Maintaining independence in frail older people after hospital discharge

Dr Claire Heppenstall
University of Otago, Christchurch
Frailty

“a multi-system reduction in reserve capacity”

“physiological systems are close to the threshold of symptomatic clinical failure”

“increased risk of disability and death from minor external stressors”

The dominoes effect....
Presentation of frailty

- “Off-legs”/ “taken to bed”/ Immobility
- Falls
- Confusion
- Incontinence
- Iatrogenic illness/ medication side-effects
- Weight loss
- “Failed discharge”
- “Acopia”

Components of frailty

- Physical frailty
- Psychological frailty
- Cognitive impairment
- Social isolation or precariousness
- Environmental obstacles
Physical frailty

- 5 key symptoms:
  - Weight loss
  - Self-reported exhaustion
  - Decreased muscle strength
  - Slow walking speed
  - Decreased physical activity

Psychosocial frailty

- Health
  - Function
  - Attitude
- Social supports
- Spiritual supports
- Financial resources
- Environmental factors
- Caregiver

Illness
- Disability
- Dependence
- Isolation
- Caregiver burden

+ve

-ve
The dominos effect

- Low physical activity
- Outside less
- Decreased Vit D
- Muscle weakness
- Unsteadiness & fear of falling
- Fractures
- Osteoporosis

Natural history of frailty

Number of deaths in each trajectory, out of the average 20 deaths each year per UK general practice list of 2000 patients
- Cancer (n=5)
- Organ failure (n=6)
- Physical and cognitive frailty (n=7)
- Other (n=2)

Function over time with high and low levels leading to death.
So what works?

• Comprehensive geriatric assessment
• Multidisciplinary team rehabilitation
• Maximising function
• Medication review
• Exercise
• Nutrition

Comprehensive geriatric assessment

• Multidimensional assessment, rehabilitation and social support
• May be inpatient or outpatient
• Identifies problems early
• Increases number remaining at home
Medication review

- Polypharmacy and inappropriate prescribing common in frail elderly
- In 715 acutely admitted adults
  - 48% prescribed >5 meds
  - 336 potentially inappropriate meds
  - One-third presented directly with an ADR
    - Benzodiazepines in falls risk
    - Opioids without laxatives
Exercise

• Reduces falls
• Improves muscle strength
• Improves walking speed
• Improves amount of physical activity
• Reduces mortality
• Improve general health status
• Improves confidence

Nutrition

• Improved weight gain
• Improved energy intake
• Reduced mortality
Palliative care

• Frail elderly have a worse prognosis than many cancers
• Estimated life-expectancy <3 years
• Discuss and inform older people and families
• Stop unnecessary medications or interventions
• Gradual process

Conclusion

• Frailty is a recognised clinical syndrome in the elderly with its own diagnostic features
• Physical, mental and social factors
• High risk of adverse outcomes
• Health professionals often feel a sense of futility when faced with a frail patient, however....

• There are interventions which improve outcomes and keep the dominos standing!
Maintaining Independence Study

• Frail elderly who lost function as a result of an illness or injury
• Unable to go directly home
• Admitted to Older Person’s Health Service (OPHS)
• Assessment, Treatment and Rehabilitation

What is the significance?

• Older people who fail to regain pre-morbid function after an acute hospital admission
  – 41.3% mortality
  – 28.6% never regain function

• 34 - 42% of frail admitted to nursing home
• 71% unhappy about move to care
NZ Health of Older People Strategy

- Promote positive ageing
- “...community based care and disability support to avoid unnecessary hospitalisation or inappropriate long-term residential care.”

- Ageing in place

WHO Active Ageing policy

- Active ageing
- “the process of optimizing opportunities for health participation and security in order to enhance quality of life as people age.”
Research questions

- Does inpatient OPHS care achieve the goal of promoting ageing in place?
- What predicts outcomes for those in OPHS care?
- How could we improve outcomes?

Phase 1 - Outcomes at 6 months

- Retrospective study of discharges from inpatient OPHS care
- What are the outcomes for frail older people?
- Are outcomes better following OPHS care?
Phase 1 results

- 552 older people included
- 14% mortality
- 62% remained in their own homes
Phase 2 methods

- A prospective cohort study
- Participants recruited at the time of hospital discharge
- Notes review and face to face interviews
  - Function
  - Frailty
  - Depression
  - Cognition
  - Co-morbidities
  - Medications
  - Social circumstances

Telephone follow-up

- 3 and 6 months
- “Do you feel your health has improved, stayed the same or got worse since you came home from hospital?”
Phase 2 results

- 159 older people included
- Mean age 80.9 years
- 53.8% lived alone
- At 12 months
  - 14% mortality
  - 67% in their own home
  - 75% further hospital admission

Predictors of Outcome

- Residential care
  - Frailty RR=1.3 (per pt)
  - Quality-of-life RR=1.4
  - Dementia RR=4.3
  - Visual impairment
    RR=2.7
  - Readmission RR=3.7

- Hospital admissions
  - Male RR=4.2
  - Frailty RR=1.2 (per pt)
  - Comorbidities RR=1.3
    (per pt)
Readmissions

• 24/159 (15%) people moved directly to care following a readmission
• 63% of those who entered care

Telephone follow-up

• “Deteriorating” health at 3 or 6 months
• Risk of residential care admission increased 4 times (p=0.009)
• 40% who reported deterioration moved v 14% whose health improved
Discussion

• OPHS inpatient care does improve mortality
• Smaller reduction in residential care admission
• Self-reported health is an important indicator
• Frailty and dementia are also significant
• Many go directly from a further admission to residential care

Qualitative Study

• Telephone and face-to-face interviews
• 144 telephone interviews
• 16 face-to-face interviews with older people
• Separate interviews with carers
Admissions

• “I knew that I couldn’t stay at home and avoid going back and back to the hospital”

• “the doctor, the hospital, they put me in here. The virus. For instance...I caught the Norovirus”

• “the hospital didn’t want me any more”

Dominos again

• Cascade of illness and disability

• “...leg ulcer, that seemed to be persistent and not improving...morphine and immobility caused her to get constipated. she ended up with abdominal pain and was in so much pain that she pressed her alarm and went to hospital...then she got the diarrhoea bug...”
Functional Dependence

Stayers
• “In the mornings I get quite busy, I can do a bit of housework, a bit of laundry”
• “she sometimes bakes cakes- you baked a cake yesterday”

Movers
• “I can go 20 paces, but then I sit down because I’m buggered”
• “couldn’t do my supermarket shopping because my legs would give up on me”

Care needs
• Having care needs met was more important than the actual level of care
• “The main reason for my son being here is the medication, he sorts that out, gets supplies from the chemist”
• “my main carer was admitted to PMH, and my brother was unwell so I lost my main supports”
Carer stress

• “I just didn’t keep my balance very well and this resulted in my wife being a bit concerned about whether I could be trusted to stop outside...and all these things added up to quite a degree of stress and illness on her part.”

Burden of care

• “My niece who was prepared to come over and stay the night with me until I got stronger, but I just felt that’s really not fair to her. She’s got family to think of”

• “that’s a worry to me because I feel I’m being a nuisance to them you see....and that’s why we went round the homes”
Attitude: moving to care

**Stayers**
- “no use lying down...I work fairly hard, I’ve always worked hard”
- “my willpower....I’m a very determined person...I have independence here so I just get on”

**Movers**
- “nothing further could have been done, it was inevitable”
- “really no choice as far as I’m concerned”

Discussion
- In keeping with quantitative data
  - Admissions
  - Comorbidities, especially iatrogenic illness
  - Functional dependence
- In addition
  - Carer stress and burden of care
  - Attitudes
Phase 4: intervention

- Regular telephone follow-up
- “Deteriorating” health triggered multidisciplinary team intervention
  - Comprehensive geriatric assessment by medical staff
  - Assessment by multidisciplinary team
  - Goal setting and support

Intervention results

- 26 older people included
- 21 remained at home
- 3 died
- 1 to residential care, 1 to independent unit
- 7 reported deteriorating health
**Interventions undertaken**

<table>
<thead>
<tr>
<th>Problems</th>
<th>Intervention</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Admitted and died before medical review</td>
<td>None</td>
<td>Died</td>
</tr>
<tr>
<td>2. Admitted before medical review</td>
<td>None</td>
<td>In hospital</td>
</tr>
<tr>
<td>3. Dysphagia, weight loss, poor appetite, difficulty preparing meals</td>
<td>Medical review, Dietician, MDT to address meal preparation</td>
<td>Services failed to start Admitted to residential care</td>
</tr>
<tr>
<td>4. Weight loss, poor intake poor mobility, falls, heart failure</td>
<td>Medical review &amp; GP involvement Dietician, physiotherapy</td>
<td>Home with intensive MDT input</td>
</tr>
<tr>
<td>5. Weight loss</td>
<td>Dietician</td>
<td>Home</td>
</tr>
<tr>
<td>6. Cough and SOB</td>
<td>Medical review</td>
<td>Home</td>
</tr>
<tr>
<td>7. Depression Carer stress</td>
<td>Referred to psychiatry</td>
<td>Home with PSE team input</td>
</tr>
</tbody>
</table>

**Feedback**

- Most older people found the telephone calls useful
- Most felt it had helped their health
- The majority preferred fortnightly calls

- Developmental issues with MDT
- Would need to assess feasibility issues further before it could be implemented
Frailty in older people

- Our study group represent a frail population
- This study illustrates some of the issues facing us all treating the frail
- Limited physiological and psychosocial reserves such that even a minor insult leads to catastrophic decline in function

Finally

- Multiphase study of frail elderly from OPHS care
- 67% remain at home at one year
- Mortality reduced
- Self-rated health predicts adverse outcomes
- We propose a telephone-based intervention to improve outcomes
Acknowledgments

• Health Research Council of NZ
• University of Otago, Christchurch
• Canterbury District Health Board
• Prof Tim Wilkinson, Drs Carl Hanger and Sally Keeling
• Statistician Dr John Pearson