Reviewer's report

Title: Redistribution of Heart Failure as the Cause of Death: The Atherosclerosis Risk in Communities Study

Version: 1
Date: 9 December 2013

Reviewer: Mohsen Naghavi

Reviewer's report:

• Major Compulsory Revisions

1- In Discussion part page 13 “An advantage of coarsened exact matching in this regard is that no a priori assumptions about the UCD are necessary” but this is not correct because in the method part page 7 we have “Before matching we eliminated deaths due to external causes, ICD-10 codes V00-Y98, and deaths due to ill-defined UCD on the basis that they were not plausible as an UCD of a heart failure death” then you have priori assumptions that injuries and ill-defined codes are implausible underlying death for HF. why you did not decide that Cerebrovascular disease, Digestive diseases, Dementia, Alzheimer’s disease are not plausible for UCD for HF? We know that these causes cannot be underlying cause of HF.

2- In the result part of this study 50.7 % of cause cannot be underlying causes of HF, if we add 9.9% of other to this list implausible causes increase until 60.7%

Look to this table

<table>
<thead>
<tr>
<th>Disease</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower respiratory infections</td>
<td>3.3</td>
</tr>
<tr>
<td>Cancers</td>
<td>6.7</td>
</tr>
<tr>
<td>Diabetes</td>
<td>4.9</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>4.4</td>
</tr>
<tr>
<td>Digestive diseases</td>
<td>2.3</td>
</tr>
<tr>
<td>Dementia</td>
<td>2.7</td>
</tr>
<tr>
<td>Alzheimer’s disease</td>
<td>2.1</td>
</tr>
<tr>
<td>Other</td>
<td>9.9</td>
</tr>
</tbody>
</table>

All of these diseases can be comorbidity of HF or these are prevalent diseases in this age group that coarsened exact matching captured these diseases

3- Also you dropped age under 55, if you add age under 55 to this analysis and do not drop injuries (Voo-Y98) make more implausible results

4- In this study you considered “I11-I13”: as hypertensive heart diseases, but “I12, I12.0 and I12.9” are code for Hypertensive chronic kidney disease not hypertensive heart diseases

I11 Hypertensive heart disease
I11.0 Hypertensive heart disease with heart failure
I11.9 Hypertensive heart disease without heart failure
I12 Hypertensive chronic kidney disease
I12.0 Hypertensive chronic kidney disease with stage 5 chronic kidney disease or end stage renal disease
I12.9 Hypertensive chronic kidney disease with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease
I13 Hypertensive heart and chronic kidney disease
I13.0 Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease
I13.1 Hypertensive heart and chronic kidney disease without heart failure
I13.10 Hypertensive heart and chronic kidney disease without heart failure, with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease
I13.11 Hypertensive heart and chronic kidney disease without heart failure, with stage 5 chronic kidney disease, or end stage renal disease
I13.2 Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease
I13.9 Hypertensive heart and renal disease, unspecified

Minor Essential Revisions:
In Background part When you are saying that percent of ill-defined in USA are 7% it depends to your definition for ill-defined code, for ill-defined codes there are not any standard definition, first we have to clarified that which codes we included in ill-defined code then we can present fraction of ill-defined code

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests