



# Community Health Assessment Quarterly

Volume 1, Issue 1 Premier Issue!

Spring 2006

## Analysis of Fall Deaths Among Seniors

Falling is a very common hazard in life; who doesn't remember falling and skinning a knee as a child. But did you know that, for seniors, a fall can be fatal? Indeed, falls are the leading cause of injury death among seniors (older adults age 65 and over) in the United States, accounting for approximately 14,000 deaths in 2003. And the problem has been growing, according to data from the National Center for Injury Prevention and Control: the senior fall death rate (the number of fall deaths among seniors divided by the senior population) has grown 31% between 1999 and 2003. Death rates due to falls increase sharply with age, with men having a significantly higher death rate than women nationally (1).

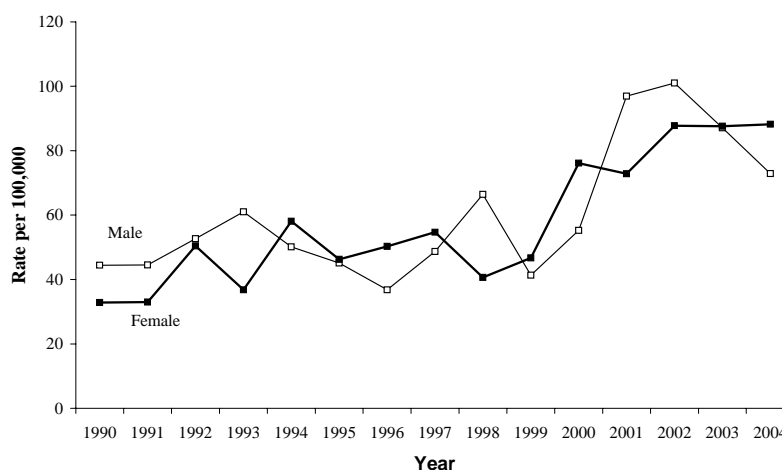
The Health Assessment team at the Multnomah County Health Department wondered if the same trends are occurring for Multnomah County residents. And can anything be done to prevent such deaths to seniors locally?

### Data and Results

To examine fall deaths among seniors in Multnomah County, we analyzed mortality (death) data, available from 1990 to 2004. The underlying cause of death on the death certificate was used as the criterion for determining fall deaths.

Multnomah County data show that deaths from falls increased significantly (test for linear trend,  $p < 0.05$ ) for both male and female seniors between 1990 and 2004.

Fall Deaths Among Multnomah County Seniors By Gender



Graph 1. Fall Deaths by Gender

The fall death rate was higher for women (88.2 per 100,000 senior women) than for men (72.9) in 2004, contrary to national findings. Overall, the fall death rate was 21% higher for Multnomah County seniors (82.1 per 100,000) than the rest of the state of Oregon (68.1). Fortunately, the fall death rate among male seniors declined in the last two years, dropping 30% between 2002 and 2004 (Graph 1).

A further analysis of Multnomah County death data for 1999-2004 shows that there were 332 fall deaths among Multnomah County seniors, with 55% of deaths occurring to adults 85 and over. The death rate due to falling clearly increases with age, as can be seen in Graph 2. Demographic data show that 60% of senior fall victims were women, 59% were widowed, and 95% were White non-Hispanic.

Table 1. Demographic and Characteristic Information on Fall Deaths among Multnomah County Seniors: 1999-2004 (N= 332)

Demographic	Characteristic of fall
Mean age (yr)	Fall at home (%)
Female sex (%)	Fall (trip, stumble) on same level (%)
White non-Hispanic race (%)	Fall to lower level (stairs, ladder) (%)
Married (%)	Fall involving hip fracture (%)
Widowed (%)	Fall involving head injury (%)
Mean education (yr)	Mean time from injury to death (days)

# Fall Deaths Among Seniors

Looking at characteristics of the falls, over two-thirds of falls occurred in the home, and 72% of the fall deaths involved tripping or stumbling onto the floor. In addition, one-third suffered a hip fracture, and approximately 44% of fall deaths involved a head injury (see table 1).

*Studies indicate that exercise can reduce the risk of fall injuries among seniors.*

times more likely to suffer a hip fracture than those age 65-74, when controlling for gender (logistic regression;  $p = .010$ ). Women were also significantly more likely to suffer a hip fracture

than men (Chi-Square = 2.9,  $p=0.05$ ): 37% of women suffered a hip fracture, compared to 27% of men.

## Hip Fractures

Studies have found that hip fractures are a common and serious outcome of falls in seniors, and cause the greatest number of deaths (2). According to recent studies, women sustain 70-80% of all hip fractures, and those 85 and over are 10 times more likely to suffer hip fractures than those ages 60-65. The same general patterns were found in the mortality data among seniors in Multnomah County. Of the 112 fall deaths where a hip fracture occurred, hip fractures increased significantly with age (Chi-square = 10.6,  $p < .05$ ): 40% of those 85 and over suffered a hip fracture, compared to 12% of those ages 65-74. Seniors 85 and over were four

## Recommendations

The fall death rate among seniors is a large and growing problem in Multnomah County, and it is largely preventable. Following are actions that can be taken to help reduce fall deaths (3-4).

- **Seniors:** Examine the home environment for hazards. Remove any object, such as throw rugs, that may cause tripping or stumbling. Ask your doctor about a fall risk factor assessment. Studies have found that exercise can reduce the risk of injuries from falls.
- **Health care providers:** Conduct a fall risk factor assessment, especially in seniors 85 and over. Encourage exercise that emphasizes balance and strength training. Bone strengthening medications may reduce the risk of fall-related fractures.

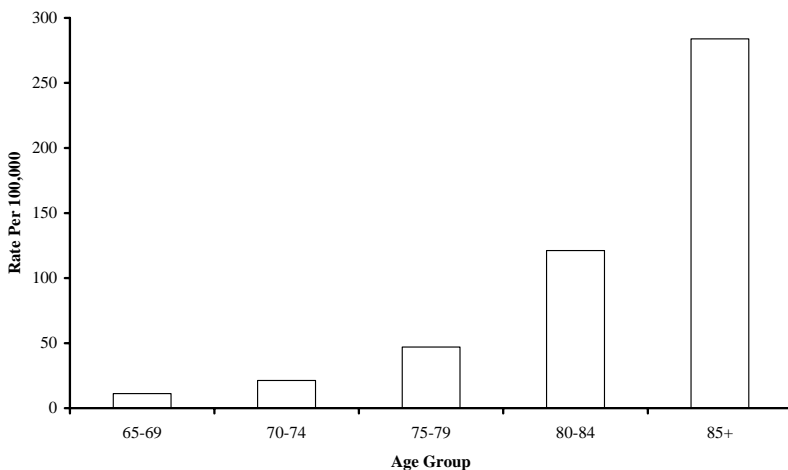
courage exercise that emphasizes balance and strength training. Bone strengthening medications may reduce the risk of fall-related fractures.

- **Public health professionals:** A health promotion effort encouraging more exercise among seniors could help reduce this problem.

## References

1. National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reports System. Accessed March 25, 2006. URL: <http://www.cdc.gov/ncipc/>
2. Wolinsky FD, Fitzgerald JF, Stump TE. The effect of hip fracture on mortality, hospitalization, and functional status: a prospective study. *American Journal of Public Health* 1997; 87 (3): 398 – 403.
3. Chang JT, Morton SC, Rubenstein LZ, Mojica WA, Maglione M, Suttrop MJ, Roth EA, Shekelle PG. Interventions for the prevention of falls in older adults: systematic review and meta-analysis of randomized clinical trials. *BMJ* 2004; 328: 680-687.
4. Oregon Department of Human Services. Preventing Falls in the Elderly. CD Summary 2002; 51 (23).

Fall Deaths in Multnomah County by Age Group: 2000-2004



Graph 2. Fall Deaths by Age Group

---

**Community Health Assessment Quarterly** is published four times per year, free of charge, by Multnomah County Health Department Health Assessment and Evaluation Office 426 SW Stark St 9<sup>th</sup> Floor, Portland OR 97204. If you have questions or comments, please email Jon Duckart at [jon.p.duckart@co.multnomah.or.us](mailto:jon.p.duckart@co.multnomah.or.us) or by phone at 503-988-3663 x29055. This publication is available online at: [www.co.multnomah.or.us/health/hra/haq.shtml](http://www.co.multnomah.or.us/health/hra/haq.shtml)