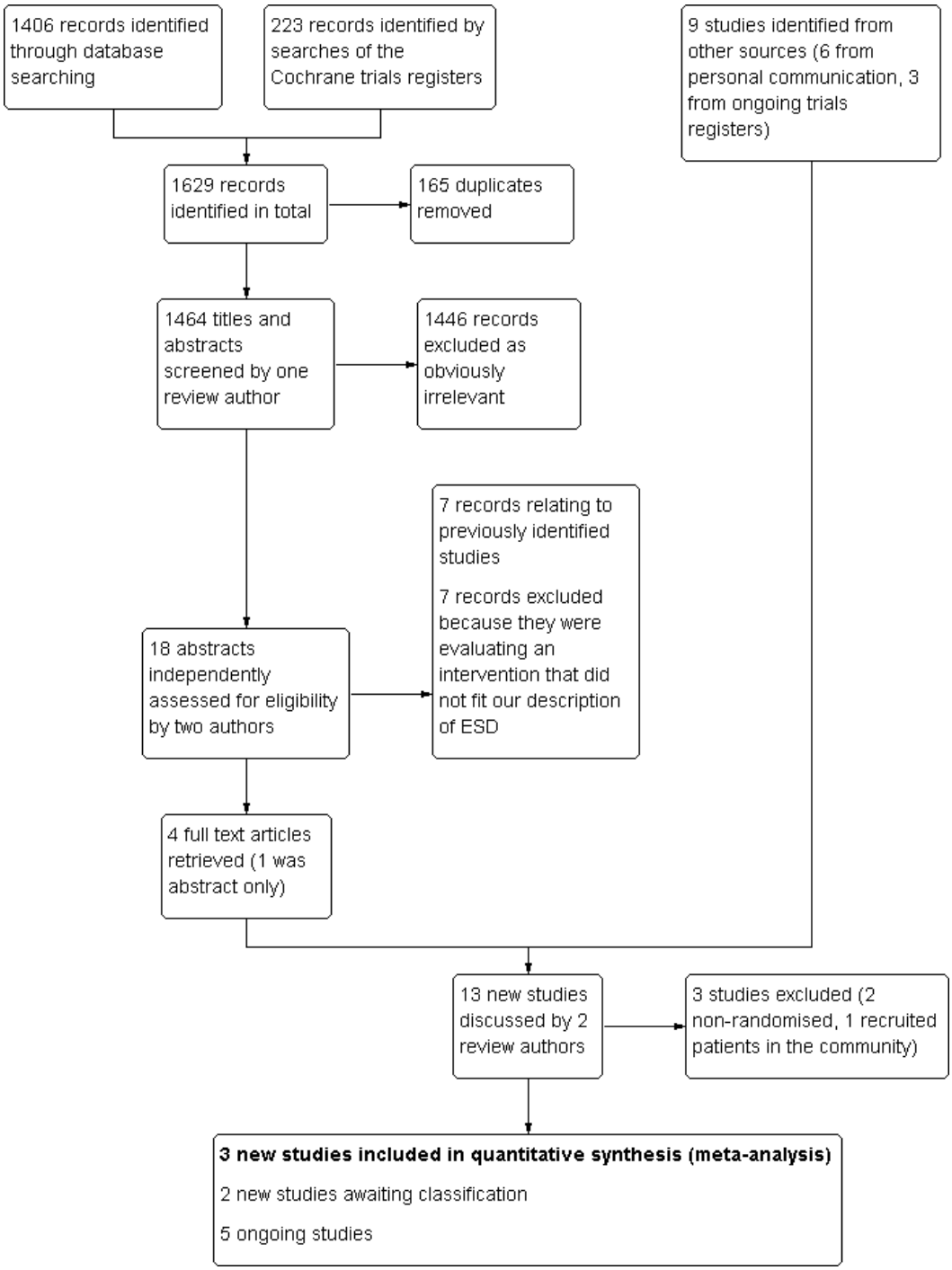
Description of studies

See: Characteristics of included studies; Characteristics of excluded studies; Characteristics of studies awaiting classification; Characteristics of ongoing studies.
(See: Characteristics of ongoing studies; Characteristics of studies awaiting classification; Characteristics of excluded studies)

Results of the search

The search strategy for previous versions of this review identified 29 potentially eligible trials of which three (from England, New Zealand and Scotland) were in the early stages of planning but never started. The original assessors agreed on the inclusion of 10 trials, the exclusion of 14 trials and disagreed on two trials (Akershus 1998; New York 1986). After discussion and obtaining more information, both these trials were considered eligible but one was excluded (New York 1986) as no outcome information was available (see below). Therefore, the previous version of this review included 11 trials (ESD trialists 2005).
For this updated review the searches of MEDLINE, EMBASE and CINAHL identified 1406 records and from these and the searches of the Cochrane trials registers and other sources, we identified 13 new potentially eligible trials for consideration using the four selection criteria (Figure 1). In addition we identified newly published data for three previously included trials (Montreal 2000; Stockholm 1998; Trondheim 2000).

Figure 1. Flow diagram illustrating the results of the updated searches



The assessors agreed on the inclusion of three trials (Copenhagen 2009; Glostrup 2006; Trondheim 2004) and the exclusion of three trials (Grasel 2005; Lincoln 2004; Weiss 2004) (see below), which were newly identified for this updated review. We require further information for two trials (ATTEND pilot trial 2011; Edirne 2001) to assess eligibility, and an additional five trials (Aveiro; Bergen; Hong Kong; Perth; West Denmark) do not yet have available outcome data.

Of all 21 excluded studies (Characteristics of excluded studies), eight recruited a mixed patient group, four examined services to prevent hospital admission, two were late interventions, two were non-randomised trials, one recruited patients in a community setting, one (New York 1986) appears eligible but we have been unable to identify any outcome data (published or unpublished), and three studies (Auckland 1999; Ayrshire 2000; Cumbria 2004) were planned but did not commence recruitment.

We asked the co-ordinators of all eligible trials to provide a detailed description of their intervention and control services, which was collected using a standard questionnaire prior to the identification and analysis of outcome data. We now have descriptive information available for all 14 included trials (1957 patients).

Included studies

The services under comparison are outlined in detail (Characteristics of included studies). We were particularly interested in establishing the degree of co-ordination and organisation of the community and hospital services (i.e. whether patients received care from a co-ordinated multidisciplinary team with some specialist interest in stroke which met on a regular basis). By this definition the following classifications can be made.

Intervention services

1. Early supported discharge (ESD) team co-ordination and delivery: in nine trials (Adelaide 2000; Belfast 2004; Copenhagen 2009; Glostrup 2006; London 1999; Manchester 2001; Montreal 2000; Newcastle 1997; Stockholm 1998) the ESD service comprised a multidisciplinary team which co-ordinated discharge from hospital, post discharge care and provided rehabilitation and patient care at home. The multidisciplinary team met on a regular basis to plan patient care.

2. ESD team co-ordination: in three trials (Oslo 2000; Trondheim 2000; Trondheim 2004) discharge home and the immediate post-discharge care was planned and supervised by a co-ordinated multidisciplinary team. However, care was subsequently handed over to existing community-based agencies who provided continuing rehabilitation and support at home. These community-based agencies did not usually provide co-ordinated multidisciplinary team care (i.e. input from a multidisciplinary team which met on a regular basis to plan patient care).

3. No ESD team: in two trials (Akershus 1998; Bangkok 2002) patients had access to multidisciplinary team care in hospital but this ended at hospital discharge. Their subsequent care was provided by a range of community stroke services which were not planned or provided by a co-ordinated team (Akershus 1998) or were provided by trained healthcare volunteers (Bangkok 2002).

The boundary between groups (1) and (2) does not appear clear cut but indicates a spectrum of approaches where an ESD team plans and co-ordinates discharge, provides early post-discharge rehabilitation and then hands over care to other community services.

ESD team structure, practices and procedures

Details of ESD team practices can best be obtained from the original trials. However, we developed a summary description of the services to indicate the type of service provided. Standardised staffing levels (whole time equivalents (WTE) sufficient to manage a notional 100 new patients per year) were calculated from recorded staff contact times (Adelaide 2000; Aveiro; Glostrup 2006; London 1999; Montreal 2000; Newcastle 1997; Stockholm 1998), or a typical team caseload (Belfast 2004; Trondheim 2000; Trondheim 2004). We assumed staff would have a 35-hour working week with 20 hours direct contact time and 10 hours indirect contact time.

Typical ESD teams had approximately 3.0 WTE staff (range 2.5 to 4.6) as follows; medical 0.1, nursing (ranged from 0 to 1.2), physiotherapy 1.0, occupational therapy 1.0, speech and language therapy 0.1, assistant 0.2. Variable levels of social work (0 to 0.5 WTE) and secretarial support were also available (Table 1).

The ESD teams could either have a community (community in-reach) or hospital base (hospital out-reach) with experience in stroke rehabilitation/neurological rehabilitation (Adelaide 2000; Belfast 2004; Copenhagen 2009; Glostrup 2006; London 1999; Manchester 2001; Montreal 2000; Newcastle 1997; Oslo 2000; Stockholm 1998; Trondheim 2000; Trondheim 2004). All co-ordinated their work through regular multidisciplinary team meetings. A typical approach would involve the early identification of the patient in hospital and a visit from the key worker (case manager) from the ESD team. Discharge was planned with the patient and carer, often involving a pre-discharge home visit (attended by the patient) or environmental visit (not attended by the patient). Team input typically began on the day of discharge and could be provided as required. In practice this ranged from daily input to four to five days per week. Typically teams would agree recovery goals with the patient and negotiate the termination of services within three months (which would be tapered off as goals were

achieved). Many teams used a patient-held medical record and provided a formal discharge summary at the end of input.

Control services

These were categorised on whether organised stroke unit care was available to patients prior to discharge (Table 1). In nine trials, all patients (Adelaide 2000; Akershus 1998; Copenhagen 2009; Glostrup 2006; Oslo 2000; Stockholm 1998; Trondheim 2000; Trondheim 2004) or most patients (Belfast 2004) were recruited from a stroke unit or neurological rehabilitation unit staffed by a multidisciplinary team. Five trials (Bangkok 2002; London 1999; Manchester 2001; Montreal 2000; Newcastle 1997) recruited a minority of patients from a multidisciplinary stroke unit setting. Therefore, the control service was frequently provided in general wards. Discharge arrangements were variable in the control services with a minority undergoing a pre-discharge home visit and variable follow-up arrangements.

Settings of services

The trials identified come from eight countries (Australia, Canada, Denmark, Norway, Sweden, Thailand, UK, USA). Eleven trials were established in city hospitals servicing largely urban areas while two (Belfast 2004, Glostrup 2006) covered a mixture of rural and urban areas. An additional trial (Trondheim 2004) recruited only patients from rural addresses who were admitted to a large urban hospital.

Patient characteristics

Patients had a clinical diagnosis of stroke and the average patient age in the trials ranged from 66 to 80 years. There appeared to be a degree of selection of patients deemed suitable for the early supported discharge services that was based on need (persisting disability), stability of their medical condition, and practicability (living within the local area). The average (mean or median) initial Barthel index (at the time of patient recruitment) in each study ranged from 10/20 to 17/20 with a lower interquartile range limit of 6 to 16/20 and an upper value of 14 to 19/20. Thus the typical patient population had an initial Barthel index of 14/20 with an interquartile range of 10 to 18.

We repeated this process to estimate the Barthel index at the time of discharge for those trials where Barthel index was recorded within one week prior to discharge (Adelaide 2000; Belfast 2004; London 1999; Manchester 2001; Newcastle 1997; Trondheim 2000; Trondheim 2004). The average (mean or median) initial Barthel index (within one week prior to discharge) in each study ranged from 13/20 to 17/20 with a lower interquartile range limit of 10 to 16/20 and an upper value of 15 to 19/20. Thus the typical patient population prior to discharge had an initial Barthel index of 15/20 with an interquartile range of 11 to 17.

None of the trials recruited more than 70% of hospitalised stroke patients; a median of 34% (range 13% to 70%) of hospitalised stroke patients met the clinical criteria for the early discharge service (NB: in some trials, a further group of patients did not meet research criteria such as an ability to complete research assessments). Inclusion and exclusion criteria of individual trials have been summarised in the Characteristics of included studies table.

Outcomes

Most trials included our main outcomes of death, residence (institutional care) and dependency (Barthel index or Rankin score), all recorded at the end of scheduled follow-up, as well as our primary resource outcome length of initial hospital stay (Table 2). Two trials (Stockholm 1998; Trondheim 2000) reported outcomes of death and dependency after scheduled follow-up (at one year and five years).

Secondary outcomes included a range of measures which are summarised in the Characteristics of included studies table and the sampling analysis schedule provided in Table 3 and Table 4.

Excluded studies

See the Characteristics of excluded studies table.

Risk of bias in included studies

See the 'Risk of bias' graph (Figure 2), the 'Risk of bias' summary (Figure 3) and the Characteristics of included studies table.

Figure 2. 'Risk of bias' graph: review authors' judgements about each risk of bias item presented as percentages across all included studies.

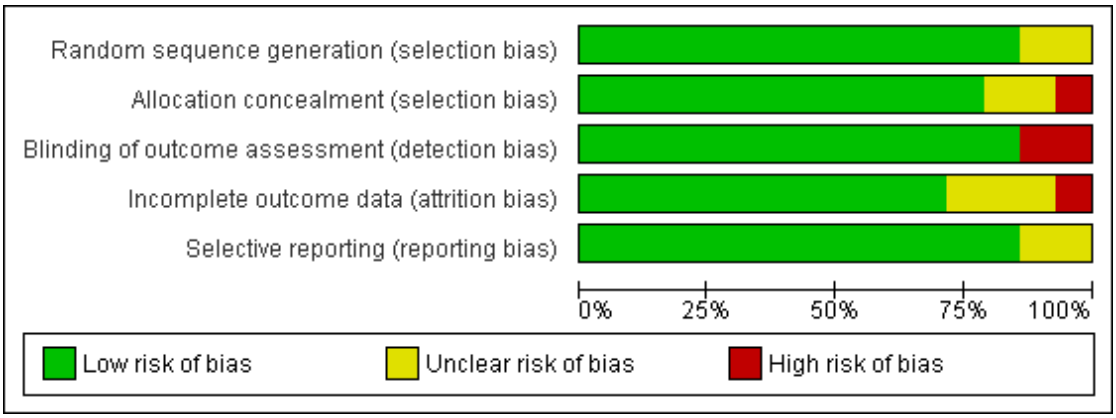
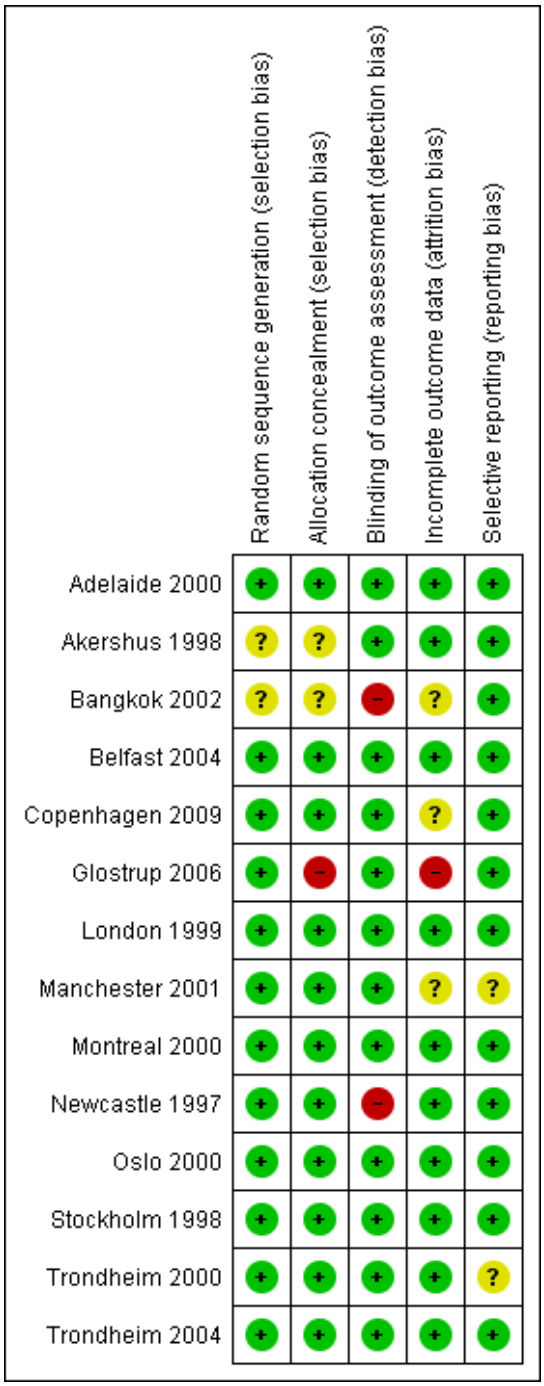


Figure 3. 'Risk of bias' summary: review authors' judgements about each risk of bias item for each included study.



Allocation

Eleven trials (Adelaide 2000; Belfast 2004; Copenhagen 2009; London 1999; Manchester 2001; Montreal 2000; Newcastle 1997; Oslo 2000; Stockholm 1998; Trondheim 2000; Trondheim 2004) used a clearly concealed randomisation procedure.

Blinding

Twelve trials (Adelaide 2000; Akershus 1998; Belfast 2004; Copenhagen 2009; Glostrup 2006; London 1999; Manchester 2001; Montreal 2000; Oslo 2000; Stockholm 1998; Trondheim 2000; Trondheim 2004) used an independent (blinded) assessment of outcomes at a fixed time after recruitment (median six months; range three to 12 months). Performance bias has not been assessed as blinding of participants or treating personnel was impossible due to the nature of the intervention.

Incomplete outcome data

Those trials with published outcome data were generally complete (see Results) at least for the main outcomes of death, institutionalisation and dependency.

Effects of interventions

We analysed results for all comparisons of ESD services (policy of early discharge with home-based support and rehabilitation) versus conventional services (policy of hospital rehabilitation and conventional discharge arrangements) at the end of scheduled follow-up (median six months; range three to 12 months). We divided services into three subgroups to reflect the pre-specified view that effectiveness of ESD services may be influenced by the multidisciplinary teamwork of the ESD team responsible for post-discharge care (see Description of studies). Therefore, we presented the analysis in the following subgroups:

- ESD team co-ordination and delivery: co-ordinated multidisciplinary ESD team co-ordinated and provided post-discharge care;
- ESD team co-ordination: co-ordinated multidisciplinary ESD team co-ordinated supervised discharge and immediate post-discharge care but then handed over to other services;
- no ESD team: post-discharge services were not provided by co-ordinated multidisciplinary ESD team.

The interpretation, timing and analysis of outcomes are shown in Table 2, Table 3 and Table 4.

1. Patient outcomes

1.1: Death

Outcome data were available for all 14 trials (1957 patients). We assumed patients with missing data (19 intervention patients and 10 controls) were alive. Overall there was no significant difference in case-fatality between the ESD team and conventional services. There was no significant degree of statistical heterogeneity with a trend towards lower case fatality with the co-ordinated ESD team subgroups (Analysis 1.1).

1.2: Death or requiring institutional care

Outcome data were available for 12 trials (1758 patients). We assumed patients with missing data (19 intervention patients and 10 controls) were alive and living at home. Overall there was a significant reduction in the odds of patients dying or requiring long term institutional care (OR 0.78, 95% CI 0.61 to 1.00, P = 0.05) with no significant heterogeneity. This equates to an extra four (zero to seven) patients living at home for every 100 treated (Analysis 1.2).

1.3: Death or dependency

Outcome data were available for 14 trials (1957 patients). We assumed patients with missing data (31 intervention patients and 25 controls) were alive and independent. Overall there was a significant reduction in the odds of the combined adverse outcome of death or dependency (OR 0.80, 95% CI 0.67 to 0.97, P = 0.02) with no significant heterogeneity. This equates to an extra five (one to nine) patients regaining independence for every 100 receiving ESD services (Analysis 1.3).

1.4: Activities of daily living (ADL)

These data were available (in a variety of formats) for nine trials (1124 patients). Overall there was no significant difference in the ADL scores of survivors for whom data were available with no significant heterogeneity (Analysis 1.4).

1.5: Extended activities of daily living

These data were available (in a variety of formats) for nine trials (1051 patients). Overall there was an apparent increase in extended ADL scores among survivors receiving ESD services (SMD 0.14; 95% CI 0.02 to 0.26, P = 0.02). These results were dependent on data from the two subgroups of trials evaluating an ESD team (i.e. no data were available from the two trials without a co-ordinated ESD team (Akershus 1998; Bangkok 2002)) (Analysis 1.5).

1.6: Subjective health status

These data were available (in a variety of formats) from 12 trials (1377 patients). Overall there was no significant difference in the subjective health status scores of both groups. There was no significant degree of heterogeneity (Analysis 1.6).

1.7: Mood status

These data were available (in a variety of formats) from eight trials (851 patients). Overall there was no significant difference in mood scores. There was no significant heterogeneity. Additional dichotomous data from one trial (London 1999) indicated that the ESD service group were more likely to express anxiety (P = 0.02) and non-significant trends towards higher levels of depression (Analysis 1.7).

1.8: Patient satisfaction

These data were available (in a variety of formats) from five trials (513 patients). Overall there was a pattern of ESD service patients being significantly more likely to report satisfaction with outpatient services or services in general (OR 1.60, 95% CI 1.08 to 2.38, P = 0.02). There was no significant heterogeneity (Analysis 1.8).

2. Duration of follow-up

Primary outcomes were recorded at the end of scheduled follow-up (median six months; range three to 12 months). Two trials (403 patients) have reported extended outcome data subsequent to the end of scheduled follow-up at one year and five years (Stockholm 1998, Trondheim 2000). There was a significant reduction in the odds of the combined adverse outcome of death or dependency censored at six months (OR 0.68; 95% CI 0.53 to 0.87; P = 0.002). Overall the pattern of a reduction in death or dependency appears to be sustained at one year and five years but was no longer significant (OR 0.84; 95% CI 0.66 to 1.05; P = 0.13 and OR 0.78; 95% CI 0.52 to 1.17; P = 0 .23 respectively) (Analysis 2.1; Analysis 2.2; Analysis 2.3; Analysis 2.4; Analysis 2.5; Analysis 2.6).

3. Carer outcomes

3.1: Subjective health status

These data were available (in a variety of formats) from eight trials (749 carers). Overall there was no significant difference in scores and no significant heterogeneity (Analysis 3.1).

3.2: Mood status

These data were available from only two trials with 58 carers. Overall there was no significant reduction in the mood score of carers receiving ESD services but significant heterogeneity was apparent between trials (Analysis 3.2).

3.3: Carer satisfaction

These data were available (in a variety of formats) from four trials (279 carers). Overall there was no significant difference in the odds of carers who received ESD services expressing satisfaction with services (OR 1.56, 95% CI 0.87 to 2.81) (Analysis 3.3).

4. Resource use

(See: Analysis 4.1; Analysis 4.2)

4.1: Length of initial hospital stay

We were able to reanalyse data on length of initial hospital stay (acute care and rehabilitation for index admission) for 13 trials (1695 patients) (Analysis 4.1). Across all trials and within each subgroup of trials, there was a significant reduction (P < 0.0001) in the length of hospital stay, which is approximately equivalent to seven days. Data were incomplete for total length of stay including hospital readmissions. An analysis of the pattern of discharges based on six trials that could provide data (Adelaide 2000, Belfast 2004, London 1999, Manchester 2001, Oslo 2000, Stockholm 1998) is shown in Table 5.

4.2: Hospital readmissions

Seven trials (918 patients) provided data on the number of patients readmitted to hospital after the index admission. Readmission rates during scheduled follow up (31% versus 28%) were very similar between the ESD service and conventional care groups (Analysis 4.2).

Costs

Costing data are currently available from seven trials (Table 6) which estimated total costs up to three months (Montreal 2000), six months (Adelaide 2000; Newcastle 1997) or one year (Glostrup 2006; London 1999; Stockholm 1998; Trondheim 2000) after randomisation. Estimated costs ranged from 23% less to 15% greater for the ESD group in comparison to controls. These estimates were reported to be stable in sensitivity analyses.

Sensitivity analyses

Analyses by methodological characteristics

Analysis restricted to the 10 trials that were randomised at an individual patient level and reported concealed randomisation and blinded follow-up showed a significant reduction in death or dependency (OR 0.72, 95% CI 0.58 to 0.90, P = 0.004).

Subgroup analyses

Analyses by patient age and gender

Subgroup data for the primary outcome (death or dependency) were available for at least nine trials. Smaller amounts of data were available for death, death or institutionalisation, and length of stay. There was no significant association of patient age or gender with the apparent effect of the ESD service (Analysis 5.1; Analysis 5.2; Analysis 6.1; Analysis 6.2).

Analyses by initial stroke severity

Data were available for 11 trials (1545 patients). Subgroup analysis by initial stroke severity revealed a greater reduction (P = 0.04) in odds of death or dependency (OR 0.77, 95% CI 0.61 to 0.98) in patients with moderate initial stroke severity (initial Barthel Index of > 9/20) than those in the severe subgroup (OR 1.40, 95% CI 0.83 to 2.36). Similar patterns of results were seen for the outcome death or institutional care. The reduction in length of hospital stay was much greater (P < 0.0001) for the severe stroke subgroup (MD 28 days, 95% CI 17 to 40) than the moderate group (MD 3 days, 95% CI 1 to 7). Similar results were obtained if the Barthel index at randomisation was used from the two trials (Adelaide 2000; London 1999) that randomised patients up to several weeks after stroke (Analysis 7.1; Analysis 7.2).

These results suggest that the greatest benefit in clinical outcomes was with the mild and moderate groups but the greatest reduction in hospital bed days was with the severe subgroup.

Analyses by carer availability

Ten trials (1237 patients) could provide subgroup data on the availability of a carer. There was no apparent interaction of ESD service effect with the presence of a carer (Analysis 8.1; Analysis 8.2).

Analyses by ESD service organisation

The ESD services studied were classified according to the organisation of the multidisciplinary team (see Description of studies). There was a significant subgroup interaction (P = 0.04) by ESD characteristics. The trials with a co-ordinated multidisciplinary ESD team showed an odds of death or dependency of OR 0.73 (95% CI 0.59 to 0.90) compared with OR 1.23 (95% CI 0.79 to 1.91) in those without an ESD team. There was no significant interaction with the background service (stroke unit or other ward) or the base for the ESD team (community in-reach or hospital out-reach). The reduction in length of hospital stay was more marked in the hospital out-reach group (MD 10 days, 95% CI 1 to 18) than the community in-reach group (MD 4 days, 95% CI 1 to 7) but this was not statistically significant (P = 0.24) (Analysis 9.1; Analysis 9.2; Analysis 10.3; Analysis 10.4; Analysis 11.1; Analysis 11.2).

The staffing levels of each service did not differ sufficiently to allow meaningful subgroup analyses based on staff mix, service intensity and supportive versus rehabilitative interventions.

Analyses by control service organisation

Subgroup analyses were carried out according to the background (control) service available; stroke unit or other ward. There were no apparent interactions with control service characteristics (Analysis 11.1; Analysis 11.2).

Analysis of 'core' ESD services

Some commentators have criticised the original inclusion of trials (Akershus 1998; Bangkok 2002) that did not incorporate a robust multidisciplinary rehabilitation programme in the community. The remaining 12 trials are much more typical of what has become accepted as a 'core' ESD service (Fisher 2011). If the analyses are restricted to those 12 trials the results are more convincing for ESD services: death (OR 0.77, 95% CI 0.54 to 1.09; P = 0.14) (Analysis 10.1), death or institutional care (OR 0.69, 95% CI 0.53 to 0.91; P = 0.008) (Analysis 10.2), death or dependency (OR 0.73, 95% CI 0.59 to 0.90; P = 0.003) (Analysis 10.3) and reduction in length of stay (MD 8 days; 95% CI 4 to 11; P < 0.0001) (Analysis 10.4).

DISCUSSION

Summary of main results

It is clear from this analysis of the randomised trials that services aiming to accelerate discharge from hospital can bring about a reduction in the length of hospital stay and that this reduction can be substantial. This updated individual patient data analysis now demonstrates that patients receiving ESD services were more likely to be independent and living at home six months after stroke than those who received conventional services. ESD patients scored better on extended ADL scores and were more likely to express

satisfaction with services. Although we have limited information available, we have been unable to confirm earlier concerns about the impact of ESD services on the mood and well being of carers (in terms of subjective health score, mood or satisfaction with services).

Economic analyses were carried out in seven trials. Although the underlying costs and assumptions were different for each analysis, all concluded that the opportunity savings from hospital bed days released tended to be greater than, or similar to, the cost of the ESD service. Realising such cost savings in practice can be difficult but ESD services appear to offer one way to manage rising demand for a finite number of hospital beds.

The particular component of an ESD service responsible for the improvement in functional outcome seen remains unclear. Providing rehabilitation in the setting of the patients' own home is thought to be a significant contributing factor. It has also been suggested that patients receiving ESD services overall receive greater input from rehabilitation therapists and for a longer duration than those receiving conventional care. However, any potential increase in rehabilitation input does not appear to affect overall cost-efficacy of ESD services in economic analyses.

In conclusion, appropriately resourced and co-ordinated ESD teams can offer a further effective service option for a selected group of stroke patients and should be considered in addition to organised inpatient (stroke unit) care as part of a comprehensive stroke service.

Overall completeness and applicability of evidence

When interpreting the results of this review it is important to remember that the basic question addressed was whether a policy of early hospital discharge with support could be as effective and efficient as conventional care. Therefore, our inclusion criteria were broad and focused on trials that compared two policies of care for stroke patients in hospital: (1) conventional care, i.e. the usual hospital care and discharge procedures; and (2) an alternative system of care which aimed to provide an earlier discharge with rehabilitation or support, or both, in a home-based setting ('early supported discharge' (ESD)). Within this broad question we anticipated that a 'core' group of trials would be testing a specialist multidisciplinary ESD team that had been established to provide this form of care to stroke patients. However, we also wished to retain the option of including other trials where a policy of early discharge was tested in other ways. The advantage of this broad approach is that it can allow us to examine both the effectiveness of a reasonably specific co-ordinated ESD team 'package' of care, and also to explore the broader issues of which service factors (both inpatient and outpatient) may influence patient outcomes. One potential hazard is that it is difficult to conduct such an exercise in a truly a priori and objective manner.

In developing a clear question to guide this review, we have chosen to focus on the intention of the service intervention and to avoid terms such as 'hospital at home' which may have a different meaning to different people. However, we should acknowledge that some services (Wade 1985) aim to both help avoid hospital admission and accelerate discharge. We have not excluded any trials from the review solely on the basis of their service having this dual function. We have also focused the review on services for stroke patients. There are several potentially complementary trials that have recruited a mixed geriatric medical patient population. These have recently been reviewed (Shepperd 2009).

Quality of the evidence

This update identified three new trials (360 patients) and did not alter overall conclusions in comparison with the previous version of the review. While we acknowledge that the total amount of data available is limited (14 trials; 1957 patients) there do appear to be some general conclusions which can be drawn.

1. Most of the evidence of benefit of ESD services come from trials of a multidisciplinary ESD team whose work is co-ordinated through regular meetings.
2. The typical multidisciplinary ESD team comprised physiotherapy, occupational therapy and speech and language therapy staff with medical, nursing and social work support.
3. Such services appeared to be effective even in comparison with a standard service based on care in a stroke unit.
4. Although we could not find evidence that the setting of the service (hospital out-reach or community in-reach) influenced outcomes, all the ESD teams reported here had a specialist interest in stroke or rehabilitation, or both.
5. All trials recruited a selected subgroup (on average 34%) of stroke patients usually living in an urban setting. There is insufficient evidence to draw conclusions on ESD services for patients living in a more dispersed rural setting.
6. Most of the evidence of ESD benefit appears to be for patients with moderate disability (initial Barthel index of > 9/20), although the balance of cost and benefit is not clear for this subgroup. For patients with more severe disability the substantial saving in bed-days may well be outweighed by a risk of poorer patient outcomes. We, therefore, cannot exclude the possibility that the clinical benefits enjoyed by the moderate disability subgroup required a net increase in rehabilitation input while the main cost savings (in terms of bed days) came from the severe subgroup.

Although the quality of the evidence in general was good, the majority of trials were completed over 10 years ago. In many countries the last decade has seen a significant overhaul of stroke services to enable greater access to hyperacute therapies (e.g. intravenous thrombolysis). However, only a small proportion of stroke patients will be eligible for such therapies, with the vast majority contin-

uing to rely on post-stroke rehabilitation to improve functional outcomes.

The conclusions about the potential benefit of ESD services appear to be robust. The results are strengthened if analyses focus on trials with clearly concealed randomisation and blinded follow-up (10 trials; 1314 patients), or on the 'core' group of trials testing a co-ordinated ESD team.

Potential biases in the review process

Through a thorough searching process and well established personal connections with researchers in this field we are confident that we should have identified all potentially relevant studies. However, for two studies (ATTEND pilot trial 2011; Edirne 2001) we did not have sufficient information to classify according to our inclusion criteria. We realise the absence of data from these studies in our meta-analysis may potentially have introduced bias.

As discussed, our inclusion criteria with respect to the service intervention were deliberately broad. We recognise that interpretation of patient and service characteristics raises the potential risk of a post-hoc explanation of results. However, we have tried as far as possible to plan analyses a priori.

For a small proportion of patients data were missing for our dichotomous outcomes of death (19 intervention patients; 10 controls), death or institutionalisation (19 intervention patients; 10 controls) and death or dependency (31 intervention patients; 25 controls). In these instances we assumed the patients to be alive and independent. Similarly for continuous outcome data, where standard deviations were not reported they were inferred from the interquartile ranges or alternatively estimated as being at least as large as the comparable trials using the same measure (see Measures of treatment effect). Whilst we recognise that this may have introduced potential bias to our results, we believe that including imputed and estimated data were preferable to excluding data from patients or studies.

AUTHORS' CONCLUSIONS

Implications for practice

Selected stroke patients in hospital who received input from an ESD service returned home earlier than those receiving conventional care. They were also more likely to be independent and living at home six months after their stroke and to express satisfaction with the services they received. There were no apparent adverse effects on the subjective health status or mood of patients or carers. The apparent benefits of ESD services are largely derived from trials of services provided by co-ordinated ESD teams and recruiting patients with less severe disability.

Although clarity around the specific model of ESD is required, the evidence summarised is sufficient to provide support for implementation of stroke ESD services as part of a comprehensive system of stroke care. Thus, a consensus on key elements of an ESD service has been developed by the original trialists to facilitate successful implementation at a national and international level (Fisher 2011).

Implications for research

Our conclusions are based on a relatively small number of trials. More research is required to define the important characteristics of effective ESD services and to define the balance of cost and benefit for different patient and service groups. Contemporary trials would provide data on resource use and functional outcome in an era with greater access to thrombolytic therapy. Further research is required to establish if more generic ESD teams (e.g. services for a mixed elderly population) will obtain the same results as the stroke-specific services reported here. The role of ESD services in poorer healthcare settings and in more dispersed rural communities has not really been adequately addressed.

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* *Indicates the major publication for the study*

CHARACTERISTICS OF STUDIES

Characteristics of included studies *[ordered by study ID]*

Adelaide 2000

Methods	RCT Randomisation using opaque sealed envelopes Independent (single blind) follow-up
Participants	86 patients recruited from city hospital Inclusion criteria: clinical diagnosis of stroke in previous 6 months, requiring rehabilitation, needing light/moderate assistance with transfers, medically stable, living at a local address with adequate community support Characteristics: mean age 72 years (SD 11), median BI 85/100 (IQR 80 to 95). Trial included 86/398 (22%) of stroke patients admitted to hospital
Interventions	Intervention: multidisciplinary community rehabilitation team, comprising medical, physiotherapy, occupational therapy, speech and language therapy and social work input. Combination of hospital in-reach and community out-reach services. Input initially intensive and then tapered off to stop when rehabilitation goals were met. Team had specialist interest in rehabilitation and their activities were co-ordinated through weekly multidisciplinary meetings. Team co-ordinated and delivered care Control: these patients received conventional rehabilitation in a neurological rehabilitation unit with specialist interests in stroke and neurological disability. Controls received multidisciplinary care co-ordinated through weekly meetings For both groups, discharge was frequently planned with pre-discharge home visits
Outcomes	Outcomes recorded at 6 months: death, place of residence, dependency (modified BI, Adelaide Activities Profile), subjective health status (SF36), carer subjective health status (SF36, GHQ 28), patient and carer views (McMaster Family Assessment of recovery)
Notes	Intervention focused on patient's own identified goals and received longer contact with the ESD therapy team

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Low risk	Quote "... contact by telephone for the allocation sequence which was computer generated"
Allocation concealment (selection bias)	Low risk	Quote "opaque sealed envelopes"
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Quote "independent of ... unaware of treatment allocation"

Adelaide 2000 (*Continued*)

Incomplete outcome data (attrition bias) All outcomes	Low risk	ITT analysis
Selective reporting (reporting bias)	Low risk	All pre-specified outcomes were reported

Akershus 1998

Methods	RCT (exact methods unclear) Independent (single blind) follow-up
Participants	251 patients recruited from city hospital Inclusion criteria: clinical definition of stroke, age greater than or equal to 60 years of age, SSS 12 to 52, conscious and able to co-operate with rehabilitation, living at private address Characteristics: mean age 75 (SD 6) years. Initial BI a median of 50/100 (IQR 30 to 70). A total of 238/550 (43%) of the patients screened were recruited
Interventions	Intervention: community rehabilitation provided by a variety of municipality-based rehabilitation services (41% admitted to nursing homes for rehabilitation, 25% received ambulatory physiotherapy, 4% speech therapy, 30% no treatment). Community rehabilitation services did not specialise in stroke and were not consistently co-ordinated through regular multidisciplinary team meetings. Medical input from primary care physician with variable degree of nursing input Control: control patients received conventional inpatient rehabilitation in a 6-bed bay of a rehabilitation unit. This comprised multidisciplinary rehabilitation provided by staff with a specialist interest in stroke rehabilitation and co-ordinated through weekly team meetings
Outcomes	Outcomes recorded at 7 months: death, place of residence, impairment (SSS), dependency (BI: in current analysis dependency = BI < 15/20), subjective health status (SF36) , resource use (length of stay)
Notes	This trial was set up as an evaluation of the stroke rehabilitation ward with municipality services acting as controls 7 intervention and 12 control patients could not be contacted at 7 months

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Unclear risk	Quote "patients were given a random number ... a person not involved in the study drew numbers for allocation" However, if the rehabilitation ward was full, patients randomised to this 'intervention' were assigned the control i.e. rehabilitation in the municipality (13 patients)

Akershus 1998 (*Continued*)

Allocation concealment (selection bias)	Unclear risk	"a person not involved in the study drew numbers for allocation"
Blinding of outcome assessment (detection bias) All outcomes	Low risk	"who was unaware of where the patients had been treated"
Incomplete outcome data (attrition bias) All outcomes	Low risk	ITT analysis
Selective reporting (reporting bias)	Low risk	All pre-specified outcomes were reported

Bangkok 2002

Methods	RCT (exact methods unclear) Unblinded outcome assessments
Participants	102 acute stroke patients presenting to a city hospital Inclusion criteria: ischaemic stroke within 48 hours of onset; age 18 to 80 years Exclusion criteria: altered consciousness (NIHSS > 20), large infarct, embolic cause; aphasia
Interventions	Intervention: discharge on 4th day to home care programme managed by Red Cross volunteers. Visit on day 3 then alternate day visits for 1 week, then visits on week 2, month 1, 3 and 6. Volunteers trained in stroke, simple rehabilitation and detection of complications. Volunteers reported back to nursing staff Control: managed in neurological or medical department for up to 10 days
Outcomes	Outcomes recorded at 6 months: death, dependency (NIHSS 0 to 2, BI 75 to 100), patient satisfaction
Notes	Same treatment during first 3 days Nadroparin given for 10 days

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Unclear risk	"patients were randomised into two groups"
Allocation concealment (selection bias)	Unclear risk	Method of allocation concealment not reported
Blinding of outcome assessment (detection bias) All outcomes	High risk	Outcome assessments were based on data from neurologist or Red Cross volunteer who were aware of treatment allocation

Bangkok 2002 (*Continued*)

Incomplete outcome data (attrition bias) All outcomes	Unclear risk	"102 patients were studied" No information is provided on withdrawals or those who did meet inclusion criteria, etc
Selective reporting (reporting bias)	Low risk	All pre-specified outcomes have been reported

Belfast 2004

Methods	RCT Central randomisation system using random number sequence Independent (single blind) follow-up
Participants	113 hospitalised stroke patients within 3 weeks of onset Exclusion criteria: medically unstable, no rehabilitation needs Characteristics: age 68 (SD 12) years, male 55%, baseline BI 14/20 (SD 4)
Interventions	Intervention: community rehabilitation in-reach team with specialist interest in rehabilitation. Team consisted of physiotherapy, occupational therapy, speech and language therapy, support staff and medical input. Work was co-ordinated through weekly team meetings. Planning often included pre-discharge home visit. Team co-ordinated and delivered care Control: conventional care comprised medical ward, geriatric medical ward, and stroke unit services. The majority of these patients were managed by a multidisciplinary team with a specialist interest in stroke and rehabilitation, which was co-ordinated through weekly multidisciplinary team meetings and often included pre-discharge home visits. Occasional day hospital follow-up
Outcomes	Outcomes recorded at 6 and 12 months: death, place of residence, dependency (modified Rankin score, Nottingham extended ADL score), subjective health status (SF36, Euroquol), carer health status (caregiver strain), patient and carer preference
Notes	Main difference reported was that the intervention provided continuity of rehabilitation in community setting

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Low risk	"computer generated randomly assigned care options"
Allocation concealment (selection bias)	Low risk	"administered solely by a named secretary. No research team member ... had access to this list"

Belfast 2004 (*Continued*)

Blinding of outcome assessment (detection bias) All outcomes	Low risk	"research nurses were blind at baseline to the particular group"
Incomplete outcome data (attrition bias) All outcomes	Low risk	ITT analysis
Selective reporting (reporting bias)	Low risk	All pre-specified outcomes were reported

Copenhagen 2009

Methods	RCT External list generated and managed by external person, blocks of 10 Opaque sealed envelopes
Participants	100 patients recruited from stroke unit of 1 university hospital, 1 to 3 days post stroke Inclusion criteria: mRS 0 to 3 pre-stroke, living at home Median age 81 (range 33 to 98) years, median BI 69 (0 to 100), median SSS 45 (11 to 58)
Interventions	Hospital out-reach multidisciplinary team, based within stroke unit. Co-ordinated and delivered low intensity (1 to 3 times per week) home based rehabilitation for a period of 1 month. All staff were skilled in stroke care and co-ordinated via weekly multidisciplinary meetings Control: conventional discharge planning from combined acute/rehabilitation stroke unit and conventional after discharge care
Outcomes	At 90 days: dependency (mRS, BI, MAS, COPM), cognition (CT-50), quality of life (EQ-5D) At 150 days: mortality, use of municipal services, hospital contacts, cost, carer satisfaction
Notes	

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Low risk	Unpublished: 'External list generated and managed by external person'
Allocation concealment (selection bias)	Low risk	Unpublished: 'Opaque sealed envelopes'
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Unpublished: blinded outcome assessment

Copenhagen 2009 (*Continued*)

Incomplete outcome data (attrition bias) All outcomes	Unclear risk	7 patients in the intervention group and 3 control patients 'dropped out' prior to discharge and were not included in the final analysis
Selective reporting (reporting bias)	Low risk	All pre-specified outcomes appear to have been reported (unpublished)

Glostrup 2006

Methods	Cluster randomised trial 6 municipalities each divided into 2 parts and then computer randomised to intervention or control
Participants	198 patients with acute stroke (World Health Organization definition) requiring at least 7 days hospital stay recruited from 1 university hospital Exclusion criteria: death in hospital, discharge to 24-hour nursing facility, severe co-morbidity, aphasia Charachteristics: mean age 71 years (range 38 to 96), approximately 50% in each group had no impairment on initial BI Trial included 198/410 patients screened (48%)
Interventions	All patients were discharged from a mixed geriatric/neurology rehabilitation unit with staff skilled in stroke care Intervention: multidisciplinary stroke team comprised of physiotherapist, occupational therapist and physician who made contact with patient during hospital stay, facilitated discharge including pre-assessment home visit and provided therapy in the community for a total of 30 days (maximum 10 home visits). Team co-ordinated and delivered care and were co-ordinated through multidisciplinary meetings (frequency uncertain) Control: conventional discharge planning and after discharge services including home care services, day care centre and physiotherapy
Outcomes	Outcomes at 6 months: dependency (BI, Frenchay Activities Index), cognition (MMSE, CT-50), mood (GDS), subjective health status (SF-36) At 12 months: data on use of public health services (e.g. home-care services), hospital re-admissions, outpatient visits and death
Notes	Some patients initially randomised were not included in the final analysis

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Low risk	Cluster randomisation of municipality divided into 2 parts a-priori Quote: "by computer generated random numbers"

Glostrup 2006 (*Continued*)

Allocation concealment (selection bias)	High risk	Quote: "by computer generated random numbers" Quote: "this way all patients were pre-randomised according to their address"
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Quote: "independent therapists not aware of patients randomisation performed outcome assessments after 26 weeks"
Incomplete outcome data (attrition bias) All outcomes	High risk	75 patients in the intervention group and 87 control patients were excluded from the analysis prior to discharge
Selective reporting (reporting bias)	Low risk	All available outcome assessments have been reported

London 1999

Methods	RCT Permuted blocks of 10 provided in blank sealed opaque envelopes Final (12-month assessment) was blinded to treatment allocation
Participants	331 patients recruited from 2 city hospitals Inclusion criteria: patients were medically stable, lived alone and were able to transfer independently (or could be transferred by a resident carer) Characteristics: mean age 71 years (range 27 to 103). Initial BI 15 to 19/20 in approximately 50% of patients 331 patients randomised out of over 660 screened (approximately 45% of patients were recruited)
Interventions	Intervention: multidisciplinary community therapy team comprising physiotherapy, occupational therapy, speech and language therapy and medical input. The team had a special interest in neurology and stroke and were co-ordinated through weekly multidisciplinary meetings. The community team liaised with hospital based rehabilitation staff and then provided a package of care after discharge. The maximum duration of the intervention was 3 months. Team co-ordinated and delivered care Control: these patients received conventional care (less than 50% managed in co-ordinated multidisciplinary stroke units) with conventional discharge planning and post discharge support
Outcomes	Main outcomes recorded at 12 months (additional details at 2, 4 and 6 months): death, place of residence, dependency (BI, Frenchay activities index, Rivermead ADL score; in current analysis dependency = BI < 20/20), subjective health status (Nottingham Health Profile), patient mood (Hospital anxiety and depression scale), carer health status (caregiver strain), patient and carer satisfaction, resource use (hospital length of stay, place of residence, number of therapy sessions)

London 1999 (*Continued*)

Notes	Important characteristics were believed to be providing a co-ordinated package of community rehabilitation 5 intervention and 4 control patients lost to follow-up

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "permuted blocks of ten with random number tables"
Allocation concealment (selection bias)	Low risk	Quote: "blank opaque sealed envelopes"
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Quote: "by a researcher blinded to which arm of the trial"
Incomplete outcome data (attrition bias) All outcomes	Low risk	Missing outcome data were balanced in numbers across groups (5 patients in intervention group and 4 control patients were lost to follow-up) with similar reasons for withdrawal and proportionally unlikely to have impact
Selective reporting (reporting bias)	Low risk	All pre-specified outcomes were reported

Manchester 2001

Methods	RCT of inpatient stroke team and home team Home team arm consists of early discharge trial Stratified randomisation conducted from offsite trials office Blinded outcome assessment
Participants	23 patients admitted to 2 city hospitals within 7 days of onset of clinical stroke Medically stable Characteristics: mean age 66 (SD 9) years. Males 18 (77%). Initial BI 15/20 (SD 6)
Interventions	Intervention: community-based, nurse-led, stroke-specific multidisciplinary team (nursing, physiotherapy, occupational therapy, speech and language therapy). Patients assessed pre-discharge and allocated up to daily input at home for up to 3 months Control: conventional discharge planning by mobile stroke team or hospital stroke unit
Outcomes	Outcomes at 12 months: death, place of residence, dependency (BI, Nottingham EADL score, Euroquol, Sickness Impact Profile 30, HADS, Carer HADS and caregiver burden scale)

Manchester 2001 (*Continued*)

Notes	Trial terminated early after the withdrawal of 1 hospital and difficulty recruiting new staff 2 intervention and 1 control patient lost to follow-up

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote from protocol only: "The Centre for Cancer Epidemiology Trials Unit will generate the randomisation schedule"
Allocation concealment (selection bias)	Low risk	Quote from protocol only: "this schedule will be concealed from clinicians"
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Quote from protocol only: "will be concealed from ... therapists undertaking follow-up assessments"
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	Insufficient information to make a decision as to 'low-risk' or 'high-risk'
Selective reporting (reporting bias)	Unclear risk	Insufficient information to make a decision as to 'low-risk' or 'high-risk'

Montreal 2000

Methods	RCT Telephone randomisation using opaque sealed envelopes held in a central office Single blinding of outcome assessment
Participants	114 patients recruited from 5 city hospitals Inclusion criteria: clinical diagnosis of stroke in the previous 28 days (mean delay 10 days), moderate disability, living with carer, medically stable Characteristics: mean age 70 (SD 13) years, mean BI 83/100 (SD 14). Trial included 164/1321 (13%) of patients screened
Interventions	Intervention: community rehabilitation team providing intensive home rehabilitation. Team comprised nursing, physiotherapy, occupational therapy, speech therapy and dietitian input. Intervention was co-ordinated and individualised. Intervention lasted 4 weeks with further care as required. Team co-ordinated and delivered care Control: conventional care incorporated a variety of inpatient services (owing to health care cutbacks, only 27% of control patients received home care or rehabilitation centre care)
Outcomes	Outcomes recorded at 3 months: death, place of residence, dependency (BI, instrumental ADL), subjective health status (SF36), service costs

Montreal 2000 (*Continued*)

Notes	Health service changes during the study resulted in an increase in community services and reduction in inpatient facilities forcing earlier discharges on conventional care patients. As a result, the intervention group received an increased rehabilitation input	

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Low risk	"block sizes that varied from 4 to 8 ... in the central office, group assignment was revealed over the telephone"
Allocation concealment (selection bias)	Low risk	"opaque sealed envelopes"
Blinding of outcome assessment (detection bias) All outcomes	Low risk	"who were not informed about group assignment"
Incomplete outcome data (attrition bias) All outcomes	Low risk	ITT analysis
Selective reporting (reporting bias)	Low risk	Pre-specified outcomes reported

Newcastle 1997

Methods	RCT Zelen randomisation procedure using a computerised randomisation system, accessed by telephone Independent (single blind) follow-up of patients but security of blinding uncertain ITT analysis
Participants	92 stroke patients recruited from 3 city hospitals Inclusion criteria: within 3 days of stroke, BI 5 to 19, medically stable, living at private address Characteristics: median age 73 (44 to 93) years. Median BI 14/20 (range 2 to 20) at 1 week post-stroke. 119/402 (30%) of patients screened were recruited
Interventions	Intervention: community-based hospital in-reach multidisciplinary rehabilitation team with a specialist interest in stroke and co-ordinated through weekly multidisciplinary meetings. Medical support by general practitioner and stroke physician. Rehabilitation team contacted patients and carers and carried out assessment of home circumstances prior to discharge. Following discharge, daily therapy and home care could be provided if required. Median duration of input was 9 weeks (range 1 to 44 weeks). Team co-ordinated and delivered care Control: these patients received conventional hospital care, usually provided in general medical wards (less than half the patients received organised multidisciplinary stroke unit care)

Newcastle 1997 (*Continued*)

Outcomes	Outcomes recorded at 3, 6 and 12 months after randomisation: death, place of residence, dependency (Rankin score, Nottingham extended ADL; in current analysis dependency = Rankin score > 2, approximately equivalent to a BI < 19/20), subjective health status (COOP charts), mood status (Wakefield depression inventory), carer subjective health status (GHQ 30), patient and carer preferences (qualitative interviews), resource use (length of hospital stay, costing of services)
Notes	Staff felt that continuity of care provided in the home environment were key elements 1 intervention and 3 control patients lost to follow-up

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Low risk	Quote: "central computerised randomisation service"
Allocation concealment (selection bias)	Low risk	Central allocation. Quote: "central computerised randomisation service"
Blinding of outcome assessment (detection bias) All outcomes	High risk	Quote: "blinding to the randomisation group was not possible as it soon became apparent at the discharge interview"
Incomplete outcome data (attrition bias) All outcomes	Low risk	All withdrawals explained, ITT analysis followed
Selective reporting (reporting bias)	Low risk	All pre-specified outcome measures reported.

Oslo 2000

Methods	RCT Zelen's randomisation method (stratified for urinary incontinence) Concealed allocation Blinded outcome assessment
Participants	82 stroke patients admitted to an acute stroke unit in a city hospital Inclusion criteria: onset < 6 days, home dwelling, no prior disability, no major co-morbidity, BI 5 to 19 at 72 hours after the stroke Exclusion criteria: subarachnoid haemorrhage, cognitive or communication problems Characteristics: mean age 78 (SD 9) years, male 45%, baseline BI 14/20 (SD 5)
Interventions	Intervention: multidisciplinary team , experienced in stroke rehabilitation (nurse, physiotherapist, occupational therapist) visited patient in hospital, prepared discharge and co-ordinated rehabilitation. Rehabilitation at home provided by both the team and community services. Input as long as required Control: acute care and rehabilitation in co-ordinated multidisciplinary stroke units

Oslo 2000 (*Continued*)

Outcomes	Outcomes recorded at 6 months: death, residence, Nottingham extended ADL scale, General Health Questionnaire, depression, resource use
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "block randomised by computer generated numbers"
Allocation concealment (selection bias)	Low risk	Quote: "sealed envelopes ... sequentially opened"
Blinding of outcome assessment (detection bias) All outcomes	Low risk	All assessments performed by a specially trained nurse "... who was neither informed about the intention nor the design or hypothesis of the study"
Incomplete outcome data (attrition bias) All outcomes	Low risk	5 patients in the intervention group and 6 control patients were lost to follow-up by 3 months; ITT analysis followed for all dichotomous variables
Selective reporting (reporting bias)	Low risk	All pre-specified outcomes have been reported

Stockholm 1998

Methods	RCT Opaque sealed envelopes Independent (single blind) outcome measurement
Participants	83 patients recruited from the neurology department of a city hospital Inclusion criteria: cerebral infarct or primary intracerebral haemorrhage, 5 to 7 days post stroke, continent and able to feed, residual impairment, medically stable, intact cognition Characteristics: median age 72 (range 49 to 89) years. Median Lindmark Motor Capacity scale 127/153 (IQR 100 to 138). Trial included 86/220 (38%) of patients screened (approximately 30% of all patients)
Interventions	Intervention: multidisciplinary hospital out-reach early supported discharge team, with special interest in rehabilitation and co-ordinated through weekly meetings. This was a therapist based service (no nursing input) based in the hospital stroke unit. Pre-discharge home visit carried out with the patient. Intervention provided on a less than daily basis for 3 to 4 months after discharge. Team co-ordinated and delivered care

Stockholm 1998 (*Continued*)

	Control: these patients received conventional hospital care involving co- ordinated multidisciplinary stroke unit care in a hospital stroke unit and conventional discharge procedures
Outcomes	Outcomes measured at 3, 6 and 12 months: death, place of residence, dependency (Katz ADL, BI, Frenchay Activities Index; in the current analysis dependency = BI < 20/20), subjective health status (Sickness impact profile), carer subjective health status (Sickness impact profile), patient and carer satisfaction, resource use (length of stay and service costs) Outcome assessment was repeated again at 5 years - including resource use
Notes	Team felt that co-ordinated continuity of care provided at home was the key element 1 intervention and 1 control patient lost to follow-up

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Low risk	Quote: "blocks of two or four, ... by a computerized random procedure"
Allocation concealment (selection bias)	Low risk	"sealed numbered envelopes"
Blinding of outcome assessment (detection bias) All outcomes	Low risk	"assessors were blinded with respect to group assignment and were not involved in randomisation"
Incomplete outcome data (attrition bias) All outcomes	Low risk	All withdrawals explained
Selective reporting (reporting bias)	Low risk	All prespecified outcomes reported at 1 year

Trondheim 2000

Methods	RCT Opaque sealed envelopes
Participants	320 unselected acute stroke patients admitted to a stroke unit providing acute care and early rehabilitation Inclusion: acute stroke (< 7 days) patients screened within 3 days of admission Exclusion: coma (SSS < 2) or full recovery (SSS > 57) Characteristics: mean age 74 years, 53% male, mean BI 60/100, mean SSS 43/58. Trial included 320/468 (68%) of admissions
Interventions	Intervention: hospital out-reach stroke team (nurse, physiotherapy, occupational therapy) based in the stroke unit who made contact with patients in hospital, arranged discharge to home or rehabilitation unit, co-ordinated rehabilitation and support services and provided follow up. Variable duration of input. Team co-ordinated care which was

Trondheim 2000 (*Continued*)

	largely delivered by other agencies Control: conventional procedures with acute care and early rehabilitation in a stroke unit, and discharge home or to a rehabilitation unit
Outcomes	Outcomes measured at 6 weeks, 6 months and 12 months: death, place of residence, BI, Rankin score, Frenchay Activity Index, initial (stroke unit) length of stay, total (stroke unit + rehabilitation) length of stay Further outcomes at 12 months: Nottingham Health Profile, MMSE, Montgomery-Asberg Depression Scale, Caregivers Strain index, cost analysis
Notes	Outcomes repeated after 5 years: death, place of residence, Rankin score, BI, Frenchay Activity Index, SSS, MMSE

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Low risk	Quote: "randomisation was restricted in permuted blocks with random number tables"
Allocation concealment (selection bias)	Low risk	Quote: "sealed opaque envelopes"
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Quote: "all assessments were blinded as far as is possible in such a trial"
Incomplete outcome data (attrition bias) All outcomes	Low risk	All missing data are explained
Selective reporting (reporting bias)	Unclear risk	All pre-specified outcomes reported

Trondheim 2004

Methods	RCT Opaque sealed envelopes
Participants	62 patients admitted to the stroke unit (acute care and early rehabilitation) who were resident in a rural community (30 to 90 minutes driving distance from hospital) Inclusion: acute stroke (< 7 days) patients screened within 3 days of admission Exclusion: coma (SSS < 2) or full recovery (SSS > 57) Characteristics: mean age 76 years, mean BI 56/100, mean SSS 43/58. Trial included 62/89 (70%) of admissions
Interventions	Intervention: hospital out-reach stroke team (physiotherapy, occupational therapy, nurse) based in the stroke unit who made contact with patients in hospital, arranged discharge to home or rehabilitation unit, co-ordinated rehabilitation and support services and provided follow-up. Team co-ordinated care which was largely delivered by other agencies. Primary care provider assisted with co-ordination of discharge home for patients living

Trondheim 2004 (*Continued*)

	further than 45 minute driving distance from the hospital. ESD co-ordination for 4 to 6 weeks, terminated by outpatient consultation (30 to 45 minutes driving distance) or home visit (> 45 minutes driving distance) Control: conventional procedures with acute care and early rehabilitation in a stroke unit, and discharge home or to a rehabilitation unit
Outcomes	Outcomes measured at 6, 26 and 52 weeks: Modified Rankin Score, BI, Nottingham Health Profile, Caregiver Strain Index, death, initial (stroke unit) length of stay, total (stroke unit + rehabilitation) length of stay
Notes	

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Random sequence generation (selection bias)	Low risk	Quote: 'patients ... were block randomised in blocks of four, six or eight .... The order of the blocks was randomly chosen'
Allocation concealment (selection bias)	Low risk	Sealed opaque envelopes by an external office
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Quote: 'An independent and blinded assessor' ... performed all outcome measures
Incomplete outcome data (attrition bias) All outcomes	Low risk	All withdrawals or missing data are explained
Selective reporting (reporting bias)	Low risk	All pre-specified outcomes are reported

ADL: activities of daily living
BI: Barthel Index
COOP: Care Cooperative Information Project
COPM: Canadian Occupational Performance measure
EADL: extended activities of daily living
ESD: early supported discharge
EUROQOL / EQ-5D: European Quality of Life instrument
GDS: Geriatric Depression Scale
GHQ: General Health Questionnaire
HADS: Hospital Anxiety and Depression Scale
hrs: hours
IQR: interquartile range
ITT: intention-to-treat
MAS: Motor assessment scale
MMSE: Mini Mental State Examination
NIHSS: National Institute of Health Stroke Scale
RCT: randomised controlled trial

SD: standard deviation
SF36: Short Form 36
SSS: Scandinavian Stroke Scale

Characteristics of excluded studies *[ordered by study ID]*

Study	Reason for exclusion
Asplund 2000	Patients had a variety of diagnoses
Auckland 1999	Study was planned but did not commence recruitment
Ayrshire 2000	Study was planned and funded but did not commence recruitment
Challis 1991	Patients had a variety of diagnoses Non-randomised trial
Cumbria 2004	Study was planned but did not commence recruitment
Donald 1995	Patients had a variety of diagnoses
Dunn 1994	Patients had a variety of diagnoses
Gladman 2001	Patients had a variety of diagnoses
Grasel 2005	Non-randomised trial
Kalra 2000	Service to prevent admission to hospital
LHEC 1997	Patients had a variety of diagnoses
Lincoln 2004	Community setting
Mackay 1995	Late rehabilitation intervention
Martin 1994	Patients had a variety of diagnoses
New York 1986	No outcome data available (unable to contact authors)
Ricauda 2004	Service aimed to prevent hospital admission (patients did not leave hospital emergency room)
Shepperd 1998	Service to prevent admission to hospital Patients had a variety of diagnoses
Townsend 1998	Patients had a variety of diagnoses

(*Continued*)

Victor 1988	Patients had a variety of diagnoses Non-randomised trial
Wade 1985	Service to prevent hospital admission as well as accelerate discharge Non-randomised trial
Weiss 2004	Non-randomised trial.

Characteristics of studies awaiting assessment *[ordered by study ID]*

ATTEND pilot trial 2011

Methods	RCT
Participants	Stroke patients in hospital
Interventions	Training and support for families
Outcomes	3-month outcomes
Notes	Professor Jeyaraj Pandian, Ludhiana, Punjab, India

Edirne 2001

Methods	RCT
Participants	Stroke patients in hospital
Interventions	In-patient versus community rehabilitation
Outcomes	2-month outcomes
Notes	F Ozdemir, Trakya University School of Medicine, Edirne, Turkey

RCT: randomised controlled trial

Characteristics of ongoing studies *[ordered by study ID]*

Aveiro

Trial name or title	Aveiro
Methods	RCT
Participants	Acute stroke patients (World Health Organization definition), age 25 to 85 years, FIM < 100 Exclusion criteria: SAH, comorbidity, severe aphasia interfering seriously with the stroke rehabilitation, psychological and psychiatric problems or other severe illness interfering seriously with the stroke rehabilitation
Interventions	Community-based multidisciplinary team comprising physiotherapist, occupational therapist, gerontologist (case manager) and psychologist - all staff with previous experience in stroke care but no specialized training in stroke rehabilitation stroke care. Team co-ordinate and deliver care. Team are co-ordinated via weekly multidisciplinary meetings
Outcomes	Unclear at present
Starting date	6 September 2009
Contact information	Silvina Santana
Notes	

Bergen

Trial name or title	Early supported discharge after stroke in Bergen
Methods	Unclear at present
Participants	Unclear at present
Interventions	Unclear at present
Outcomes	Unclear at present
Starting date	December 2008
Contact information	Dr J S Souken
Notes	

Hong Kong

Trial name or title	Patient Engagement Program for Stroke (PEPS)
Methods	Unclear at present
Participants	Unclear at present
Interventions	Unclear at present
Outcomes	Unclear at present
Starting date	May 2010
Contact information	Dr Fung Pui Man
Notes	Hong Kong

Perth

Trial name or title	Establishing an effective and efficient early supported discharge rehabilitation program for stroke clients in Perth (Western Australia)
Methods	RCT
Participants	Unclear at present
Interventions	Unclear at present
Outcomes	Unclear at present
Starting date	20 November 2011
Contact information	Roslyn Jones
Notes	Main ID: ACTRN12611001243909 (anzctr.org.au)

West Denmark

Trial name or title	RCT Computer-generated blocks of 10, opaque sealed envelopes
Methods	198 acute stroke patients in second line neurological rehabilitation units within 4 centres (Brönderslev, Hammel, Ringe, Skive) screened on day 5 of admission
Participants	Intervention: hospital out-reach multidisciplinary team comprising physiotherapy, occupational therapy, nursing and speech and language therapy (in hospital only). Co-ordinate discharge planning, including pre-assessment home visits and provide low-intensity rehabilitation (maximum 8 sessions) in the community for a period of 1 month. Team are co-ordinated through twice weekly multidisciplinary meetings. Patients live

West Denmark (*Continued*)

	between 0 to 70 km (average 30 km) of team base Control: conventional discharge planning from neurological rehabilitation unit with 1 pre-assessment home visit and after care including home care, physiotherapy clinic and further inpatient rehabilitation if required
Interventions	Outomces at 6 months: FIM, Frenchay activity index, EUROQOL Mortality, institutionalisation, care requirements Patient and carer satisfaction
Outcomes	Unpublished information from authors
Starting date	2009
Contact information	Birgitte G Jepson, Poul Mogensen
Notes	

EUROQOL: European Quality of Life instrument
FIM: functional independence measure
RCT: randomised controlled trial
SAH: subarachnoid haemorrhage

DATA AND ANALYSES

Comparison 1. Early supported discharge service versus conventional care: patient outcomes

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Death	14	1957	Odds Ratio (M-H, Fixed, 95% CI)	0.91 [0.67, 1.25]
1.1 ESD team co-ordination and delivery	9	1140	Odds Ratio (M-H, Fixed, 95% CI)	0.69 [0.44, 1.07]
1.2 ESD team co-ordination	3	464	Odds Ratio (M-H, Fixed, 95% CI)	0.95 [0.52, 1.74]
1.3 No ESD team	2	353	Odds Ratio (M-H, Fixed, 95% CI)	1.90 [0.90, 3.98]
2 Death or requiring institutional care	12	1758	Odds Ratio (M-H, Fixed, 95% CI)	0.78 [0.61, 1.00]
2.1 ESD team co-ordination and delivery	7	941	Odds Ratio (M-H, Fixed, 95% CI)	0.65 [0.45, 0.93]
2.2 ESD team co-ordination	3	464	Odds Ratio (M-H, Fixed, 95% CI)	0.75 [0.50, 1.14]
2.3 No ESD team	2	353	Odds Ratio (M-H, Fixed, 95% CI)	1.32 [0.75, 2.33]
3 Death or dependency	14	1957	Odds Ratio (M-H, Fixed, 95% CI)	0.80 [0.67, 0.97]
3.1 ESD team co-ordination and delivery	9	1140	Odds Ratio (M-H, Fixed, 95% CI)	0.71 [0.55, 0.91]
3.2 ESD team co-ordination	3	464	Odds Ratio (M-H, Fixed, 95% CI)	0.77 [0.54, 1.11]
3.3 No ESD team	2	353	Odds Ratio (M-H, Fixed, 95% CI)	1.23 [0.79, 1.91]
4 Activities of daily living (Barthel ADL) score	9	1124	Std. Mean Difference (IV, Fixed, 95% CI)	0.03 [-0.08, 0.15]
4.1 ESD team co-ordination and delivery	7	825	Std. Mean Difference (IV, Fixed, 95% CI)	0.06 [-0.08, 0.20]
4.2 ESD team co-ordination	1	48	Std. Mean Difference (IV, Fixed, 95% CI)	-0.23 [-0.79, 0.34]
4.3 No ESD team	1	251	Std. Mean Difference (IV, Fixed, 95% CI)	0.0 [-0.25, 0.25]
5 Extended activities of daily living (EADL) score	9	1051	Std. Mean Difference (IV, Fixed, 95% CI)	0.14 [0.02, 0.26]
5.1 ESD team co-ordination and delivery	7	729	Std. Mean Difference (IV, Fixed, 95% CI)	0.17 [0.02, 0.32]
5.2 ESD team co-ordination	2	322	Std. Mean Difference (IV, Fixed, 95% CI)	0.07 [-0.15, 0.29]
5.3 No ESD team	0	0	Std. Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
6 Subjective health status	12	1377	Std. Mean Difference (IV, Fixed, 95% CI)	0.00 [-0.10, 0.11]
6.1 ESD team co-ordination and delivery	8	860	Std. Mean Difference (IV, Fixed, 95% CI)	-0.07 [-0.21, 0.06]
6.2 ESD team co-ordination	3	370	Std. Mean Difference (IV, Fixed, 95% CI)	0.14 [-0.07, 0.34]
6.3 No ESD team	1	147	Std. Mean Difference (IV, Fixed, 95% CI)	0.14 [-0.19, 0.47]
7 Mood status	8	851	Std. Mean Difference (IV, Fixed, 95% CI)	-0.06 [-0.19, 0.07]
7.1 ESD team co-ordination and delivery	5	383	Std. Mean Difference (IV, Fixed, 95% CI)	-0.02 [-0.22, 0.18]
7.2 ESD team co-ordination	2	321	Std. Mean Difference (IV, Fixed, 95% CI)	-0.08 [-0.30, 0.14]
7.3 No ESD team	1	147	Std. Mean Difference (IV, Fixed, 95% CI)	-0.12 [-0.45, 0.20]
8 Satisfaction with services	5	513	Odds Ratio (M-H, Fixed, 95% CI)	1.60 [1.08, 2.38]
8.1 ESD team co-ordination and delivery	4	450	Odds Ratio (M-H, Fixed, 95% CI)	1.74 [1.13, 2.67]
8.2 ESD team co-ordination	1	63	Odds Ratio (M-H, Fixed, 95% CI)	1.01 [0.36, 2.83]

8.3 No ESD team	0	0	Odds Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

Comparison 2. Early supported discharge service versus conventional care: duration of follow-up

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Death: within 6 months	9	1177	Odds Ratio (M-H, Fixed, 95% CI)	0.80 [0.48, 1.34]
2 Death or dependency: within 6 months	9	1177	Odds Ratio (M-H, Fixed, 95% CI)	0.68 [0.53, 0.87]
3 Death: within 1 year	8	1381	Odds Ratio (M-H, Fixed, 95% CI)	0.91 [0.66, 1.26]
4 Death or dependency: within 1 year	7	1183	Odds Ratio (M-H, Fixed, 95% CI)	0.84 [0.66, 1.05]
5 Death: within 5 years	2	403	Odds Ratio (M-H, Fixed, 95% CI)	0.81 [0.54, 1.21]
6 Death or dependency: within 5 years	2	403	Odds Ratio (M-H, Fixed, 95% CI)	0.78 [0.52, 1.17]

Comparison 3. Early supported discharge service versus conventional care: carer outcomes

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Subjective health status	8	749	Std. Mean Difference (IV, Fixed, 95% CI)	-0.03 [-0.17, 0.12]
1.1 ESD team co-ordination and delivery	5	373	Std. Mean Difference (IV, Fixed, 95% CI)	-0.15 [-0.35, 0.06]
1.2 ESD team co-ordination	3	376	Std. Mean Difference (IV, Fixed, 95% CI)	0.09 [-0.12, 0.29]
1.3 No ESD team	0	0	Std. Mean Difference (IV, Fixed, 95% CI)	0.0 [0.0, 0.0]
2 Mood status	2	58	Std. Mean Difference (IV, Random, 95% CI)	-0.19 [-1.60, 1.22]
2.1 ESD team co-ordination and delivery	2	58	Std. Mean Difference (IV, Random, 95% CI)	-0.19 [-1.60, 1.22]
2.2 ESD team co-ordination	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
2.3 No ESD team	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
3 Satisfaction with services	4	279	Odds Ratio (M-H, Fixed, 95% CI)	1.56 [0.87, 2.81]
3.1 ESD team co-ordination and delivery	3	246	Odds Ratio (M-H, Fixed, 95% CI)	1.60 [0.85, 3.01]
3.2 ESD team co-ordination	1	33	Odds Ratio (M-H, Fixed, 95% CI)	1.28 [0.24, 6.70]
3.3 No ESD team	0	0	Odds Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

Comparison 4. Early supported discharge service versus conventional care: resource use

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Length of initial hospital stay (days)	13	1695	Mean Difference (IV, Random, 95% CI)	-7.10 [-10.03, -4.17]
1.1 ESD team co-ordination and delivery	9	1129	Mean Difference (IV, Random, 95% CI)	-6.84 [-11.20, -2.49]
1.2 ESD team co-ordination	3	464	Mean Difference (IV, Random, 95% CI)	-10.36 [-15.39, -5.33]
1.3 No ESD team	1	102	Mean Difference (IV, Random, 95% CI)	-7.0 [-8.61, -5.39]
2 Readmission to hospital	7	918	Odds Ratio (M-H, Fixed, 95% CI)	1.26 [0.94, 1.67]
2.1 ESD team co-ordination and delivery	7	918	Odds Ratio (M-H, Fixed, 95% CI)	1.26 [0.94, 1.67]
2.2 ESD team co-ordination	0	0	Odds Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]
2.3 No ESD team	0	0	Odds Ratio (M-H, Fixed, 95% CI)	0.0 [0.0, 0.0]

Comparison 5. Early supported discharge service versus conventional care: age subgroups

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Death or dependency	9	1175	Odds Ratio (M-H, Fixed, 95% CI)	0.85 [0.67, 1.08]
1.1 Age < 75 years	9	695	Odds Ratio (M-H, Fixed, 95% CI)	0.82 [0.60, 1.12]
1.2 Age > 75 years	9	480	Odds Ratio (M-H, Fixed, 95% CI)	0.90 [0.61, 1.31]
2 Length of stay (days)	8	911	Mean Difference (IV, Random, 95% CI)	-9.69 [-13.56, -5.82]
2.1 Age < 75 years	8	566	Mean Difference (IV, Random, 95% CI)	-11.68 [-18.00, -5.36]
2.2 Age > 75 years	7	345	Mean Difference (IV, Random, 95% CI)	-6.26 [-10.51, -2.01]

Comparison 6. Early supported discharge service versus conventional care: gender subgroups

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Death or dependency	9	1175	Odds Ratio (M-H, Fixed, 95% CI)	0.83 [0.65, 1.05]
1.1 Male	9	654	Odds Ratio (M-H, Fixed, 95% CI)	0.73 [0.54, 1.01]
1.2 Female	9	521	Odds Ratio (M-H, Fixed, 95% CI)	0.98 [0.68, 1.40]
2 Length of stay (days)	8	909	Mean Difference (IV, Fixed, 95% CI)	-4.54 [-6.48, -2.60]
2.1 Male	8	518	Mean Difference (IV, Fixed, 95% CI)	-4.32 [-6.65, -1.98]
2.2 Female	7	391	Mean Difference (IV, Fixed, 95% CI)	-5.05 [-8.55, -1.55]

Comparison 7. Early supported discharge service versus conventional care: stroke severity subgroups

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Death or dependency	11	1545	Odds Ratio (M-H, Fixed, 95% CI)	0.86 [0.69, 1.07]
1.1 Initial Barthel 10 to 20	11	1164	Odds Ratio (M-H, Fixed, 95% CI)	0.77 [0.61, 0.98]
1.2 Initial Barthel < 10	10	381	Odds Ratio (M-H, Fixed, 95% CI)	1.40 [0.83, 2.36]
2 Length of stay (days)	9	960	Mean Difference (IV, Random, 95% CI)	-7.33 [-12.15, -2.50]
2.1 Initial Barthel 10 to 20	9	788	Mean Difference (IV, Random, 95% CI)	-3.11 [-7.13, 0.92]
2.2 Initial Barthel < 10	7	172	Mean Difference (IV, Random, 95% CI)	-28.32 [-39.93, -16.71]

Comparison 8. Early supported discharge service versus conventional care: carer subgroups

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Death or dependency	10	1237	Odds Ratio (M-H, Fixed, 95% CI)	0.87 [0.69, 1.10]
1.1 Carer present	10	799	Odds Ratio (M-H, Fixed, 95% CI)	0.86 [0.64, 1.14]
1.2 No carer	9	438	Odds Ratio (M-H, Fixed, 95% CI)	0.90 [0.61, 1.32]
2 Length of stay (days)	9	970	Mean Difference (IV, Random, 95% CI)	-7.96 [-12.01, -3.92]
2.1 Carer present	9	636	Mean Difference (IV, Random, 95% CI)	-9.70 [-16.06, -3.33]
2.2 No carer	8	334	Mean Difference (IV, Random, 95% CI)	-6.17 [-9.00, -1.34]

Comparison 9. Early supported discharge service versus conventional care: ESD service subgroups: service base

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Death or dependency	12	1604	Odds Ratio (M-H, Fixed, 95% CI)	0.73 [0.59, 0.90]
1.1 Community in-reach	6	755	Odds Ratio (M-H, Fixed, 95% CI)	0.72 [0.53, 0.96]
1.2 Hospital out-reach	6	849	Odds Ratio (M-H, Fixed, 95% CI)	0.74 [0.56, 1.00]
2 Length of stay (days)	11	1395	Mean Difference (IV, Random, 95% CI)	-7.86 [-11.99, -3.73]
2.1 Community in-reach	6	744	Mean Difference (IV, Random, 95% CI)	-4.34 [-7.34, -1.34]
2.2 Hospital out-reach	5	651	Mean Difference (IV, Random, 95% CI)	-9.62 [-17.88, -1.36]

Comparison 10. Early supported discharge service versus conventional care: ESD service subgroups: MDT co-ordination

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Death	14	1957	Odds Ratio (M-H, Fixed, 95% CI)	0.91 [0.67, 1.25]
1.1 MDT co-ordination	12	1604	Odds Ratio (M-H, Fixed, 95% CI)	0.77 [0.54, 1.09]
1.2 No MDT	2	353	Odds Ratio (M-H, Fixed, 95% CI)	1.90 [0.90, 3.98]
2 Death or requiring institutional care	12	1758	Odds Ratio (M-H, Fixed, 95% CI)	0.78 [0.61, 1.00]
2.1 MDT co-ordination	10	1405	Odds Ratio (M-H, Fixed, 95% CI)	0.69 [0.53, 0.91]
2.2 No MDT	2	353	Odds Ratio (M-H, Fixed, 95% CI)	1.32 [0.75, 2.33]
3 Death or dependency	14	1957	Odds Ratio (M-H, Fixed, 95% CI)	0.80 [0.67, 0.97]
3.1 MDT co-ordination	12	1604	Odds Ratio (M-H, Fixed, 95% CI)	0.73 [0.59, 0.90]
3.2 No MDT	2	353	Odds Ratio (M-H, Fixed, 95% CI)	1.23 [0.79, 1.91]
4 Length of stay (days)	13	1695	Mean Difference (IV, Random, 95% CI)	-7.21 [-10.12, -4.30]
4.1 MDT co-ordination	12	1593	Mean Difference (IV, Random, 95% CI)	-7.62 [-11.39, -3.86]
4.2 No MDT	1	102	Mean Difference (IV, Random, 95% CI)	-7.0 [-8.61, -5.39]

Comparison 11. Early supported discharge service versus conventional care: conventional service subgroups

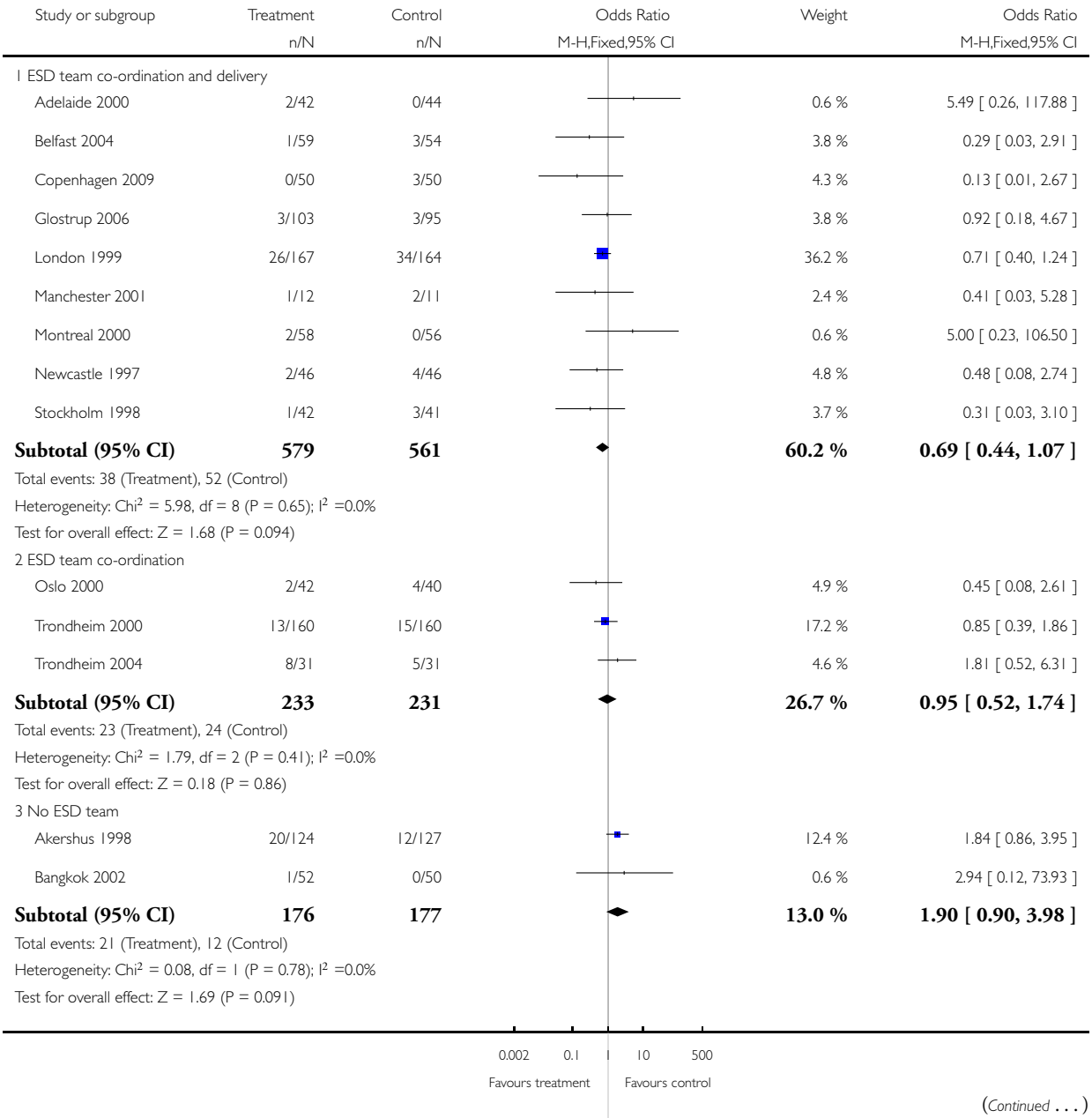
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Death or dependency	14	1957	Odds Ratio (M-H, Fixed, 95% CI)	0.80 [0.67, 0.97]
1.1 Stroke unit	9	1115	Odds Ratio (M-H, Fixed, 95% CI)	0.83 [0.66, 1.06]
1.2 Other wards	7	842	Odds Ratio (M-H, Fixed, 95% CI)	0.76 [0.56, 1.02]
2 Length of stay (days)	12	1517	Mean Difference (IV, Random, 95% CI)	-7.28 [-10.64, -3.93]
2.1 Stroke unit	9	882	Mean Difference (IV, Random, 95% CI)	-6.37 [-12.76, 0.02]
2.2 Other wards	6	635	Mean Difference (IV, Random, 95% CI)	-7.25 [-11.47, -3.03]

Analysis 1.1. Comparison 1 Early supported discharge service versus conventional care: patient outcomes, Outcome 1 Death.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 1 Early supported discharge service versus conventional care: patient outcomes

Outcome: 1 Death



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Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Weight	Odds Ratio M-H,Fixed,95% CI
Total (95% CI)	**988**	**969**		**100.0 %**	**0.91 [0.67, 1.25]**
Total events: 82 (Treatment), 88 (Control)					
Heterogeneity: Chi^2 = 13.15, df = 13 (P = 0.44); I^2 =1%					
Test for overall effect: Z = 0.56 (P = 0.58)					
Test for subgroup differences: Chi^2 = 5.35, df = 2 (P = 0.07), I^2 =63%					

Analysis 1.2. Comparison 1 Early supported discharge service versus conventional care: patient outcomes, Outcome 2 Death or requiring institutional care.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 1 Early supported discharge service versus conventional care: patient outcomes

Outcome: 2 Death or requiring institutional care

Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Weight	Odds Ratio M-H,Fixed,95% CI
1 ESD team co-ordination and delivery					
Copenhagen 2009	8/50	12/50		7.0 %	0.60 [0.22, 1.63]
Glostrup 2006	7/103	3/95		2.0 %	2.24 [0.56, 8.91]
London 1999	41/167	55/164		28.9 %	0.64 [0.40, 1.04]
Manchester 2001	2/12	3/11		1.8 %	0.53 [0.07, 4.01]
Montreal 2000	2/58	4/56		2.7 %	0.46 [0.08, 2.64]
Newcastle 1997	4/46	9/46		5.7 %	0.39 [0.11, 1.38]
Stockholm 1998	1/42	3/41		2.0 %	0.31 [0.03, 3.10]
Subtotal (95% CI)	**478**	**463**		**50.1 %**	**0.65 [0.45, 0.93]**
Total events: 65 (Treatment), 89 (Control)					
Heterogeneity: Chi^2 = 4.29, df = 6 (P = 0.64); I^2 =0.0%					
Test for overall effect: Z = 2.35 (P = 0.019)					
2 ESD team co-ordination					
Oslo 2000	10/42	15/40		8.1 %	0.52 [0.20, 1.35]

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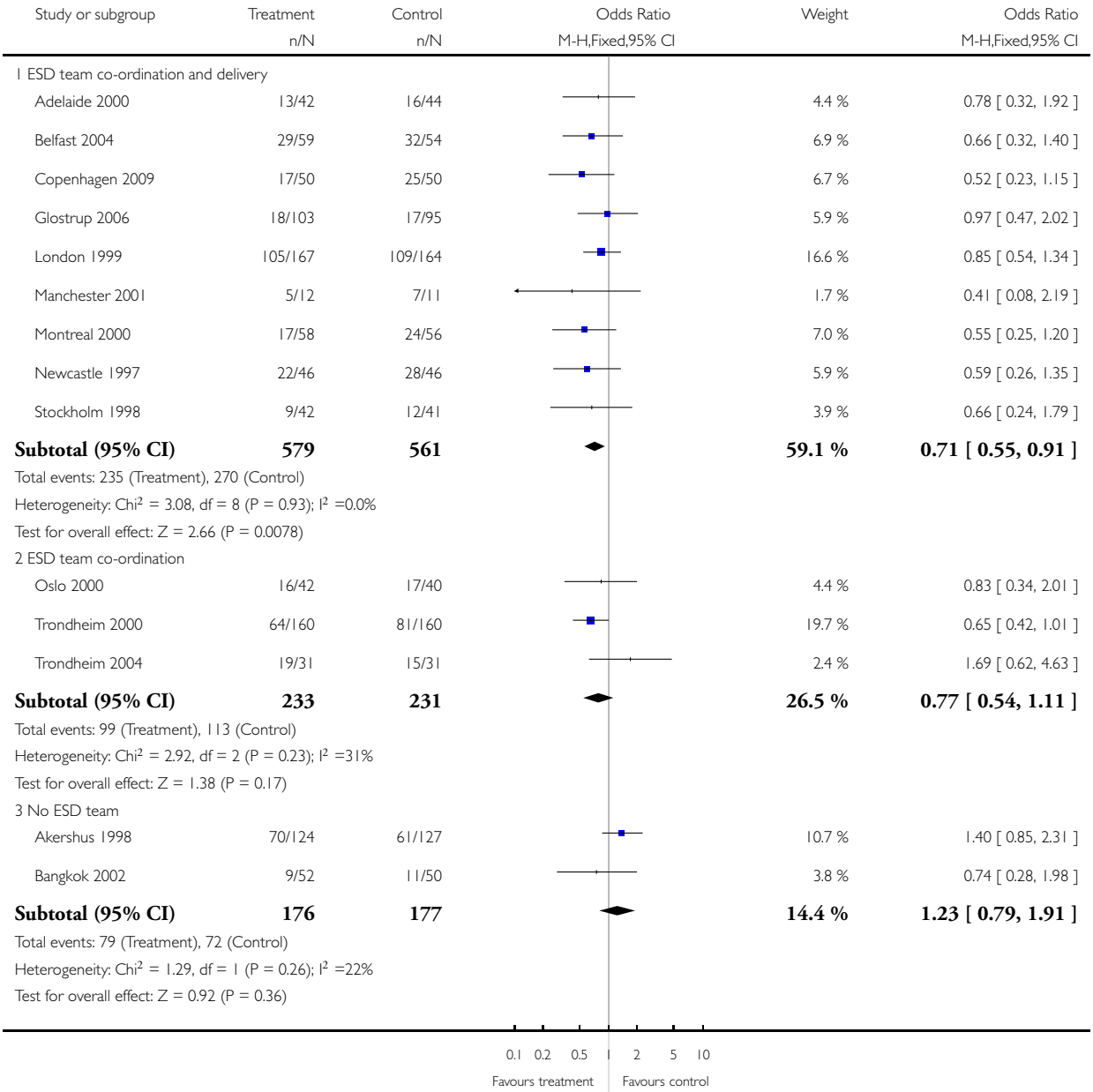
Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Weight	Odds Ratio M-H,Fixed,95% CI
Trondheim 2000	34/160	43/160		23.4 %	0.73 [0.44, 1.23]
Trondheim 2004	11/31	9/31		4.0 %	1.34 [0.46, 3.92]
Subtotal (95% CI)	**233**	**231**		**35.5 %**	**0.75 [0.50, 1.14]**
Total events: 55 (Treatment), 67 (Control)					
Heterogeneity: Chi^2 = 1.71, df = 2 (P = 0.43); I^2 =0.0%					
Test for overall effect: Z = 1.33 (P = 0.18)					
3 No ESD team					
Akershus 1998	33/124	28/127		14.0 %	1.28 [0.72, 2.29]
Bangkok 2002	1/52	0/50		0.3 %	2.94 [0.12, 73.93]
Subtotal (95% CI)	**176**	**177**		**14.4 %**	**1.32 [0.75, 2.33]**
Total events: 34 (Treatment), 28 (Control)					
Heterogeneity: Chi^2 = 0.25, df = 1 (P = 0.62); I^2 =0.0%					
Test for overall effect: Z = 0.96 (P = 0.34)					
Total (95% CI)	**887**	**871**		**100.0 %**	**0.78 [0.61, 1.00]**
Total events: 154 (Treatment), 184 (Control)					
Heterogeneity: Chi^2 = 10.57, df = 11 (P = 0.48); I^2 =0.0%					
Test for overall effect: Z = 1.97 (P = 0.049)					
Test for subgroup differences: Chi^2 = 4.36, df = 2 (P = 0.11), I^2 =54%					

Analysis 1.3. Comparison 1 Early supported discharge service versus conventional care: patient outcomes, Outcome 3 Death or dependency.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 1 Early supported discharge service versus conventional care: patient outcomes

Outcome: 3 Death or dependency



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Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Weight	Odds Ratio M-H,Fixed,95% CI
Total (95% CI)	**988**	**969**	◆	**100.0 %**	**0.80 [0.67, 0.97]**
Total events: 413 (Treatment), 455 (Control)					
Heterogeneity: Chi^2 = 11.77, df = 13 (P = 0.55); I^2 =0.0%					
Test for overall effect: Z = 2.30 (P = 0.021)					
Test for subgroup differences: Chi^2 = 4.51, df = 2 (P = 0.10), I^2 =56%					

Analysis 1.4. Comparison 1 Early supported discharge service versus conventional care: patient outcomes, Outcome 4 Activities of daily living (Barthel ADL) score.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 1 Early supported discharge service versus conventional care: patient outcomes

Outcome: 4 Activities of daily living (Barthel ADL) score

Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Fixed,95% CI	Weight	Std. Mean Difference IV,Fixed,95% CI
1 ESD team co-ordination and delivery							
Adelaide 2000	42	96 (9)	44	98 (10)		7.6 %	-0.21 [-0.63, 0.22]
Belfast 2004	56	17.68 (3.05)	48	16.94 (3.94)		9.2 %	0.21 [-0.18, 0.60]
Copenhagen 2009	43	19.5 (5)	44	19 (3)		7.8 %	0.12 [-0.30, 0.54]
Glostrup 2006	90	89.9 (20)	88	88.8 (20)		15.9 %	0.05 [-0.24, 0.35]
London 1999	136	16 (4)	126	16 (4)		23.4 %	0.0 [-0.24, 0.24]
Manchester 2001	9	17 (4)	8	15 (7)		1.5 %	0.34 [-0.62, 1.30]
Montreal 2000	48	97.1 (6.9)	43	95.1 (10.6)		8.0 %	0.22 [-0.19, 0.64]
Subtotal (95% CI)	**424**		**401**		◆	**73.3 %**	**0.06 [-0.08, 0.20]**
Heterogeneity: Chi^2 = 3.37, df = 6 (P = 0.76); I^2 =0.0%							
Test for overall effect: Z = 0.87 (P = 0.38)							
2 ESD team co-ordination							
Trondheim 2004	23	71.7 (34.7)	25	79 (28.7)		4.2 %	-0.23 [-0.79, 0.34]

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Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Fixed,95% CI	Weight	Std. Mean Difference IV,Fixed,95% CI
Subtotal (95% CI)	**23**		**25**			**4.2 %**	**-0.23 [-0.79, 0.34]**
Heterogeneity: not applicable							
Test for overall effect: Z = 0.78 (P = 0.43)							
3 No ESD team							
Akershus 1998	124	95 (20)	127	95 (20)		22.4 %	0.0 [-0.25, 0.25]
Subtotal (95% CI)	**124**		**127**			**22.4 %**	**0.0 [-0.25, 0.25]**
Heterogeneity: not applicable							
Test for overall effect: Z = 0.0 (P = 1.0)							
Total (95% CI)	**571**		**553**			**100.0 %**	**0.03 [-0.08, 0.15]**
Heterogeneity: Chi^2 = 4.39, df = 8 (P = 0.82); I^2 =0.0%							
Test for overall effect: Z = 0.58 (P = 0.56)							
Test for subgroup differences: Chi^2 = 1.03, df = 2 (P = 0.60), I^2 =0.0%							

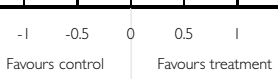
Analysis 1.5. Comparison 1 Early supported discharge service versus conventional care: patient outcomes, Outcome 5 Extended activities of daily living (EADL) score.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 1 Early supported discharge service versus conventional care: patient outcomes

Outcome: 5 Extended activities of daily living (EADL) score

Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Fixed,95% CI	Weight	Std. Mean Difference IV,Fixed,95% CI
1 ESD team co-ordination and delivery							
Adelaide 2000	42	39.7 (32.5)	44	36.4 (37.8)		8.2 %	0.09 [-0.33, 0.52]
Belfast 2004	56	11.66 (5.8)	48	10.21 (6.34)		9.8 %	0.24 [-0.15, 0.62]
London 1999	136	27 (12)	126	27 (11)		25.1 %	0.0 [-0.24, 0.24]
Manchester 2001	9	12 (6)	8	9 (6)		1.6 %	0.47 [-0.50, 1.44]
Montreal 2000	51	11 (3.5)	44	9.5 (3.9)		8.9 %	0.40 [0.00, 0.81]
Newcastle 1997	45	10 (13)	42	7 (15)		8.3 %	0.21 [-0.21, 0.63]
Stockholm 1998	40	24 (6)	38	21.5 (8)		7.4 %	0.35 [-0.10, 0.80]
Subtotal (95% CI)	**379**		**350**			**69.2 %**	**0.17 [0.02, 0.32]**
Heterogeneity: Chi^2 = 4.44, df = 6 (P = 0.62); I^2 =0.0%							
Test for overall effect: Z = 2.28 (P = 0.022)							
2 ESD team co-ordination							
Oslo 2000	34	35.35 (13.46)	31	35.81 (16.51)		6.2 %	-0.03 [-0.52, 0.46]
Trondheim 2000	133	32.2 (11.1)	124	31.1 (11.1)		24.6 %	0.10 [-0.15, 0.34]
Subtotal (95% CI)	**167**		**155**			**30.8 %**	**0.07 [-0.15, 0.29]**
Heterogeneity: Chi^2 = 0.22, df = 1 (P = 0.64); I^2 =0.0%							
Test for overall effect: Z = 0.65 (P = 0.51)							
3 No ESD team							
Subtotal (95% CI)	**0**		**0**			**0.0 %**	**0.0 [0.0, 0.0]**
Heterogeneity: not applicable							
Test for overall effect: not applicable							
Total (95% CI)	**546**		**505**			**100.0 %**	**0.14 [0.02, 0.26]**
Heterogeneity: Chi^2 = 5.18, df = 8 (P = 0.74); I^2 =0.0%							
Test for overall effect: Z = 2.26 (P = 0.024)							
Test for subgroup differences: Chi^2 = 0.53, df = 1 (P = 0.47), I^2 =0.0%							

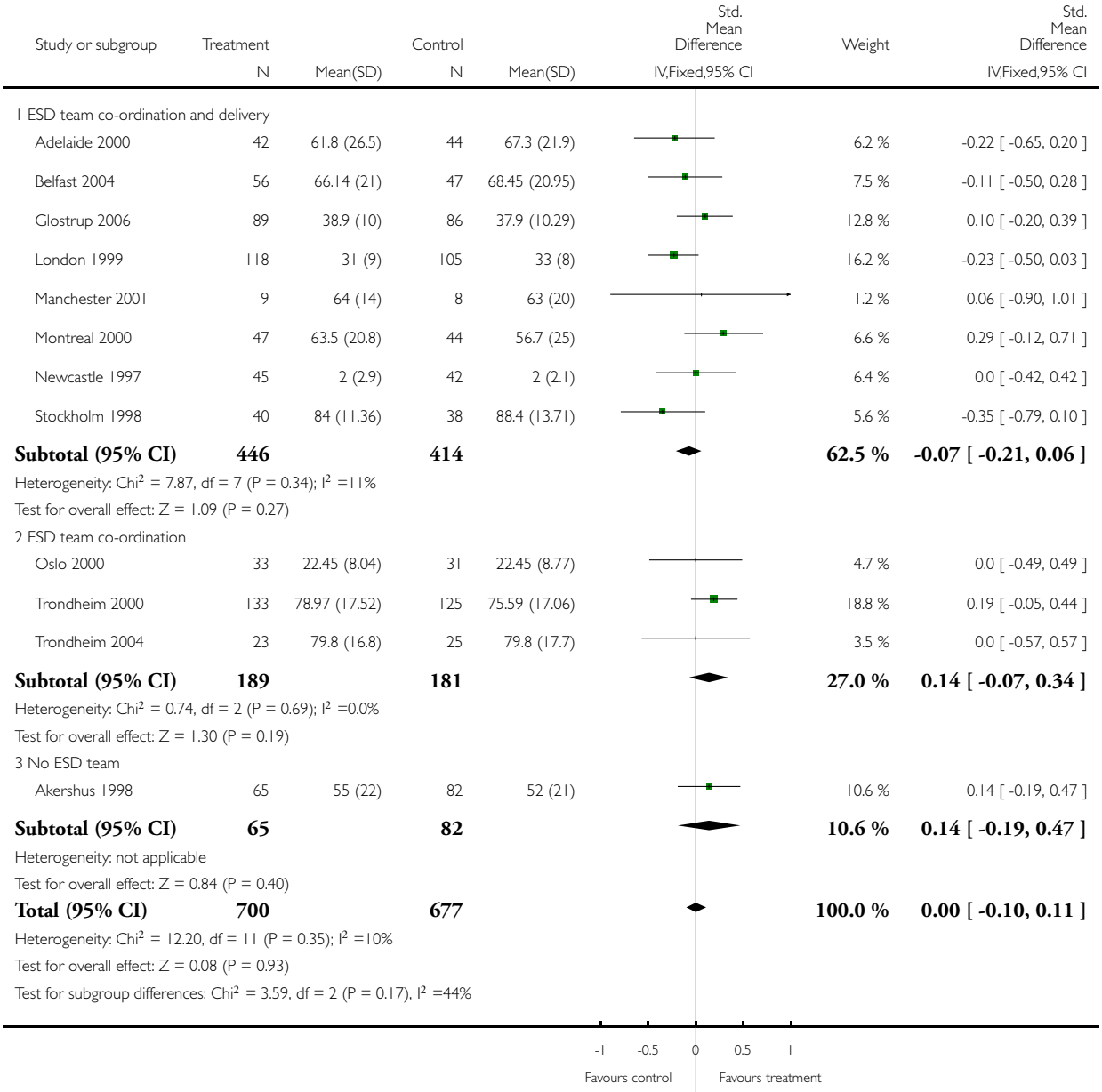


Analysis 1.6. Comparison 1 Early supported discharge service versus conventional care: patient outcomes, Outcome 6 Subjective health status.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 1 Early supported discharge service versus conventional care: patient outcomes

Outcome: 6 Subjective health status

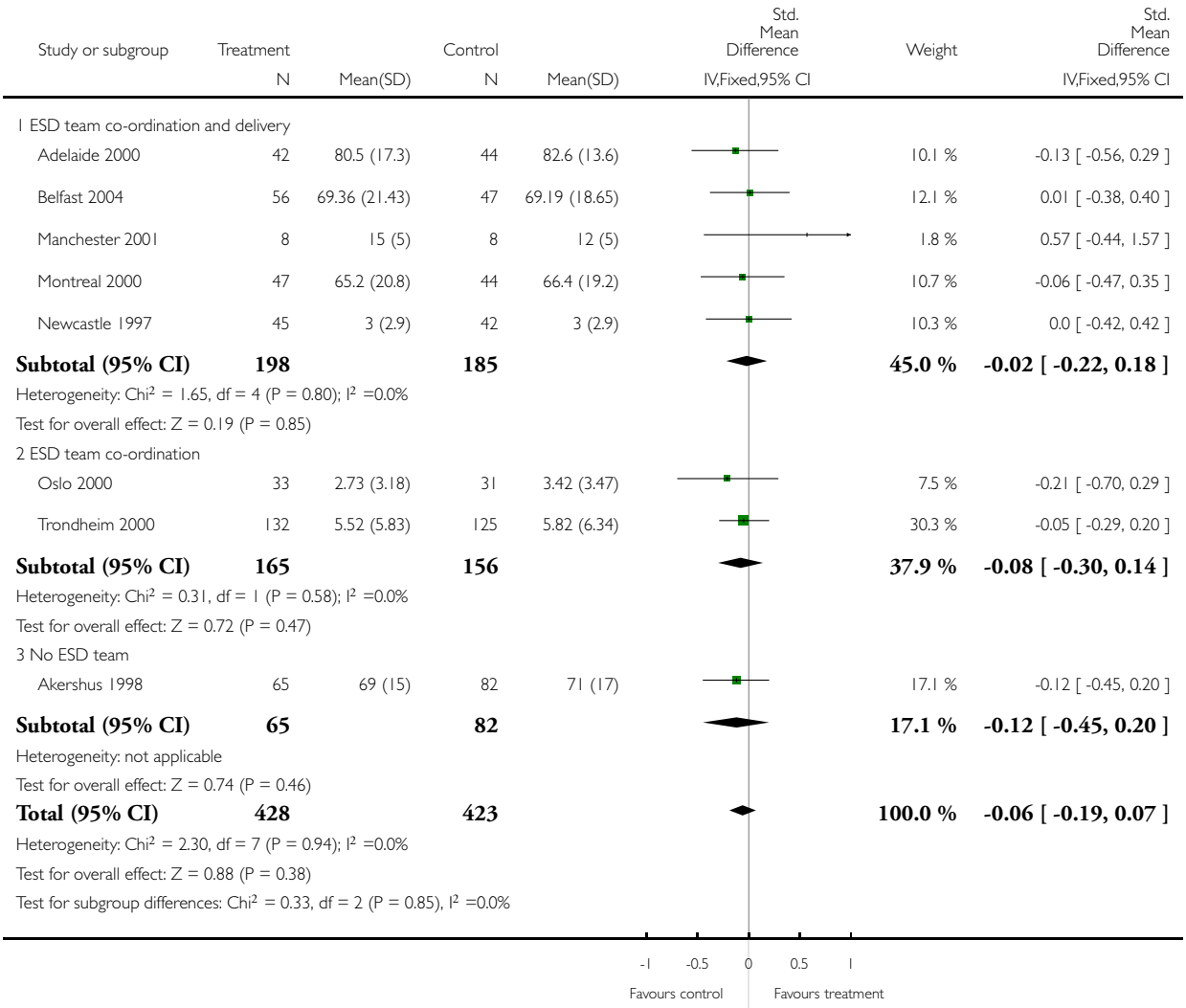


Analysis 1.7. Comparison 1 Early supported discharge service versus conventional care: patient outcomes, Outcome 7 Mood status.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 1 Early supported discharge service versus conventional care: patient outcomes

Outcome: 7 Mood status

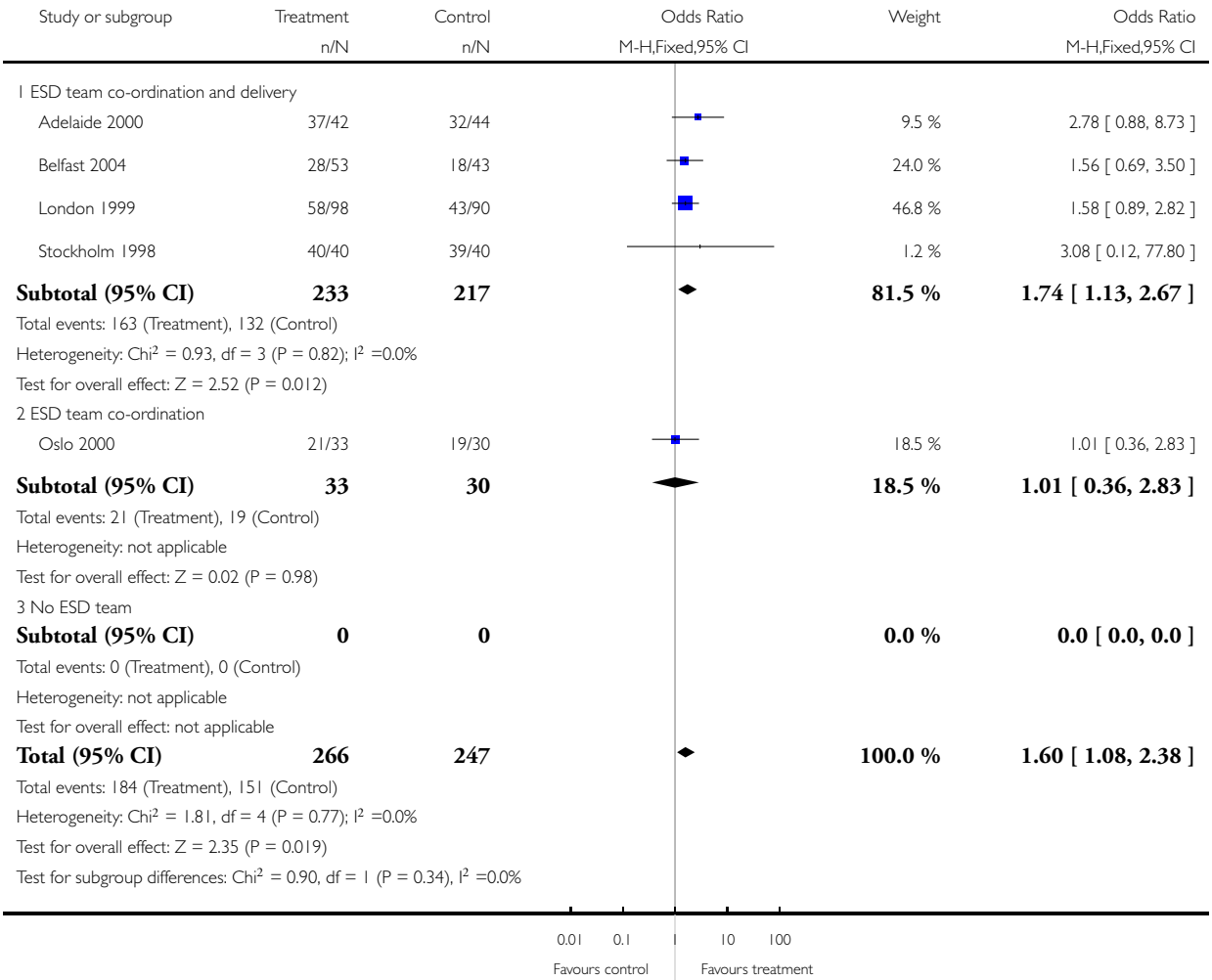


Analysis 1.8. Comparison 1 Early supported discharge service versus conventional care: patient outcomes, Outcome 8 Satisfaction with services.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 1 Early supported discharge service versus conventional care: patient outcomes

Outcome: 8 Satisfaction with services



Analysis 2.1. Comparison 2 Early supported discharge service versus conventional care: duration of follow-up, Outcome 1 Death: within 6 months.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 2 Early supported discharge service versus conventional care: duration of follow-up

Outcome: 1 Death: within 6 months

Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Weight	Odds Ratio M-H,Fixed,95% CI
Adelaide 2000	2/42	0/44		1.4 %	5.49 [0.26, 117.88]
Bangkok 2002	1/52	0/50		1.5 %	2.94 [0.12, 73.93]
Copenhagen 2009	0/50	3/50		10.7 %	0.13 [0.01, 2.67]
Glostrup 2006	3/103	3/95		9.3 %	0.92 [0.18, 4.67]
Montreal 2000	2/58	0/56		1.5 %	5.00 [0.23, 106.50]
Newcastle 1997	2/46	4/46		11.8 %	0.48 [0.08, 2.74]
Oslo 2000	2/42	4/40		12.0 %	0.45 [0.08, 2.61]
Stockholm 1998	1/42	3/41		9.1 %	0.31 [0.03, 3.10]
Trondheim 2000	13/160	15/160		42.5 %	0.85 [0.39, 1.86]
Total (95% CI)	**595**	**582**		**100.0 %**	**0.80 [0.48, 1.34]**

Total events: 26 (Treatment), 32 (Control)

Heterogeneity: $Chi^2 = 6.35$, df = 8 (P = 0.61); $I^2 = 0.0\%$

Test for overall effect: Z = 0.84 (P = 0.40)

Test for subgroup differences: Not applicable

Analysis 2.2. Comparison 2 Early supported discharge service versus conventional care: duration of follow-up, Outcome 2 Death or dependency: within 6 months.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 2 Early supported discharge service versus conventional care: duration of follow-up

Outcome: 2 Death or dependency: within 6 months

Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Weight	Odds Ratio M-H,Fixed,95% CI
Adelaide 2000	13/42	16/44		7.1 %	0.78 [0.32, 1.92]
Bangkok 2002	9/52	11/50		6.1 %	0.74 [0.28, 1.98]
Copenhagen 2009	17/50	25/50		10.9 %	0.52 [0.23, 1.15]
Glostrup 2006	18/103	17/95		9.6 %	0.97 [0.47, 2.02]
Montreal 2000	17/58	24/56		11.4 %	0.55 [0.25, 1.20]
Newcastle 1997	22/46	28/46		9.6 %	0.59 [0.26, 1.35]
Oslo 2000	16/42	17/40		7.1 %	0.83 [0.34, 2.01]
Stockholm 1998	9/42	12/41		6.3 %	0.66 [0.24, 1.79]
Trondheim 2000	64/160	81/160		32.0 %	0.65 [0.42, 1.01]
Total (95% CI)	**595**	**582**		**100.0 %**	**0.68 [0.53, 0.87]**

Total events: 185 (Treatment), 231 (Control)

Heterogeneity: $Chi^2 = 2.13$, df = 8 (P = 0.98); $I^2 = 0.0\%$

Test for overall effect: Z = 3.07 (P = 0.0021)

Test for subgroup differences: Not applicable

Analysis 2.3. Comparison 2 Early supported discharge service versus conventional care: duration of follow-up, Outcome 3 Death: within 1 year.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 2 Early supported discharge service versus conventional care: duration of follow-up

Outcome: 3 Death: within 1 year

Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Weight	Odds Ratio M-H,Fixed,95% CI
Akershus 1998	20/124	12/127		12.9 %	1.84 [0.86, 3.95]
Belfast 2004	1/59	3/54		4.0 %	0.29 [0.03, 2.91]
Glostrup 2006	5/103	4/95		5.1 %	1.16 [0.30, 4.46]
London 1999	26/167	34/164		37.6 %	0.71 [0.40, 1.24]
Manchester 2001	1/12	2/11		2.5 %	0.41 [0.03, 5.28]
Stockholm 1998	1/42	3/41		3.8 %	0.31 [0.03, 3.10]
Trondheim 2000	21/160	26/160		29.3 %	0.78 [0.42, 1.45]
Trondheim 2004	8/31	5/31		4.8 %	1.81 [0.52, 6.31]
Total (95% CI)	**698**	**683**		**100.0 %**	**0.91 [0.66, 1.26]**

Total events: 83 (Treatment), 89 (Control)

Heterogeneity: Chi^2 = 7.75, df = 7 (P = 0.35); I^2 =10%

Test for overall effect: Z = 0.57 (P = 0.57)

Test for subgroup differences: Not applicable

Analysis 2.4. Comparison 2 Early supported discharge service versus conventional care: duration of follow-up, Outcome 4 Death or dependency: within 1 year.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 2 Early supported discharge service versus conventional care: duration of follow-up

Outcome: 4 Death or dependency: within 1 year

Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Weight	Odds Ratio M-H,Fixed,95% CI
Akershus 1998	70/124	61/127		16.7 %	1.40 [0.85, 2.31]
Belfast 2004	29/59	32/54		10.8 %	0.66 [0.32, 1.40]
London 1999	105/167	109/164		25.9 %	0.85 [0.54, 1.34]
Manchester 2001	5/12	7/11		2.7 %	0.41 [0.08, 2.19]
Stockholm 1998	10/42	18/41		8.8 %	0.40 [0.16, 1.02]
Trondheim 2000	70/160	88/160		31.4 %	0.64 [0.41, 0.99]
Trondheim 2004	19/31	15/31		3.7 %	1.69 [0.62, 4.63]
Total (95% CI)	**595**	**588**		**100.0 %**	**0.84 [0.66, 1.05]**

Total events: 308 (Treatment), 330 (Control)

Heterogeneity: Chi^2 = 10.94, df = 6 (P = 0.09); I^2 =45%

Test for overall effect: Z = 1.53 (P = 0.13)

Test for subgroup differences: Not applicable

Analysis 2.5. Comparison 2 Early supported discharge service versus conventional care: duration of follow-up, Outcome 5 Death: within 5 years.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 2 Early supported discharge service versus conventional care: duration of follow-up

Outcome: 5 Death: within 5 years

Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Weight	Odds Ratio M-H,Fixed,95% CI
Stockholm 1998	8/42	12/41		18.7 %	0.57 [0.20, 1.58]
Trondheim 2000	71/160	77/160		81.3 %	0.86 [0.55, 1.33]
Total (95% CI)	**202**	**201**		**100.0 %**	**0.81 [0.54, 1.21]**

Total events: 79 (Treatment), 89 (Control)

Heterogeneity: $Chi^2 = 0.53$, df = 1 (P = 0.47); $I^2 = 0.0\%$

Test for overall effect: Z = 1.05 (P = 0.29)

Test for subgroup differences: Not applicable

Analysis 2.6. Comparison 2 Early supported discharge service versus conventional care: duration of follow-up, Outcome 6 Death or dependency: within 5 years.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 2 Early supported discharge service versus conventional care: duration of follow-up

Outcome: 6 Death or dependency: within 5 years

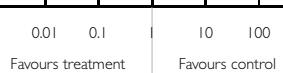
Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Weight	Odds Ratio M-H,Fixed,95% CI
Stockholm 1998	18/42	22/41		24.2 %	0.65 [0.27, 1.54]
Trondheim 2000	101/160	108/160		75.8 %	0.82 [0.52, 1.31]
Total (95% CI)	**202**	**201**		**100.0 %**	**0.78 [0.52, 1.17]**

Total events: 119 (Treatment), 130 (Control)

Heterogeneity: $Chi^2 = 0.23$, df = 1 (P = 0.63); $I^2 = 0.0\%$

Test for overall effect: Z = 1.19 (P = 0.23)

Test for subgroup differences: Not applicable



Analysis 3.1. Comparison 3 Early supported discharge service versus conventional care: carer outcomes, Outcome 1 Subjective health status.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 3 Early supported discharge service versus conventional care: carer outcomes

Outcome: 1 Subjective health status

Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Fixed,95% CI	Weight	Std. Mean Difference IV,Fixed,95% CI
1 ESD team co-ordination and delivery							
Adelaide 2000	24	67.9 (20)	25	63.5 (24.5)		6.6 %	0.19 [-0.37, 0.75]
Belfast 2004	31	6.81 (3.29)	27	6.48 (4.27)		7.8 %	0.09 [-0.43, 0.60]
London 1999	75	8 (4)	59	9 (3)		17.7 %	-0.28 [-0.62, 0.07]
Montreal 2000	49	16.4 (14.7)	42	21.7 (14.7)		12.0 %	-0.36 [-0.77, 0.06]
Newcastle 1997	22	25 (15)	19	25 (19)		5.5 %	0.0 [-0.61, 0.61]
Subtotal (95% CI)	**201**		**172**			**49.7 %**	**-0.15 [-0.35, 0.06]**
Heterogeneity: Chi^2 = 3.95, df = 4 (P = 0.41); I^2 =0.0%							
Test for overall effect: Z = 1.40 (P = 0.16)							
2 ESD team co-ordination							
Oslo 2000	42	50.76 (22.29)	40	57.32 (17.18)		10.9 %	-0.33 [-0.76, 0.11]
Trondheim 2000	128	23.39 (2.7)	121	22.58 (3.12)		33.3 %	0.28 [0.03, 0.53]
Trondheim 2004	23	24.3 (2.7)	22	24.8 (1.9)		6.1 %	-0.21 [-0.80, 0.38]
Subtotal (95% CI)	**193**		**183**			**50.3 %**	**0.09 [-0.12, 0.29]**
Heterogeneity: Chi^2 = 6.65, df = 2 (P = 0.04); I^2 =70%							
Test for overall effect: Z = 0.85 (P = 0.40)							
3 No ESD team							
Subtotal (95% CI)	**0**		**0**			**0.0 %**	**0.0 [0.0, 0.0]**
Heterogeneity: not applicable							
Test for overall effect: not applicable							
Total (95% CI)	**394**		**355**			**100.0 %**	**-0.03 [-0.17, 0.12]**
Heterogeneity: Chi^2 = 13.13, df = 7 (P = 0.07); I^2 =47%							
Test for overall effect: Z = 0.39 (P = 0.70)							
Test for subgroup differences: Chi^2 = 2.53, df = 1 (P = 0.11), I^2 =60%							

Analysis 3.2. Comparison 3 Early supported discharge service versus conventional care: carer outcomes, Outcome 2 Mood status.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 3 Early supported discharge service versus conventional care: carer outcomes

Outcome: 2 Mood status

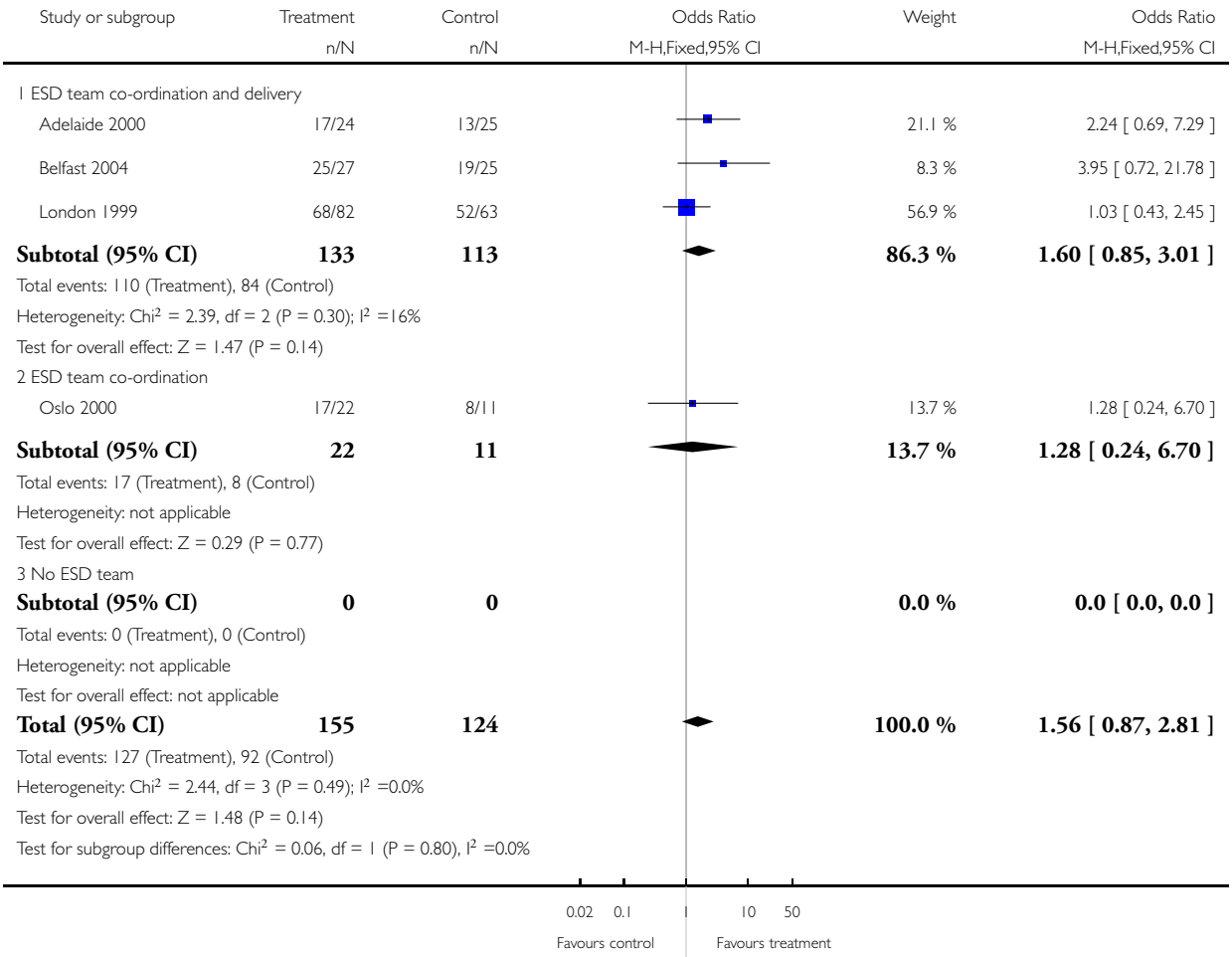
Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
1 ESD team co-ordination and delivery							
Adelaide 2000	24	69.6 (18.5)	25	82 (11.9)		59.5 %	-0.79 [-1.37, -0.20]
Manchester 2001	4	16 (4)	5	12 (6)		40.5 %	0.68 [-0.70, 2.06]
Subtotal (95% CI)	**28**		**30**			**100.0 %**	**-0.19 [-1.60, 1.22]**
Heterogeneity: $Tau^2 = 0.78$; $Chi^2 = 3.68$, df = 1 (P = 0.05); $I^2 = 73\%$							
Test for overall effect: Z = 0.27 (P = 0.79)							
2 ESD team co-ordination							
Subtotal (95% CI)	**0**		**0**			**0.0 %**	**0.0 [0.0, 0.0]**
Heterogeneity: not applicable							
Test for overall effect: not applicable							
3 No ESD team							
Subtotal (95% CI)	**0**		**0**			**0.0 %**	**0.0 [0.0, 0.0]**
Heterogeneity: not applicable							
Test for overall effect: not applicable							
Total (95% CI)	**28**		**30**			**100.0 %**	**-0.19 [-1.60, 1.22]**
Heterogeneity: $Tau^2 = 0.78$; $Chi^2 = 3.68$, df = 1 (P = 0.05); $I^2 = 73\%$							
Test for overall effect: Z = 0.27 (P = 0.79)							
Test for subgroup differences: Not applicable							

Analysis 3.3. Comparison 3 Early supported discharge service versus conventional care: carer outcomes, Outcome 3 Satisfaction with services.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 3 Early supported discharge service versus conventional care: carer outcomes

Outcome: 3 Satisfaction with services



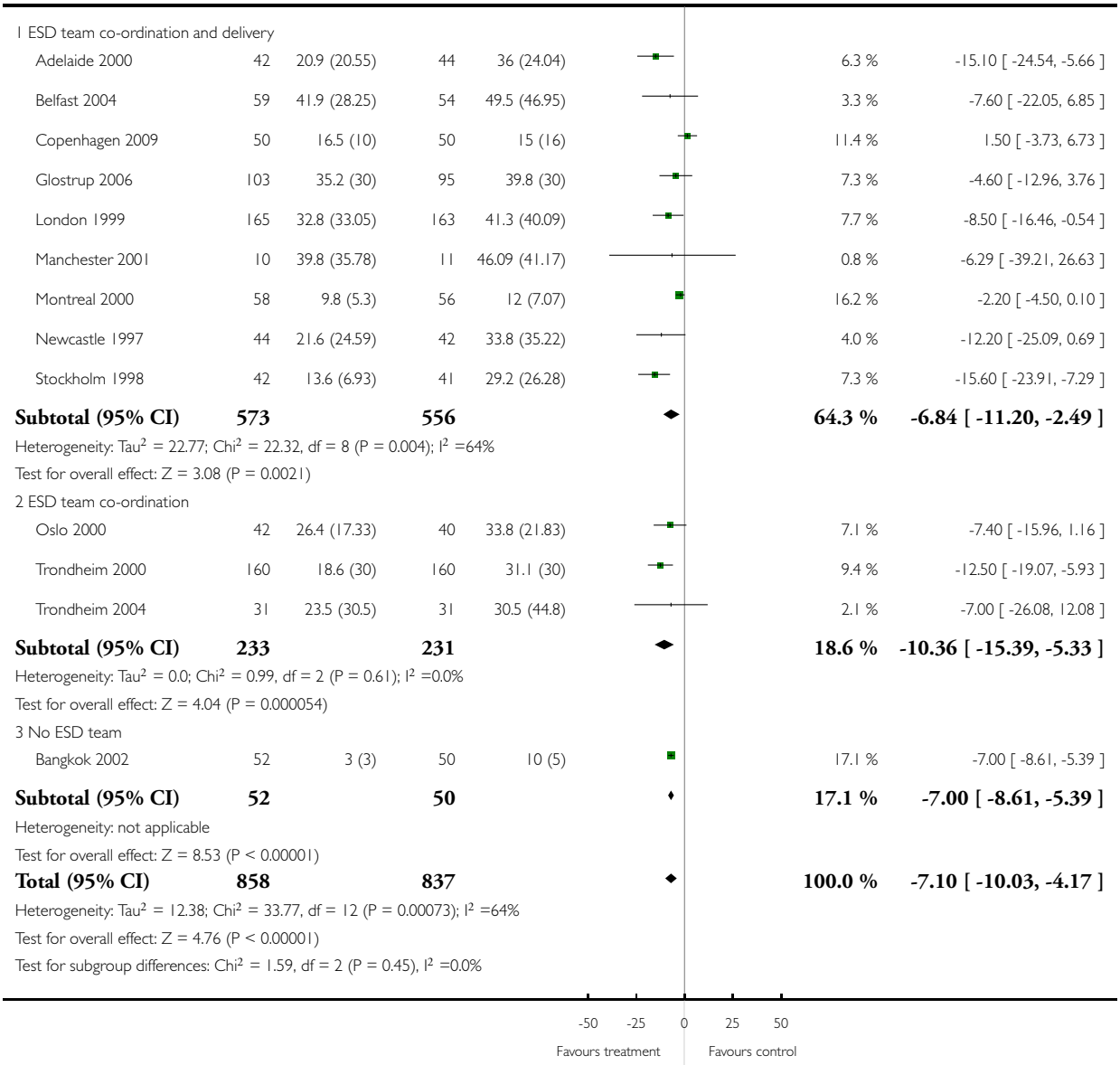
Analysis 4.1. Comparison 4 Early supported discharge service versus conventional care: resource use, Outcome 1 Length of initial hospital stay (days).

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 4 Early supported discharge service versus conventional care: resource use

Outcome: 1 Length of initial hospital stay (days)

Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Random,95% CI	Weight	Mean Difference IV,Random,95% CI
1 ESD team co-ordination and delivery							
Adelaide 2000	42	20.9 (20.55)	44	36 (24.04)		6.3 %	-15.10 [-24.54, -5.66]
Belfast 2004	59	41.9 (28.25)	54	49.5 (46.95)		3.3 %	-7.60 [-22.05, 6.85]
Copenhagen 2009	50	16.5 (10)	50	15 (16)		11.4 %	1.50 [-3.73, 6.73]
Glostrup 2006	103	35.2 (30)	95	39.8 (30)		7.3 %	-4.60 [-12.96, 3.76]
London 1999	165	32.8 (33.05)	163	41.3 (40.09)		7.7 %	-8.50 [-16.46, -0.54]
Manchester 2001	10	39.8 (35.78)	11	46.09 (41.17)		0.8 %	-6.29 [-39.21, 26.63]
Montreal 2000	58	9.8 (5.3)	56	12 (7.07)		16.2 %	-2.20 [-4.50, 0.10]
Newcastle 1997	44	21.6 (24.59)	42	33.8 (35.22)		4.0 %	-12.20 [-25.09, 0.69]
Stockholm 1998	42	13.6 (6.93)	41	29.2 (26.28)		7.3 %	-15.60 [-23.91, -7.29]
Subtotal (95% CI)	**573**		**556**			**64.3 %**	**-6.84 [-11.20, -2.49]**
Heterogeneity: Tau^2 = 22.77; Chi^2 = 22.32, df = 8 (P = 0.004); I^2 =64%							
Test for overall effect: Z = 3.08 (P = 0.0021)							
2 ESD team co-ordination							
Oslo 2000	42	26.4 (17.33)	40	33.8 (21.83)		7.1 %	-7.40 [-15.96, 1.16]
Trondheim 2000	160	18.6 (30)	160	31.1 (30)		9.4 %	-12.50 [-19.07, -5.93]
Trondheim 2004	31	23.5 (30.5)	31	30.5 (44.8)		2.1 %	-7.00 [-26.08, 12.08]
Subtotal (95% CI)	**233**		**231**			**18.6 %**	**-10.36 [-15.39, -5.33]**
Heterogeneity: Tau^2 = 0.0; Chi^2 = 0.99, df = 2 (P = 0.61); I^2 =0.0%							
Test for overall effect: Z = 4.04 (P = 0.000054)							
3 No ESD team							
Bangkok 2002	52	3 (3)	50	10 (5)		17.1 %	-7.00 [-8.61, -5.39]
Subtotal (95% CI)	**52**		**50**			**17.1 %**	**-7.00 [-8.61, -5.39]**
Heterogeneity: not applicable							
Test for overall effect: Z = 8.53 (P < 0.00001)							
Total (95% CI)	**858**		**837**			**100.0 %**	**-7.10 [-10.03, -4.17]**
Heterogeneity: Tau^2 = 12.38; Chi^2 = 33.77, df = 12 (P = 0.00073); I^2 =64%							
Test for overall effect: Z = 4.76 (P < 0.00001)							
Test for subgroup differences: Chi^2 = 1.59, df = 2 (P = 0.45), I^2 =0.0%							

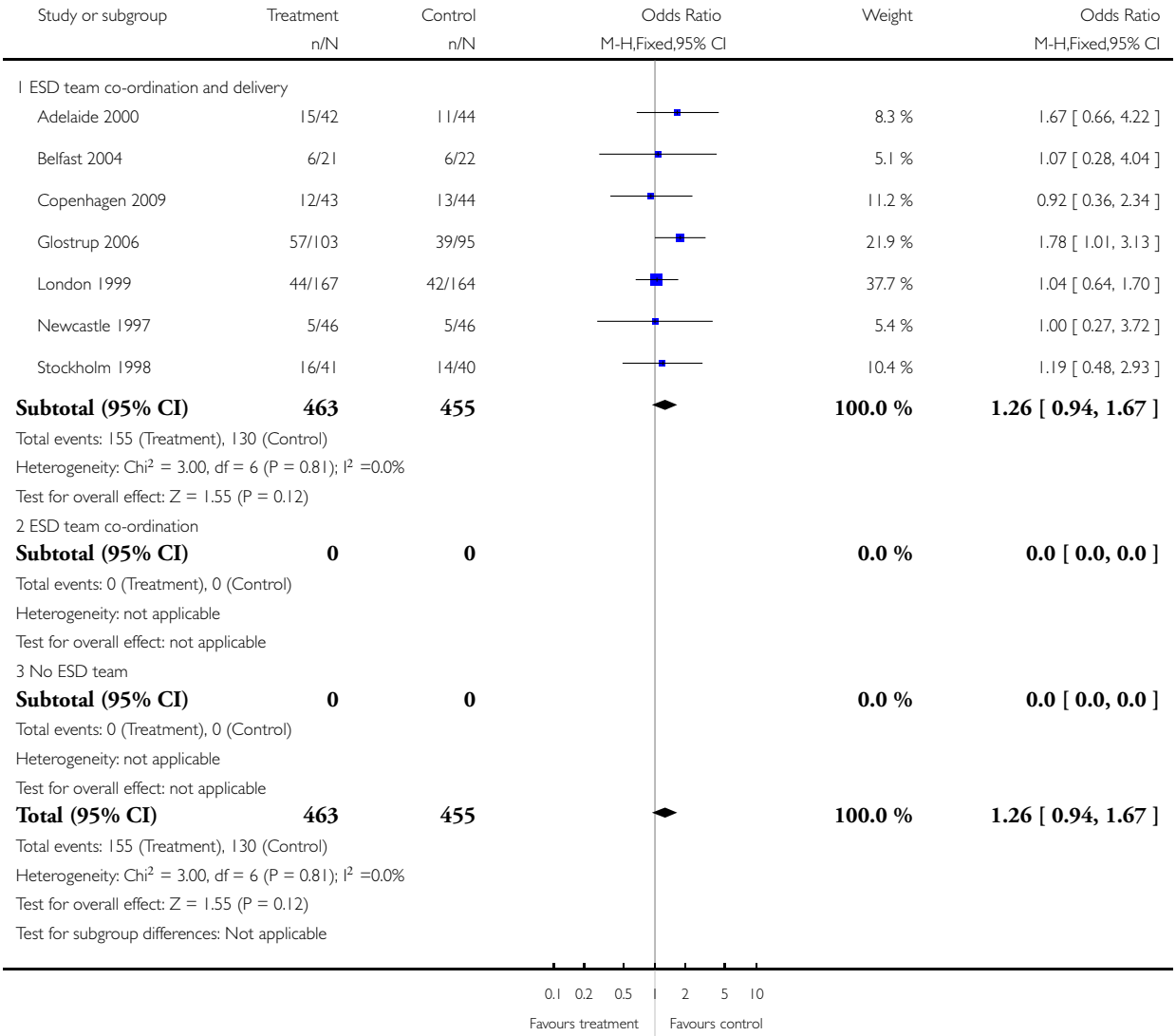


Analysis 4.2. Comparison 4 Early supported discharge service versus conventional care: resource use, Outcome 2 Readmission to hospital.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 4 Early supported discharge service versus conventional care: resource use

Outcome: 2 Readmission to hospital

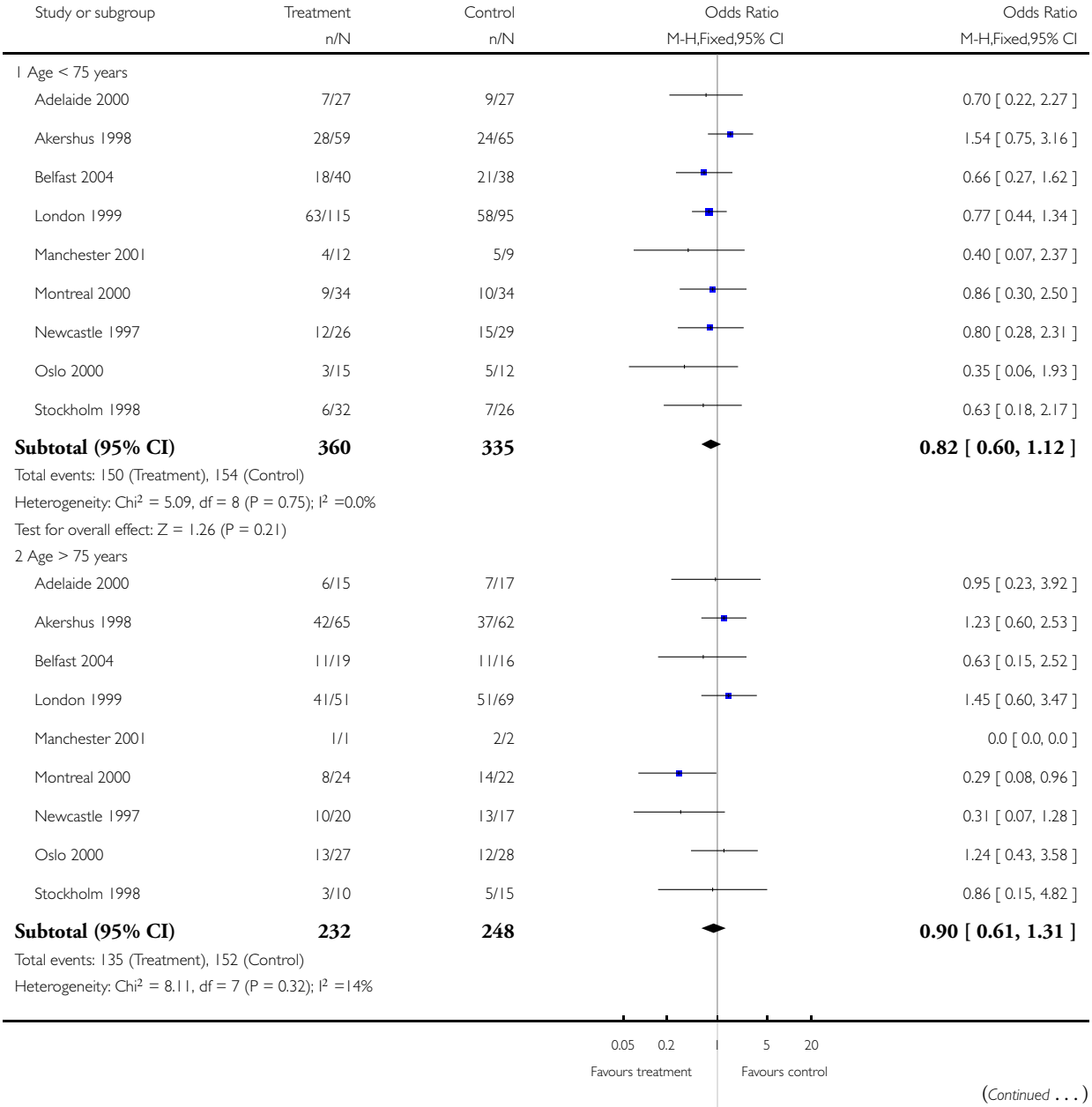


Analysis 5.1. Comparison 5 Early supported discharge service versus conventional care: age subgroups, Outcome 1 Death or dependency.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 5 Early supported discharge service versus conventional care: age subgroups

Outcome: 1 Death or dependency



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Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Odds Ratio M-H,Fixed,95% CI
Test for overall effect: Z = 0.57 (P = 0.57)				
Total (95% CI)	**592**	**583**	◆	**0.85 [0.67, 1.08]**
Total events: 285 (Treatment), 306 (Control)				
Heterogeneity: Chi^2 = 13.34, df = 16 (P = 0.65); I^2 =0.0%				
Test for overall effect: Z = 1.34 (P = 0.18)				
Test for subgroup differences: Chi^2 = 0.13, df = 1 (P = 0.72), I^2 =0.0%				

Analysis 5.2. Comparison 5 Early supported discharge service versus conventional care: age subgroups, Outcome 2 Length of stay (days).

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 5 Early supported discharge service versus conventional care: age subgroups

Outcome: 2 Length of stay (days)

Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Random,95% CI	Weight	Mean Difference IV,Random,95% CI
1 Age < 75 years							
Adelaide 2000	27	22 (20)	27	36 (21)		6.8 %	-14.00 [-24.94, -3.06]
Belfast 2004	40	42 (23)	38	54 (33)		5.7 %	-12.00 [-24.68, 0.68]
London 1999	114	33 (32)	94	42 (33)		8.3 %	-9.00 [-17.89, -0.11]
Manchester 2001	10	33 (26)	9	46 (32)		1.9 %	-13.00 [-39.40, 13.40]
Montreal 2000	34	9.7 (7)	34	11.8 (9)		12.9 %	-2.10 [-5.93, 1.73]
Newcastle 1997	26	21 (19)	28	32 (25)		6.2 %	-11.00 [-22.79, 0.79]
Oslo 2000	15	23 (12)	12	41 (26)		4.2 %	-18.00 [-33.91, -2.09]
Stockholm 1998	32	14 (5)	26	34 (18)		9.9 %	-20.00 [-27.13, -12.87]
Subtotal (95% CI)	**298**		**268**		◆	**55.9 %**	**-11.68 [-18.00, -5.36]**
Heterogeneity: Tau^2 = 50.12; Chi^2 = 23.46, df = 7 (P = 0.001); I^2 =70%							

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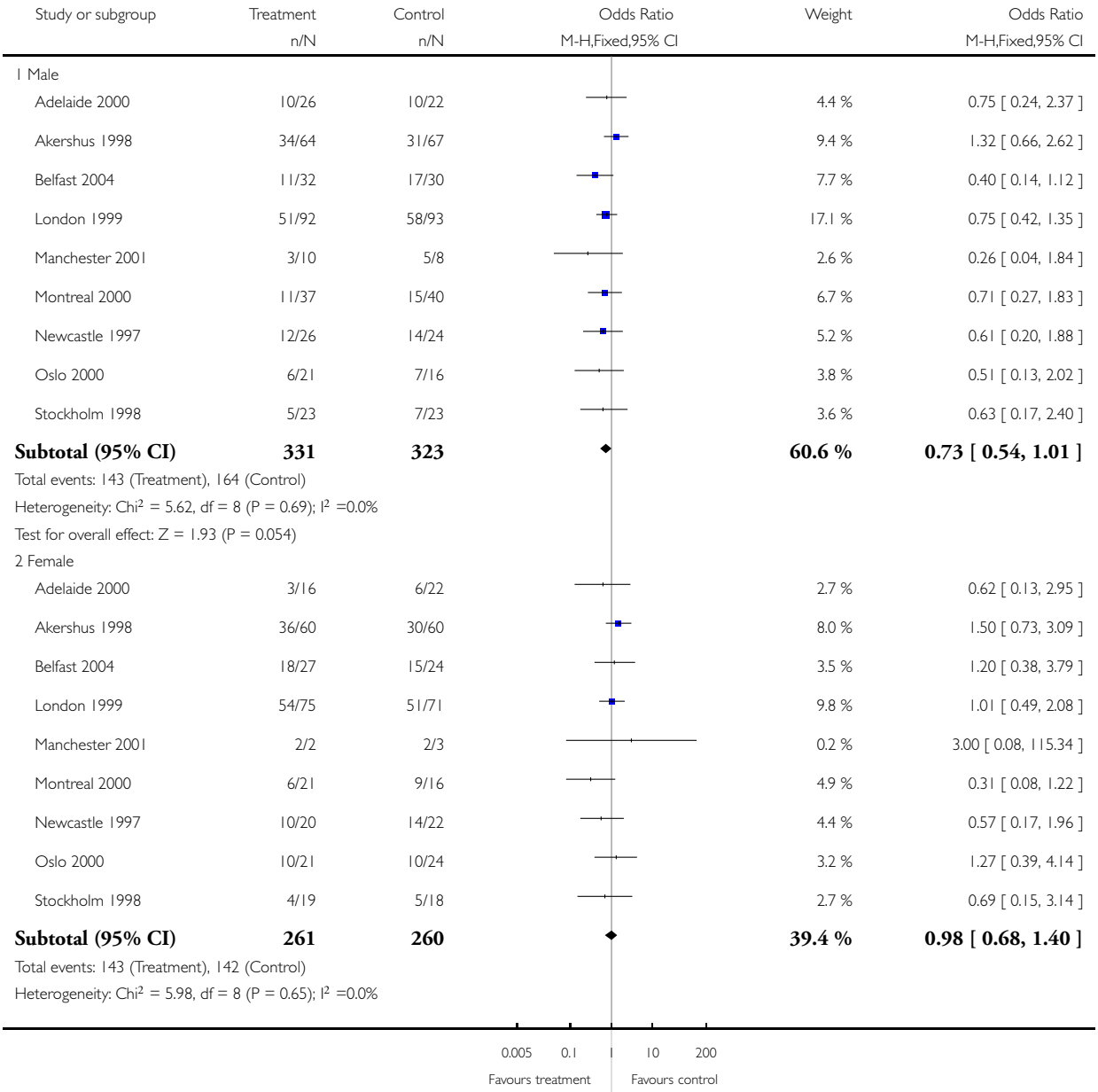
Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Random,95% CI	Weight	Mean Difference IV,Random,95% CI
Test for overall effect: Z = 3.62 (P = 0.00029)							
2 Age > 75 years							
Adelaide 2000	15	19 (16)	17	37 (27)		4.5 %	-18.00 [-33.18, -2.82]
Belfast 2004	19	42 (26)	16	55 (48)		1.9 %	-13.00 [-39.26, 13.26]
London 1999	51	31 (27)	69	41 (44)		5.7 %	-10.00 [-22.76, 2.76]
Montreal 2000	24	10 (5.6)	22	12.5 (7.1)		13.0 %	-2.50 [-6.22, 1.22]
Newcastle 1997	18	22 (21)	14	40 (40)		2.4 %	-18.00 [-41.09, 5.09]
Oslo 2000	27	28 (17)	28	31 (17)		8.2 %	-3.00 [-11.99, 5.99]
Stockholm 1998	10	12 (5.7)	15	21 (16)		8.4 %	-9.00 [-17.83, -0.17]
Subtotal (95% CI)	**164**		**181**			**44.1 %**	**-6.26 [-10.51, -2.01]**
Heterogeneity: Tau^2 = 7.11; Chi^2 = 7.66, df = 6 (P = 0.26); I^2 =22%							
Test for overall effect: Z = 2.89 (P = 0.0039)							
Total (95% CI)	**462**		**449**			**100.0 %**	**-9.69 [-13.56, -5.82]**
Heterogeneity: Tau^2 = 26.27; Chi^2 = 33.47, df = 14 (P = 0.002); I^2 =58%							
Test for overall effect: Z = 4.91 (P < 0.00001)							
Test for subgroup differences: Chi^2 = 1.95, df = 1 (P = 0.16), I^2 =49%							

Analysis 6.1. Comparison 6 Early supported discharge service versus conventional care: gender subgroups, Outcome 1 Death or dependency.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 6 Early supported discharge service versus conventional care: gender subgroups

Outcome: 1 Death or dependency



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Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Weight	Odds Ratio M-H,Fixed,95% CI
Test for overall effect: Z = 0.14 (P = 0.89)					
Total (95% CI)	**592**	**583**	◆	**100.0 %**	**0.83 [0.65, 1.05]**
Total events: 286 (Treatment), 306 (Control)					
Heterogeneity: Chi^2 = 12.94, df = 17 (P = 0.74); I^2 =0.0%					
Test for overall effect: Z = 1.55 (P = 0.12)					
Test for subgroup differences: Chi^2 = 1.34, df = 1 (P = 0.25), I^2 =25%					

Analysis 6.2. Comparison 6 Early supported discharge service versus conventional care: gender subgroups, Outcome 2 Length of stay (days).

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 6 Early supported discharge service versus conventional care: gender subgroups

Outcome: 2 Length of stay (days)

Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Fixed,95% CI	Weight	Mean Difference IV,Fixed,95% CI
1 Male							
Adelaide 2000	26	21.1 (22.98)	22	39.7 (25.1)		2.0 %	-18.60 [-32.31, -4.89]
Belfast 2004	32	34.9 (25.47)	30	41.1 (36.37)		1.5 %	-6.20 [-21.92, 9.52]
London 1999	91	28.7 (27.93)	92	36.2 (31.01)		5.2 %	-7.50 [-16.05, 1.05]
Manchester 2001	9	34.78 (34)	8	47.38 (39.57)		0.3 %	-12.60 [-47.89, 22.69]
Montreal 2000	37	9.3 (5.09)	40	11.5 (6.74)		53.5 %	-2.20 [-4.86, 0.46]
Newcastle 1997	25	19.6 (22.15)	23	30.3 (31.01)		1.6 %	-10.70 [-26.06, 4.66]
Oslo 2000	21	22.1 (14.69)	16	30 (19.62)		2.9 %	-7.90 [-19.38, 3.58]
Stockholm 1998	23	11.5 (6.22)	23	34.2 (30.7)		2.3 %	-22.70 [-35.50, -9.90]
Subtotal (95% CI)	**264**		**254**		◆	**69.2 %**	**-4.32 [-6.65, -1.98]**
Heterogeneity: Chi^2 = 16.37, df = 7 (P = 0.02); I^2 =57%							

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Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Fixed,95% CI	Weight	Mean Difference IV,Fixed,95% CI
Test for overall effect: Z = 3.63 (P = 0.00029)							
2 Female							
Adelaide 2000	16	20.5 (16.54)	22	32.2 (22.89)		2.4 %	-11.70 [-24.24, 0.84]
Belfast 2004	27	50.3 (29.55)	24	60 (56.62)		0.6 %	-9.70 [-34.95, 15.55]
London 1999	74	37.9 (38.02)	71	47.8 (48.91)		1.8 %	-9.90 [-24.20, 4.40]
Montreal 2000	21	10.8 (5.7)	16	13.4 (7.91)		18.0 %	-2.60 [-7.18, 1.98]
Newcastle 1997	19	24.3 (27.88)	19	38.2 (40.17)		0.8 %	-13.90 [-35.89, 8.09]
Oslo 2000	21	30.7 (19.02)	24	36.4 (23.23)		2.5 %	-5.70 [-18.05, 6.65]
Stockholm 1998	19	16.1 (7.04)	18	22.8 (18.11)		4.7 %	-6.70 [-15.65, 2.25]
Subtotal (95% CI)	**197**		**194**			**30.8 %**	**-5.05 [-8.55, -1.55]**
Heterogeneity: Chi² = 3.52, df = 6 (P = 0.74); I² =0.0%							
Test for overall effect: Z = 2.83 (P = 0.0047)							
Total (95% CI)	**461**		**448**			**100.0 %**	**-4.54 [-6.48, -2.60]**
Heterogeneity: Chi² = 20.00, df = 14 (P = 0.13); I² =30%							
Test for overall effect: Z = 4.58 (P < 0.00001)							
Test for subgroup differences: Chi² = 0.12, df = 1 (P = 0.73), I² =0.0%							

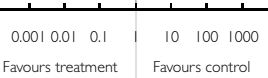
Analysis 7.1. Comparison 7 Early supported discharge service versus conventional care: stroke severity subgroups, Outcome 1 Death or dependency.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 7 Early supported discharge service versus conventional care: stroke severity subgroups

Outcome: 1 Death or dependency

Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Odds Ratio M-H,Fixed,95% CI
1 Initial Barthel 10 to 20				
Adelaide 2000	11/39	13/40		0.82 [0.31, 2.13]
Akershus 1998	30/74	22/64		1.30 [0.65, 2.61]
Belfast 2004	21/51	22/43		0.67 [0.29, 1.51]
London 1999	55/116	71/120		0.62 [0.37, 1.04]
Manchester 2001	5/10	5/9		0.80 [0.13, 4.87]
Montreal 2000	17/58	23/55		0.58 [0.26, 1.26]
Newcastle 1997	10/34	12/29		0.59 [0.21, 1.68]
Oslo 2000	13/37	12/32		0.90 [0.34, 2.41]
Stockholm 1998	7/37	11/39		0.59 [0.20, 1.75]
Trondheim 2000	35/120	41/112		0.71 [0.41, 1.24]
Trondheim 2004	14/25	6/20		2.97 [0.86, 10.26]
Subtotal (95% CI)	**601**	**563**		**0.77 [0.61, 0.98]**
Total events: 218 (Treatment), 238 (Control)				
Heterogeneity: Chi² = 8.71, df = 10 (P = 0.56); I² =0.0%				
Test for overall effect: Z = 2.10 (P = 0.036)				
2 Initial Barthel < 10				
Adelaide 2000	3/3	4/4		0.0 [0.0, 0.0]
Akershus 1998	40/50	39/63		2.46 [1.04, 5.81]
Belfast 2004	8/8	10/11		2.43 [0.09, 67.57]
London 1999	43/44	36/42		7.17 [0.82, 62.32]
Manchester 2001	0/2	2/2		0.04 [0.00, 2.93]
Newcastle 1997	12/12	14/15		2.59 [0.10, 69.34]
Oslo 2000	3/5	5/8		0.90 [0.09, 8.90]
Stockholm 1998	2/5	1/2		0.67 [0.02, 18.06]
Trondheim 2000	29/40	40/48		0.53 [0.19, 1.47]
Trondheim 2004	5/6	9/11		1.11 [0.08, 15.53]



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Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Odds Ratio M-H,Fixed,95% CI
Subtotal (95% CI)	**175**	**206**		**1.40 [0.83, 2.36]**
Total events: 145 (Treatment), 160 (Control)				
Heterogeneity: Chi^2 = 10.55, df = 8 (P = 0.23); I^2 =24%				
Test for overall effect: Z = 1.26 (P = 0.21)				
Total (95% CI)	**776**	**769**		**0.86 [0.69, 1.07]**
Total events: 363 (Treatment), 398 (Control)				
Heterogeneity: Chi^2 = 22.66, df = 19 (P = 0.25); I^2 =16%				
Test for overall effect: Z = 1.37 (P = 0.17)				
Test for subgroup differences: Chi^2 = 4.10, df = 1 (P = 0.04), I^2 =76%				

Analysis 7.2. Comparison 7 Early supported discharge service versus conventional care: stroke severity subgroups, Outcome 2 Length of stay (days).

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 7 Early supported discharge service versus conventional care: stroke severity subgroups

Outcome: 2 Length of stay (days)

Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Random,95% CI	Weight	Mean Difference IV,Random,95% CI
1 Initial Barthel 10 to 20							
Adelaide 2000	39	21 (14)	40	33 (20)		9.3 %	-12.00 [-19.60, -4.40]
Belfast 2004	51	39 (29)	43	34 (32)		6.7 %	5.00 [-7.44, 17.44]
London 1999	114	24 (28)	119	28 (26)		9.6 %	-4.00 [-10.95, 2.95]
Manchester 2001	9	35 (35)	9	35 (38)		1.7 %	0.0 [-33.75, 33.75]
Montreal 2000	58	10 (5.6)	55	12.8 (6.5)		11.8 %	-2.80 [-5.04, -0.56]
Newcastle 1997	33	19 (17)	28	24 (23)		7.8 %	-5.00 [-15.31, 5.31]
Oslo 2000	37	24 (15)	32	26 (15)		9.6 %	-2.00 [-9.10, 5.10]
Stockholm 1998	37	13 (10)	39	25 (14)		10.5 %	-12.00 [-17.45, -6.55]

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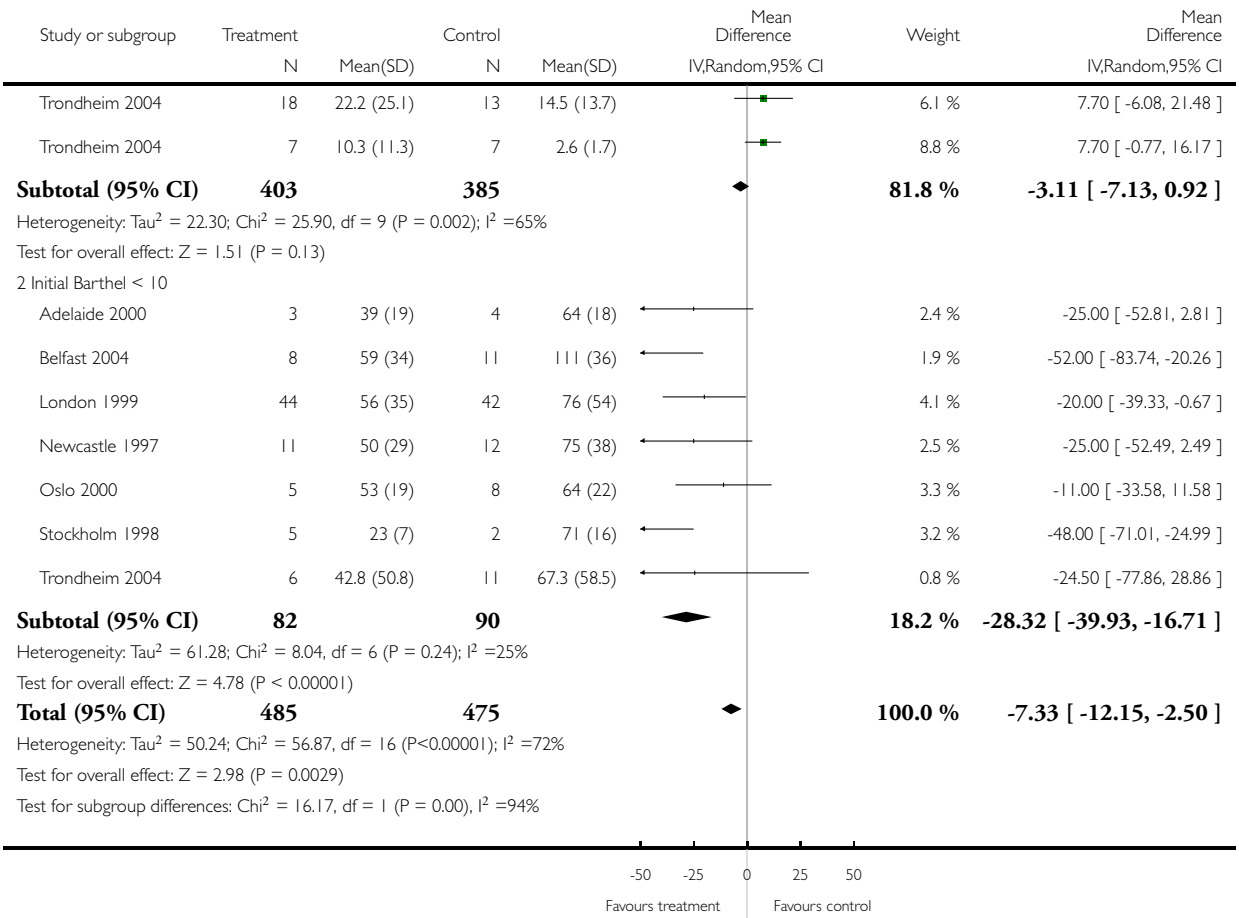
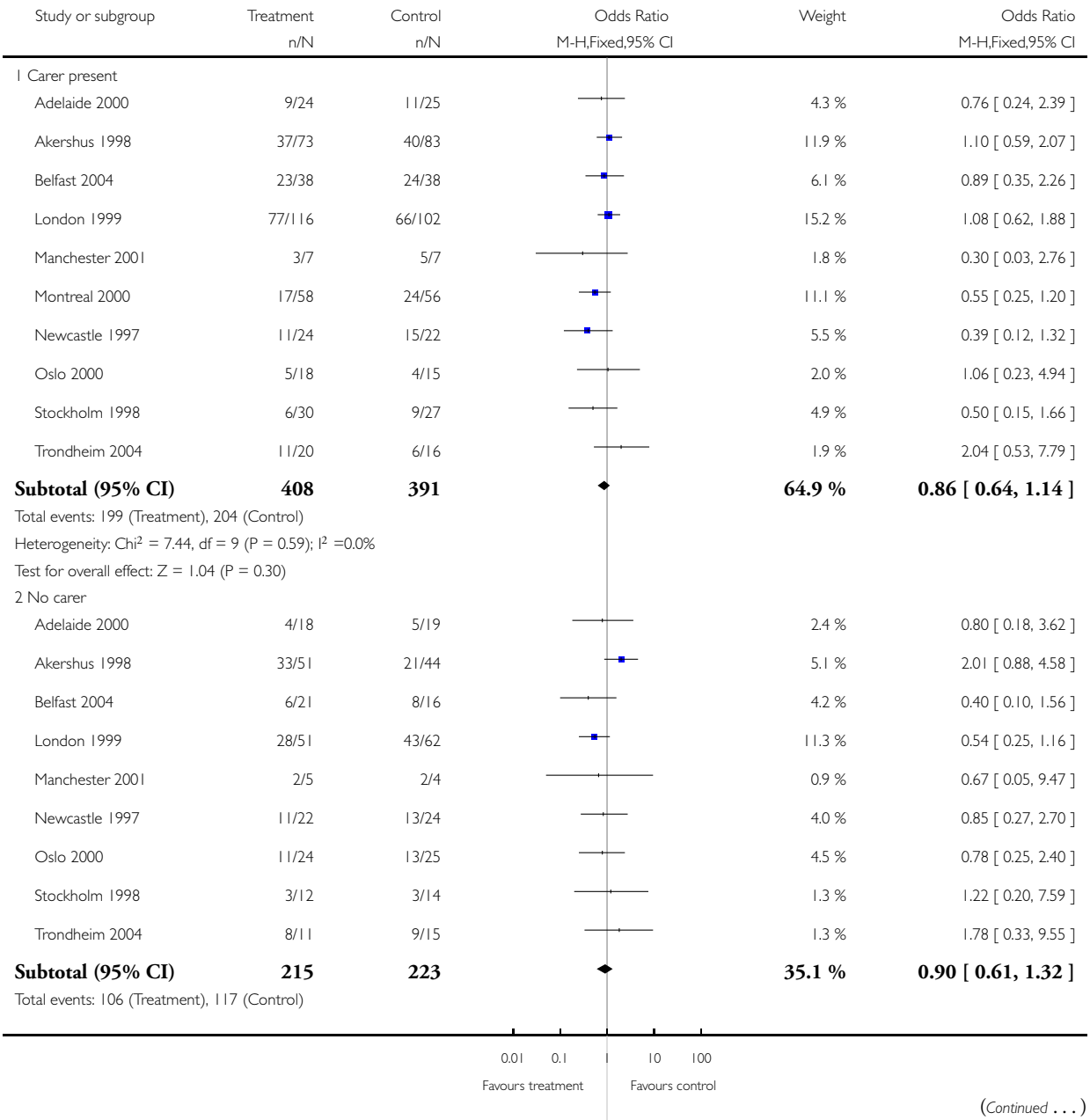


Analysis 8.1. Comparison 8 Early supported discharge service versus conventional care: carer subgroups, Outcome 1 Death or dependency.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 8 Early supported discharge service versus conventional care: carer subgroups

Outcome: 1 Death or dependency



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Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Weight	Odds Ratio M-H,Fixed,95% CI
Heterogeneity: Chi² = 7.59, df = 8 (P = 0.47); I² =0.0%					
Test for overall effect: Z = 0.55 (P = 0.58)					
Total (95% CI)	**623**	**614**	◆	**100.0 %**	**0.87 [0.69, 1.10]**
Total events: 305 (Treatment), 321 (Control)					
Heterogeneity: Chi² = 15.05, df = 18 (P = 0.66); I² =0.0%					
Test for overall effect: Z = 1.16 (P = 0.25)					
Test for subgroup differences: Chi² = 0.03, df = 1 (P = 0.86), I² =0.0%					

Analysis 8.2. Comparison 8 Early supported discharge service versus conventional care: carer subgroups, Outcome 2 Length of stay (days).

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 8 Early supported discharge service versus conventional care: carer subgroups

Outcome: 2 Length of stay (days)

Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Random,95% CI	Weight	Mean Difference IV,Random,95% CI
1 Carer present							
Adelaide 2000	24	19.5 (20.21)	25	37.4 (25.35)		6.5 %	-17.90 [-30.71, -5.09]
Belfast 2004	38	44.4 (25.48)	38	42.8 (45.05)		4.6 %	1.60 [-14.86, 18.06]
London 1999	116	30.7 (32.26)	101	43.1 (44)		8.4 %	-12.40 [-22.80, -2.00]
Manchester 2001	6	25.6 (33.64)	7	56 (43.12)		0.9 %	-30.40 [-72.17, 11.37]
Montreal 2000	58	9.8 (5.32)	56	12 (7.07)		17.6 %	-2.20 [-4.50, 0.10]
Newcastle 1997	24	18.2 (22.05)	22	33.8 (36.05)		4.2 %	-15.60 [-33.06, 1.86]
Oslo 2000	18	19.7 (13.75)	15	23.4 (14.6)		9.0 %	-3.70 [-13.44, 6.04]
Stockholm 1998	30	12.6 (6.59)	27	33.5 (30.97)		7.1 %	-20.90 [-32.82, -8.98]
Trondheim 2004	20	22.2 (34.1)	11	28.3 (50.4)		1.4 %	-6.10 [-39.42, 27.22]

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Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Random,95% CI	Weight	Mean Difference IV,Random,95% CI
Subtotal (95% CI)	**334**		**302**			**59.5 %**	**-9.70 [-16.06, -3.33]**
Heterogeneity: Tau^2 = 45.00; Chi^2 = 20.78, df = 8 (P = 0.01); I^2 =62%							
Test for overall effect: Z = 2.99 (P = 0.0028)							
2 No carer							
Adelaide 2000	18	22.7 (21.44)	19	34.1 (22.73)		5.6 %	-11.40 [-25.63, 2.83]
Belfast 2004	21	37.5 (32.89)	16	65.4 (48.97)		1.9 %	-27.90 [-55.71, -0.09]
London 1999	49	37.9 (34.68)	62	38.4 (32.88)		6.6 %	-0.50 [-13.20, 12.20]
Manchester 2001	4	48.5 (42.79)	4	15 (7.87)		0.9 %	33.50 [-9.14, 76.14]
Newcastle 1997	20	25.8 (27.33)	20	33.9 (35.21)		3.5 %	-8.10 [-27.63, 11.43]
Oslo 2000	24	31.5 (18.26)	25	40.1 (23.26)		7.3 %	-8.60 [-20.28, 3.08]
Stockholm 1998	12	15.9 (7.48)	14	21 (9.8)		12.4 %	-5.10 [-11.75, 1.55]
Trondheim 2004	11	25.9 (23.8)	15	32.9 (39.5)		2.4 %	-7.00 [-31.44, 17.44]
Subtotal (95% CI)	**159**		**175**			**40.5 %**	**-6.17 [-11.00, -1.34]**
Heterogeneity: Tau^2 = 2.02; Chi^2 = 7.26, df = 7 (P = 0.40); I^2 =4%							
Test for overall effect: Z = 2.50 (P = 0.012)							
Total (95% CI)	**493**		**477**			**100.0 %**	**-7.96 [-12.01, -3.92]**
Heterogeneity: Tau^2 = 22.90; Chi^2 = 28.79, df = 16 (P = 0.03); I^2 =44%							
Test for overall effect: Z = 3.86 (P = 0.00011)							
Test for subgroup differences: Chi^2 = 0.75, df = 1 (P = 0.39), I^2 =0.0%							

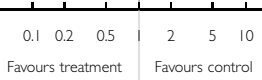
Analysis 9.1. Comparison 9 Early supported discharge service versus conventional care: ESD service subgroups: service base, Outcome 1 Death or dependency.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 9 Early supported discharge service versus conventional care: ESD service subgroups: service base

Outcome: 1 Death or dependency

Study or subgroup	Treatment n/N	Control n/N	Odds Ratio M-H,Fixed,95% CI	Weight	Odds Ratio M-H,Fixed,95% CI
1 Community in-reach					
Belfast 2004	29/59	32/54		8.1 %	0.66 [0.32, 1.40]
London 1999	105/167	109/164		19.4 %	0.85 [0.54, 1.34]
Manchester 2001	5/12	7/11		2.0 %	0.41 [0.08, 2.19]
Montreal 2000	17/58	24/56		8.2 %	0.55 [0.25, 1.20]
Newcastle 1997	22/46	28/46		6.9 %	0.59 [0.26, 1.35]
Oslo 2000	16/42	17/40		5.1 %	0.83 [0.34, 2.01]
Subtotal (95% CI)	**384**	**371**		**49.7 %**	**0.72 [0.53, 0.96]**
Total events: 194 (Treatment), 217 (Control)					
Heterogeneity: Chi^2 = 1.81, df = 5 (P = 0.87); I^2 =0.0%					
Test for overall effect: Z = 2.22 (P = 0.027)					
2 Hospital out-reach					
Adelaide 2000	13/42	16/44		5.1 %	0.78 [0.32, 1.92]
Copenhagen 2009	17/50	25/50		7.8 %	0.52 [0.23, 1.15]
Glostrup 2006	18/103	17/95		6.9 %	0.97 [0.47, 2.02]
Stockholm 1998	9/42	12/41		4.5 %	0.66 [0.24, 1.79]
Trondheim 2000	64/160	81/160		23.1 %	0.65 [0.42, 1.01]
Trondheim 2004	19/31	15/31		2.8 %	1.69 [0.62, 4.63]
Subtotal (95% CI)	**428**	**421**		**50.3 %**	**0.74 [0.56, 1.00]**
Total events: 140 (Treatment), 166 (Control)					
Heterogeneity: Chi^2 = 4.27, df = 5 (P = 0.51); I^2 =0.0%					
Test for overall effect: Z = 1.99 (P = 0.047)					
Total (95% CI)	**812**	**792**		**100.0 %**	**0.73 [0.59, 0.90]**
Total events: 334 (Treatment), 383 (Control)					
Heterogeneity: Chi^2 = 6.11, df = 11 (P = 0.87); I^2 =0.0%					
Test for overall effect: Z = 2.97 (P = 0.0029)					
Test for subgroup differences: Chi^2 = 0.03, df = 1 (P = 0.85), I^2 =0.0%					



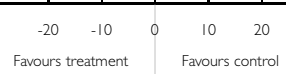
Analysis 9.2. Comparison 9 Early supported discharge service versus conventional care: ESD service subgroups: service base, Outcome 2 Length of stay (days).

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 9 Early supported discharge service versus conventional care: ESD service subgroups: service base

Outcome: 2 Length of stay (days)

Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Random,95% CI	Weight	Mean Difference IV,Random,95% CI
1 Community in-reach							
Belfast 2004	59	41.9 (28.25)	54	49.5 (46.95)		5.6 %	-7.60 [-22.05, 6.85]
London 1999	165	32.8 (33.05)	163	41.3 (40.09)		10.7 %	-8.50 [-16.46, -0.54]
Manchester 2001	10	39.8 (35.78)	11	46.1 (41.17)		1.4 %	-6.30 [-39.22, 26.62]
Montreal 2000	58	9.8 (5.3)	56	12 (7.07)		16.8 %	-2.20 [-4.50, 0.10]
Newcastle 1997	44	21.6 (24.59)	42	33.8 (35.22)		6.5 %	-12.20 [-25.09, 0.69]
Oslo 2000	42	26.4 (17.33)	40	33.8 (21.83)		10.1 %	-7.40 [-15.96, 1.16]
Subtotal (95% CI)	**378**		**366**			**51.1 %**	**-4.34 [-7.34, -1.34]**
Heterogeneity: Tau^2 = 2.15; Chi^2 = 5.60, df = 5 (P = 0.35); I^2 =11%							
Test for overall effect: Z = 2.84 (P = 0.0046)							
2 Hospital out-reach							
Adelaide 2000	42	20.9 (22.55)	44	36 (24.04)		8.8 %	-15.10 [-24.95, -5.25]
Copenhagen 2009	50	16.5 (10)	50	15 (16)		13.8 %	1.50 [-3.73, 6.73]
Stockholm 1998	42	13.6 (6.93)	41	29.2 (26.28)		10.3 %	-15.60 [-23.91, -7.29]
Trondheim 2000	160	18.6 (30)	160	31.1 (30)		12.2 %	-12.50 [-19.07, -5.93]
Trondheim 2004	31	23.5 (30.5)	31	30.5 (44.8)		3.7 %	-7.00 [-26.08, 12.08]
Subtotal (95% CI)	**325**		**326**			**48.9 %**	**-9.62 [-17.88, -1.36]**
Heterogeneity: Tau^2 = 65.10; Chi^2 = 19.52, df = 4 (P = 0.00062); I^2 =80%							
Test for overall effect: Z = 2.28 (P = 0.022)							
Total (95% CI)	**703**		**692**			**100.0 %**	**-7.86 [-11.99, -3.73]**
Heterogeneity: Tau^2 = 25.07; Chi^2 = 28.92, df = 10 (P = 0.001); I^2 =65%							
Test for overall effect: Z = 3.73 (P = 0.00019)							
Test for subgroup differences: Chi^2 = 1.39, df = 1 (P = 0.24), I^2 =28%							

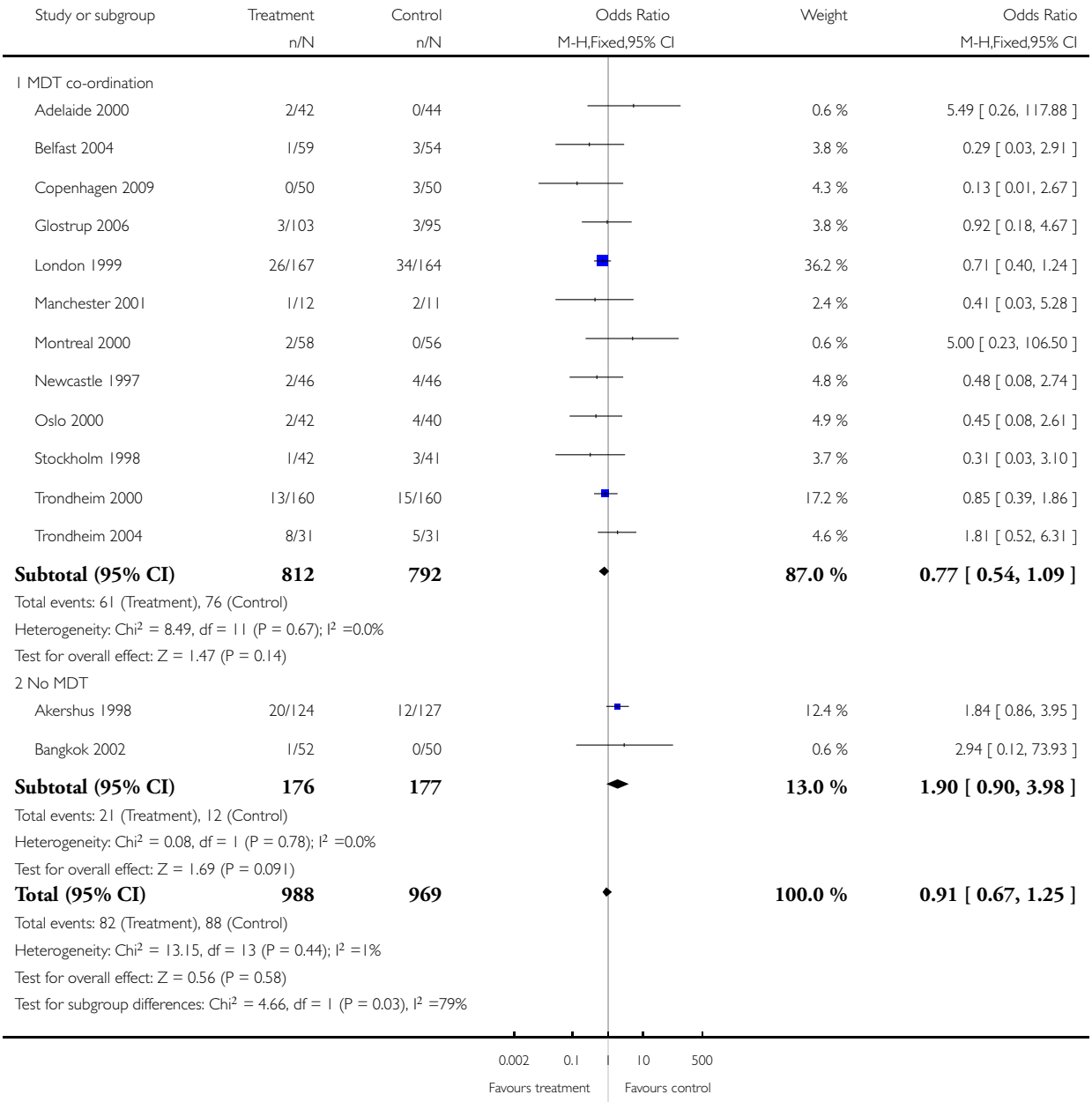


Analysis 10.1. Comparison 10 Early supported discharge service versus conventional care: ESD service subgroups: MDT co-ordination, Outcome 1 Death.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 10 Early supported discharge service versus conventional care: ESD service subgroups: MDT co-ordination

Outcome: 1 Death

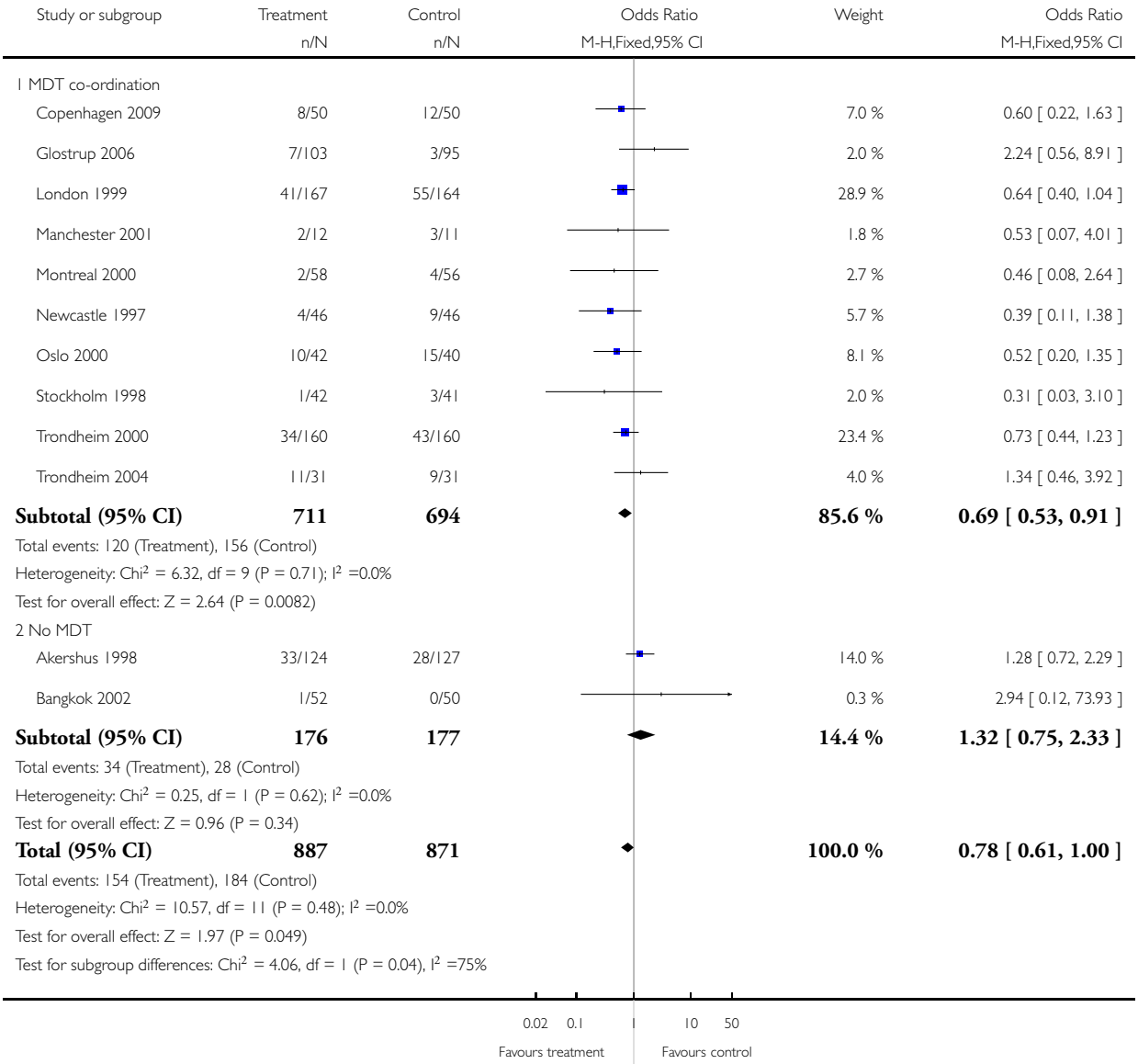


Analysis 10.2. Comparison 10 Early supported discharge service versus conventional care: ESD service subgroups: MDT co-ordination, Outcome 2 Death or requiring institutional care.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 10 Early supported discharge service versus conventional care: ESD service subgroups: MDT co-ordination

Outcome: 2 Death or requiring institutional care

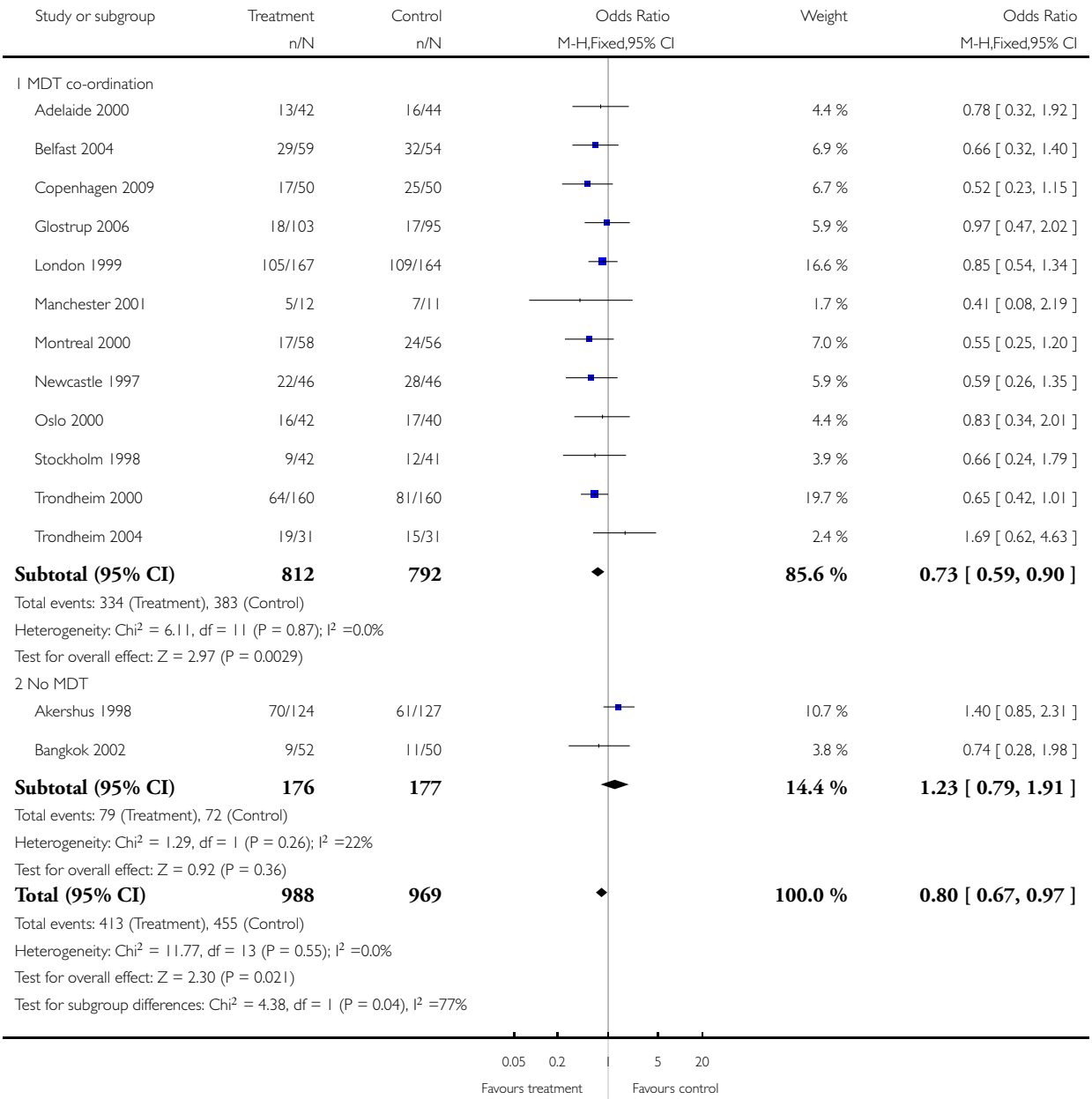


Analysis 10.3. Comparison 10 Early supported discharge service versus conventional care: ESD service subgroups: MDT co-ordination, Outcome 3 Death or dependency.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 10 Early supported discharge service versus conventional care: ESD service subgroups: MDT co-ordination

Outcome: 3 Death or dependency

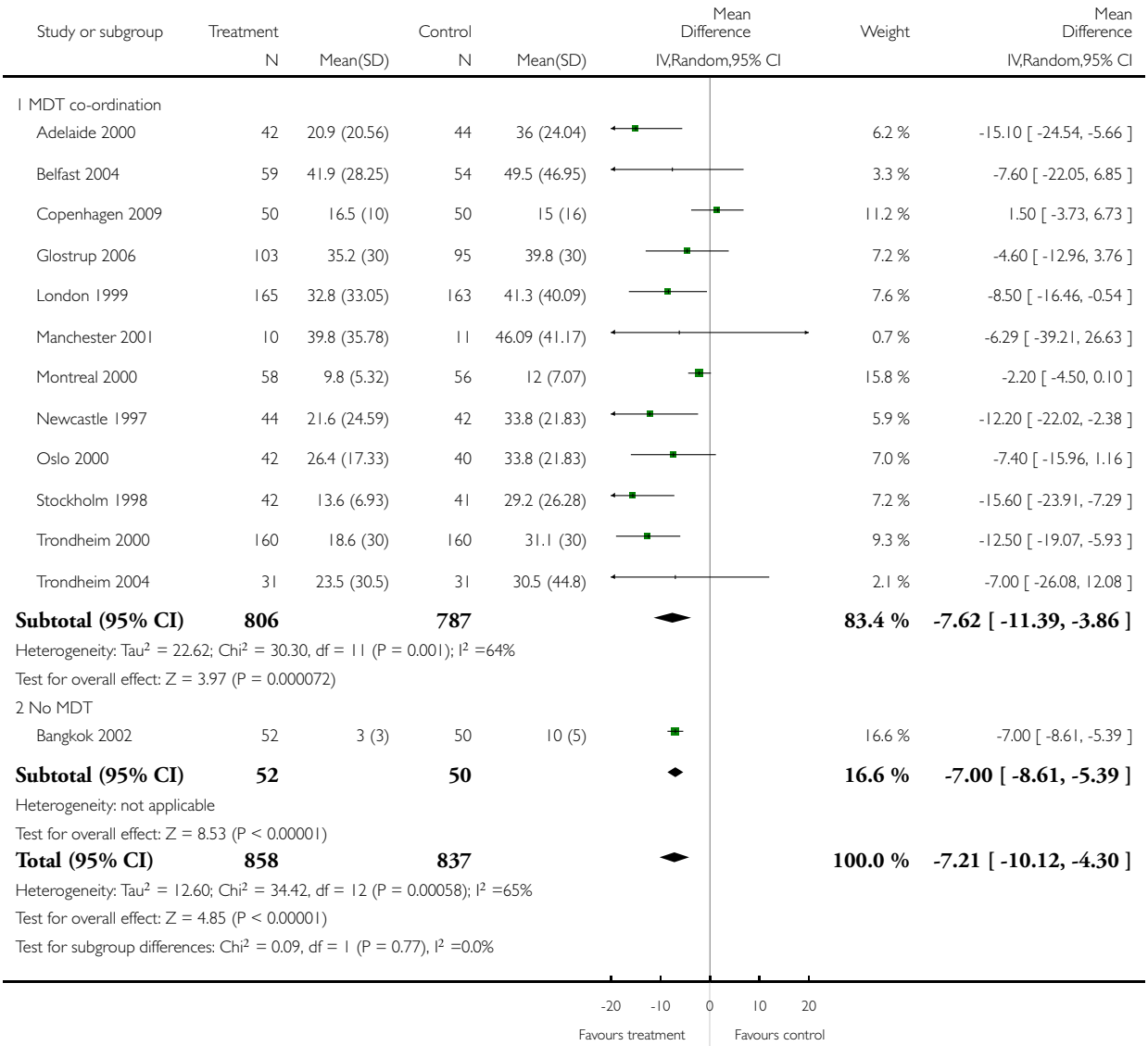


Analysis 10.4. Comparison 10 Early supported discharge service versus conventional care: ESD service subgroups: MDT co-ordination, Outcome 4 Length of stay (days).

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 10 Early supported discharge service versus conventional care: ESD service subgroups: MDT co-ordination

Outcome: 4 Length of stay (days)

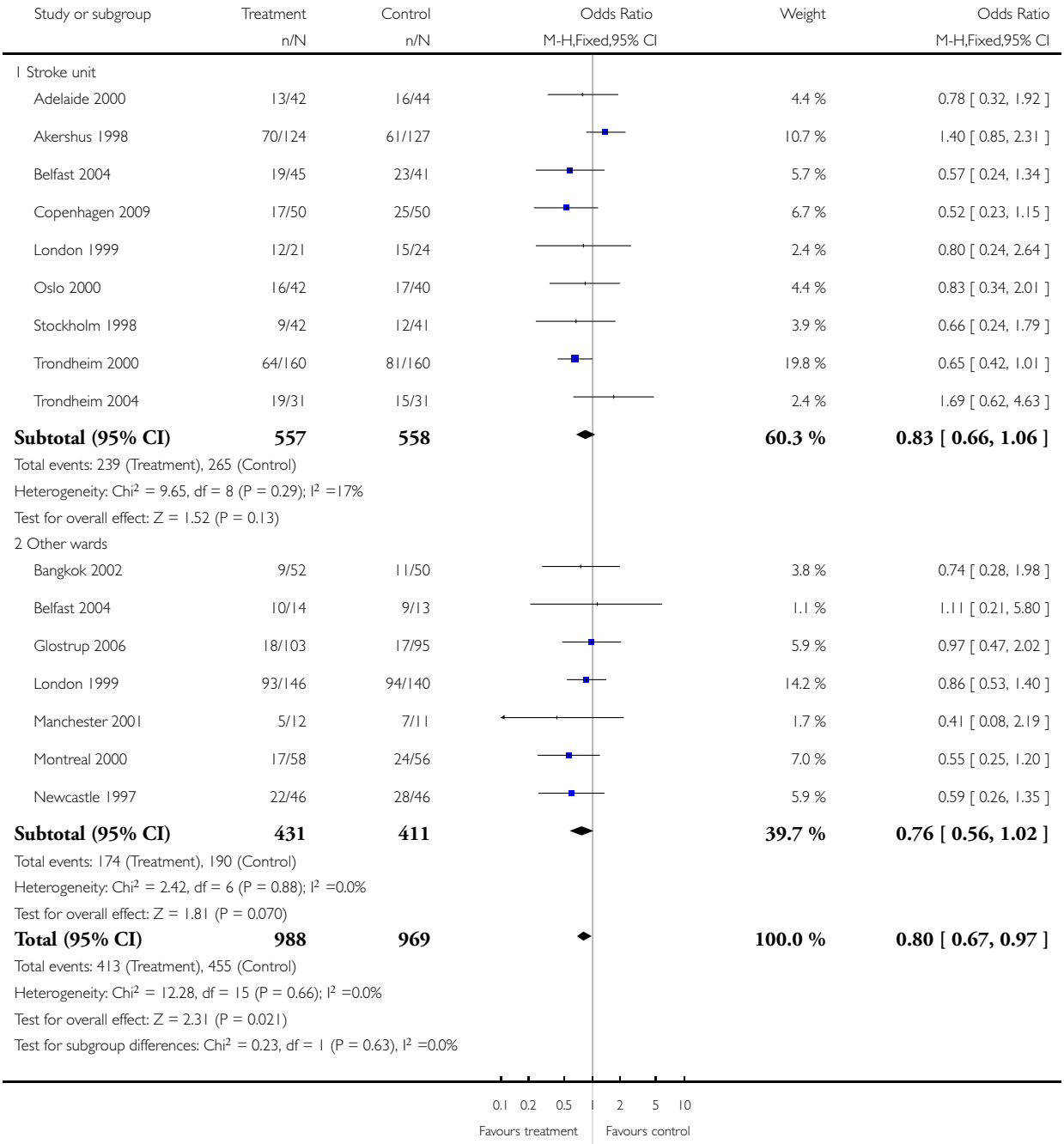


Analysis 11.1. Comparison 11 Early supported discharge service versus conventional care: conventional service subgroups, Outcome 1 Death or dependency.

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 11 Early supported discharge service versus conventional care: conventional service subgroups

Outcome: 1 Death or dependency



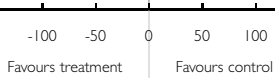
Analysis 11.2. Comparison 11 Early supported discharge service versus conventional care: conventional service subgroups, Outcome 2 Length of stay (days).

Review: Services for reducing duration of hospital care for acute stroke patients

Comparison: 11 Early supported discharge service versus conventional care: conventional service subgroups

Outcome: 2 Length of stay (days)

Study or subgroup	Treatment N	Mean(SD)	Control N	Mean(SD)	Mean Difference IV,Random,95% CI	Weight	Mean Difference IV,Random,95% CI
1 Stroke unit							
Adelaide 2000	42	20.9 (20.56)	44	36 (24.04)		7.0 %	-15.10 [-24.54, -5.66]
Belfast 2004	45	42.1 (28.74)	41	39.9 (36.42)		4.2 %	2.20 [-11.76, 16.16]
Copenhagen 2009	50	16.5 (10)	50	15 (16)		11.4 %	1.50 [-3.73, 6.73]
London 1999	19	49.8 (48.89)	23	29 (17.98)		1.8 %	20.80 [-2.38, 43.98]
Manchester 2001	10	39.8 (35.78)	11	46.1 (41.17)		1.0 %	-6.30 [-39.22, 26.62]
Oslo 2000	42	26.4 (17.33)	40	33.8 (21.83)		7.8 %	-7.40 [-15.96, 1.16]
Stockholm 1998	42	13.6 (6.93)	41	29.2 (26.28)		8.0 %	-15.60 [-23.91, -7.29]
Trondheim 2000	160	18.6 (30)	160	31.1 (30)		9.8 %	-12.50 [-19.07, -5.93]
Trondheim 2004	31	23.5 (30.5)	31	30.5 (44.8)		2.6 %	-7.00 [-26.08, 12.08]
Subtotal (95% CI)	**441**		**441**			**53.8 %**	**-6.37 [-12.76, 0.02]**
Heterogeneity: Tau^2 = 56.04; Chi^2 = 26.85, df = 8 (P = 0.00075); I^2 =70%							
Test for overall effect: Z = 1.96 (P = 0.051)							
2 Other wards							
Bangkok 2002	52	3 (3)	50	10 (5)		15.3 %	-7.00 [-8.61, -5.39]
Belfast 2004	14	41.3 (27.66)	13	80 (63.15)		0.8 %	-38.70 [-75.96, -1.44]
London 1999	146	30.6 (29.93)	139	43.4 (42.48)		7.8 %	-12.80 [-21.37, -4.23]
Manchester 2001	10	39.8 (35.78)	11	46.1 (41.17)		1.0 %	-6.30 [-39.22, 26.62]
Montreal 2000	58	9.8 (5.32)	56	12 (7.07)		14.7 %	-2.20 [-4.50, 0.10]
Newcastle 1997	44	21.6 (24.59)	42	33.8 (21.83)		6.7 %	-12.20 [-22.02, -2.38]
Subtotal (95% CI)	**324**		**311**			**46.2 %**	**-7.25 [-11.47, -3.03]**
Heterogeneity: Tau^2 = 12.21; Chi^2 = 18.71, df = 5 (P = 0.002); I^2 =73%							
Test for overall effect: Z = 3.37 (P = 0.00075)							
Total (95% CI)	**765**		**752**			**100.0 %**	**-7.28 [-10.64, -3.93]**



(*Continued . . .*)

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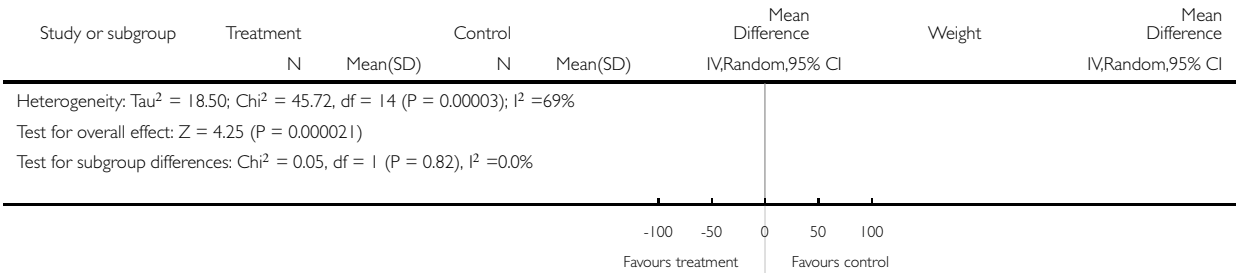

ADDITIONAL TABLES

Table 1. Characteristics and staffing of ESD trials

Trial	Setting	Key features	Control service base	ESD staffing (whole time equivalents for caseload of 100 patients/year; median and range)							
				Medical	Nursing	Physio	OT	SALT	Assistant	Other	Total
Adelaide 2000	Urban	PHMR Goals documented	Rehabilitation unit (stroke and neurological)	0.06	0.06	0.7	1.6	0.25	0.4	Social work	2.6
Aveiro	Mixed	Tailored	Mixture (stroke unit, case managers in community-based team)	0.8	0	1.0	1.5	0	0	Psychology	3.2
Belfast 2004	Mixed	PHMR	Mixture (medical, geriatric, stroke	0.1	0	1.5	1.0	0.5	1.5	Secretary Social work	4.6

Table 1. Characteristics and staffing of ESD trials (*Continued*)

			unit)								
Copenhagen 2009	Urban	Tailored	Stroke unit								
Glostrup 2006	Mixed	Tailored	Neurology, geriatrics	0	0	2.0	2.0	0	0	0	4.0
London 1999	Urban	Equipment store	Mixture (medical, stroke unit)	0.1	0	1	1	0.5	0.5	-	3.1
Manchester 2001	Urban		Mixture (medical, stroke team or unit)	nd	nd	nd	nd	nd	nd	-	nd
Montreal 2000	Urban		Mixture (medical neurology)	0	0.4	1.0	0.7	0.4	-	Dietitian	2.7
Newcastle 1997	Urban	Envt visit Key worker 7-day input PHMR	Mixture (medical, geriatric)	0	0	0.8	1.0	0.3	0.2	Secretary Social work Carers	2.8
Stockholm 1998	Urban	Case manager Patient diary	Stroke unit	0.03	0	1.0	1.0	0.5	-	-	2.6
Oslo 2000	Urban	Key worker Community services	Stroke unit	nd	nd	nd	nd	nd	nd	-	nd

Table 1. Characteristics and staffing of ESD trials (*Continued*)

Trondheim 2000	Urban	Key worker Team Community services	Stroke unit	0.12	1.2	1.2	1.2	0	-	-	3.7
Trondheim 2004	Rural		Stroke unit	0.12	1.2	1.2	1.2	0	-	-	3.7
West Denmark	Mixed	Tailored	Neurorehabilitation centres (3)	?	0	?	?	0	0	0	?
	9 urban 4 mixed 1 rural		**6 stroke unit 6 mixed service 2 neurorehabilitation unit**	**0.08 (0 to 0.12)**	**0 (0 to 1.2)**	**1.1 (0.7 to 2)**	**1.0 (0.7 to 2)**	**0.1 (0 to 0.5)**	**0.2 (0 to 1.5)**	**-**	**3.0 (2.6 to 4.6)**

MDT mtg: multidisciplinary team meeting
N: number of participants
nd: no comparable data
OT: occupational therapy
PDHV: pre-discharge home visit
PHMR: patient held medical record
physio: physiotherapy
PNH: private nursing home
SALT: speech and language therapy

Table 2. Plan and timing of primary analyses

Trial	Death	Institutional care	Dependency	Defined dependent	Length of stay
Adelaide 2000	6 months	6 months	6 months	Barthel index < 95/100	Initial hospital discharge
Akershus 1998	7 months	7 months	7 months	Barthel index < 95/100	Not used - only available for acute hospital
Bangkok 2002	6 months	6 months	6 months	Barthel index < 95/100	Initial hospital discharge

Table 2. Plan and timing of primary analyses *(Continued)*

Belfast 2004	12 months	12 months	12 months	Barthel index < 19/20	Initial hospital discharge
Copenhagen 2009	5 months	5 months	3 months	Rankin score 3 to 5	Initial hospital stay
Glostrup 2006	12 months	12 months	6 months	Barthel index - significant reduction	Initial hospital discharge
London 1999	12 months	12 months	12 months	Barthel index < 19/20	Initial hospital discharge
Manchester 2001	12 months	12 months	12 months	Barthel index < 19/20	Initial hospital stay (acute and rehabilitation wards)
Montreal 2000	3 months	3 months	3 months	Barthel index < 95/100	Initial hospital stay
Newcastle 1997	3 month	3 month	3 month	Rankin score 3 to 5	Initial hospital stay
Oslo 2000	6 month	6 month	6 month	Rankin score 3 to 5	Initial hospital stay
Stockholm 1998	6 month	6 month	6 month	Barthel index 95/100	Initial hospital stay
Trondheim 2000	6 months	6 months	6 months	Barthel index 95/100	Initial hospital stay
Trondheim 2004	12 months	12 months	12 months	Rankin score 3 to 5	Initial hospital stay (acute and rehabilitation wards)

Table 3. Plan of secondary analyses: patient outcomes

Trial	Timing of outcome	ADL score	Extended ADL score	Subjective health	Mood	Service satisfaction	Hospital readmission
Adelaide 2000	6 months	Barthel index (median, IQR)	Adelaide Activities Profile	SF-36 (General health perceptions)	SF-36 (mental health)	Satisfied with rehabilitation programme	6 months
Akershus 1998	7 month	Barthel index (median, imputed SD)	-	SF-36 (general health perceptions)	SF-36 (mental health)	-	-
Bangkok 2002	-	-	-	-	-	-	-
Belfast 2004	12 months	Barthel index	Nottingham extended ADL	SF-36 (general health perceptions)	SF-36 (mental health)	Satisfied with outpatient rehabilitation	6 month

Table 3. Plan of secondary analyses: patient outcomes (*Continued*)

Copenhagen 2009	3 months	Barthel Index (median, imputed SD)	-	EQ-5D	-		5 months
Glostrup 2006	6 months	Barthel index	Frenchay activities index	SF-36	GDS	-	12 month
London 1999	12 months	Barthel index	Rivermead ADL score	Nottingham health profile (score reversed)	Number abnormal on hospital anxiety and depression scale	Satisfied with care in general	12 month
Manchester 2001	12 months	Barthel index	Nottingham extended ADL score	Euroquol scale (0 to 100)	Hospital anxiety and depression scale (depression subscore, score reversed)	-	-
Montreal 2000	3 month	Barthel index	Instrumental ADL (OARS) scale	SF-36 (general health perceptions)	SF-36 (mental health)	-	-
Newcastle 1997	3 month	-	Nottingham extended ADL score (median, IQR)	Dartmouth COOP chart overall health section (median, IQR; scale reversed)	Dartmouth COOP chart feelings section (median, IQR; scale reversed)	-	3 month
Oslo 2000	6 month	-	Nottingham extended ADL score (median, IQR)	General Health Questionnaire (reversed score)	MADRS score	Satisfied with care in general	-
Stockholm 1998	8 months	-	Frenchay Activities index (median, IQR)	Sickness impact profile score (median, IQR)	-	Satisfied with care received	6 months
Trondheim 2000	12 months	-	Frenchay social activity index	Nottingham Health Profile (average of sum 1 and 2)	MADRS	-	-

Table 3. Plan of secondary analyses: patient outcomes (*Continued*)

Trondheim 2004	12 months	Barthel Index	-	Nottingham health profile	-	-	-

ADL: activities of daily living
COOP: Care Cooperative Information Project
GDS: Geriatric Depression Scale
IQR: interquartile range
MADRS: Montgomery-Åsberg Depression Rating Scale
OARS: Older Americans Resources and Services scale
SD: standard deviation
SF: short form

Table 4. Plan of secondary analyses: carer outcomes

Trial	Timing of outcome	Subjective health	Mood	Service satisfaction
Adelaide 2000	6 months	SF-36 general health perceptions	SF-36 mental health	Satisfied with rehabilitation programme
Akershus 1998	-	-	-	-
Bangkok 2002	-	-	-	-
Belfast 2004	6 months	Caregiver strain index (score reversed)	-	Satisfied with outpatient services
Copenhagen 2009	3 months			Satisfied with rehabilitation programme
Glostrup 2006	-	-	-	-
London 1999	12 months	Caregiver strain index (score reversed)	-	Satisfied with care in general
Manchester 2001	12 month	-	Hospital anxiety and depression scale (depression subscore, score reversed)	-
Montreal 2000	3 months	Caregiver Burden Index	-	-
Newcastle 1997	3 months	General health questionnaire (median, range; score reversed)	-	-
Oslo 2000	6 months	General health questionnaire (score reversed)	-	Satisfied with care in general

Table 4. Plan of secondary analyses: carer outcomes (*Continued*)

Stockholm 1998	-	-	-	-
Trondheim 2000	12 months	Caregiver Burden score	-	-
Trondheim 2004	12 months	Caregiver strain index (score reversed)	-	-

Table 5. Patterns of discharge from hospital in ESD and control groups

Time from randomisation	Number (%) discharged		Risk difference (95% CI)	Significance
	ESD service (364 patients)	Control (354 patients)		
2 weeks	116 (32%)	77 (22%)	11 (-3, 24)	0.13
4 weeks	236 (65%)	179 (50%)	19 (4, 35)	0.01
6 weeks	277 (76%)	249 (70 %)	8 (1, 15)	0.02
8 weeks	303 (83%)	275 (78%)	8 (3, 13)	0.003
3 months	345 (95%)	324 (92%)	2 (-1, 6)	0.21
6 months	363 (100%)	353 (100%)	0 (-2, 1)	0.71

Data are presented from six trials (Adelaide 2000, Belfast 2004, London 1999, Manchester 2001, Oslo 2000, Stockholm 1998) that could provide relevant data on 718 participants. Discharges include deaths and do not include readmissions. The risk difference (95% confidence interval) is calculated taking into account variation between trials

Table 6. Service costs of individual trials

Trial	Items costed	ESD cost / patient	Control cost / pt	Percent difference
Adelaide 2000	Cost minimisation. Direct and indirect	$8040 Aus	$10054 Aus	- 20%
Glostrup 2006	Direct costs	EURO7674	EURO6660	+15%
London 1999	Direct and indirect to 12 months	£6800	£7432	- 9%
Montreal 2000	Direct and indirect to 3 months	$7784 Canadian	$11,065 Canadian	-30%
Newcastle 1997	Direct and indirect	£7155	£7480	- 4%

Table 6. Service costs of individual trials (*Continued*)

Stockholm 1998	Hospital, community, private costs	2806 SEK	3475 SEK	- 19%
Trondheim 2000	Direct costs to 12 months	EURO5,113	EURO6,665	- 23%

APPENDICES

Appendix 1. MEDLINE search strategy

MEDLINE (Ovid) search strategy
1. cerebrovascular disorders/ or exp basal ganglia cerebrovascular disease/ or exp brain ischemia/ or exp carotid artery diseases/ or exp intracranial arterial diseases/ or exp "intracranial embolism and thrombosis"/ or exp intracranial hemorrhages/ or stroke/ or stroke, lacunar/ or exp brain infarction/ or exp vertebral artery dissection/
2. (stroke or cerebrovasc$ or brain vasc$ or cerebral vasc$ or cva$ or apoplex$).tw.
3. ((brain$ or cerebr$ or cerebell$ or vertebrobasilar or hemispher$ or intracran$ or intracerebral or infratentorial or supratentorial or MCA or anterior circulation or posterior circulation or basal ganglia) adj5 (isch?emi$ or infarct$ or thrombo$ or emboli$)).tw.
4. ((brain$ or cerebr$ or cerebell$ or intracerebral or intracran$ or parenchymal or intraventricular or infratentorial or supratentorial or basal gangli$) adj5 (haemorrhage$ or hemorrhage$ or haematoma$ or hematoma$ or bleed$)).tw.
5. 1 or 2 or 3 or 4
6. Patient Discharge/
7. Progressive Patient Care/
8. home care services/ or home care services, hospital-based/ or home nursing/
9. (early supported discharge or ESD).tw.
10. ((early or earlier or prompt or accelerate$ or acute or subacute or supported) adj5 discharg$).tw.
11. (reduce$ adj5 (duration or length) adj5 (stay or hospital)).tw.
12. (reduce$ adj5 (hospital or inpatient or in-patient) adj5 (stay or care)).tw.
13. short-term ward.tw.
14. ((organi?ed or multidisciplinary) adj5 discharge adj5 team$).tw.
15. ((early or earlier or prompt or accelerate$ or supported) adj5 return$ adj2 home$).tw.
16. (hospital$ adj3 home$).tw.
17. hospital rehabilitation unit$.tw.
18. (rehabilitation adj3 home$).tw.
19. (intensive adj2 home adj5 (rehabilitation or support$)).tw.
20. (mobile adj2 team$).tw.
21. organi?ed home care.tw.
22. ((extended stroke unit adj3 (service$ or care)) or ESUS).tw.
23. ((post-discharge or home rehabilitation) adj5 (support$ or care)).tw.
24. ((early or earlier or acute or subacute or post-discharge) adj5 (community or domiciliary or primary care or home or home-based) adj5 (rehabilitation or support$ or care)).tw.
25. or/6-24
26. 5 and 25
27. Randomized Controlled Trials as Topic/
28. random allocation/
29. Controlled Clinical Trials as Topic/
30. control groups/

31. clinical trials as topic/
32. double-blind method/
33. single-blind method/
34. Research Design/
35. Program Evaluation/
36. randomised controlled trial.pt.
37. controlled clinical trial.pt.
38. clinical trial.pt.
39. random$.tw.
40. (controlled adj5 (trial$ or stud$)).tw.
41. (clinical$ adj5 trial$).tw.
42. ((control or treatment or experiment$ or intervention) adj5 (group$ or subject$ or patient$)).tw.
43. (quasi-random$ or quasi random$ or pseudo-random$ or pseudo random$).tw.
44. ((control or experiment$ or conservative) adj5 (treatment or therapy or procedure or manage$)).tw.
45. ((singl$ or doubl$ or tripl$ or trebl$) adj5 (blind$ or mask$)).tw.
46. (assign$ or allocat$).tw.
47. controls.tw.
48. trial.ti.
49. or/27-48
50. 26 and 49
51. exp animals/ not humans.sh.
52. 50 not 51

Appendix 2. EMBASE search strategy

EMBASE (Ovid) search strategy
1. cerebrovascular disease/ or basal ganglion hemorrhage/ or exp brain hematoma/ or exp brain hemorrhage/ or exp brain infarction/ or exp brain ischemia/ or exp carotid artery disease/ or cerebral artery disease/ or cerebrovascular accident/ or exp intracranial aneurysm/ or exp occlusive cerebrovascular disease/ or stroke/
2. stroke patient/ or stroke unit/
3. (stroke or cerebrovasc$ or brain vasc$ or cerebral vasc$ or cva$ or apoplex$).tw.
4. ((brain$ or cerebr$ or cerebell$ or vertebrobasilar or hemispher$ or intracran$ or intracerebral or infratentorial or supratentorial or MCA or anterior circulation or posterior circulation or basal ganglia) adj5 (isch?emi$ or infarct$ or thrombo$ or emboli$)).tw.
5. ((brain$ or cerebr$ or cerebell$ or intracerebral or intracran$ or parenchymal or intraventricular or infratentorial or supratentorial or basal gangli$) adj5 (haemorrhage$ or hemorrhage$ or haematoma$ or hematoma$ or bleed$)).tw.
6. 1 or 2 or 3 or 4 or 5
7. hospital discharge/
8. early supported discharge/
9. progressive patient care/
10. home care/ or home physiotherapy/ or home rehabilitation/
11. home environment/
12. community based rehabilitation/
13. (early supported discharge or ESD).tw.
14. ((early or earlier or prompt or accelerate$ or acute or subacute or supported) adj5 discharg$).tw.
15. (reduce$ adj5 (duration or length) adj5 (stay or hospital)).tw.
16. (reduce$ adj5 (hospital or inpatient or in-patient) adj5 (stay or care)).tw.
17. short-term ward.tw.
18. ((organi?ed or multidisciplinary) adj5 discharge adj5 team$).tw.
19. ((early or earlier or prompt or accelerate$ or supported) adj5 return$ adj2 home$).tw.
20. (hospital$ adj3 home$).tw.
21. hospital rehabilitation unit$.tw.
22. (rehabilitation adj3 home$).tw.

23. (intensive adj2 home adj5 (rehabilitation or support$)).tw.
24. (mobile adj2 team$).tw.
25. organi?ed home care.tw.
26. ((extended stroke unit adj3 (service$ or care)) or ESUS).tw.
27. ((post-discharge or home rehabilitation) adj5 (support$ or care)).tw.
28. ((early or earlier or acute or subacute or post-discharge) adj5 (community or domiciliary or primary care or home or home-based) adj5 (rehabilitation or support$ or care)).tw.
29. or/7-28
30. Randomized Controlled Trial/
31. Randomization/
32. Controlled Study/
33. control group/
34. clinical trial/ or phase 1 clinical trial/ or phase 2 clinical trial/ or phase 3 clinical trial/ or phase 4 clinical trial/ or controlled clinical trial/
35. Double Blind Procedure/
36. Single Blind Procedure/ or triple blind procedure/
37. Parallel Design/
38. random$.tw.
39. (controlled adj5 (trial$ or stud$)).tw.
40. (clinical$ adj5 trial$).tw.
41. ((control or treatment or experiment$ or intervention) adj5 (group$ or subject$ or patient$)).tw.
42. (quasi-random$ or quasi random$ or pseudo-random$ or pseudo random$).tw.
43. ((control or experiment$ or conservative) adj5 (treatment or therapy or procedure or manage$)).tw.
44. ((singl$ or doubl$ or tripl$ or trebl$) adj5 (blind$ or mask$)).tw.
45. (assign$ or alternate or allocat$).tw.
46. controls.tw.
47. trial.ti.
48. or/30-47
49. 6 and 29 and 48

Appendix 3. CINAHL search strategy

CINAHL (EBSCO) search strategy
S49 .S33 and S48
S48 .S34 or S35 or S36 or S37 or S38 or S39 or S40 or S41 or S42 or S43 or S44 or S45 or S46 or S47
S47 .TI trial
S46 .TI controls OR AB controls
S45 .TI (assign* or allocat*) OR AB (assign* or allocat*)
S44 .TI ((singl* or doubl* or tripl* or trebl*) N5 (blind* or mask*)) OR AB ((singl* or doubl* or tripl* or trebl*) N5 (blind* or mask*))
S43 .TI ((control or experiment* or conservative) N5 (treatment or therapy or procedure or manage*)) OR AB ((control or experiment* or conservative) N5 (treatment or therapy or procedure or manage*))
S42 .TI (quasi-random* or quasi random* or pseudo-random* or pseudo random*) OR AB (quasi-random* or quasi random* or pseudo-random* or pseudo random*)
S41 .TI ((control or treatment or experiment* or intervention) N5 (group* or subject* or patient*)) OR AB ((control or treatment or experiment* or intervention) N5 (group* or subject* or patient*))
S40 .TI clinical* N5 trial* OR AB clinical* N5 trial*
S39 .TI (controlled N5 (trial* or stud*)) OR AB (controlled N5 (trial* or stud*))
S38 .TI random* OR AB random*
S37 .(MH “Program Evaluation”)
S36 .(MH “Random Assignment”)
S35 .(ZT “clinical trial”) or (ZT “randomised controlled trial”)

S34 .(MH "Clinical Trials") OR (MH "Double-Blind Studies") OR (MH "Intervention Trials") OR (MH "Randomized Controlled Trials") OR (MH "Single-Blind Studies") OR (MH "Therapeutic Trials") OR (MH "Triple-Blind Studies")
S33 .S11 and S32
S32 .S12 or S13 or S14 or S15 or S16 or S17 or S18 or S19 or S20 or S21 or S22 or S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31
S31 .TI ((early or earlier or acute or subacute or post-discharge) N5 (community or domiciliary or primary care or home or home-based) N5 (rehabilitation or support* or care)) OR AB ((early or earlier or acute or subacute or post-discharge) N5 (community or domiciliary or primary care or home or home-based) N5 (rehabilitation or support* or care))
S30 .TI ((post-discharge or home rehabilitation) N5 (support* or care)) OR AB ((post-discharge or home rehabilitation) N5 (support* or care))
S29 .TI ESUS OR AB ESUS
S28 .TI (extended stroke unit N3 (service* or care)) OR AB (extended stroke unit N3 (service* or care))
S27 .TI organi?ed home care OR AB organi?ed home care
S26 .TI mobile N2 team* OR AB mobile N2 team*
S25 .TI (intensive N2 home N5 (rehabilitation or support*)) OR AB (intensive N2 home N5 (rehabilitation or support*))
S24 .TI rehabilitation N3 home* OR AB rehabilitation N3 home*
S23 .TI hospital rehabilitation unit* OR AB hospital rehabilitation unit*
S22 .TI hospital* N3 home* OR AB hospital* N3 home*
S21 .TI ((early or earlier or prompt or accelerate* or supported) N5 return* N2 home*) OR AB ((early or earlier or prompt or accelerate* or supported) N5 return* N2 home*)
S20 .TI ((organi?ed or multidisciplinary) N5 discharge N5 team*) OR AB ((organi?ed or multidisciplinary) N5 discharge N5 team*)
S19 .TI short-term ward OR AB short-term ward
S18 .TI (reduce* N5 (hospital or inpatient or in-patient) N5 (stay or care)) OR AB (reduce* N5 (hospital or inpatient or in-patient) N5 (stay or care))
S17 .TI (reduce* N5 (duration or length) N5 (stay or hospital)) OR AB (reduce* N5 (duration or length) N5 (stay or hospital))
S16 .TI ((early or earlier or prompt or accelerate* or acute or subacute or supported) N5 discharg*) OR AB ((early or earlier or prompt or accelerate* or acute or subacute or supported) N5 discharg*)
S15 .TI (early supported discharge or ESD) OR AB (early supported discharge or ESD)
S14 .(MH "Home Health Care") OR (MH "Home Rehabilitation+") OR (MH "Home Nursing, Professional")
S13 .(MH "Progressive Patient Care")
S12 .(MH "Patient Discharge+") OR (MH "Early Patient Discharge")
S11 .S1 or S2 or S3 or S4 or S7 or S10
S10 .S8 and S9
S9 .TI (haemorrhage* or hemorrhage* or haematoma* or hematoma* or bleed*) or AB (haemorrhage* or hemorrhage* or haematoma* or hematoma* or bleed*)
S8 .TI (brain brain* or cerebr* or cerebell* or intracerebral or intracran* or parenchymal or intraventricular or infratentorial or supratentorial or basal gangli*) or AB (brain* or cerebr* or cerebell* or intracerebral or intracran* or parenchymal or intraventricular or infratentorial or supratentorial or basal gangli*)
S7 .S5 and S6
S6 .TI (ischemi* or ischaemi* or infarct* or thrombo* or emboli*) or AB (ischemi* or ischaemi* or infarct* or thrombo* or emboli*)
S5 .TI (brain* or cerebr* or cerebell* or vertebrobasilar or hemispher* or intracran* or intracerebral or infratentorial or supratentorial or MCA or anterior circulation or posterior circulation or basal ganglia) or AB (brain* or cerebr* or cerebell* or vertebrobasilar or hemispher* or intracran* or intracerebral or infratentorial or supratentorial or MCA or anterior circulation or posterior circulation or basal ganglia)
S4 .TI (stroke or cerebrovasc* or brain vasc* or cerebral vasc* or cva* or apoplex*) or AB (stroke or cerebrovasc* or brain vasc* or cerebral vasc* or cva* or apoplex*)
S3 .(MH "Stroke Patients")
S2 ..(MH "Cerebrovascular Disorders") OR (MH "Basal Ganglia Cerebrovascular Disease+") OR (MH "Carotid Artery Diseases+") OR (MH "Cerebral Ischemia+") OR (MH "Cerebral Vasospasm") OR (MH "Intracranial Arterial Diseases+") OR (MH "Intracranial Embolism and Thrombosis") OR (MH "Intracranial Hemorrhage+") OR (MH "Stroke") OR (MH "Vertebral Artery Dissections")
S1 .(MH "Stroke Units")

WHAT'S NEW

Last assessed as up-to-date: 20 April 2012.

Date	Event	Description
30 May 2012	New search has been performed	This updated review identified three new trials (360 patients) and now incorporates an individual patient data meta-analysis of 14 trials (1957 patients). We have retained the modified classification of Early Supported Discharge Services (into three subgroups) to reflect the variety of trials being published
6 April 2012	New citation required but conclusions have not changed	New authors.

HISTORY

Protocol first published: Issue 3, 1997

Review first published: Issue 3, 1999

Date	Event	Description
16 November 2004	New search has been performed	This review (2004) incorporates an individual patient data meta-analysis of 11 trials. This includes new data on more than double the number of patients included in the previous version. We have retained the modified classification of Early Supported Discharge Services (into three subgroups) to reflect the variety of trials being published

CONTRIBUTIONS OF AUTHORS

For this version of the review, Patricia Fearon updated and carried out the literature searches, reanalyzed the data and redrafted the manuscript. Peter Langhorne supervised the update and revised the draft manuscript. The Early Supported Discharge Trialists group provided original data, data interpretation and redrafted the manuscript.

For the previous version of the review (ESD trialists 2005) Peter Langhorne initiated the study, drafted the original protocol, co-ordinated the project and drafted the original manuscript. Peter Langhorne, Martin Dennis and Gillian Taylor formed the writing committee. Gillian Taylor, Peter Langhorne and Gordon Murray conducted the original statistical analyses. The Early Supported Discharge Trialists group provided original data, data interpretation and redrafted the manuscript.

Early Supported Discharge Trialists group consisted of: Craig Anderson (Sydney), Erik Bautz-Holter (Oslo), Martin Dennis (Secretariat) Paola Dey (Manchester), Bent Indredavik (Trondheim), Birgitte Jepson (West Denmark), Peter Langhorne (Co-ordinator), Nancy Mayo (Montreal), Paul Mogensen (West Denmark), Gordon Murray (Stastician), Michael Power (Belfast), Helen Rodgers (Newcastle), Ole Morten Ronning (Akershus), Anthony Rudd (London), Silvana Santana (Aviero), Nijasri Suwanwela (Bangkok), Gillian Taylor (Statistician), Lotta Widen-Holmqvist (Stockholm) and Charles Wolfe (London). All contributed to the study design, data collection, and analysis and revision of the manuscript.

DECLARATIONS OF INTEREST

The ESD trialists conducted the original randomised trials.

SOURCES OF SUPPORT

Internal sources

- University of Glasgow, UK.
- University of Edinburgh, UK.

External sources

- Stroke Association, UK.
- Chest Heart and Stroke Scotland, UK.

DIFFERENCES BETWEEN PROTOCOL AND REVIEW

Some post-hoc analyses have been carried out. These are highlighted in the text.

INDEX TERMS

Medical Subject Headings (MeSH)

*Length of Stay; *Patient Discharge [economics]; Cost-Benefit Analysis; Home Care Services, Hospital-Based [economics; *organization & administration]; Home Nursing [economics; organization & administration]; Randomized Controlled Trials as Topic; Stroke [economics; *rehabilitation]

MeSH check words

Aged; Aged, 80 and over; Humans