Non-natural deaths in San Diego County: A comparison of older adults to the general population

Joshua Smith, PhD, MPH
Epidemiologist
County of San Diego, Health and Human Services Agency
Emergency Medical Services
Joshua.smith@sdcounty.ca.gov

San Diego County

- 4,200 square miles, 90 miles of international border, 70 miles of coastline, 3.2 million people
- 19,000 – 21,000 deaths recorded each year
- Medical Examiner investigates about 10,000 cases
- Further evaluation (autopsy or external exam) performed on about 3,000 cases, including all non-natural deaths to determine both manner and cause

Manner of Death:
- Natural
- Unintentional (accident)
- Homicide
- Suicide
- Undetermined

"The cause of death can be summarized as the disease or injury that initiates the sequence of events that ultimately results in the person’s death." (Motor vehicle crash, gunshot, drug overdose, etc.) - San Diego County Medical Examiner, 2012 Annual Report.
Unintentional Death Rates in San Diego County, 1990-2012

San Diego County Suicide Rates, 1990-2012

San Diego County Homicide Rates, 1990-2012
Deaths by Manner in San Diego County, 1990 - 2012

<table>
<thead>
<tr>
<th>Manner</th>
<th>1990</th>
<th>2000</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unintentional Deaths</td>
<td>867</td>
<td>901</td>
<td>1237</td>
</tr>
<tr>
<td>Unintentional Deaths 65+</td>
<td>137</td>
<td>218</td>
<td>440</td>
</tr>
<tr>
<td>Suicides</td>
<td>348</td>
<td>347</td>
<td>411</td>
</tr>
<tr>
<td>Suicides 65+</td>
<td>88</td>
<td>65</td>
<td>68</td>
</tr>
<tr>
<td>Homicides</td>
<td>242</td>
<td>119</td>
<td>110</td>
</tr>
<tr>
<td>Homicides 65+</td>
<td>15</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

Unintentional Death Rates by Gender in San Diego County, 1990-2012

San Diego Suicide Rates by Gender, 1990-2012
Unintentional Deaths

In 2012, 87% of all unintentional deaths fell into one of 3 causes:

1. Drugs and Alcohol (including prescription drugs)
2. Motor Vehicle Related (including pedestrians struck by motor vehicles)
3. Falls
Summary of Non-natural Deaths in San Diego County, 1990 – 2012

- Population-controlled unintentional deaths are increasing faster among older adults than among the general population.
- While suicide rates among older adults have decreased compared to 20 years ago, recent trends are flat.
- Homicide rates have decreased among the general population and older adults for the last two decades.
- Both older males and older females have witnessed a drastic increase in unintentional death rates over the last eight years.
- The suicide rate among older males remains substantially higher than the general population and their female counterparts.

Unintentional Deaths

- The rate of unintentional deaths related to drugs and alcohol has increased sharply over the last decade, most likely due to prescription opioids.
- While motor vehicle crash related death rates have decreased among older adults, they remain higher than the general population.
- Fall related deaths have increased significantly among older adults over the last decade, predominantly accounting for the overall increase in unintentional deaths.

Why are fall related deaths increasing?
1. Falls are increasing?
2. The mortality rate of falls is increasing?
3. Both?
   - San Diego County emergency department data show that there was a 35% increase in the rate of fall related ER visits among those 65 years and older from 2006 to 2011 (EpiCenter, California Department of Public Health).
   - There was a 12% increase in the rate of non-fatal, fall-related hospitalizations over the same time period (EpiCenter, California Department of Public Health).
   - The fall related death rate increased by 54% over the same time period.
   - It appears that the increase in fall related deaths is due to an increase in both factors.

Potential issues related to falls? (Literature Review)
- Increasing Longevity
- Mental Health / Cognitive Decline
- Impaired Balance
- Polypharmacy
- History of Falls
- Anticoagulants
- Environmental Factors
- Others?

Notes:
- Unless otherwise noted, all data are from the County of San Diego, Health and Human Services, Emergency Medical Services, Medical Examiner Database.
- All rates are per 100,000 people.