Interventions for frail older people in the emergency department

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Clinical scenario version 1

- Elsie: 87 year old lady, frail
  - Hypertension, on three anti-hypertensives
- Fall at home, left hip pain
- Brought to ED, fall noted, x-ray showed no fracture
- Urine dip
  - ++ leucocytes
  - ++ nitrates
  - No blood

Is this a UTI?

1. Yes
2. No
3. Don’t know

UTI and falls

- UTI can be a cause of falls, but…
  - If LUTS, then urine dip only helpful if negative as may be other cause; if positive then treat and send MSU
  - If no history (cognitively impaired) then ONLY consider UTI if other features (e.g. abdominal pain, haematuria, fever)
  - If no LUTS then why testing urine?

Elsie…

- Treated for urosepsis in ED
  - Catheter
  - iv fluids, antibiotics
  - Transferred to the Acute Medical Unit
  - Stabilised

Morbidity Associated with Urinary Catheters

- Short term: UTI

  This is the most common hospital acquired infection, 80% of these are a consequence of a urinary catheter.

- Long term: Incontinence

  Detrusor instability

50% of patients catheterised on AMU are done so inappropriately.

Mortality Associated with Urinary Catheters

- Up to 4% of patients with a urinary catheter develop **bacteraemia** and up to 30% of these patients will die as a result.
- **~1%** of catheterised patients on AMU will **die** because of their catheter!

50% of patients catheterised on AMU are done so inappropriately.

Elsie's journey continues…

- Geriatric liaison service missed her on their round
- Outlied
- LoS 14 days as care package lost…

Could it be different?

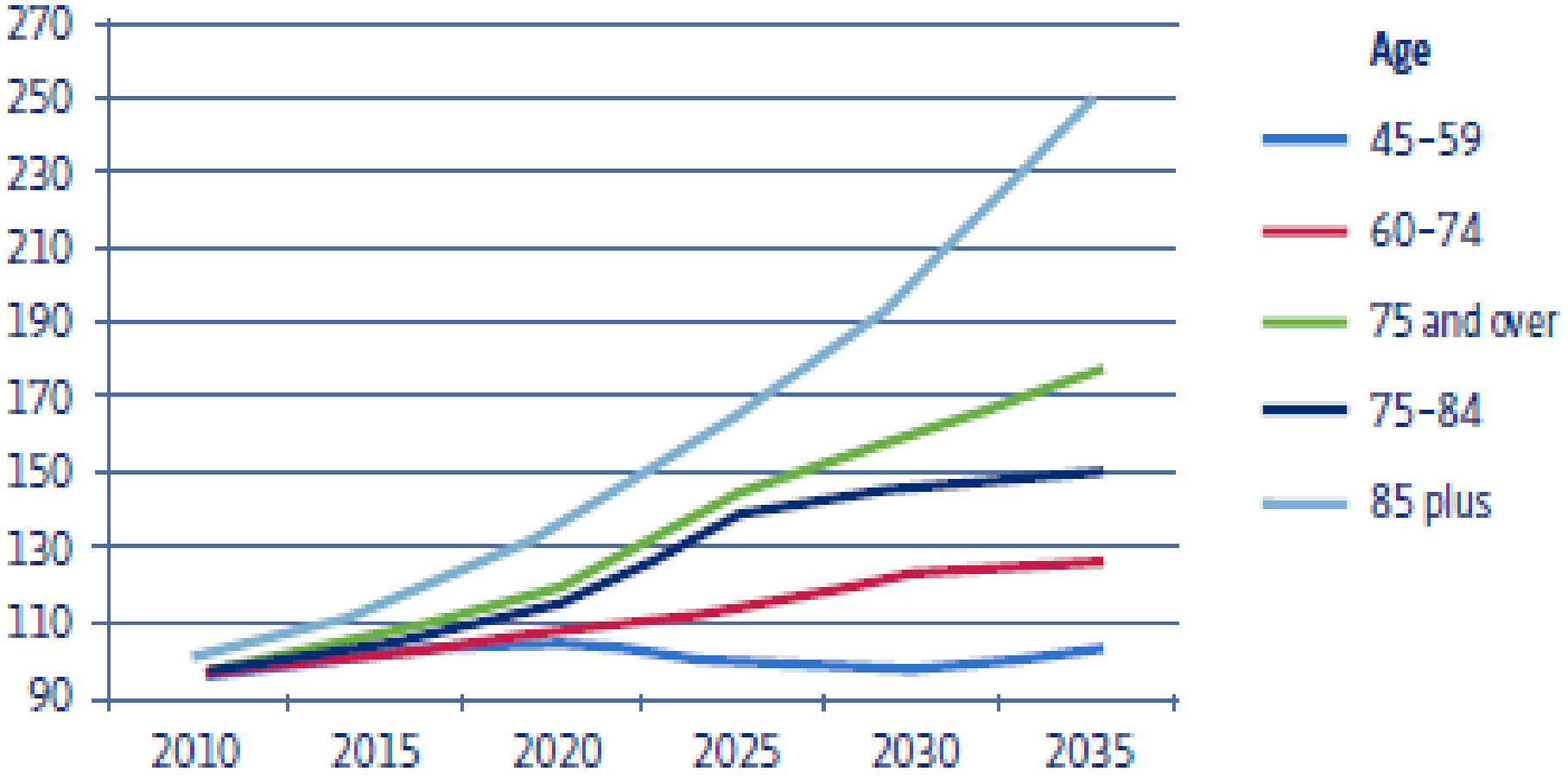
Clinical scenario version 2

- Elsie attends ED with a non-syncopal fall
- Major injury excluded
- High risk of future fall noted; AMT-4 = 3
- BP 105/60, serum Na+ 125 – Bendroflumethazide stopped
- Discharged home from ED with rapid intermediate care to address falls risk
- FU with falls clinic and mental health team

So what's all the fuss about?

- People like Elsie will increasingly become THE major patient attending the emergency department in the Western world…

Figure 1. Projected population by age, United Kingdom, 2010–35 (2010 = 100)



Source: Office for National Statistics (Oct 2011) National Population Projections 2010-based Statistical Bulletin.

The ‘barriers’…

	Evidence	Cost-effectiveness
• Preventing admissions the highest primary care priority	+	?
• Risk stratification	−	?
• Advance care planning	+	?
• Intermediate care	+	+
• Enhanced paramedic response	+	?

The problem

- Systems designed to do this:

When they need to be doing this:

Training in emergency medicine

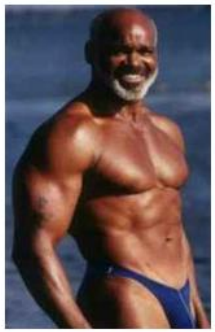
http://www.eusem.org/cms/assets/1/pdf/eusem%20core%20curriculum%202002.pdf

24. Dermatological emergencies
    (a) Erythroderma
    (b) Lyell syndrome
    (c) Stevens Johnson syndrome
    (d) Pemphigus/pemphigoid
    (e) Erysipelas
    (f) Necrotizing fasciitis
    (g) Herpes zoster
    (h) Scabies
25. Musculoskeletal disease
    (a) Orthopaedic and neurovascular examination
    (b) Strains/sprains/fractures
    (c) Dislocations
    (d) Nerve entrapment syndromes
26. Behaviour
    (a) Mental state examination
    (b) Organic illness manifest as behavioural disorders
    (c) Acute psychosis
    (d) Suicidal and homicidal evaluation
    (e) Alcohol abuse
    (f) Drug abuse
    (g) Aggression
27. Social and geriatrics
    (a) Overall care of the patient
    (b) Psychosocial assessment
    (c) Homelessness
    (d) Frequent attenders
    (e) Multisystem pathology
28. Pre hospital
29. Disaster medicine

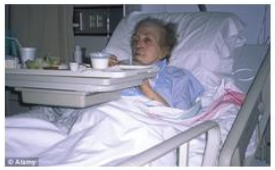
Comprehensive Geriatric Assessment

- ‘a multidimensional interdisciplinary diagnostic process focused on determining a frail older person’s medical, psychological and functional capability in order to develop a coordinated and integrated plan for treatment and long term follow up.’

Why focus on frail?



Meet the MDT…



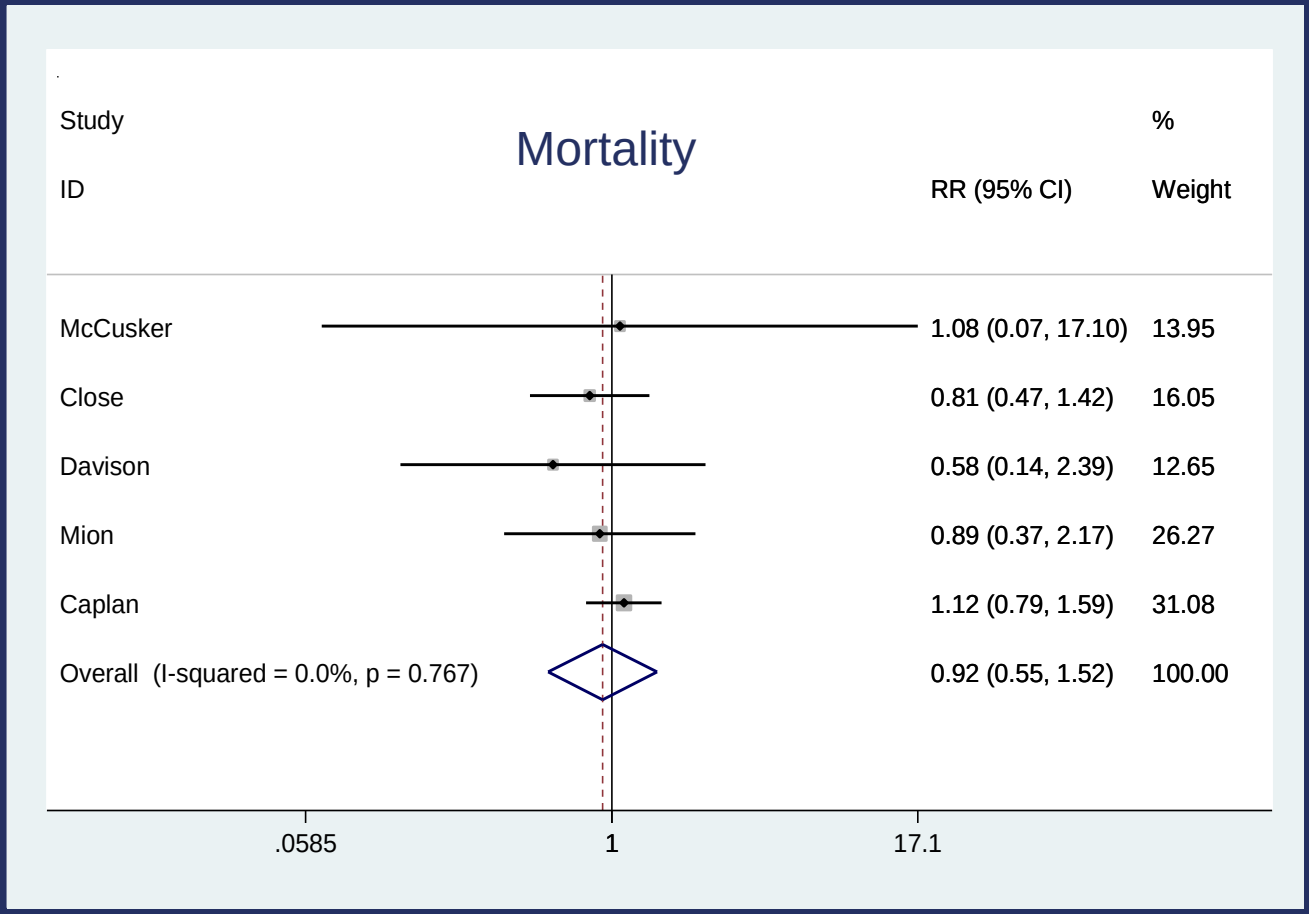
Evidence for CGA in acute care, Fox 2012

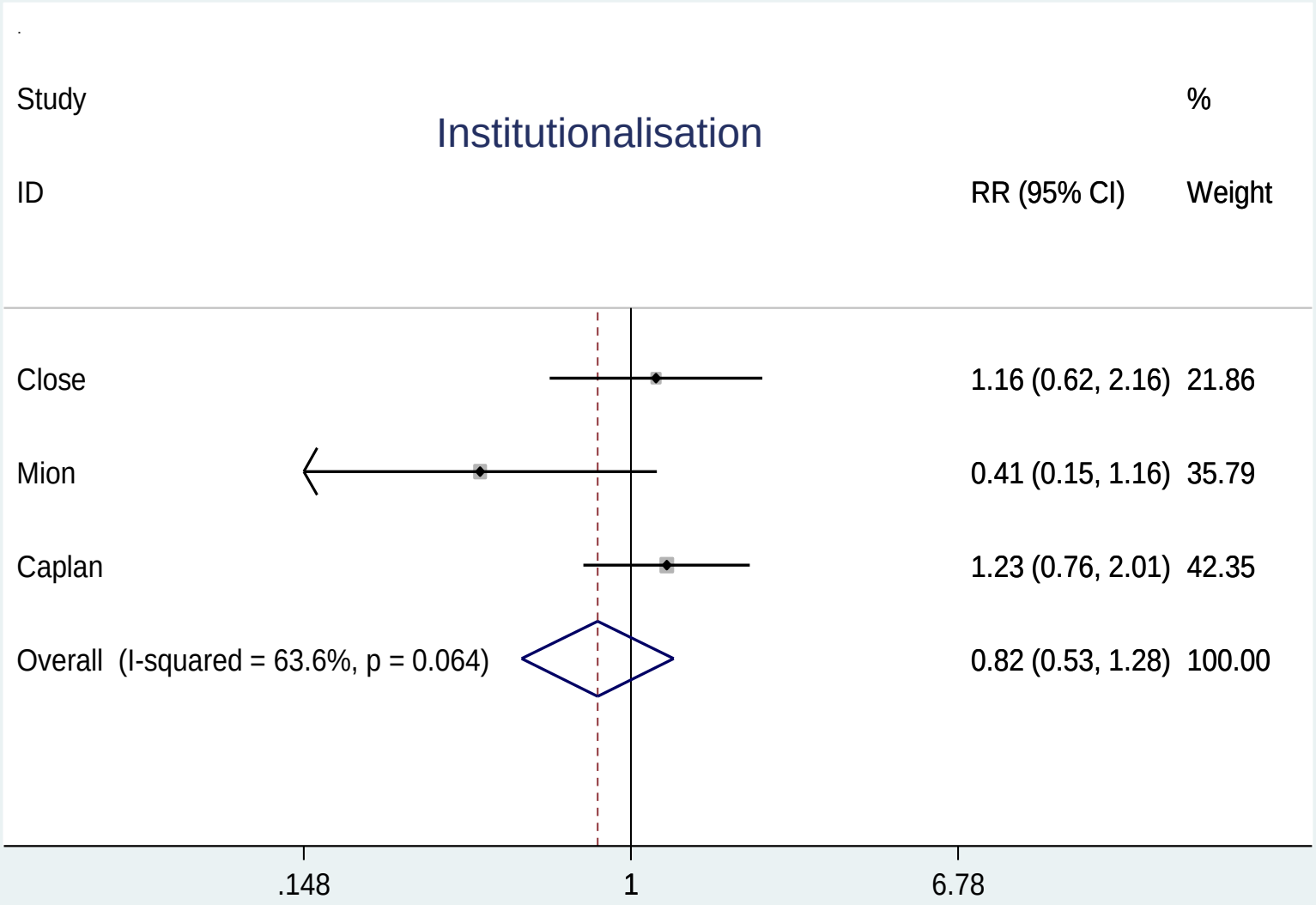
- 6839 patients in 13 controlled trials
- Fewer falls RR 0.51, 95% CI 0.29–0.88
- Less delirium RR 0.73, 95% CI 0.61–0.88
- Less functional decline RR 0.87, 95% CI 0.78–0.97
- Shorter LoS WMD −0.61, 95% CI −1.16 to −0.05
- More discharges home RR 1.05, 95% CI 1.01–1.10
- Fewer discharges to NH RR 0.82, 95% CI 0.68–0.99
- Lower costs WMD −$245, 95% CI −$446 to −$45

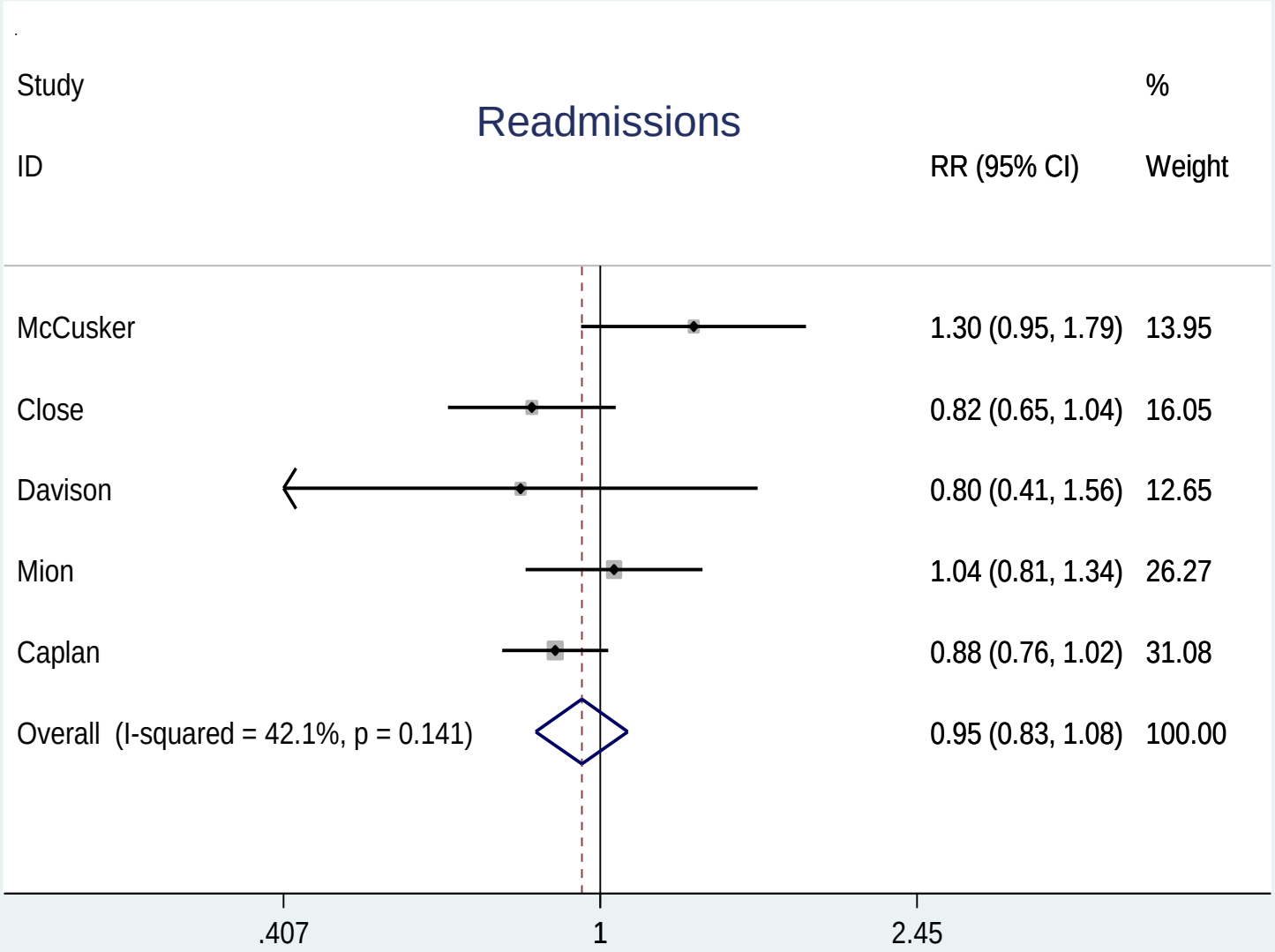
Are there effective interventions in ED?

Trial	Population	Intervention	RIP	Readmission	Functional decline	Admission to LTC
Yim, 2011 RCT	High risk older people (HK-ISAR)	Nurse led CGA and referral onwards	↔	↔	N/A	↔
Caplan 2004, RCT	75+ discharged home (excluding NH residents)	Nurse led CGA and referral onwards	↔	↓	↓	↔
McCusker 2003, RCT	Older people ISAR >1	Nurse led CGA and referral onwards	↔	↔	N/A	N/A
Mion 2003, RCT	65+ discharged from ED	Nurse led CGA and referral onwards	↔	↔	N/A	↔
Miller 1996, CCT	65+ discharged from ED	Nurse led CGA and referral onwards	↔	↔	N/A	↔

Meta-analysis 2011




Study
ID
Institutionalisation
RR (95% CI)
%
Weight
Close
1.16 (0.62, 2.16)
21.86
Mion
0.41 (0.15, 1.16)
35.79
Caplan
1.23 (0.76, 2.01)
42.35
Overall (I-squared = 63.6%, p = 0.064)
0.82 (0.53, 1.28)
100.00
.148
1
6.78


Study
ID
Readmissions
%
RR (95% CI)
Weight
McCusker
1.30 (0.95, 1.79)
13.95
Close
0.82 (0.65, 1.04)
16.05
Davison
0.80 (0.41, 1.56)
12.65
Mion
1.04 (0.81, 1.34)
26.27
Caplan
0.88 (0.76, 1.02)
31.08
Overall (I-squared = 42.1%, p = 0.141)
0.95 (0.83, 1.08)
100.00
.407
1
2.45

Interventions affecting disposition…

Trial	Population	Intervention	RIP	Admission/ readmission	Functional decline	LTC
Aldeen, 2014	ISAR ≥2	GEDI – nurse-led CGA (SW, pharmacist) & phone FU	=	↓	-	-
Wright, 2013 CCT	70+	Full CGA and referral onwards	-	↓	-	-
Pareja-Sierra, 2013	Older people	Full CGA and referral onwards	-	↓	-	-
Conroy, 2013 CCT	Frail older people (local criteria)	Full CGA and referral onwards	-	↓	-	-

Challenges

- CGA takes time…
  - It needs coordination
  - It needs communication
  - It needs some expertise

- Need to develop GER MED competencies in ED context

Summary

- Strong evidence base for CGA
- BUT weak evidence for ED CGA
- Urgent need for more robust, well–designed interventions to be tested
  - Effectiveness
  - Cost-effectiveness
- Does the EUSEM curriculum need to be updated?

Thank you

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