D.3 Step up – Step down/Community Hospital

Study	APPLEGATE 1990[16]
Study type	RCT (Patient randomised; Parallel).
Number of participants	Geriatric Assessment Unit (n=78). Control Group (n=77) n=155.
Countries and setting	Geriatric Assessment Unit, Baptist Memorial Hospital, Memphis, USA.
Duration of study	July 1985 – June 1987 was the enrolment period; patients followed up for 1 year thereafter.
Stratum	Admission avoidance.
Subgroup analysis within study	Yes. Stratification performed before randomisation according to whether the patient, the family or the consulting physician thought that the patient had a higher or lower risk of immediately going to a nursing home.
Inclusion criteria	At risk for nursing home placement. To have potentially reversible functional impairment in more than one activity of daily living, or both. Age of 65 or older. Loss of independence in more than one activity of daily living. Willingness to participate in a randomised study and give signed informed consent. Access to a primary physician willing to resume care of the patient at discharge.
Exclusion criteria	Medical problems that were unstable or required continued short term monitoring. If their survival was estimated to be less than six months. If they had serious chronic mental impairment. If a nursing home placement was considered inevitable.
Recruitment/selection of patients	278 referrals received from physicians and social work personnel, to the Hospital. Of which 123 were considered ineligible. The remaining 155 patients were randomly assigned, 77 to the control group and 78 to the geriatric assessment unit. Further details: baseline characteristics of patients well-balanced across both groups; all completed the study (no loss/drop outs recorded).
Age, gender and ethnicity	Age. Mean: 78.8 years (range: 61-100). Gender. (% of F): 77%.

Study	APPLEGATE 1990[16]
	Nationality. White (84.5%), other (15.5%).
Further population details	Most common diagnoses at referral: hip fractures in 28 patients, other fractures in 23, other conditions requiring orthopaedic surgery in 9, conditions requiring non-orthopaedic surgery in 14, circulatory disorders in 21, stoke in 15, musculoskeletal disorders in 9, psychiatric disorders in 7, endocrine disorders in 6 and miscellaneous medical disorders in 17.
Extra comments	-
Indirectness of population	No indirectness.
Interventions	(n=78) Intervention 1: Hospital at home- The Geriatric Assessment Unit: 10-bed unit in rehabilitation hospital (occupies a separate building from main hospital). Primary objective of the unit was to improve health and functional status sufficiently that patients at risk of institutionalisation could avoid placement in a nursing home. Within the unit, an interdisciplinary assessment of medical, social and psychological function was completed within 72 hours of admission by a team of physicians (university faculty and fellows), rehabilitation nurses, physical therapists, occupational therapist, psychologists, social workers, nutritionists and specialists in speech therapy and audiology. After the assessments were completed, the team determined at the first of a series of weekly meetings whether the patient was a candidate for a specific treatment, rehabilitation or both. If medical treatment was required, the patient was either treated in the unit or returned to the acre of the referring physician. Any patient with a defect in vision, hearing, or speech was referred to the appropriate therapist .If the patients needed rehabilitation care, a rehabilitation plan with specific goals was developed, and the patients' progress was revaluated weekly. All patients receiving rehabilitation care were required were required to have a degree of impairment such that physical, occupational or recreational therapy was needed in some combination three times a day in order to meet Medicare requirements. When patients reached their rehabilitation goals or attained a stable level of function, they were discharged without any subsequent services from the geriatric-assessment-unit team. (n=77) Intervention 2- Standard care: Neither the staff members of the geriatric assessment unit nor the investigators in the study were involved in the care of the patients in the control group after randomisation. Instead, the controls received the usual care provided by their physicians. There were no differences between groups in the specialties of the primary physicians providing care for their patients; two thirds of the patients in each group received primary care from internists in the community. The patients received a wide range of services after discharge from the acute care hospital, including home health care and care in other rehabilitation units.
Funding	None stated.
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: STEP UP/STEP DOWN versus STANDARD CARE. Protocol outcome 1: Mortality. - Actual outcome: Mortality at 6 months; differences between two groups greatest at 6 months (p=0.08) but diminished thereafter.	

Study	APPLEGATE 1990[16]
Group 1: 8/78 patients; Group 2: 1/77 patients; Risk of bias: All domain - low, Selection - low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 2: Length of Stay. - Actual outcome: Length of stay in acute hospitals; Group 1: 69 days (SD not reported); Group 2: 74 days (SD not reported); Risk of bias: All domain - low, Selection - low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 3: Quality of Life. - Actual outcome: Functional Status; Geriatric assessment unit had significantly more improvement (P<0.05) than the control group in regard to three basic self-care activities (bathing, dressing and the ability to transfer) during the six months after randomisation and tended to have less deterioration in one other activity (the ability to administer medications). Risk of bias: All domain - high, Selection - low, Blinding - high, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness	
Protocol outcomes not reported by the study	Avoidable adverse events; patient and/or carer satisfaction; re-admission; number of presentations to ED; Number of unnecessary admissions; reduced GP presentations.

Study	GARASEN 2007[110] GARASEN 2008[109]
Study type	RCT (Patient randomised; Parallel).
Number of participants	Community Hospital=72. General Hospital=70 n=142.
Countries and setting	Sobstad Nursing Home (reassigned to become a community hospital) and St Olavs University Hospital, Norway.
Duration of study	August 2003 – May 2004. Follow up for 12 months.
Stratum	Early discharge.
Subgroup analysis within study	None reported.
Inclusion criteria	Patients aged 60 years or more admitted to the general hospital due to an acute illness or an acute exacerbation of a known chronic disease.

Study	GARASEN 2007[110] GARASEN 2008[109]
	Probably be in need of inward care for more than 3 to 4 days. Admitted from their own homes. Expected to return home when inward care was finished.
Exclusion criteria	Severe dementia. A psychiatric disorder needing specialised care 24 hours a day.
Recruitment/selection of patients	When an eligible patient was identified and accepted for inclusion, a blinded randomisation was performed by the Clinical Research Department at the Faculty of Medicine using random number tables in blocks to ensure balanced groups.
Age, gender and ethnicity	Age. Community Hospital (Mean=80.8. Median=81.5). Assigned General Hospital (Mean=81.3. Median=81). Gender. Community Hospital (Males=34. Females=102). Assigned General Hospital (Males=27. Females=43). Ethnicity: not stated.
Further population details	Activities of Daily Living. Community Hospital (Mean=2.24). Assigned General Hospital (Mean=2.05). A non-significant difference (p=0.27).
Extra comments	-
Indirectness of population	No indirectness.
Interventions	(n=72) Intervention 1: Hospital at home- Intermediate Care Intervention: The experimental intervention was based on individualised intermediate care including evaluation and treatment ('care' and 'cure') of each patient's diseases. However, the main focus was to improve the patients' ability to manage daily activities when returning home. On admission to the community hospital the physicians performed a medical examination of the patients and a careful evaluation of available earlier health records from the admitting general practitioner, the general hospital physicians and the community home care services. The communication with each patient and his family focusing on physical and mental challenges was also essential to understand the needs and level of care. Intermediate care at the community hospital was compared to conventional care in general hospital beds at medical, surgical and orthopaedic departments. (n=70) Intervention 2: Hospital based care/services-General Hospital: Traditional prolonged care at a hospital.

Study	GARASEN 2007[110] GARASEN 2008[109]
Funding	Central Norway Regional Health Authority.
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: STEP UP/STEP DOWN (COMMUNITY HOSPITAL) versus STANDARD CARE. Protocol outcome 1: Readmission. - Actual outcome: Readmission for the same disease; Group 114/72 (19.4%); Group 2: 25/70 (35.7%); Risk of bias: All domain - low, Selection - low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 2: Length of Stay. - Actual outcome: Number of days of care after randomisation; Group 1:31 days (95% CI 26.1-34.7); Group 2: 29.8days (95% CI 23.2-36.4); Risk of bias: All domain - low, Selection - low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 3: Mortality. - Actual outcome: Mortality within 6 months; Group 1:9/72 (12.5%); Group 2: 14/70 (20%). Risk of bias: All domain - low, Selection - low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness - Actual outcome: Mortality within 12 months; Group 1: 13/72 (18.1%); Group 2: 22/70 (31.4%); Risk of bias: All domain - low, Selection - low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness	
Protocol outcomes not reported by the study	Avoidable adverse events; quality of life; patient and/or carer satisfaction; number of presentations to ED; number of unnecessary admissions; reduced GP presentations.

Study	THOMAS 1993[289]
Study type	RCT (Patient randomised; Parallel).
Number of participants	Experimental group (Community Hospital) = 68. Control group (no intervention) = 64 n=132. Five patients refused assessment (control group=2, experimental group=3) and seven patients were lost to follow up (control=4, experimental=3).
Countries and setting	A non-academic affiliated 503-bed community hospital.
Duration of study	Follow up for 6 months.
Stratum	Overall.

Study	THOMAS 1993[289]
Subgroup analysis within study	None reported.
Inclusion criteria	All patients over the age of 70 years admitted to a 503-bed community hospital were eligible.
Exclusion criteria	Refusal of consent. Admission to intensive care unit, coronary care unit, an obvious terminal illness, renal haemodialysis. Place of residence greater than 50 miles from the hospital.
Recruitment/selection of patients	Study patients were similar in both groups at randomisation.
Age, gender and ethnicity	Age. Experimental group (Community Hospital): 76 (+/- 5.4). Control group: 77 (+/- 5.4). Gender. Experimental group (Community Hospital): Male: 22; Female 40. Control group: Male: 24; Female 34. Race. Experimental group (Community Hospital): White: 49; Black: 13. Control group: White: 43; Black: 15.
Further population details	Not stated.
Extra comments	-
Indirectness of population	No indirectness
Interventions	(n=68) Intervention 1: Community Hospital- received individual assessments from each team member consisting of a physician, geriatric nurse specialist, pharmacist, and physical therapists. Team discussions of each patient led to formal recommendations placed in the patients charts. An additional copy of the consultation was mailed to the attending physicians' office. The team continued to monitor progress of the experimental group. (n=64) Intervention 2: In-hospital treatment then discharged. Received no recommendations and no subsequent visits.
Funding	Not stated.
RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: STEP UP/STEP DOWN versus STANDARD CARE. Protocol outcome 1: Mortality. - Actual outcome: Death at 6 months; Group 1:3/62 (6%); Group 2: 12/58 (21%); Risk of bias: All domain - high, Selection - high, Blinding - low, Incomplete outcome	

Study	THOMAS 1993[289]
data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness - Actual outcome: Death at 12 months; Group 1:7/68 (10%); Group 2: 13/64 (20%); Risk of bias: All domain - high, Selection - high, Blinding - low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 2: Length of Stay. - Actual outcome: Length of hospital stay; Group 1:9 days; Group 2: 10.1 days; Risk of bias: All domain - high, Selection - high, Blinding - low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 3: Readmissions. - Actual outcome: Readmissions in 6 months; Group 1:0.3 per patient; Group 2: 0.6 per patient; Risk of bias: All domain - high, Selection - high, Blinding - low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 4: Quality of Life. - Actual outcome: Functional activity scores using Katz ADL scale; Group 1: 61% (36/59) remained same. 17% (10/59) worsened. 22% (13/59) showed improvement; Group 2: 70% (32/46) remained the same. 23% (10/46) worsened. 7% (4/46) showed improvement. Risk of bias: All domain - high, Selection - high, Blinding - high, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness	
Protocol outcomes not reported by the study	Avoidable adverse events; patient and/or carer satisfaction; number of presentations to ED; number of unnecessary admissions; reduced GP presentations.

Study	YOUNG 2007[322]
Study type	RCT (single-blind, randomised, prospective trial).
Number of participants	Community Hospital=280. General Hospital=210 n=390.
Countries and setting	Community hospitals in five geographical areas in urban and rural settings in the midlands and North England.
Duration of study	November 2000 – August 2003 patient identification. Follow up for 6 months.
Stratum	Early discharge.
Subgroup analysis within study	None reported.

Study	YOUNG 2007[322]
Inclusion criteria	Address within the catchment area of the relevant community hospital. In the opinion of their attending senior physician, were medically stable and in need of post-acute rehabilitation care before anticipated home discharge.
Exclusion criteria	Patients with features of medical instability (pyrexia, breathlessness at rest, history of chest pain within 48 hours, or need for IV medications). Patients who were drowsy or unconscious. Patients requiring stroke unit rehabilitation with a specialists or treatment in other departments such as surgery or coronary care. Patients who needed new residential new residential or nursing home placements.
Recruitment/selection of patients	773 elderly patients who had been emergently admitted to elderly care departments (four general hospital sites) or a combined elderly and medical unit (one general hospital site) were identified and monitored. Of these, 490 were recruited, 280 randomised to community hospital care and 210 to usual care. 421 (86%) received the treatment to which they were allocated. Further details: the characteristics were of the groups were similar at baseline. Lost/drop outs – Community 11/280; Usual care 11/210.
Age, gender and ethnicity	Age. Community Hospital (Median=86. Range=81-90). General Hospital (Median=86. Range=82-90). Gender. Community Hospital (Males=83. Females=197). General Hospital (Males=69. Females=141). Ethnicity: not stated.
Further population details	Not stated.
Extra comments	-
Indirectness of population	No indirectness.
Interventions	(n=280) Intervention 1: Community Hospital - The seven participating community hospitals in the five sites ranged from a consultant-led rehabilitation hospital in an urban setting to small, rural, general practitioner-led units. The community hospitals provided a multi-disciplinary rehabilitation approach with multidisciplinary assessment and treatment, individualised care plans, involvement of therapists, shared coverage between consultants and general practitioners, and close involvement of social service staff. (n=210) Intervention 2: General Hospital: Usual care consisted primarily of an extended general hospital stay with multidisciplinary care but could include transfer to other post-acute services according to existing local operational policies.
Funding	Department of Health.
	RESULTS (NUMBERS ANALYSED) AND RISK OF BIAS FOR COMPARISON: STEP UP/STEP DOWN versus STANDARD CARE.

Study	YOUNG 2007[322]
	Protocol outcome 1: Length of Stay. - Actual outcome: Length of hospital stay care after randomisation; Community Hospital: Median: 22 days (range: 1-195; interquartile range: 11-45); General Hospital: Median: 20 days (range: 1-230; interquartile range: 10-34); Risk of bias: All domain - low, Selection - low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 2: Quality of Life. - Actual outcome: NEADL Scale as a measure of independence at 6 months; Community Hospital: Median 20 (IQR 9-32); General Hospital: Median 20 (IQR 6-32). Risk of bias: All domain - low, Selection - low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness - Actual outcome: Barthel Index (functional activity restriction) at 6 months; Community Hospital: Median 16 (IQR 13-18); General Hospital: Median 16 (IQR 12-18); Risk of bias: All domain - low, Selection - low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 3: Mortality. - Actual outcome: Death at 6 months; Community Hospital: 73/280 (26.1%); General Hospital: 64/210 (30.5%); Risk of bias: All domain - low, Selection - low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness Protocol outcome 4: Patient satisfaction. - Actual outcome: Patient satisfaction. The reported patient satisfaction was similar for both groups. At 1 week after hospital discharge, the community hospital group showed greater satisfaction with the statement 'I am happy with the amount of recovery I have made'; Risk of bias: All domain - low, Selection - low, Blinding - Low, Incomplete outcome data - Low, Outcome reporting - Low, Measurement - Low, Crossover - Low, Subgroups - Low; Indirectness of outcome: No indirectness
Protocol outcomes not reported by the study	Avoidable adverse events; carer satisfaction; readmission; number of presentations to ED; number of unnecessary admissions; reduced GP presentations.