Hip Protectors

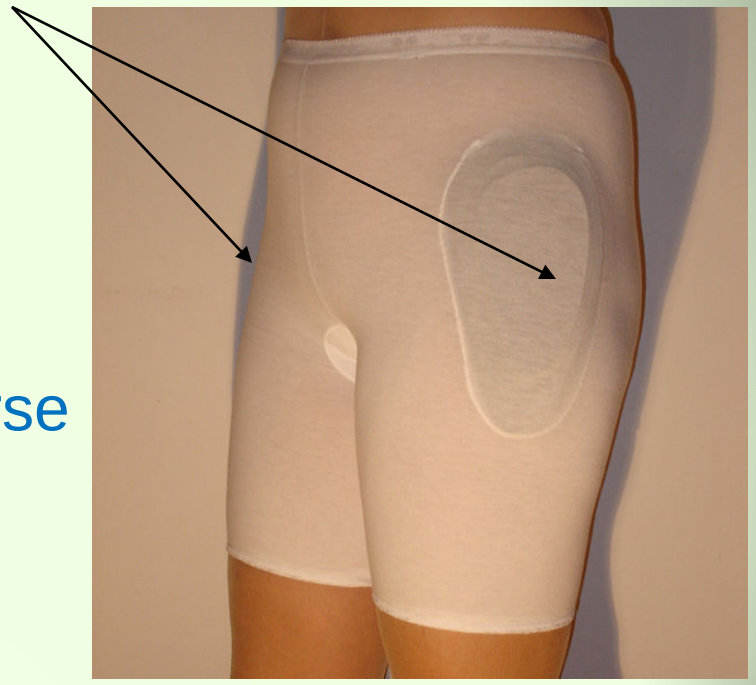
Fracture Prevention in Long-Term Care

McMaster University

Canadian Agency for Drugs and Technologies in Health

What are hip protectors?

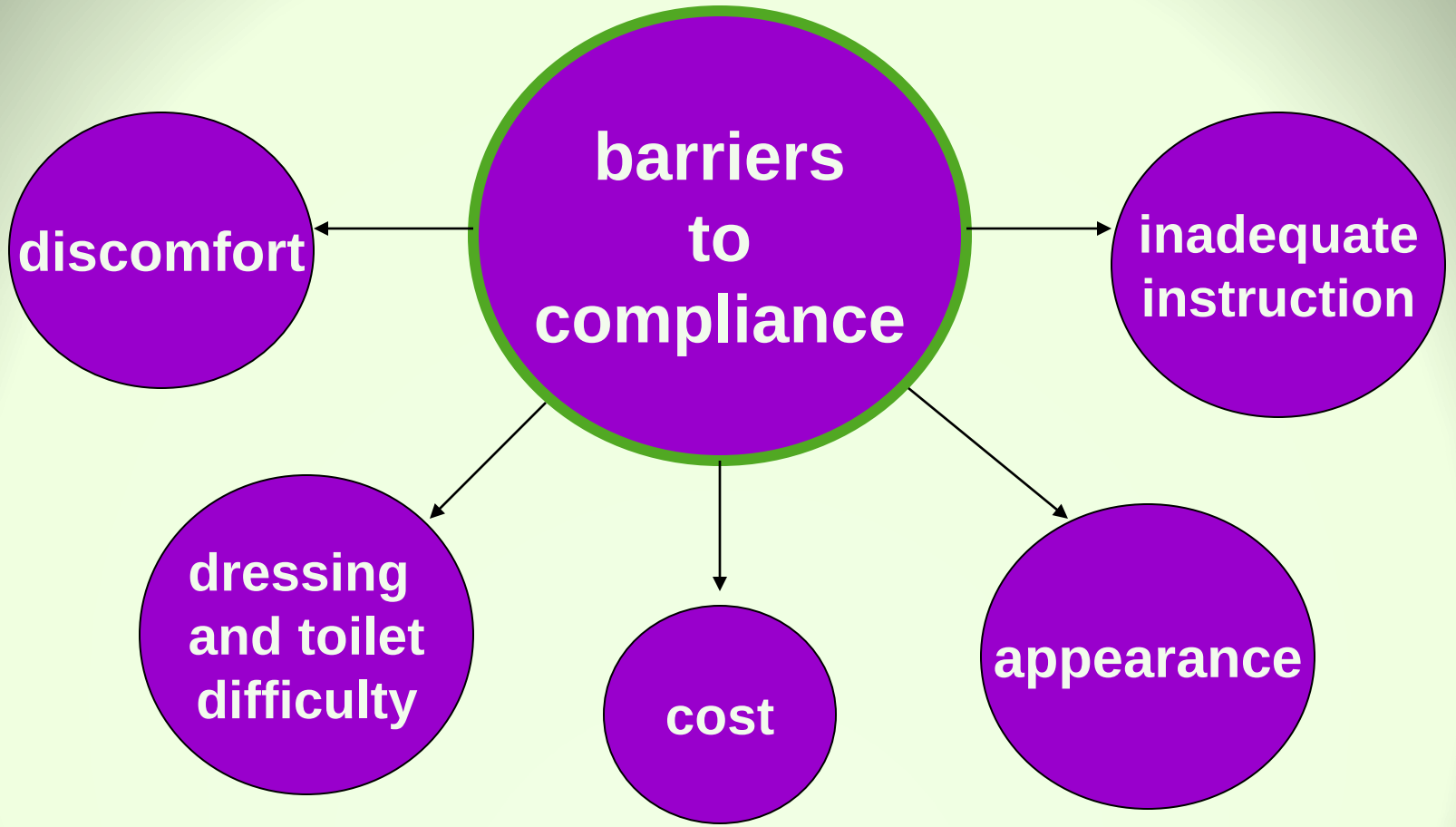
- garments with dual sided pockets for protective pad insertion
- can be “hard” or “soft” shelled
- during a fall, pads absorb or disperse force away from hips, preventing fracture



Do hip protectors prevent fractures?

- Vary in effectiveness
  - between types
  - between long-term care (LTC) residents
- Clinically and cost effective for fracture prevention in women > 70 years living in LTC facilities at current compliance (23%)
- Effectiveness is influenced by rate of compliance

What factors hinder compliance?



What policies are recommended?

- Obtain adequate number of hip protectors for facility
- Consider resident preferences when deciding which type of protector to use
- Apply specific criteria to determine which residents will benefit from hip protectors
- Educate staff, residents, and their family members of the benefits and barriers

The Use of Hip Protectors in Long-Term Care Facilities: A Survey of Nursing Home Staff

A. Sawka, M. Nixon, L. Giangregorio, L. Thabane,
J. Adachi, A, Gafni, R. Goeree, P. Raina,
J. Ranford & A. Papaioannou

J. Am Med Dir Assoc 2007; 8:229-232

McMaster University
Inspiring Innovation and Discovery

CIHR IRSC
Canadian Institutes of Health Research
Instituts de recherche en santé du Canada

Study Features

- Objectives: To determine the prevalence of exposure to hip protectors and opinions on their use, from the perspective of nursing home staff.
- Written survey of 160 staff from 5 Nursing Homes in Hamilton-Wentworth region, Ontario Canada
- Included for profit and non profit homes
- Number of residents in each home: from 61-378

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Results

- Rate of prior exposure to hip protectors varied from 41% to 100%
- Rate of prior experience applying these devices varied from 14% to 80%
- Most frequently cited barriers to the use of hip protectors were:
  - physicians not thinking to prescribe them
  - expense
  - perceived lack of evidence of benefit in this population
  - wearer discomfort
  - removal by wearers

continued…

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Results, cont'd

- Lack of staff time to apply hip protectors was rarely cited as a problem (0 to 2.3%)

- Majority of staff believed that hip protectors should be worn by nursing home residents:
  - with a prior history of fracture (52% to 95%)
  - who have osteoporosis (33% to 86%)
  - who fall frequently (67% to 100%)
  - who are unsteady on their feet (55% to 90%)

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Study Limitations

- limited sample size
- sampling of nursing homes from a limited geographic area
- limited response rates to questions
- opinions generated by staff unfamiliar with the devices studied
- did not survey nursing home residents or their family members

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Conclusions

- Prevalence of exposure of nursing home staff to hip protectors is highly variable
- Nursing home staff generally believe that hip protectors decrease the risk of hip fracture
- Barriers to the use of hip protectors in nursing homes include: prescriber factors, knowledge gaps among staff, expense, and wearer-factors

Sawka et al. *J.Am Med Dir Assoc* 2007; 8:229-232

Could a Policy of Provision of Hip Protectors to Institutionalized Elderly Result in Cost Savings in Acute Hip Fracture Care?

The Case of Ontario, Canada

A. Sawka, A. Gafni, P. Boulos, K. Beattie, A. Papaioannou, A. Cranney, D. Hanley, J. Adachi, A. Cheung, E. Papadimitropolous, L. Thabane

Osteoporos Int 2007; 18:819-827

Methods

- Cost analysis, Ministry of Health perspective
- Ontario nursing home population age ≥65 yrs (N = 60775)
- 1-year cycle length (since high yearly mortality)
- Include only costs of acute hospitalization for hip fracture and hip protectors
- Modeled using Markov Chain Monte Carlo methods, WinBUGS 1.4

Sawka et al. *Osteoporos Int* 2007; 18:819-827

Assumptions used in Economic Analysis

Assumptions	Value
Annual Incidence Hip Fractures in Nursing Homes (For Individuals ≥65 Years)	4.3%
Cost of Hospitalization for Treatment of Hip Fracture, Including MD Fees	$11,160.30 (SD 8,643)
Cost of 3 Safehip Protectors/person/yr – used in primary analysis	$255
Odds Ratio of Hip Fracture with Hip Protector (based on meta-analysis*)	0.40 (0.25, 0.61)
Compliance with Hip Protectors	As in Trials*

* Sawka et al. *J Clin Epidem 2007;* 60:336-344

Sawka et al. *Osteoporos Int* 2007; 18:819-827

Results

	Mean Hip Fracture Prevented (95% CRI)	Cost Savings (millions)	Mean Probability Cost Savings
All (65 yr+) (60,775)	1864 (1610, 2089)	6.0 (-26.4, 39.7)	0.63

Sawka et al. *Osteoporos Int* 2007; 18:819-827

Conclusions

- At current prices, a strategy of provision of hip protectors to all nursing home residents aged ≥65 yrs in Ontario or those with dementia or osteoporosis is likely to result in healthcare cost savings
- Cost savings - due to decreased spending on initial acute hospitalization for hip fracture
- Negotiating lower prices for hip protectors would increase the cost savings

Sawka et al. *Osteoporos Int* 2007; 18:819-827