1 health care provider visit between October and December 2008, with or without accounting for patients’ willingness to be vaccinated. Uptake and missed opportunity rates were weighted to be nationally representative using the Current Population Survey. Estimated numbers of vaccinated and unvaccinated adults were obtained by scaling up estimated vaccination and missed opportunity rates as well as disease prevalence based on the size of the total adult population as of November 1, 2008. All calculations were performed using STATA SE version 10.1 software (StataCorp, College Station, Texas).

Results. The Table presents estimates of influenza vaccine uptake, missed opportunities derived from vaccination and fall visit data alone, and an adjusted measure of missed opportunities that is limited to the subgroup of unvaccinated adults who were amenable to being vaccinated based on a health care provider’s recommendation. Calculating missed opportunities based on vaccination and care use data alone reveals that there are more than 53 million US adults who had at least 1 health care provider contact between October and December 2008 and nonetheless remained unvaccinated. Vaccinating all of these patients would increase overall vaccination uptake by 23.1 percentage points and result in an overall uptake rate of approximately 62%. Eliminating missed opportunities among those with specific vaccine indications would increase uptake by 19.7 percentage points (diabetes) to 27.4 percentage points (asthma).

Eliminating missed opportunities only among those willing to be vaccinated would result in a 14.4-percentage point increase in vaccine uptake among the general adult population, leading to an overall vaccination rate of approximately 53%. Corresponding subpopulation increases in immunization rates range from 9.6 (diabetes) to 17.5 (asthma) percentage points.

Comment. We showed that reducing missed opportunities among the subgroup of adults amenable to health care provider recommendation could yield substantially higher influenza vaccine uptake rates. Our results also suggest that there is a sizable subgroup of patients who see health care providers during the vaccination season, but may be unwilling to get vaccinated in the absence of outreach efforts aimed at overcoming their resistance. Thus, strategies aimed at fully eliminating missed vaccination opportunities need to consider the preferences and beliefs of this group.

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Author Contributions: All authors had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. Study concept and design: Maurer, Harris, and Lurie. Acquisition of data: Maurer, Harris, and Lurie. Analysis and interpretation of data: Maurer, Harris, and Lurie. Drafting of the manuscript: Maurer, Harris, and Lurie. Critical revision of the manuscript for important intellectual content: Maurer, Harris, and Lurie. Statistical analysis: Maurer, Harris, and Lurie. Obtained funding: Harris and Lurie. Study supervision: Lurie.

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Table. Characteristics of the Subjects

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Subjects With Syncope (n=53)</th>
<th>Controls (n=50)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, y</td>
<td>23 (1.5)</td>
<td>23 (1.4)</td>
<td>.94</td>
</tr>
<tr>
<td>Women, %</td>
<td>81</td>
<td>80</td>
<td>.56</td>
</tr>
<tr>
<td>BMI</td>
<td>21 (2.0)</td>
<td>21 (2.2)</td>
<td>.69</td>
</tr>
<tr>
<td>SBP, mm Hg</td>
<td>120 (10)</td>
<td>118 (8)</td>
<td>.39</td>
</tr>
<tr>
<td>DBP, mm Hg</td>
<td>66 (9)</td>
<td>70 (8)</td>
<td>.14</td>
</tr>
<tr>
<td>HR, beats/min</td>
<td>70 (13)</td>
<td>72 (12)</td>
<td>.54</td>
</tr>
<tr>
<td>IVC, mm</td>
<td>24.6 (2.3)</td>
<td>23.1 (2.8)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>IVC/BSA, mm²/m²</td>
<td>14.4 (1.6)</td>
<td>12.6 (2.0)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>IVC &gt;24 mm, %</td>
<td>72</td>
<td>18</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Abbreviations: BMI, body mass index (calculated as weight in kilograms divided by height in meters squared); BSA, body surface area; DBP, diastolic blood pressure; HR, heart rate; IVC, inferior vena cava; SBP, systolic blood pressure.

Results. Characteristics of the studied groups is presented in the Table. There were no significant cardiac abnormalities on echocardiography in any of the subjects. The mean IVC diameter and IVC diameter indexed for body surface area were significantly larger in subjects with vasovagal syncope than in the controls (24.6 vs 21.3 mm and 14.4 vs 12.6 mm/m², respectively [P < .001]). The sensitivity of IVC diameter equal or above 24 mm for predicting the history of vasovagal syncope was 72% and the specificity, 82%. Intersession coefficient of repeatability for IVC size was 2.64 mm.

Comment. Our results suggest that IVC may play a role in the pathogenesis of vasovagal syncope. We propose that in healthy subjects (without volume overload, pericardial disease, and right heart abnormalities), dilated IVC may be a marker of decreased abdominal venous tone and/or increased compliance. This may lead to exaggerated abdominal venous pooling during standing and subsequently orthostatic symptoms. Our hypothesis is in accordance with the results of the study, which showed a relative increase in splanchnic (but not pelvic and leg) blood volume during tilt test in patients with syncope compared with controls.1 In another study, compression of the abdomen was more effective in preventing orthostatic symptoms than compression of the legs in patients with orthostatic intolerance,4 which may suggest a main role of the abdominal venous pool in orthostatic hypotension.

Our second observation shows that IVC diameter in the pathogenesis of orthostatic hypotension. Our results suggest that IVC may play a role in the pathogenesis of vasovagal syncope. We propose that dilated IVC should not be used as an indicator of increased right atrial pressure in healthy young adults.

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COMMENTS AND OPINIONS

The Healthy Adherer Effect

We read with interest the recent publication on adherence with statin therapy and all-cause mortality.1 The authors reported an approximate 50% reduction of all-cause mortality in adherent statin users compared with nonadherent users. According to the Central Bureau of Statistics in Israel, the proportion of deaths from cardiovascular diseases in 2005 ranged between approximately 25% (age, 55-74 years) and 45% (age, >85 years).2 To reduce all-cause mortality by 50%, regular statin use would have to prevent 100% of cardiovascular deaths and a substantial additional number of deaths from other causes. It is obvious that this cannot be true.