We studied all medical examiner–certified suicides in New York City from 1990 to 1998 to compare suicide methods used by elderly and younger adults. Associations between age and suicide method and place of occurrence were examined. Fall from height was more likely to have been used by individuals 65 or older than by those who were younger. Among persons who died by fall from height, those 65 or older were more likely than others to have fallen from buildings where they lived. (Am J Public Health. 2005;95:1000–1002. doi:10.2105/AJPH.2004.037861)

Suicide rates in the United States are highest among those aged 65 and older. Additionally, suicide among the elderly has several distinguishing characteristics. For example, geriatric suicide is associated more with depression and physical illness than is suicide among younger adults. The elderly also have a higher proportion of completed suicides to attempted suicides. Nationally, firearms are most frequently used by persons older than 65 years, but factors influencing choice of suicide method among the elderly are not well understood. In the general population, suicide method has been related to location-specific factors, such as access to firearms or tall buildings.

In this study, we compared suicide methods of elderly and younger adults in New York City. We considered both accessibility and lethality, and we hypothesized that New York City suicide victims aged 65 years or older would have more frequently fallen to
METHODS

All deaths of New York City residents from 1990 through 1998 certified as suicides by the chief medical examiner were studied. Age, gender, race, method of suicide, and place of occurrence were recorded.

For the main analyses, 8 age categories were used: 15 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65 to 74, 75 to 84, and 85 years or older. Only 7 groups were used to determine suicide rates; the oldest 2 groups were collapsed into a 75 or older category because of the sparse denominators.

Age-specific suicide rates were calculated for each year from 1990 through 1998 by dividing the number of suicides among New York City residents in each of 7 age groups per year by the population counts. A linear interpolation of census counts for New York City for 1990 and 2000 generated denominators for the intervening years. Rates were expressed per 100,000.

Suicides were classified according to the most frequent methods: “fall from height,” “hanging,” “firearms,” “poisoning,” and “other.” “Other” included asphyxiation, drowning, self-laceration, burns, and subway-related deaths. The place of occurrence of each fall from height was classified as either “home of victim” or “other place” (i.e., residences other than the victim’s own, bridges, health care facilities, hotels, and public transit).

RESULTS

From 1990 through 1998, 5062 residents aged 15 years or older committed suicide in New York City; 882 (17.4%) were aged 65 years or older (Table 1). During the study period, 15.9% of New York City’s population was 65 years or older.

Subjects aged 75 or older accounted for 461 suicides (9.1%) and tended to have the highest suicide rates per 100,000 for the 9-year period at 12.18 (95% confidence interval [CI] = 8.85, 15.51) compared with 8.80 (95% CI = 6.28, 11.32) for the 65- to 74-year age group, 9.46 (95% CI = 7.09, 11.84) for 55 to 64, 11.30 (95% CI = 8.83, 13.67) for 45 to 54, 10.80 (95% CI = 8.87, 12.72) for 35 to 44, 9.29 (95% CI = 7.68, 10.90) for 25 to 34, and 6.51 (95% CI = 4.97, 8.06) for 15 to 24.

A significant association was seen between suicide method and age ($\chi^2 = 244.58; P < .001$) (Table 2). Fall from height was the most common method of suicide among victims aged 65 or older, whereas firearms were most frequently used by those aged 15 to 34 years.

Among suicide victims who fell from a high place, those aged 65 or older were significantly more likely than younger victims to have fallen from their homes (86.3% vs 69.4%) and less likely to have done so from other high places ($\chi^2 = 57.73; P < .001$).

DISCUSSION

Fall from height is a frequently used method of suicide among elderly New Yorkers, consistent with ease of access and the lethality of suicides attempted by the elderly. Fall from height is a method readily accessible to elderly dwellers of high-rise apartments and, unlike overdoses, offers an assuredly lethal outcome; it is also easier for frail individuals to accomplish than hanging or asphyxiation.

Suicide among the elderly in New York City mostly reflected national trends from 1990 to 1998; that is, elderly suicides occurred predominantly in White men, and the highest suicide rates were for ages 75 or older. However, national suicide rates in the geriatric population were higher than the rates for elderly people in New York (national suicide rates per 100,000 for 1990–1998 were 15.71 for 65- to 74-year-olds, 21.42 for 75- to 84-year-olds, and 21.67 for 85 or older), and firearms were the most frequently used method. Although choice of suicide method among elderly New York City residents might not apply to non-urban areas, findings do apply to the entire geriatric population of New York City, where all adult suicides were studied. Nevertheless, regional demographic disparities merit further investigation.

### TABLE 1—Demographic Characteristics of Suicide Victims in New York City: 1990–1998

<table>
<thead>
<tr>
<th>Age, y</th>
<th>White Male No. (%)</th>
<th>White Female No. (%)</th>
<th>Black Male No. (%)</th>
<th>Black Female No. (%)</th>
<th>Hispanic Male No. (%)</th>
<th>Hispanic Female No. (%)</th>
<th>Other Male No. (%)</th>
<th>Other Female No. (%)</th>
<th>Total Male No. (%)</th>
<th>Total Female No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-24</td>
<td>154 (25.1)</td>
<td>39 (6.4)</td>
<td>125 (20.4)</td>
<td>25 (4.1)</td>
<td>179 (29.2)</td>
<td>40 (6.5)</td>
<td>39 (6.4)</td>
<td>13 (2.1)</td>
<td>497 (80.9)</td>
<td>117 (19.1)</td>
</tr>
<tr>
<td>25-34</td>
<td>346 (30.2)</td>
<td>95 (8.3)</td>
<td>224 (19.6)</td>
<td>67 (5.9)</td>
<td>257 (22.4)</td>
<td>46 (4.0)</td>
<td>71 (6.2)</td>
<td>39 (3.4)</td>
<td>888 (78.4)</td>
<td>247 (21.6)</td>
</tr>
<tr>
<td>35-44</td>
<td>386 (35.6)</td>
<td>141 (13.0)</td>
<td>181 (16.7)</td>
<td>53 (4.9)</td>
<td>190 (17.5)</td>
<td>46 (4.2)</td>
<td>51 (4.7)</td>
<td>36 (3.3)</td>
<td>808 (74.5)</td>
<td>276 (25.5)</td>
</tr>
<tr>
<td>45-54</td>
<td>318 (40.4)</td>
<td>122 (15.5)</td>
<td>98 (12.5)</td>
<td>29 (3.7)</td>
<td>127 (16.1)</td>
<td>35 (4.4)</td>
<td>29 (3.7)</td>
<td>29 (3.7)</td>
<td>572 (72.7)</td>
<td>215 (27.3)</td>
</tr>
<tr>
<td>55-64</td>
<td>244 (44.4)</td>
<td>117 (21.3)</td>
<td>54 (9.8)</td>
<td>13 (2.4)</td>
<td>64 (11.7)</td>
<td>13 (2.4)</td>
<td>31 (5.6)</td>
<td>13 (2.4)</td>
<td>393 (71.6)</td>
<td>156 (28.4)</td>
</tr>
<tr>
<td>65-74</td>
<td>211 (50.2)</td>
<td>84 (20.0)</td>
<td>35 (8.3)</td>
<td>7 (1.7)</td>
<td>37 (8.8)</td>
<td>15 (3.6)</td>
<td>18 (4.3)</td>
<td>13 (3.1)</td>
<td>301 (71.7)</td>
<td>119 (28.3)</td>
</tr>
<tr>
<td>75-84</td>
<td>171 (52.3)</td>
<td>82 (25.1)</td>
<td>15 (4.6)</td>
<td>9 (2.8)</td>
<td>17 (5.2)</td>
<td>6 (1.8)</td>
<td>19 (5.8)</td>
<td>8 (2.4)</td>
<td>222 (67.9)</td>
<td>105 (32.1)</td>
</tr>
<tr>
<td>≥ 85</td>
<td>70 (52.2)</td>
<td>45 (33.6)</td>
<td>2 (1.5)</td>
<td>2 (1.5)</td>
<td>2 (1.5)</td>
<td>5 (3.7)</td>
<td>6 (4.5)</td>
<td>79 (59.0)</td>
<td>55 (41.0)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1900 (37.5)</td>
<td>725 (14.3)</td>
<td>734 (14.5)</td>
<td>205 (4.1)</td>
<td>873 (17.3)</td>
<td>203 (4.0)</td>
<td>263 (5.2)</td>
<td>157 (3.1)</td>
<td>3770 (74.5)</td>
<td>1290 (25.5)</td>
</tr>
</tbody>
</table>

*Information on race and gender was unavailable for 2 subjects.*
This brief highlights the need for knowledge about depression among urban elderly residents, a condition that is often untreated or treated inadequately. Rooftop or window barriers also might be helpful, particularly in residential towers, where most falls from height occur. The presence of firearms in the homes of the elderly has been associated with increased suicide risk, even after the investigators controlled for psychiatric illness. These data and ours suggest that some suicides committed by the elderly are influenced by access to lethal means. Vulnerable elderly in urban communities, therefore, might be deterred by building modifications as well as attending to clinical depression.

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### Contributors

R. C. Abrams originated the study, supervised all aspects of its implementation, and led the writing of the brief. P. M. Marzuk participated in designing the overall strategy of the study and in developing the data set. K. Tardiff assisted in all aspects of the study and also contributed to the writing of the brief. A. C. Leon assisted in planning the study and led the data analysis. All authors helped to conceptualize ideas, interpret findings, and edit drafts of the brief.

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### Human Participant Protection

This study was approved by the institutional review board of the Weill Medical College of Cornell University (0402-211).

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