Building a Business Case for Fall Prevention Programs

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Overview

- Burden of Falls and Fall-related Injuries
- Potential Impact of a Business Case Falls
- Business Case Approaches
- Building a Business Case

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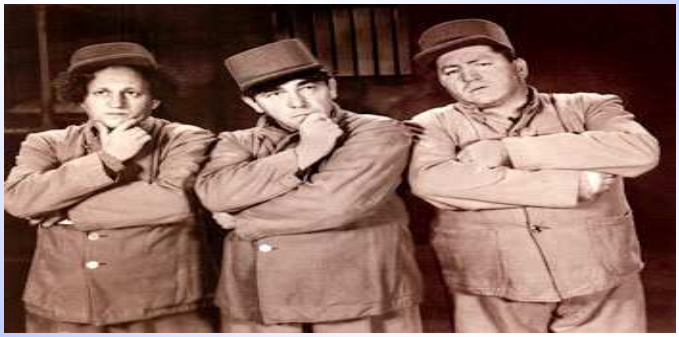
Do you know how your Fall Program Compares to the Health Industry Average?



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Burden of Falls

Perspectives:

1. Society (Payors)
2. Facility
3. Patient

Stakeholder Perspective & Impact

- Society (Payors) “Health Policy”
- Facility “Quality of Care”
- Patient “Quality of Life”

Cost of Falls: Society Perspective

- Cost of FRI for persons 65+ exceeded $19 billion or $28.2 billion in 2012
- The costs of fall injuries increase rapidly with age and are higher for women than for men.
- The burden will increase as population ages and is estimated to reach $55 billion by 2020. Of those who fall, 20% to 30% suffer moderate to severe injuries that make it hard for them to get around or live independently, and increase their risk of early death.3
- Older adults are hospitalized for fall-related injuries five times more often than they are for injuries from other causes.3
- In 2009, emergency departments treated 2.2 million nonfatal fall injuries among older adults; more than 582,000 of these patients had to be hospitalized.4

http://www.cdc.gov/ncipc/factsheets/fallcost.htm

Cost of Falls – Facility and Society

- Updated to 2010 dollars, 1 fall without serious injury incurred an additional annual cost of about $3500 compared with those with no fall.
- Those who had 2 or more falls without serious injuries increased costs by about $16,500.
- One or more falls involving at least 1 serious injury were the costliest, increasing the health care costs by about $27,000.
- By 2020, more than 4 million older Americans are projected to incur a fall with injury annually, with a total cost of about $47 billion when adjusted to 2010 dollars.

[Wu, et al, (2010, Nov). A cost effectiveness analysis of a proposal national falls prevention program. *Clinics in Geriatric Med*.]

Cost of Falls: Facility Perspective

- Average Cost FRI: $19,440
- Hospitalization cost: $17,500
- Hospitalization for hip fracture: $18,000

[http://www.cdc.gov/ncipc/factsheets/fallcost.htm]

Costs of Falls: Patient Perspective

- 1 in 3 adults 65+ fall each year
- Of those who fall, 20-30% suffer moderate to severe injuries, these falls:
  - Contribute to morbidity
  - Impede function and independence
  - Interfere with quality of life
  - Increase chance for nursing home placement
  - Increase chance for early death

Cost of Falls in Acute Care

- **Mean hospitalization cost was $17,483**
- **The mean reimbursement cost of an ED visit was $236**
- **The mean reimbursement cost of an outpatient clinic visit $412.**

Roudsari, Ebel, Corso, Molinari, & Koepsell, 2005

Cost Falls: Fatal Injuries

- TBI and injuries to the hips, legs, and feet were the most common and costly fatal fall injuries, and accounted for 78% of fatalities and 79% of costs.
- Injuries to internal organs caused 28% of deaths and accounted for 29% of costs from fatal falls.

http://www.cdc.gov/ncipc/factsheets/fallcost.htm

Cost Falls: Non-Fatal Injuries

- Hospitalizations accounted for nearly 66% of the costs of nonfatal FRI, and ED treatment accounted for 20%.
- Fractures were both the most common and costly type of nonfatal FRI; 33% of nonfatal injuries were fractures, but they accounted for 61% of costs or $12 billion.
- Hip fractures are the most frequent fall-related fracture. The cost of hospitalization for hip fracture averaged about $18,000 and accounted for 44% of direct medical costs.

http://www.cdc.gov/ncipc/factsheets/fallcost.htm

Fallers Use More Healthcare and Cost More than Non Fallers

- Fallers and non-Fallers were matched and healthcare costs followed over time.
- Fallers had more fractures and more hospitalizations than non-fallers and were more likely to be discharged to hospital or die. Cost difference: $6,259

Carroll, Delafuente, Cox, & Narayanan, 2008

Cost of Fall Event in Community

- In 272 community dwelling elderly women over age 70
  - 47 injurious falls, cost from $63 to $86,000 with
    - mean cost of $6,606
    - median cost $658 per fall event

Findorff, Wyman, Nyman, & Croghan, 2007

Cost of Falls in NHs

- **Developed a taxonomy of NH falls that accounts for both the severity of fall and the duration of Tx**
- **The most common and least costly fall category was category 1: non injurious**
  - **accounted for 30% of falls and**
  - **1-year cost of $319 per event (range $71–550).**
- **The least common and most costly was fall category 9: multiple injuries**
  - **accounted for 1% of falls and**
  - **1-year cost of $22,368 (range $9,969–64,382).**

Sorensen, Lissovoy, Kunaprayoon, Resnick, Rupnow, & Studenski, 2006

Cost of Hip Fracture

- **Prospective cohort with matched pair analysis-- 170 elderly community residing women (age 50+) in 4 hospital in Belgium, Assess costs of initial hospitalization for 1st hip fracture over 1 year post discharge**
- **Difference in cost 1 year post hospitalization for hip fx when compared with matched controls**
- **Mortality rate 13%**
- **Mean cost $9,534 for initial hospitalization of hip fracture;**
- **Hip fx patients had $7,300 more costs over 1 year period post discharge (31% NH, 16% hospital, 14% home rehab).**
- **2/5ths costs spent 1st 3 months post D/C.**
- **Costs of treating hip fracture patient 3X greater than matched controls 1 year post D/C**

Haentjens, Autier, Barette, & Boonen, 2001

Potential Impact of a Business Case for Falls

What is a Business Case?

Justifying a program investment by using business standards such as

- "internal rate of return,"
- "net present value"
- "payback period"

What is a business case for falls?

- Value of improving fall prevention, early detection, and protection from perspective of
  - Society (payors)
  - Facilities (Hospital, LTC, ER, OP)
  - Patients
- Do improvements in fall programs reduce costs?
- If they increase costs, is the value to patient care justifies spending?
- Are costs of developing and implementing the program offset by cost savings or revenue gains?

Fall Programs are NOT viewed as Good Investment

- One reason may be that organizations seriously underestimate the true cost of these injuries

Result:

Facilities are slow to adopt innovations

Diluted programs that appear less effective

Barriers to Building a Business Case

- Emerging evidence base supporting specific interventions
  - Years research spent on risk assessment, proportionally small research on RCTs
- The organization that pays for prevention does not see the payoff.
- Bias against funding for programs targeting elderly

Barriers to Building a Business Case

- Emerging evidence base for how best to implement fall programs
- Confusion as to what the goal is– prevent falls, detect falls early, or prevent injuries
- Complexity of bundling the right interventions specific to risk factors and care setting
- Unknown dose of interventions needed to effect positive change

Barriers to Building a Business Case

- Complexity of costing out program elements
- Questions over timeframe to monitor costs outcomes after an injury- e.g., what is an episode of care?

Uncertainties of Economic Analyses

- Sample variation
  - Study participants more or less impaired or more/less at risk than typical?
- Assumptions Made
  - E.g., time interval
- Generalizability
  - Settings of care, time period, patient population, caregivers, etc
- Benefits
  - Facility pays for intervention but often society benefits NOT the facility. Need incentives for improvement

Direct Costs (Immediate & Long Term)

- Direct costs are what patients and insurance companies pay for treating fall-related injuries
- Immediate costs include
  - Fees for hospital and nursing home care
  - Doctors and other professional services
  - Rehabilitation
  - Community-based services (OP visit, ER visit, home care)
  - Use of medical equipment and/or prescription drugs
  - Ambulance services
  - Changes made to the home
  - Insurance processing
- Long-term effects of FRI such as disability, dependence on others, lost time from work and household duties, and reduced quality

Cost Effectiveness

- "value for money"
- Method to determine which interventions provide the most effective care that is affordable (Muenning, 2002)
- Two or more alternatives are available

Incremental Cost Effectiveness Ratio

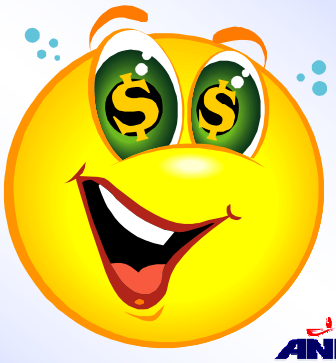
- Cost of the fall program divided by the reduction in injury and associated costs.
- Need single dimensional effectiveness measure
- Need threshold criteria for what constitutes a cost effective intervention
- Excludes patient costs, including changes in pain, suffering, out of pocket expenses, morbidity, mortality, and QOL

Payback period

- Length of time needed to recover the cost of the program/intervention
- Time it takes for cumulative total of net benefits to equal amount of original investment
- Shorter the better

Cost-Benefit Analysis

- Dollar value is placed on both cost and effectiveness of the intervention



Towards Developing a Series of Business Cases for Falls (n=81)

- **Based on Targeted Outcomes:**
  Fall Prevention, Early Fall Detection, Fall Protection
- **Based on Settings of Care:**
  Acute, LTC, Community
- **Based on Level of Risk**
  High, Moderate, Low
- **Based on Various Perspectives**
  Society (Payors), Facility, Patient

Select Interventions

- Single intervention vs. “bundle”
- Flexibility
  - universal fall program vs
  - targeted fall interventions
- What dose of the intervention is sufficient?
- How long does the intervention need to be sustained?

Interventions

Prevention

- **Risk Assessment**
- **Surveillance**
- **Treatment of modifiable risk factors**
- **Patient Education**
- **Technology**
- **Environment modification**
- **Exercise**

Early Detection

- **Technology**
- **Sitters**
- **Move Room Closer to Nursing Station**

Protection

- **Technology**
- **Patient Education (How to fall safety)**

1. Can you identify interventions specific to care settings, e.g., NH, acute care, home?
2. Can you differentiate technologies designed for prevention, detection, and protection?

Estimate Effectiveness of Interventions

- How close can you actually drive falls and FRI to zero in places where they are doing everything exactly right? Are you a believer that all falls can be prevented?
- What is the most efficient way to implement interventions? Are interventions discipline specific or bundled as a team?
- What are the ultimate measure (s) of effectiveness?
  - Decrease in number of falls
  - No "long lies" post fall
  - Decrease in the number of serious FRI?
  - Quality of Life Years?

Estimate Cost of Intervention

- Costs of Intervention include:
  - Costs associated with development of the intervention
  - Staff training
  - Human Costs (estimated time, discipline, and level of expertise)
  - Capital Costs (acquisition, installation, maintenance of technologies)
  - Supply costs
  - Travel Costs
- Make decisions whether the intervention is "universal" or targeted;
- Offer high, medium and low dose options based on risk?

Decision Model Questions (Scarce Resources)

- Who are the (legitimate) stakeholders?
- Who bears the consequences of the decision?
- Who is responsible for making/implementing/enforcing the decision?
- What do the stakeholders care about?
- What are their preferences for different outcomes?
- What trade-offs are they willing to make among different consequence dimensions (e.g., cost vs. safety)?
- What are the competing decision options to be evaluated?
- What information do the stakeholders need to make well-informed decisions?
- What questions are they asking?
- What information is immediately available about the probable consequences of different decisions?
- What data gaps and uncertainties exist, and what means exist to reduce uncertainties?
- What analytic tools and experts are available?
- What are the resource and time constraints on making the decision?

Taxonomy Falls in NHs

Taxonomy

1. **Non-injurious Fall**
2. **Psychological/Functional Injury Only**
3. **Abrasion/Contusion**
4. **Laceration/Hematoma**
5. **Fracture, non surgical /orthopedic injury**
6. **Fracture requiring casting**
7. **Fracture requiring surgery**
8. **Intracranial Injury**
9. **Multiple injuries**

Cost Over Time:

- **Acute Care Costs**
- **Convalescent Cost**
- **Long Term Costs**
- **Total Cost**

Scenarios:

- **Typical Case**
- **Best Case**
- **Worst Case**

Sorensen, Lissovoy, Kunaprayoon, Resnick, Rupnow, & Studenski, 2006

Building a Business Case: Background

This project emerged from the following:

- The recent CMS ruling related to payment for preventable adverse events
- The need to capture the impact of our research program on falls, conducted since 1999
- Support facilities (VA and non-VA) interested in implementing research related to falls

Key Questions

- Do we have a clear goal– prevent falls, early detection or prevent FRI?
- Is there a strong enough evidence based to bundle interventions by setting of care, and level of risk?
- Does the evidence suggest we develop a universal program versus targeted programs --are there in differences in cost and effectiveness?
- Do we know what optimal fall prevention, early detection, and/or fall protection looks like?

Key Questions

- Over what period of time do we need to evaluate cost and outcomes?
  - Setting specific (adm- D/C), Episode of Care, Lifetime
- Can we estimate how much it will cost to implement these optimal programs?
- Do we know enough about implementation to consistently provide the right dose of the interventions, sustained over time which will make a difference in outcomes?
- How close can you drive # falls or FRI to zero in places where they are doing everything right?

Suggestions

- Reduce Preventable Falls: Measure reduction by types of falls and cost out
- Return on Investment for Program Infrastructure: Cost Staffing, Interventions with Reduction of Actual Falls
- Cost Savings for Falls Prevention and Injury Protection – Profile Protective Culture

Examples

- Reduction in Hip Fractures: 2004-2007
- Reduction in Falls Post Clinic Visit
- Reduction in Falls and Harm
- Reduction in Litigation

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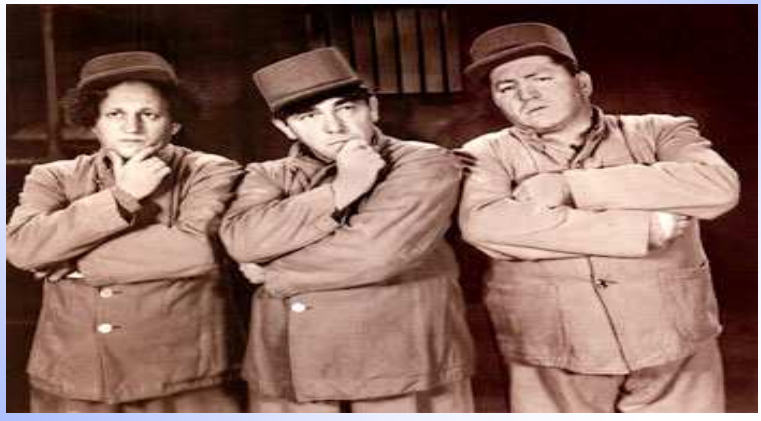

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