**Table S1: ICD codes of the causes of death investigated**

|  |  |  |  |
| --- | --- | --- | --- |
| **Causes of deaths** | **CIM9** |  | **CIM10** |
| Ischemic Heart Diseases | 410-414 |  | I20-I25 |
| Cerebrovascular Diseases | 430-438 |  | I60-I69 |
| Cancers | 140-239 |  | C00-D48 |
|  |  |  |  |
| **Amenable mortality** |  |  |  |
| Intestinal infectious diseases | 001-009 |  | A00-A09 |
| Tuberculosis | 010-018,137 |  | A15-A19, B90 |
| Other infections | 037,032,045 |  | A35-A36, A80 |
| Whooping cough | 033 |  | A37 |
| Selected invasive bacterial and protozoal infections | 034,035,036,038,4828,084,3200-3205,3208,3209,322,682 |  | A38-A41, A46,A481, B50-B54, G00,G03, L03 |
| Measles | 55 |  | B05 |
| Malignant neoplasm of colon and rectum | 153-154 |  | C18-C21 |
| Malignant melanoma of skin | 172 |  | C43 |
| Other malignant neoplasms of skin | 173 |  | C44 |
| Malignant neoplasms of breast | 174-175 |  | C50 |
| Malignant neoplasm of cervix uteri | 180 |  | C53 |
| Malignant neoplasm of corpus uteri and uterus unspecified | 179,182 |  | C54-C55 |
| Malignant neoplasm of testis | 186 |  | C62 |
| Malignant neoplasm of bladder | 188 |  | C67 |
| Malignant neoplasm of thyroid gland | 193 |  | C73 |
| Hodgkin’s disease | 201 |  | C81 |
| Leukaemia | 204-208 |  | C91-C95 |
| Benign neoplasms | 210-229 |  | D10-D36 |
| Disorders of thyroid gland | 240-246 |  | E00-E07 |
| Diabetes mellitus | 250 |  | E10-E14 |
| Epilepsy and status epilepticus | 345 |  | G40-G41 |
| Rheumatic and other valvular heart disease | 391,3920,393-398 |  | I01-I09 |
| Hypertensive diseases | 401-405 |  | I10-I15 |
| Ischaemic heart disease | 410-414 |  | I20-I25 |
| Cerebrovascular diseases | 430-438 |  | I60-I69 |
| Other respiratory | 460-466,470-478494,500-508,510-519 |  | J00-J08, J20-J39, J47-J99 |
| Influenza (including swine flu) | 487 |  | J09-J11 |
| Pneumonia | 480-486 |  | J12-J18 |
| Chronic Obstructive Pulmonary Disorder | 490-492,496 |  | J40-J44 |
| Asthma | 493 |  | J45-J46 |
| Gastric and duodenal ulcer | 531-534 |  | K25-K28 |
| Acute abdomen, appendicitis, intestinal obstruction, cholecystitis / lithiasis, pancreatitis, hernia | 540-543,550-553,574-577 |  | K35-K38, K40-K46,K80-K83, K85-K86, K91.5 |
| Nephritis and nephrosis | 580-583,584,586,588,589 |  | N00-N07, N17-N19,N25, N27 |
| Obstructive uropathy & prostatic hyperplasia | 593,5920,5921,598,600 |  | N13, N20-N21, N35,N40, N99.1 |
| Pregnancy, childbirth and the puerperium | 630-677 |  | O00-O99 |
| Complications of perinatal period | 760-779 |  | P00-P96, A33 |
| Congenital malformations, deformations and chromosomal anomalies | 740-759 |  | Q00-Q99 |
| Misadventures to patients during surgical and medical care | 870-876 |  | Y60-Y69, Y83-Y84 |
|  |  |  |  |
| **Preventable mortality** |  |  |  |
| Tuberculosis | 010-018,137 |  | A15-A19, B90 |
| Other infections | 037,032,045 |  | A35-A36, A80 |
| Whooping cough | 33 |  | A37 |
| Viral hepatitis | 70 |  | B15-B19 |
| HIV/AIDS | 42 |  | B20-B24 |
| Malignant neoplasm of lip, oral cavity and pharynx | 140-149 |  | C00-C14 |
| Malignant neoplasm of oesophagus | 150 |  | C15 |
| Malignant neoplasm of stomach | 151 |  | C16 |
| Malignant neoplasm of liver | 155 |  | C22 |
| Malignant neoplasm of trachea, bronchus and lung | 162 |  | C33-C34 |
| Malignant melanoma of skin | 172 |  | C43 |
| Other malignant neoplasms of skin | 173 |  | C44 |
| Alcohol related diseases, excluding external causes | 291,303,3050,3575,4255,5353,5710-5713 |  | F10, G312, G621, I426, K292, K70, K73,K741, K742, K746,K747, K748, K749, K860 |
| Illicit drug use disorders | 304-305 |  | F11-F16, F18-F19 |
| Ischaemic heart disease | 410-414 |  | I20-I25 |
| DVT with pulmonary embolism | 415,4511-4513,4519,4539 |  | I26, I80.1-I80.3, I80.9, I82.9 |
| Aortic aneurysm and dissection | 441 |  | I71 |
| Influenza (including swine flu) | 487 |  | J09-J11 |
| Pneumonia | 480-486 |  | J12-J18 |
| Chronic Obstructive Pulmonary Disorder | 490-492,496 |  | J40-J44 |
| Transport Accidents | 800-848,9290,9291 |  | V01-V99 |
| Accidental Injury | 880-888,910,850-869,870-879,890-909,911-928,9292-9299 |  | W00-X59 |
| Suicide and self inflicted injuries | 950-959 |  | X60-X84, Y10-Y34 |
| Homicide/ Assault | 960-969 |   | X85-Y09, U50.9 |

**Table S2: Services and specialties included in the travel time to health care score**

|  |  |
| --- | --- |
| **Ambulatory medicine** | **Hospital services** |
| General practitioner | Hepato-Gastro-Enterology |
| Nurse | Nephrology |
| Dentist | Digestive surgery  |
| Complementary and alternative medicine (GP) | Haematology |
| Ophtalmologist | Pulmonology |
| Radiologist | Endocrinology |
| Physiotherapist | Endoscopy |
| Gynaecologist | Neurology |
| Cardiologist | Orthopedic surgery |
| Dermatologist | Ophtalmology |
| Psychiatrist | Urology |
| Paediatrician | Cardiology |
| Otolaryngologist | Rheumatologiy |
| Gastroentorologist  | Dermatology |
| Rheumatologist | Vascular surgery |
| Pulmonologist | Thoracic surgery |
| Urologist | Maternity level 2 |
|   | Maternity level 3 |
|   | Neurosurgery |
|   | Cardiac surgery |
|   | Otolaryngologist |
|   | Maternity level 1 |
|   | Severly burned patients |

**Table S3: Association between cause-specific mortality and sex, individual education, contextual deprivation, time to health care and population density**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **All Causes** | **Ischemic Heart** **Diseases** | **Cerebrovascular** **Diseases** | **All Tumors** | **Preventable** **Diseases** | **Amenable** **Diseases** |
|
| **HR** |  | **HR** |  | **HR** |  | **HR** |  | **HR** |  | **HR** |  |
| *Individual effects* |   |   |  |  |   |   |  |  |   |   |  |  |
| Men | *ref* |   | *ref* |  | *ref* |  | *ref* |  | *ref* |  | *ref* |  |
| Women | 0.48 | \*\*\* | 0.37 | \*\*\* | 0.61 | \*\*\* | 0.43 | \*\*\* | 0.31 | \*\*\* | 0.59 | \*\*\* |
| Upper and post-secondary | *ref* |   | *ref* |  | *ref* |  | *ref* |  | *ref* |  | *ref* |  |
| Lower secondary | 1.31 | \*\*\* | 1.30 | \*\*\* | 1.26 | \*\*\* | 1.28 | \*\*\* | 1.44 | \*\*\* | 1.26 | \*\*\* |
| Incomplete Elementary | 1.42 | \*\*\* | 1.46 | \*\*\* | 1.42 | \*\*\* | 1.29 | \*\*\* | 1.57 | \*\*\* | 1.39 | \*\*\* |
| Incomplete Elementary | 1.75 | \*\*\* | 1.62 | \*\*\* | 1.71 | \*\*\* | 1.47 | \*\*\* | 1.99 | \*\*\* | 1.72 | \*\*\* |
| *Contextual effects* |   |   |  |  |   |   |  |  |   |   |  |  |
| Deprivation |   |   |  |  |   |   |  |  |   |   |  |  |
| Q1 (least deprived) | *ref* |   | *ref* |  | *ref* |  | *ref* |  | *ref* |  | *ref* |  |
| Q2 | 1.09 | \*\* | 1.14 | \* | 1.10 |   | 1.07 | \* | 1.08 |   | 1.09 | \* |
| Q3 | 1.12 | \*\*\* | 1.15 | \* | 1.09 |   | 1.11 | \*\* | 1.16 | \*\* | 1.10 | \* |
| Q4 | 1.16 | \*\*\* | 1.23 | \*\* | 1.08 |   | 1.13 | \*\*\* | 1.17 | \*\* | 1.14 | \*\* |
| Q5 | 1.21 | \*\*\* | 1.31 | \*\*\* | 1.23 | \*\* | 1.15 | \*\*\* | 1.27 | \*\*\* | 1.23 | \*\*\* |
| Travel ttime to health care |   |   |  |  |   |   |  |  |   |   |  |  |
| Q1 (shortest travel time) | *ref* |   | *ref* |  | *ref* |  | *ref* |  | *ref* |  | *ref* |  |
| Q2 | 1.00 |   | 0.92 |  | 1.07 |   | 1.04 |  | 1.00 |   | 0.97 |  |
| Q3 | 1.04 |   | 1.13 |  | 1.35 | \*\*\* | 1.02 |  | 1.06 |   | 1.08 |  |
| Q4 | 1.06 |   | 1.16 |  | 1.38 | \*\* | 1.06 |  | 1.10 |   | 1.09 |  |
| Q5 | 1.00 |   | 1.02 |  | 1.32 | \*\* | 0.97 |  | 0.98 |   | 1.03 |  |
| Population density |   |   |  |  |   |   |  |  |   |   |  |  |
| Q1 (least dense) | *ref* |   | *ref* |  |   |   |  |  |   |   |  |  |
| Q2 | 1.02 |   | 0.97 |  | 1.00 |   | 0.99 |  | 1.01 |   | 1.00 |  |
| Q3 | 1.09 | \*\*\* | 1.07 |  | 1.08 |   | 1.04 |  | 1.10 | \* | 1.09 | \* |
| Q4 | 1.18 | \*\*\* | 1.13 |  | 1.21 | \* | 1.16 | \*\*\* | 1.21 | \*\*\* | 1.17 | \*\*\* |
| Q5 | 1.24 | \*\*\* | 1.15 |  | 1.30 | \* | 1.21 | \*\*\* | 1.28 | \*\*\* | 1.22 | \*\* |
| Spatial variance (ZE94) | 0.007 |   | 0.005 |   | 0.000 |   | 0.003 |   | 0.014 |   | 0.008 |   |