



UNIVERSITY
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Geriatric rehabilitation – How to organise it?

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Organisation and planning



How to organise geriatric rehabilitation?

- Why it is important
- What happens in Scotland / UK
- What is geriatric rehabilitation?
 - Coping strategies
 - Physical / psychological adaptation
- Selecting patients
- The evidence for benefit
 - Hospital, community
- Alternative systems (intermediate care)
- Barriers to implementation



Why is rehabilitation such an important issue for older people?

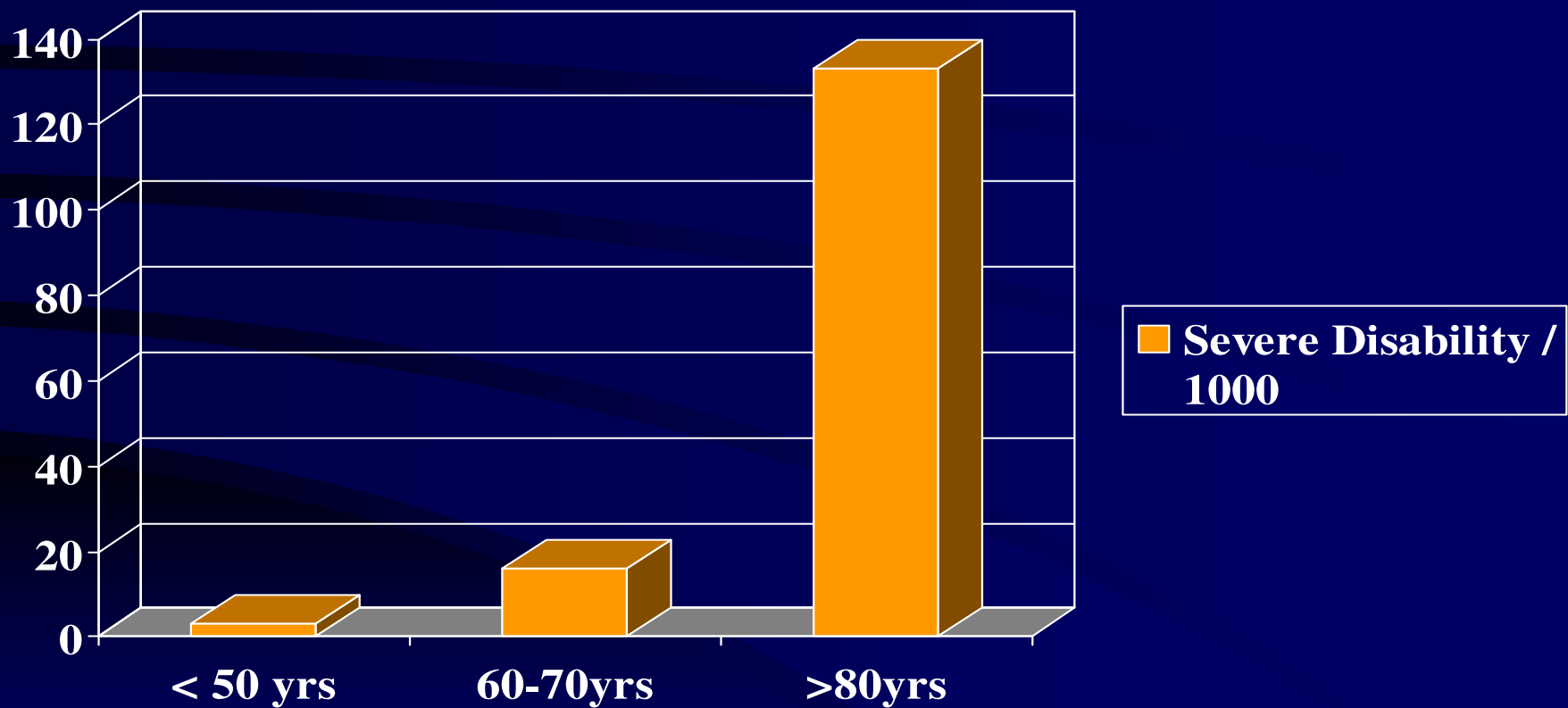


Older people are at high risk of disability

- Reduced homeostatic / physiological reserve
 - ‘Intrinsic’ ageing
 - Physical inactivity / detraining
- Increased prevalence of chronic disabling disease (overt and covert)
- ‘Crash’ in function with acute illness



Prevalence of severe disability (OPCS 1988)



The bio-psycho-social model of disability

- A general model or approach
 - Biological
 - Psychological
 - thoughts, emotions, and behaviors
 - Social factors
- All play a significant role in human functioning in the context of disease or illness
- All should be addressed in rehabilitation



Geriatric services UK



- Marjory Warren.
 - Care of chronic sick. *BMJ* 1943;2:822-3.
 - Care of the chronic aged sick. *Lancet* 1946;2:841-3
- Aubrey Lewis
 - The problem of ageing. *Lancet* 1994;2:569

The present – Geriatric medicine in Scotland and the UK

- Many well-developed geriatric services offering healthcare to frail older people
- The largest single ‘general medical’ speciality
- Undergraduate exposure
- 5 year training program – pre-consultant
- Increasing recognition of the importance of evidence based practice
- Variability regionally and nationally
 - Age-based or problem-related services
 - Hospital / community rehabilitation
 - Integration with acute / community services, psychogeriatrics
 - Sub-specialisation within geriatrics

Sub-specialisation in geriatric medicine versus comprehensive assessment / wholistic care



Comprehensive geriatric assessment (CGA)

- Multi-morbidity
- Cognition + language
 - Delirium, dementia, dysphasia
- Mood
- Vision
- Hearing
- Swallowing and the mouth
- Nutritional state
- Sarcopaenia
- Basic activities of daily living and physical function
- Extended activities of daily living
- Risk assessment
 - Falls
 - Pressure sores
- Home environment
- Social circumstances / network
- Caregiver stress



CGA – effective implementation requires ‘ownership’ of patient care

- Control – who is in charge?
- Advisory role – difficult to change long-established behaviours



The importance of the multi- or inter-disciplinary case conference

- Key component of proven systems of CGA in hospital
- Medical involvement (leadership?)
- Minimum weekly face-face meetings



" And as soon as he's on the mend, we'll get the physiotherapist in here with a ball of twine."

Which older people should get CGA and rehabilitation?

- General geriatric issues
 - Physical disability
 - Geriatric giants
 - Immobility
 - Instability
 - Incontinence
 - Impaired cognition (delirium / dementia)
 - Frailty
 - Multi-morbidity
- Age threshold eg >80yrs
- Specific diseases
 - Stroke
 - Myocardial infarction
 - Chronic obstructive pulmonary disease
 - Amputation
 - General surgery
 - Depression

Where you 'draw the line' in defining selection criteria for patients for CGA?

- Patient characteristics
 - Those most likely to benefit
- Local resources
 - If limited only those at highest need
 - Large resource allows for more inclusive approach

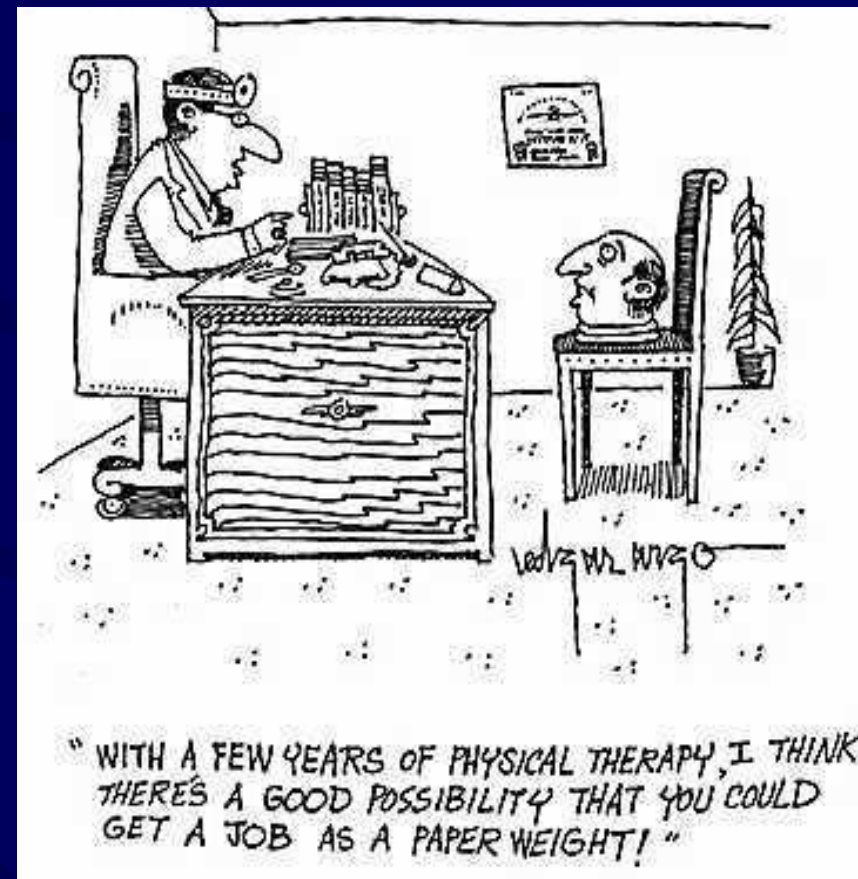


What are the key components of rehabilitation?

- Coping strategies
 - Appropriate for everyone with disability, including dementia
 - Often can be introduced quickly
 - Carer role critical
- Psychological and physical adaptation
 - Tailored for patient ability to cope / personal motivation
 - Not appropriate for everyone with disability
 - Needs time
 - Carer role important

Key issues with physical therapy

- Very frail / disabled subjects get most benefit
- You need to give adequate dose and duration of exercise to get physiological adaptation
- Short-medium term benefits are difficult to sustain



Physical therapy and adaptation – what is the practice in your unit?

- Functional activities e.g. walking
- Training specific muscle groups
- Aerobic training
- Schools or techniques
 - Bobath
 - Proprioceptive neuromuscular facilitation



Exercise training in chronically frail, very elderly people

- 100 nursing home residents mean age 87 years
- RCT progressive resistance exercise training hip and knee extensors, 3 times weekly for 10 weeks
- Muscle strength increased by >100%
- Increased gait speed and stair climbing power

Measurement of leg extensor power after hip fracture



Fiatarone Singh, JAGS 2002;50:2089

‘The lack of appreciable objective benefits from low-intensity exercise (as commonly prescribed to older or frailer adults) should dissuade healthcare professionals from using doses and modalities of exercise that are below the threshold required for physiological adaptation or therapeutic efficacy’

What is the evidence for benefit from comprehensive geriatric assessment / rehabilitation?

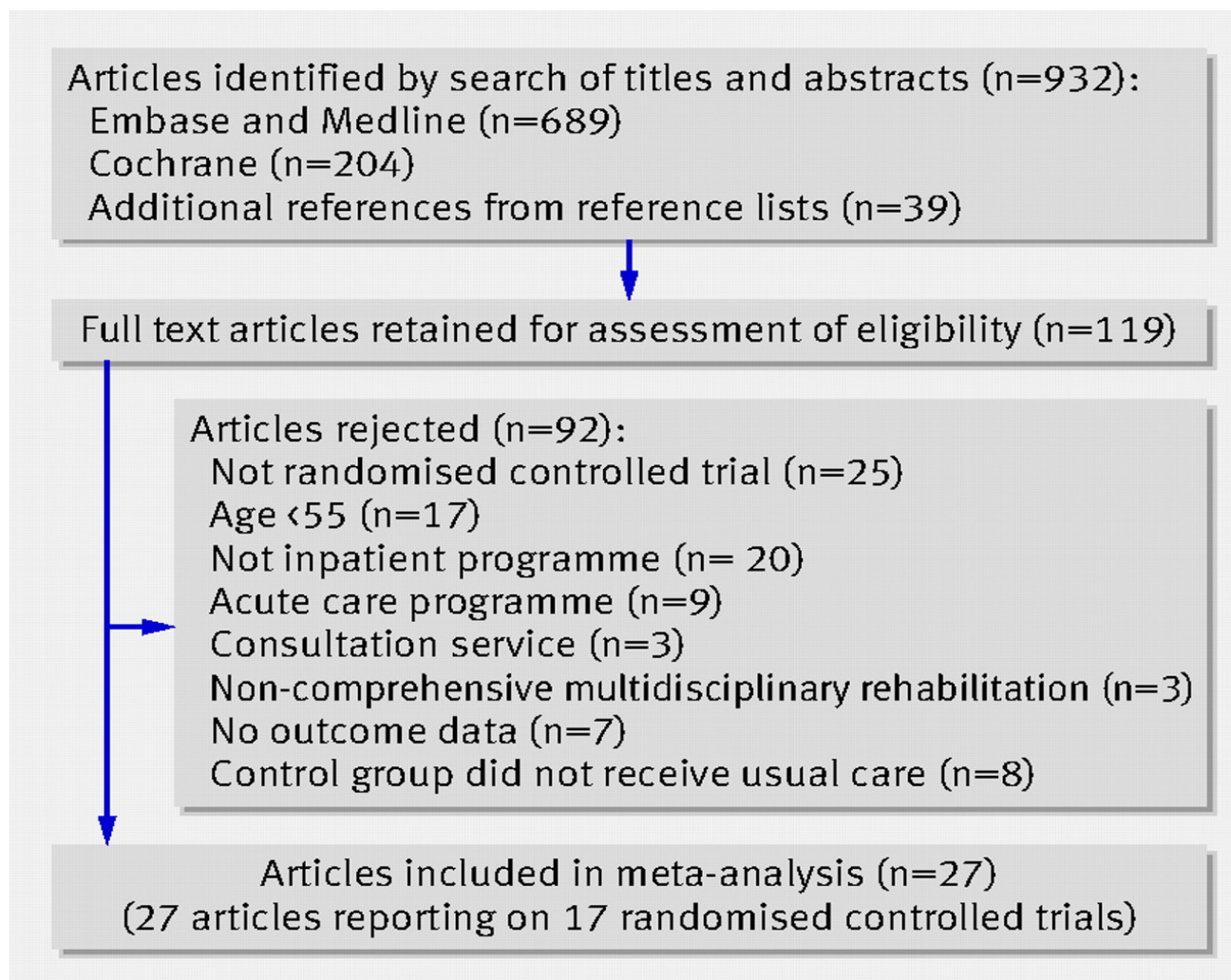


"...just as a matter of interest, just what the heck are we looking for anyway?"

Effects of comprehensive in-patient geriatric medical care

	Geriatric versus general care, OR
Death	0.65 (0.46, 0.91)
Physical improvement	1.63 (1.00, 2.65)
Cognitive increase	2.00 (1.13, 3.55)

Comprehensive geriatric rehabilitation for older patients; Fig 1 Flow of papers through study.



Bachmann S et al. *BMJ* 2010;340:bmj.c1718

Effect of inpatient rehabilitation specifically designed for geriatric patients on functional improvement at hospital discharge

Effects at hospital discharge

General geriatric rehabilitation

Cohn 2002

White 1994

Young 2007

Subtotal: $I^2=0.0\%$, $P=0.821$

Orthopaedic geriatric rehabilitation

Kennie 1988

Shyu 2005

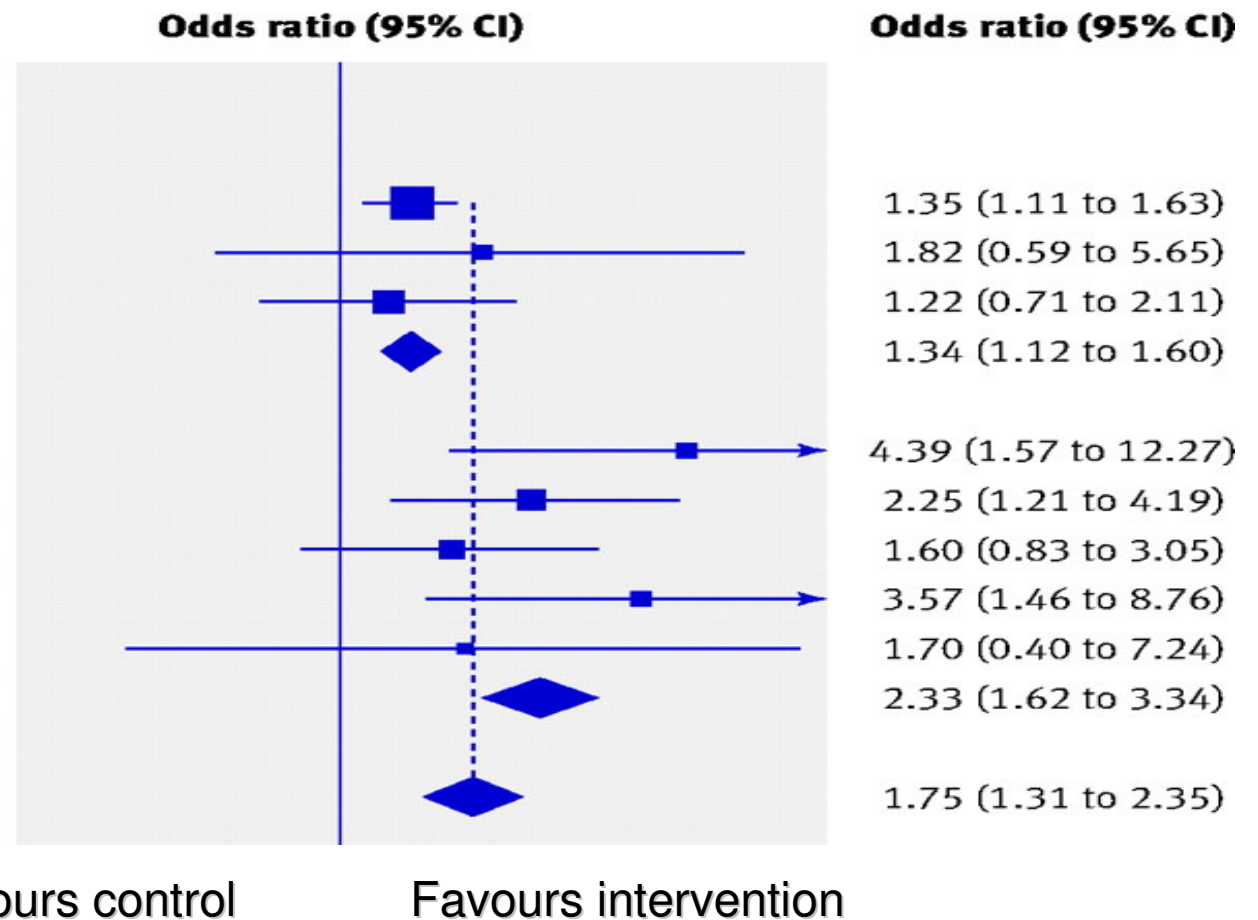
Stenwal 2007

Swanson 1998

Vidan 2005

Subtotal: $I^2=0.0\%$, $P=0.428$

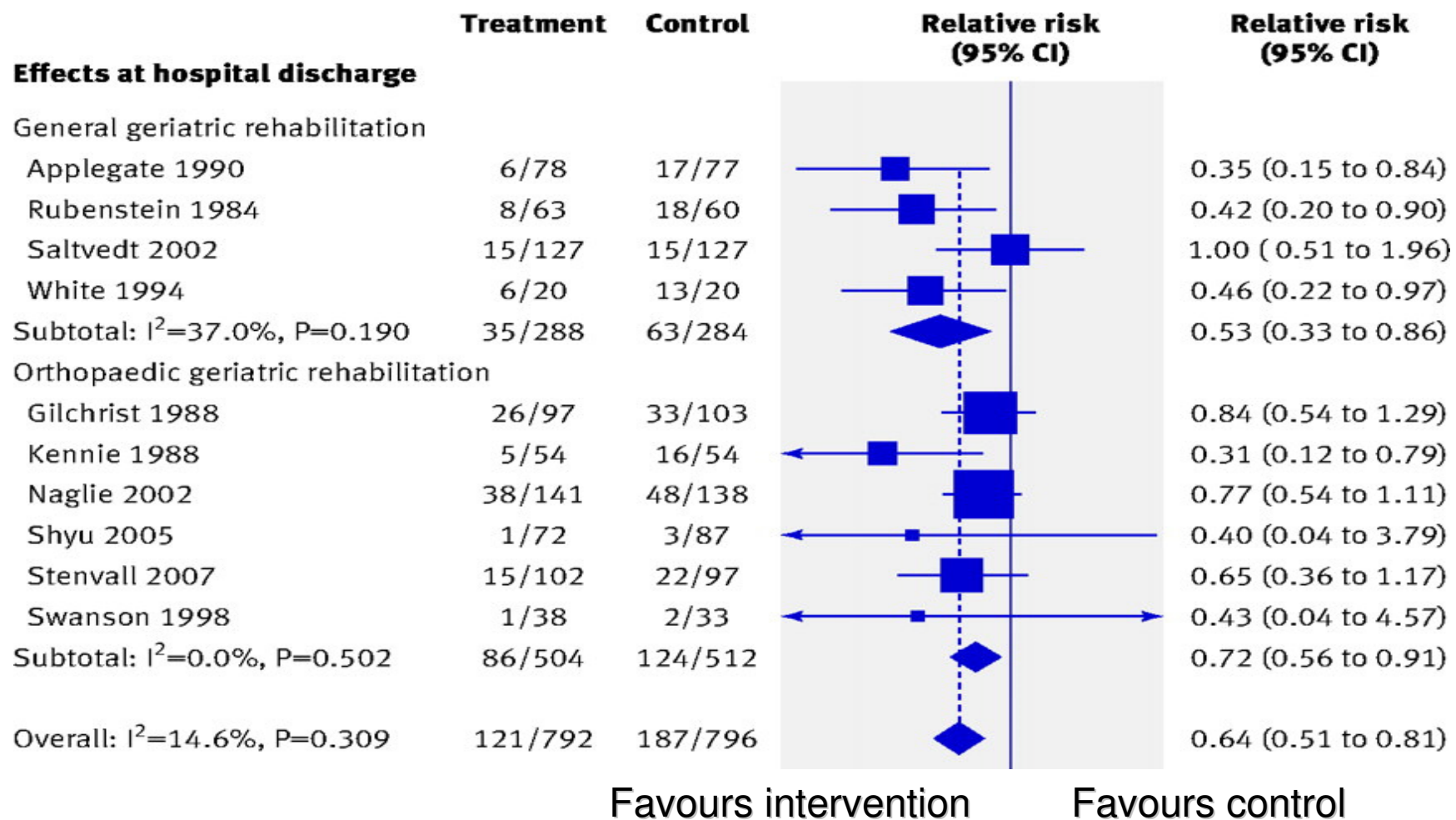
Overall: $I^2=38.4\%$, $P=0.123$



Bachmann S et al. BMJ 2010;340:bmj.c1718

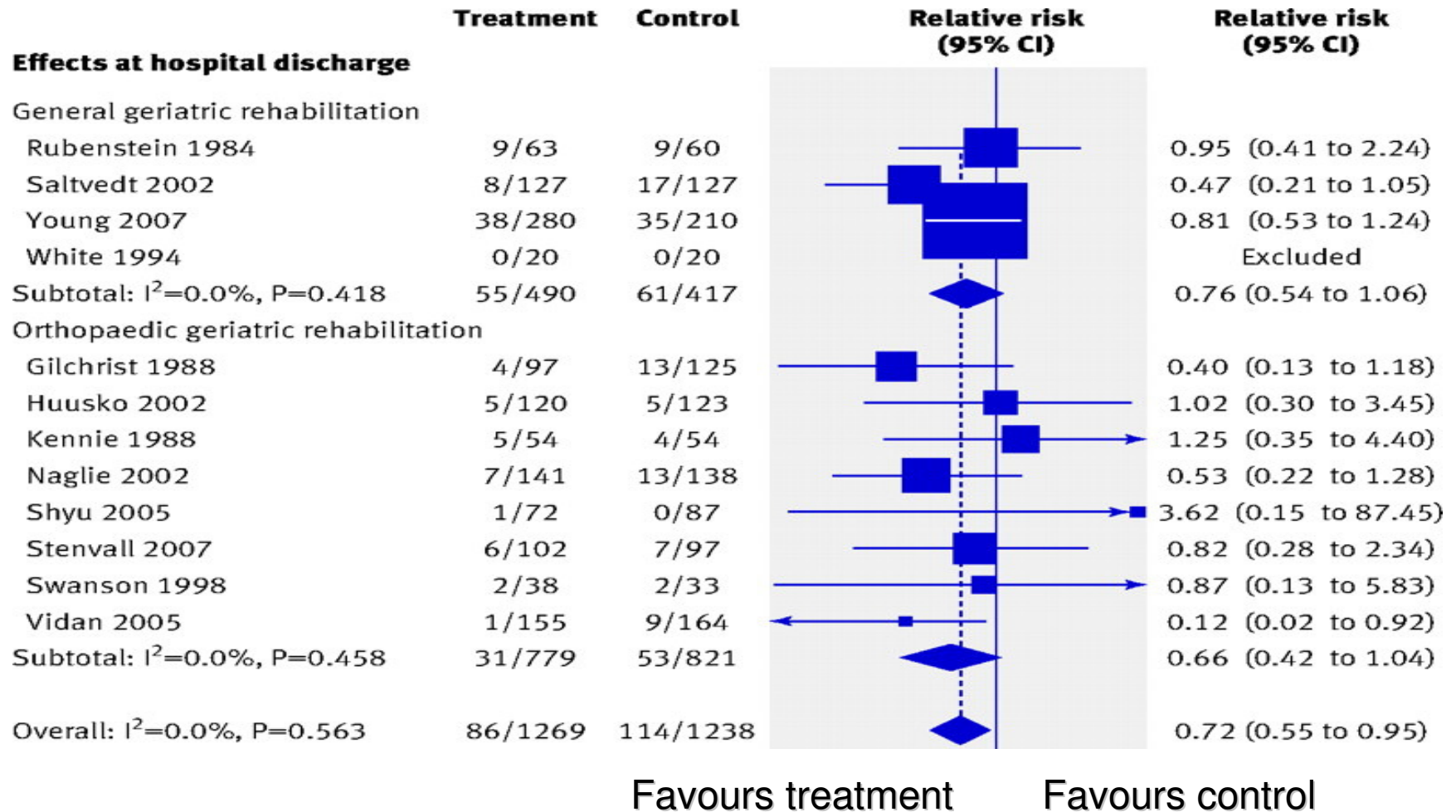
BMJ

Effect of inpatient rehabilitation specifically designed for geriatric patients on admissions to nursing homes at hospital discharge



Bachmann S et al. BMJ 2010;340:bmj.c1718

Effect of inpatient rehabilitation specifically designed for geriatric patients on mortality at hospital discharge



Bachmann S et al. BMJ 2010;340:bmj.c1718

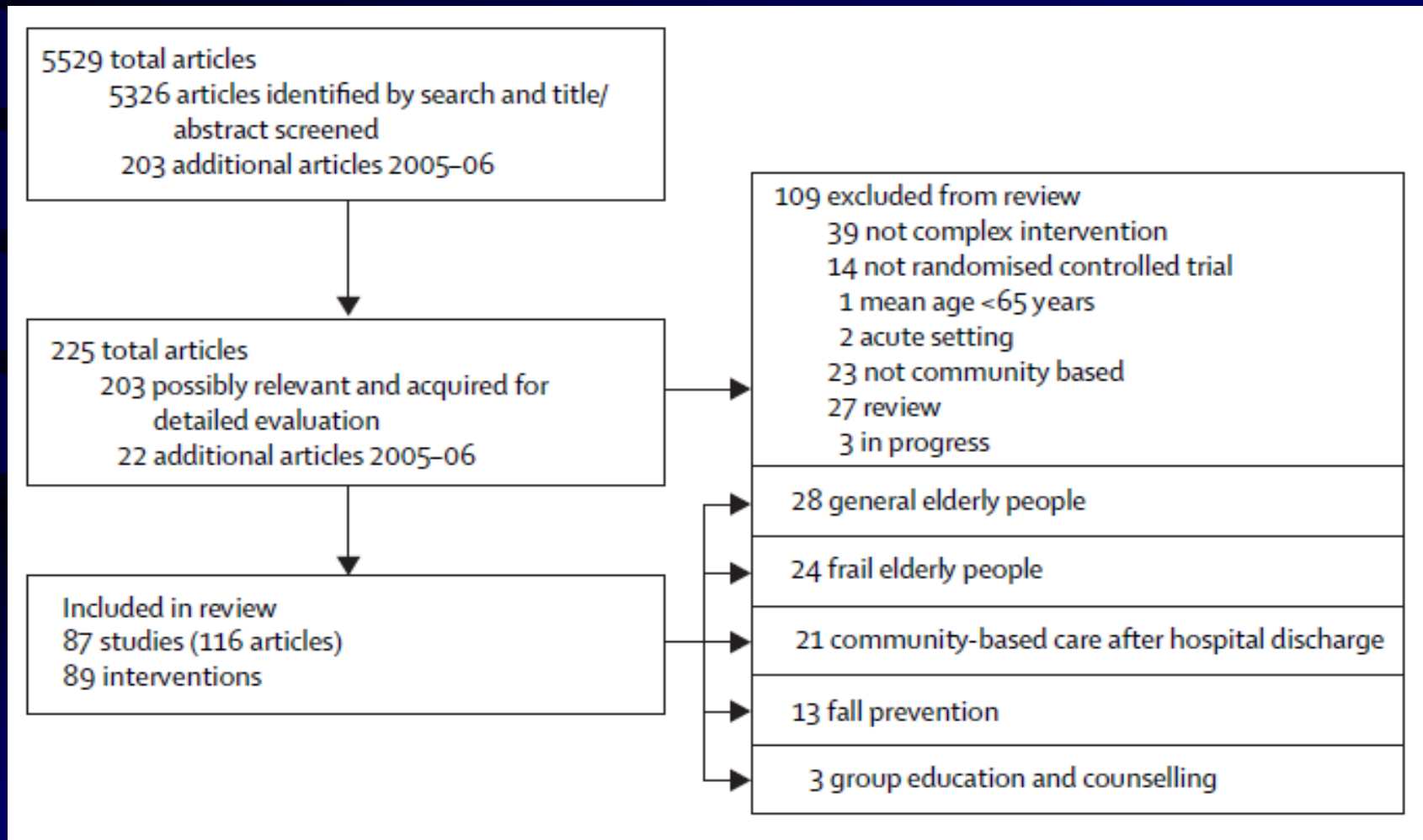
Comprehensive geriatric assessment; Acute in-patient care

- Systematic review and meta-analysis; 5 RCTS
- Frail older people acute medical disorders
- Acute geriatric units versus conventional care
 - lower risk of functional decline at discharge
 - OR 0.82 (0.68 to 0.99)
 - more likely at home after discharge
 - OR 1.30 (1.11 to 1.52)
 - no differences in case fatality
 - OR 0.83 (0.60 to 1.14)

Community-based multidisciplinary care

- Randomised controlled trials of community-based multifactorial interventions
- 89 trials including 97,984 people
- Reduced nursing home admissions
RR=0.87 (95%CI 0.83,0.90)
- Death RR=1.00 (95%CI 0.97,1.02)

Beswick, Lancet 2008;371:425



Beswick, Lancet 2008;371:425

Study context	Death N=93754	Nursing home admission N=79575	Hospital admission N=20047	People with falls N=15607
Geriatric assessment of general elderly people <i>I</i> ²	1.00 (0.98 to 1.03) 39.7%	0.86 (0.83 to 0.90) 47.5%	0.98 (0.92 to 1.03) 61.4%	0.76 (0.67 to 0.86) 0
Geriatric assessment of elderly people selected as frail <i>I</i> ²	1.03 (0.89 to 1.19) 0	1.01 (0.83 to 1.23) 28.8%	0.90 (0.84 to 0.98) 11.0%	0.99 (0.89 to 1.10) 0
Community-based care after hospital discharge <i>I</i> ²	0.97 (0.89 to 1.05) 5.2%	0.77 (0.64 to 0.91) 0	0.95 (0.90 to 0.99) 57.0%	0.82 (0.61 to 1.08) 40.3%
Fall prevention <i>I</i> ²	0.79 (0.66 to 0.96) 0	1.26 (0.70 to 2.27) 0	0.84 (0.61 to 1.16) 0	0.92 (0.87 to 0.97) 65.8%
All complex interventions <i>I</i> ²	1.00 (0.97 to 1.02) 10.6%	0.87 (0.83 to 0.90) 29.0%	0.94 (0.91 to 0.97) 43.0%	0.90 (0.86 to 0.95) 52.8%

Conclusions – CGA and rehabilitation

In-hospital dedicated geriatric units

- Reduce disability / improve physical function
- Reduce nursing home placement
- Reduce mortality

In community

- Reduce falls
- Reduce nursing home placement
- Reduce hospital admissions
- No effect on mortality

Comprehensive geriatric assessment works – so what's the problem?

- Increasing numbers of elderly hospital admissions
- Recurrent admissions at end of life
- Pressure to reduce number of hospital beds
- Avoid admission, earlier discharges
- Provide alternatives including care in the community – intermediate care
- Assumption that intermediate care will reduce costs

Intermediate care



Potential role

- Alternative to hospital
- Facilitating discharge
- Post-discharge

System / structure

- Outreach services
- Evercare / case management
- Care homes
- Community hospitals

Nurse-led intermediate care

- 238 post-acute medical inpatients
- Nurse-led intermediate care vs standard hospital care
- Nurse-led care more expensive: per-patient difference £3082, 95% CI £1161-5002
- Nurse-led care in acute hospital not cost-effective

Whole system study of intermediate care services

- Case-control study
- 1648 elderly emergency admissions
- Falls, confusion, incontinence, immobility
- Post-discharge care management team
 - Nursing, therapists, social support (no medical review)
- Intermediate care increased hospital utilisation over 1 year; mean +8 days (95% CI 3,13)

Intermediate skier – enthusiastic but
results not great!



Early supported discharge

- 104 elderly inpatients requiring rehabilitation
- RCT Hospital at home vs rehabilitation ward
- MDT included medical review
- Home care
 - reduced risk of delirium (OR 0.17, 95% CI 0.03, 0.65)
 - no difference FIM / MMSE
 - improved satisfaction
 - reduced length of stay (20 vs 40 days)
 - reduced cost (£7,680 vs £10,598)

Summary - intermediate care for frail older people

- Should be based on principles of comprehensive geriatric assessment / rehabilitation
- Requires an expert team, including medical input
- Nurse-led inpatient units likely to increase costs
- Supported discharge with domiciliary rehabilitation and medical review may improve outcome / reduce costs
- No evidence that intermediate care is a safe alternative to acute hospital admission

Knowledge is of no value unless you
put it into practice

Anton Chekhov

System barriers to effective rehabilitation

BGS position paper 2005

- Lack of comprehensive geriatric assessment in the community
- Lack of training in primary care in health needs of older people
- Pressure to discharge from the acute sector
- Lack of will on the part of primary care organisations to develop rehabilitation services in hospital
- Divided responsibilities between primary care, secondary care and community based services
- Divided managerial leadership for therapists in multidisciplinary teams

BGS position paper on rehabilitation, 2005

- Comprehensive assessment approach required for older frail people
- Should start at admission and continue beyond discharge
- Necessary to restore daily living skills and mobility in older people recovering from acute illness
- Essential to aid recovery from planned or emergency surgery
- Important component of chronic disease management
- Must include a medical contribution to ensure treatable illness is not missed
- Needs to be multidisciplinary and evidence based

Thank-you for your attention!

