**Appendix**

**Table 1** Overall population attributable fraction estimate (%) and its 95% UI for diet high in sodium by gender in year 2019 from Global Burden of Disease Results Tools

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Main causes** | **Diseases** | **Total** | **Male** | **Female** |
| Stomach cancer | Stomach cancer | 8.6 (0.2, 32.4) | 8.7 (0.2, 32.7) | 8.4 (0.2, 32.2) |
| Chronic kidney disease | Chronic kidney disease due to diabetes mellitus type 2 | 9.6 (1.3, 22.5) | 11.2 (1.8, 24.6) | 8.4 (0.8, 20.8) |
| Chronic kidney disease due to hypertension | 9.5 (1.3, 22) | 11 (1.8, 23.7) | 8.4 (0.7, 20.8) |
| Chronic kidney disease | 9.4 (1.3, 21.2) | 10.9 (1.8, 23.3) | 8.3 (0.8, 20) |
| Chronic kidney disease due to glomerulonephritis | 9.1 (1.3, 20.7) | 10.3 (1.8, 22) | 7.7 (0.7, 19) |
| Chronic kidney disease due to other and unspecified causes | 9.1 (1.2, 21.3) | 10.5 (1.7, 23.5) | 8.1 (0.7, 20.3) |
| Chronic kidney disease due to diabetes mellitus type 1 | 8.8 (1.3, 20.2) | 10.1 (1.7, 22.4) | 7.6 (0.8, 18.2) |
| Cardiovascular diseases | Hypertensive heart disease | 18.7 (2.6, 48.4) | 21.4 (3.6, 51.2) | 15.4 (1.2, 45.1) |
| Intracerebral hemorrhage | 12.5 (2, 27.4) | 14.3 (2.6, 30.2) | 10 (0.9, 23.6) |
| Subarachnoid hemorrhage | 12.2 (1.9, 26.8) | 14.5 (2.7, 29.8) | 10.4 (1, 24.1) |
| Ischemic heart disease | 11.2 (1.7, 24.2) | 12.8 (2.2, 26.2) | 8.8 (0.8, 21.3) |
| Cardiovascular diseases | 11.2 (1.7, 24) | 13.1 (2.4, 26.4) | 8.9 (0.8, 21.3) |
| Ischemic stroke | 8.3 (1.1, 19.7) | 10.2 (1.6, 22.2) | 7 (0.6, 18) |
| Endocarditis | 6.8 (1, 15.1) | 8.3 (1.5, 17.7) | 5.3 (0.5, 12.8) |
| Atrial fibrillation and flutter | 6.1 (0.9, 13.7) | 7.4 (1.2, 15.9) | 5 (0.5, 12) |
| Cardiomyopathy and myocarditis | 5 (0.8, 10.9) | 5.5 (1, 11.6) | 4.1 (0.4, 9.9) |
| Rheumatic heart disease | 4.8 (0.7, 11.6) | 5.9 (1.1, 13.3) | 4.2 (0.5, 10.9) |
| Peripheral artery disease | 4.4 (0.6, 10.5) | 5.5 (0.9, 12.1) | 3.6 (0.4, 9.6) |
| Non-rheumatic valvular heart disease | 4.2 (0.6, 9.7) | 4.8 (0.8, 10.5) | 3.6 (0.4, 9.1) |

Note: population attributable fractions can be obtained from <http://ghdx.healthdata.org/gbd-results-tool> (with the following options Location: Singapore; Year: 2019; Risk: Diet high in sodium; Context: Risk; Age: select all; Metric: Percent; Measure: Deaths; Sex: select all; Cause: select all)

UI: uncertainty interval

**Table 2** Parameter details used in probabilistic sensitivity analysis for the model

|  |  |  |
| --- | --- | --- |
| ***Causes/Age-groups*** | ***Estimate (95% UI)*** | ***Distribution*** |
| **Population attributable fractions from Global Burden of Disease\*** | | |
| Chronic kidney disease due to diabetes mellitus type 1 | 0.0882 (0.0133, 0.202) | Beta |
| Ischemic heart disease | 0.112 (0.0172, 0.242) | Beta |
| Intracerebral hemorrhage | 0.125 (0.0203, 0.274) | Beta |
| Atrial fibrillation and flutter | 0.0609 (0.00877, 0.137) | Beta |
| Rheumatic heart disease | 0.0479 (0.00699, 0.116) | Beta |
| Ischemic stroke | 0.0827 (0.0106, 0.197) | Beta |
| Hypertensive heart disease | 0.187 (0.0265, 0.484) | Beta |
| Cardiomyopathy and myocarditis | 0.0496 (0.00845, 0.109) | Beta |
| Chronic kidney disease | 0.0944 (0.0133, 0.212) | Beta |
| Subarachnoid hemorrhage | 0.122 (0.0187, 0.268) | Beta |
| Chronic kidney disease due to diabetes mellitus type 2 | 0.0958 (0.0130, 0.225) | Beta |
| Stomach cancer | 0.0857 (0.00214, 0.324) | Beta |
| Endocarditis | 0.0679 (0.0104, 0.151) | Beta |
| Non-rheumatic valvular heart disease | 0.0420 (0.00634, 0.0971) | Beta |
| Chronic kidney disease due to glomerulonephritis | 0.0907 (0.0133, 0.207) | Beta |
| Chronic kidney disease due to other and unspecified causes | 0.0912 (0.0122, 0.213) | Beta |
| Peripheral artery disease | 0.0439 (0.00625, 0.105) | Beta |
| Chronic kidney disease due to hypertension | 0.0954 (0.0133, 0.220) | Beta |
| **Inpatient bill from Ministry of Health Singapore (Mediclaims data) in US$\*** | | |
| Stomach cancer | 13000 (SD=28400) | Log-normal |
| Rheumatic heart disease | 23300 (SD=30000) | Log-normal |
| Ischemic heart disease | 13500 (SD=15800) | Log-normal |
| Intracerebral hemorrhage | 15700 (SD=20400) | Log-normal |
| Subarachnoid hemorrhage | 23700 (SD=31400) | Log-normal |
| Ischemic stroke | 8010 (SD=10700) | Log-normal |
| Hypertensive heart disease | 5630 (SD=6840) | Log-normal |
| Non-rheumatic valvular heart disease | 23800 (SD=31300) | Log-normal |
| Cardiomyopathy and myocarditis | 12800 (SD=18800) | Log-normal |
| Atrial fibrillation and flutter | 6820 (SD=9610) | Log-normal |
| Peripheral artery disease | 17700 (SD=24000) | Log-normal |
| Endocarditis | 32500 (SD=46300) | Log-normal |
| Chronic kidney disease due to diabetes mellitus type 1 | 5260 (SD=4370) | Log-normal |
| Chronic kidney disease due to diabetes mellitus type 2 | 6530 (SD=8600) | Log-normal |
| Chronic kidney disease | 7800 (SD=21800) | Log-normal |
| Chronic kidney disease due to hypertension | 6950 (SD=10300) | Log-normal |
| Chronic kidney disease due to other and unspecified causes | 4000 (SD=6200) | Log-normal |
| Chronic kidney disease due to glomerulonephritis | 4950 (SD=5170) | Log-normal |
| **Average length of stays in hospital for each disease from Mediclaims data\*** | | |
| Stomach cancer | 6.95 (SD=11.2) | Log-normal |
| Rheumatic heart disease | 7.68 (SD=7.48) | Log-normal |
| Ischemic heart disease | 3.96 (SD=6.52) | Log-normal |
| Intracerebral hemorrhage | 18.5 (SD=23.1) | Log-normal |
| Subarachnoid hemorrhage | 14.1 (SD=20.9) | Log-normal |
| Ischemic stroke | 9.37 (SD=12.4) | Log-normal |
| Hypertensive heart disease | 4.47 (SD=3.89) | Log-normal |
| Non-rheumatic valvular heart disease | 6.80 (SD=8.40) | Log-normal |
| Cardiomyopathy and myocarditis | 5.29 (SD=6.95) | Log-normal |
| Atrial fibrillation and flutter | 3.43 (SD=5.01) | Log-normal |
| Peripheral artery disease | 8.79 (SD=14.8) | Log-normal |
| Endocarditis | 23.5 (SD=20.2) | Log-normal |
| Chronic kidney disease due to diabetes mellitus type 1 | 5.37 (SD=6.57) | Log-normal |
| Chronic kidney disease due to diabetes mellitus type 2 | 7.74 (SD=10.5) | Log-normal |
| Chronic kidney disease | 5.80 (SD=9.84) | Log-normal |
| Chronic kidney disease due to hypertension | 7.46 (SD=10.2) | Log-normal |
| Chronic kidney disease due to other and unspecified causes | 1.79 (SD=3.65) | Log-normal |
| Chronic kidney disease due to glomerulonephritis | 4.10 (SD=4.90) | Log-normal |
| **Number of deaths in 2019 from Global Burden of Disease** | | |
| 20 to 24 | 69.1 (67.5, 70.8) | Log-normal |
| 25 to 29 | 123 (121, 126) | Log-normal |
| 30 to 34 | 137 (134, 140) | Log-normal |
| 35 to 39 | 244 (238, 250) | Log-normal |
| 40 to 44 | 337 (328, 346) | Log-normal |
| 45 to 49 | 521 (506, 537) | Log-normal |
| 50 to 54 | 840 (816, 865) | Log-normal |
| 55 to 59 | 1310 (1270, 1350) | Log-normal |
| 60 to 64 | 1820 (1770, 1870) | Log-normal |
| 65 to 69 | 2330 (2270, 2390) | Log-normal |
| 70 to 74 | 2710 (2650, 2780) | Log-normal |
| 75 to 79 | 2960 (2900, 3030) | Log-normal |
| 80 plus | 9630 (9470, 9810) | Log-normal |
| **Income growth rate (%) from Ministry of Manpower Singapore** | 3.3 (2.65, 3.96) | Uniform |

\*Because parameters used in the model accounted for age and sex, there were multiple parameters input into the model. Due to the large number of parameters, we only present summary parameters from all ages and combine sex in this table. This table aims to give a summary the distribution used for probabilistic senstivitiy analysis in the model.

UI: uncertainty interval

Exchange rate was where US$1=SG$1.36

**Table 3** Key Singapore statistics and other appropriate statistics

|  |  |  |  |
| --- | --- | --- | --- |
| **S/N** | **Singapore statistics, 2019** | **Value** | **Reference** |
| 1 | Total Population | 5,703,569 | (1) |
| 2 | Resident Population | 4,026,209 | (1) |
| 3 | Total Labour Force | 3,742,500 | (2) |
| 4 | Total Residents In The Labour Force | 2,328,500 | (2) |
| 5 | Total Deaths | 21,446 | (3) |
| 6 | Resident Deaths | 20,288 | (3) |
|  | **Other statistics** |  |  |
| 7 | PAF for all causes due to high sodium diet | 0.0375 | (4) |
| 8 | Average daily wage (USD) | 337 | (5) |
|  | **Results** |  |  |
| 9 | Total deaths attributable to sodium | 804 | (3; 4) |
| 10 | Resident Deaths attributable to sodium | 760 | (4) |

**Reference**

1. Department of Statistics (2022) Population and Population Structure. <https://www.singstat.gov.sg/find-data/search-by-theme/population/population-and-population-structure/latest-data> (accessed 11 April 2022 2022)

2. Department of Statistics (2022) Labour, Employment, Wages and Productivity. <https://www.singstat.gov.sg/find-data/search-by-theme/economy/labour-employment-wages-and-productivity/latest-data> (accessed 18 Feb 2022

3. Department of Statistics (2022) Death and Life Expectancy. <https://www.singstat.gov.sg/find-data/search-by-theme/population/death-and-life-expectancy/latest-data> (accessed 11 April 2022 2022)

4. Gakidou E, Afshin A, Abajobir AA *et al.* (2017) Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet* **390**, 1345-1422.

5. Ministry of Manpower Singapore (2019) LABOUR FORCE IN SINGAPORE 2019 [MRaS Department, editor]. Singapore.