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)

The ‘barriers’…

<table>
<thead>
<tr>
<th>Evidence</th>
<th>Cost-effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preventing admissions the highest primary care priority</td>
<td>+</td>
</tr>
<tr>
<td>Risk stratification</td>
<td>-</td>
</tr>
<tr>
<td>Advance care planning</td>
<td>+</td>
</tr>
<tr>
<td>Intermediate care</td>
<td>+</td>
</tr>
<tr>
<td>Enhanced paramedic response</td>
<td>+</td>
</tr>
</tbody>
</table>
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
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...

=微笑
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
<table>
<thead>
<tr>
<th>Trial</th>
<th>Population</th>
<th>Intervention</th>
<th>RIP</th>
<th>Readmission</th>
<th>Functional decline</th>
<th>Admission to LTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yim, 2011 RCT</td>
<td>High risk older people (HK-ISAR)</td>
<td>Nurse led CGA and referral onwards</td>
<td>↔</td>
<td>↔</td>
<td>N/A</td>
<td>↔</td>
</tr>
<tr>
<td>Caplan 2004, RCT</td>
<td>75+ discharged home (excluding NH residents)</td>
<td>Nurse led CGA and referral onwards</td>
<td>↔</td>
<td>↓</td>
<td>↓</td>
<td>↔</td>
</tr>
<tr>
<td>McCusker 2003, RCT</td>
<td>Older people ISAR &gt;1</td>
<td>Nurse led CGA and referral onwards</td>
<td>↔</td>
<td>↔</td>
<td>N/A</td>
<td>N/A</td>
</tr>
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<td>Mion 2003, RCT</td>
<td>65+ discharged from ED</td>
<td>Nurse led CGA and referral onwards</td>
<td>↔</td>
<td>↔</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Miller 1996, CCT</td>
<td>65+ discharged from ED</td>
<td>Nurse led CGA and referral onwards</td>
<td>↔</td>
<td>↔</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>
## Meta-analysis 2011

### Mortality

<table>
<thead>
<tr>
<th>Study</th>
<th>RR (95% CI)</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>McCusker</td>
<td>1.08 (0.07, 17.10)</td>
<td>13.95</td>
</tr>
<tr>
<td>Close</td>
<td>0.81 (0.47, 1.42)</td>
<td>16.05</td>
</tr>
<tr>
<td>Davison</td>
<td>0.58 (0.14, 2.39)</td>
<td>12.65</td>
</tr>
<tr>
<td>Mion</td>
<td>0.89 (0.37, 2.17)</td>
<td>26.27</td>
</tr>
<tr>
<td>Caplan</td>
<td>1.12 (0.79, 1.59)</td>
<td>31.08</td>
</tr>
<tr>
<td>Overall</td>
<td>0.92 (0.55, 1.52)</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Overall (I-squared = 0.0%, p = 0.767)
Overall (I-squared = 63.6%, p = 0.064)
Mion
Caplan
Close
ID
Study

RR (95% CI)
Weight

1.16 (0.62, 2.16) 21.86
0.41 (0.15, 1.16) 35.79
1.23 (0.76, 2.01) 42.35
0.82 (0.53, 1.28) 100.00
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<th>Study</th>
<th>RR (95% CI)</th>
<th>Weight</th>
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<tr>
<td>McCusker</td>
<td>1.30 (0.95, 1.79)</td>
<td>13.95</td>
</tr>
<tr>
<td>Close</td>
<td>0.82 (0.65, 1.04)</td>
<td>16.05</td>
</tr>
<tr>
<td>Davison</td>
<td>0.80 (0.41, 1.56)</td>
<td>12.65</td>
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<tr>
<td>Mion</td>
<td>1.04 (0.81, 1.34)</td>
<td>26.27</td>
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<tr>
<td>Caplan</td>
<td>0.88 (0.76, 1.02)</td>
<td>31.08</td>
</tr>
<tr>
<td>Overall</td>
<td>0.95 (0.83, 1.08)</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Overall (I-squared = 42.1%, p = 0.141)
Interventions affecting disposition...

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<th>Admission/readmission</th>
<th>Functional decline</th>
<th>LTC</th>
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</thead>
<tbody>
<tr>
<td>Aldeen, 2014</td>
<td>ISAR ≥2</td>
<td>GEDI - nurse-led CGA (SW, pharmacist) &amp; phone FU</td>
<td>=</td>
<td>↓</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wright, 2013 CCT</td>
<td>70+</td>
<td>Full CGA and referral onwards</td>
<td>-</td>
<td>↓</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pareja-Sierra, 2013</td>
<td>Older people</td>
<td>Full CGA and referral onwards</td>
<td>-</td>
<td>↓</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Conroy, 2013 CCT</td>
<td>Frail older people (local criteria)</td>
<td>Full CGA and referral onwards</td>
<td>-</td>
<td>↓</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
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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