Covid-19 associated excess mortality in Baliakandi, a rural demographic surveillance site in Bangladesh

Kazi Munisul Islam1, Mohammad Zahid Hossain1, Qazi Sadeq-ur Rahman1, Atique Iqbal Chowdhury1, Kyu Haun Lee2, Sanwarul Bari1, Shams El Arifeen1, Emily Gurley2 (icddr,b, Dhaka, Bangladesh; 2 Johns Hopkins University, USA)

Results:
▪ Major excess death happened in mid 2020, during initial peak of Covid-19 deaths
▪ 2nd and 3rd waves of Covid-19 deaths coincided, but trend continued for months when national deaths lowered
▪ End of the year high mortality probably due to more number of days in the last week

Background
▪ Covid-19 increased mortality worldwide, directly and indirectly
▪ 4/5th of excess mortalities US can be attributed to Covid-19 in 2020-21
▪ Poor testing coverage may cause under reporting
▪ Bangladesh reported >21,000 Covid-19 deaths since Mar'20-Dec ‘21
▪ Baliakandi sub-district reported 25 Covid-19 death through 2021 is likely an underestimate

Objectives:
▪ Estimate excess mortality in Baliakandi during 2020-21 compared to 2018-19
▪ Examine differences by age

Methods:
▪ Demographic information collected every 3 months
▪ Population was 236,488 distributed with in 261 villages
▪ Death of same, previous and after weeks of 2018-19 and 1-11 weeks of 2020
▪ Average death/wk = Total Number of weeks
▪ Excess mortality in each week calculated for 2020 (Mar-Dec) and 2021
▪ Excess mortality extracted by age group and rate calculated in population level

Table 1: Sex and age group distribution of excess mortality In 2020 and 2021 in Baliakandi

<table>
<thead>
<tr>
<th>Variables</th>
<th>Avg Death (2018-19)</th>
<th>Death in 2020 (Mar-Dec)</th>
<th>Death in 2021</th>
<th>Excess Mortality</th>
<th>Excess death (100,000 population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>1364</td>
<td>1516</td>
<td>1446</td>
<td>230</td>
<td>100</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>727</td>
<td>854</td>
<td>740</td>
<td>121</td>
<td>104</td>
</tr>
<tr>
<td>Female</td>
<td>636</td>
<td>662</td>
<td>706</td>
<td>109</td>
<td>92</td>
</tr>
<tr>
<td>Age Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-14 years</td>
<td>213</td>
<td>220</td>
<td>178</td>
<td>-28</td>
<td>-43</td>
</tr>
<tr>
<td>15-44 Years</td>
<td>134</td>
<td>152</td>
<td>124</td>
<td>-1</td>
<td>-0.5</td>
</tr>
<tr>
<td>45-64 Years</td>
<td>308</td>
<td>318</td>
<td>362</td>
<td>68</td>
<td>157</td>
</tr>
<tr>
<td>65-79 Years</td>
<td>368</td>
<td>410</td>
<td>452</td>
<td>126</td>
<td>1044</td>
</tr>
<tr>
<td>80 and above</td>
<td>341</td>
<td>374</td>
<td>372</td>
<td>64</td>
<td>1996</td>
</tr>
</tbody>
</table>

Figure 1: Baliakandi Sub-district, HDSS CHAMPS Bangladesh Site

Contact Information
Dr. Kazi Munisul Islam
munisul@icddrb.org

Figure 2: Excess mortality and country Covid-19 deaths waves in the year 2020 and 2021 in Baliakandi sub-district in Bangladesh

Conclusion:
▪ Reduced death in younger and excess death in older age group can imply covid-19 induced
▪ Large discrepancy between official number and estimated deaths (25 vs 230)
▪ Negative deaths of young age group during calculation undermine the total mortalities