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Economics of falls – costing the impact

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- What does health economics measure?
  - What has falls intervention diverted? (intervention success)
  - Costs in place that can be avoided (Cost of Illness)
  - Opportunity cost of investment in falls prevention

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How are decisions made?

- Resource allocation question
- Finite budgets
- Economic evaluations

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How is health economics useful?

- Cost of illness studies – setting the scene
- Assess efficiency – inputs per outputs
- Equity considerations – is resource allocation meeting needs?

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Types of evaluation

- Cost-benefit
  - Comparing costs and benefits in monetary terms, e.g. cost of intervention and monetary value of increase in life years

- Cost effectiveness (NICE)
  - Comparing cost and effect (QoL) - QALYs
  - Decision models based on published data
  - Trials to find new data on costs and effect (QoL)

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Trials…

- Standard within trial analysis
- Collect costs and QoL at baseline and follow-up
- Compare costs and effects
- Extrapolate in economic model for LT effects

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Alternative evaluation tool…

- Observational/retrospective data
- Difference in difference (DiD)
- Parallel trends before intervention
- Counter factual post intervention

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Complexities

- Data limitations
  - Mortality data
  - Quality of Life
  - Consider other outcomes, e.g. hospital admissions avoided (in context of wider health and social care costs)

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How are costs measured?

- Perspective
- Resource use
- Unit costs

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Falls….

- Cost of illness to set the scene
- Intervention to prevent falls - economic model
- Cost-effectiveness of interventions

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Cost of falls….

- Gannon B, O'Shea E, Hudson E. Economic consequences of falls and fractures among older people. *Ir Med J*. 2008 Jun ;101(6):170-3.
  - Largest costs from mortality, lost QoL, long stay care and inpatient costs

- AgeUK (2010)
  - Costs are £4.6m per day for over 65s

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Summary of our results:

- Our overall estimated cost of €402 million represents about 0.32% of GNP.

- Englander *et al.* (1996) provide an estimate of annual economic costs imposed by fall injuries, which includes fractures, at 0.3% ($20.2 Billion) of GNP ($7,071 Billion).

- In the UK, Scuffham *et al.* (2005) find that the costs of falls are less at 0.11% of gross national income, but they did not include costs of informal carer or mortality.

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Potential costs and benefits of falls prevention?

- Economic modeling
- Cost-benefit analysis
- What is the return on investment?

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Falls prevention costs….
……..example of physiotherapy

- Across the UK every year 1.2 million people end up in A&E after a fall, costing the NHS £1.6 billion

- If everyone 65+ at risk of falling was referred to physiotherapy 225,300 falls would be prevented, saving the NHS £331 million every year

- Every £1 spent on physiotherapy produces a £1.50 return on investment

– 'The Falls Prevention Economic Model'

www.csp.org.uk/costoffalls

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Cost-effectiveness literature…

PLOS ONE

RESEARCH ARTICLE

Cost-Effectiveness of a Specialist Geriatric Medical Intervention for Frail Older People Discharged from Acute Medical Units: Economic Evaluation in a Two-Centre Randomised Controlled Trial (AMIGOS)

Lukasz Tanajewski[1], Matthew Franklin[1], Georgios Gkountouras[1], Vladislav Berdunov[1], Judi Edmans[2], Simon Conroy[3], Lucy E. Bradshaw[2], John R. F. Gladman[2], Rachel A. Elliott[1]*

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- Post-discharge intervention to reduce incidence of adverse outcomes and associated high resource use
- Not cost-effective
- Dominated by standard care, 0% probability of cost-effective at £20,000/QALY
- Incremental cost of £302 and QALY difference of -0.001

Cost-effectiveness of a day hospital falls prevention programme for screened community-dwelling older people at high risk of falls

Lisa Irvine[1], Simon P. Conroy[2], Tracey Sach[1], John R. F. Gladman[3], Rowan H. Harwood[4], Denise Kendrick[3], Carol Coupland[3], Avril Drummond[3], Garry Barton[1], Tahir Masud[4]

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[4]Department of Medicine for Older People, Nottingham University Hospitals NHS Trust, South Block, Nottingham, NG7 2UH, UK

- RCT
- Programme cost £349 per person
- Incremental cost was £578 per person
- Cost per fall averted was £3,320
- (note: no QALYs measured here)

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In conclusion….

- Economic evaluation is complex
- Requires best data if feasible – good sample sizes for inference, generalisation
- Include health economics from project set up
- Consider impact and methodological outputs

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Current projects

PreventIT EU H2020– Feasibility study approach

- Feasibility of collecting resource use, outcome (EQ5D) and cost data

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