# Appendix Table 1: Underlying causes of death at age 35-79: 65,298 cases and 13,527 controls, Tianjin, China, 2016-17

| Underlying cause(s) of death; and corresponding ICD-10 code(s) | Deaths, age 35-79 |
|---------------------------------------------------------------|------------------|
|                                                               | Number | %  |
| **Cases***                                                     |        |    |
| Tuberculosis; A15-19, B90                                      | 148    | 0.2|
| Chronic obstructive pulmonary disease; I26-28, J40-47          | 2784   | 4.3|
| Other respiratory diseases; J00-22, J30-39, J60-98             | 1553   | 2.4|
| Cerebrovascular diseases; I60-69                              | 20827  | 31.9|
| Ischemic heart disease; I20-25, I70-79                        | 17290  | 26.5|
| Other cardiovascular disease; I10-15, I30-51, I80-89, I95-99   | 1861   | 2.9|
| Cancer of the lung; C33-34                                    | 10382  | 15.9|
| Ca. mouth, pharynx, larynx, esophagus; C00-15, C30-32         | 1446   | 2.2|
| Ca. stomach, liver or pancreas; C16, C22-25                   | 7244   | 11.1|
| Ca. cervix or urinary tract,myeloid leukemia; C51-3, C55, C64-8, C92 | 1477  | 2.3|
| Ca. endometrium, Parkinsonism, ulcerative colitis; G20, K51, C54 | 286   | 0.4|
| **Total cases**                                                | 65298  | 100.0|
| **Controls***                                                  |        |    |
| Diabetes and endocrine; D55-63, D65-89,E03 -34, E65-90         | 3512   | 26.0|
| Infectious and parasitic diseases; A00-14, A20-819,B25-89,B91-99 | 194   | 1.4|
| Other specified cancers; C17-21, C26, C37-40, C42-45, C47-50, C56-63, C69-75, C81-91,C93-96 | 6848 | 50.6|
| Diseases of the nervous system; G00-99, excluding G20          | 899    | 6.7|
| Digestive diseases; K23, K35-50, K52, K69, K71-73, K75, K77-84, K86-93 | 394 | 2.9|
| Genitourinary diseases; N00-99                                 | 857    | 6.3|
| Nutritionaldeficiencies; D50-53, D64, E00-02, E40-46, E50-64  | 59     | 0.4|
| Musculoskeletal diseases; M00-99                              | 266    | 2.0|
| Skin infections and disorders; L00-98                         | 22     | 0.2|
| Benign neoplasms; D00-48                                      | 136    | 1.0|
| Miscellaneous and minor conditions; O00-99, P00-96, U00-52    | 250    | 1.9|
| Acute rheumatic fever or chronic rheumatic heart disease; I00-09 | 0     | 0  |
| Congenital anomalies; Q00-09                                  | 84     | 0.6|
| Oral diseases; K00-14                                         | 5      | 0.0|
| Diseases of the sense organs; H00-62, H68-95                  | 1      | 0.0|
| **Total controls**                                            | 13527  | 100.0|

Causes in italic are included in the non-italic categories preceding them

*Definitions of cases and of controls are as in Sitas F et al, Lancet 2013;382: 685-93.
### Appendix Table 2. Demographic characteristics (%) of cases and controls in all deaths (aged 35-79 years), Tianjin, China, 2016-2017

| Category                                                                 | Cases (65298) | Controls (13527) |
|------------------------------------------------------------------------|---------------|------------------|
| **Age at death, years**                                                 |               |                  |
| 35-59                                                                  | 20.4          | 28.1             |
| 60-69                                                                  | 31.7          | 33.3             |
| 70-79                                                                  | 47.9          | 38.6             |
| **Men**                                                                | 62.9          | 49.7             |
| **Education**                                                          |               |                  |
| Junior high school and below                                           | 78.7          | 71.3             |
| Secondary, High School, Technical School                               | 15.5          | 20.5             |
| College and above                                                      | 5.8           | 8.1              |
| **Married status**                                                     |               |                  |
| Never                                                                  | 2.6           | 3.1              |
| Windowed                                                               | 17.6          | 15.7             |
| Divorced                                                               | 3.2           | 3.9              |
| Married or living as married                                           | 76.4          | 77.3             |
| Do not know                                                            | 0.2           | 0.1              |
| **Quitting status**                                                    |               |                  |
| Current smokers                                                        | 30.2          | 20.5             |
| Quitters                                                               | 13.1          | 11.2             |
| Never smokers                                                          | 56.6          | 68.3             |
| **Duration of quitting, years**                                        |               |                  |
| 1-5                                                                    | 48.5          | 49.7             |
| 6-9                                                                    | 9.5           | 9.0              |
| ≥10                                                                    | 42.0          | 41.3             |
| **Age at quitting, years**                                             |               |                  |
| 25-44                                                                  | 6.3           | 8.4              |
| 45-64                                                                  | 56.7          | 60.6             |
| 65+                                                                    | 36.0          | 31.0             |

† Deaths from diseases as in Sitas et al 2013.
### Appendix Table 3. Smoking history and mortality from all deaths of interest and 4 smoking-related diseases—mortality rate ratio (RR, 95% CI) comparing current or ex-smokers vs. never smokers, 2016 to 2017, Tianjin, China

Deaths from selected diseases vs. deaths from control diseases, at ages 35-59, 60-69 and 70-79 (both sexes)

| Disease                      | All deaths of interest | Lung cancer | Other smoking-related cancer | Cardiovascular disease | COPD |
|------------------------------|------------------------|-------------|-------------------------------|------------------------|------|
|                              | Never smokers          | Ex-smokers  | Current smokers               | COPD                   |
|                              | Age 35-59              | Age 35-59   | Age 35-59                     | Age 35-59              | Age 35-59 |
|                              | 1.00 (6631)            | 2.13 (6528) | 2.35 (5393)                   | 1.00 (177)            | 1.21 (105) |
|                              | 1.97-2.30              | 1.97-2.30   | 1.81-2.12                     | 0.94-1.57              | 0.94-1.64 |
|                              | Age 60-69              | 1.80 (9361) | 1.96 (6644)                   | 1.00 (368)            | 1.72 (300) |
|                              | 1.68-1.93              | 1.81-2.12   | 1.61 (184)                    | 2.45-2.93              | 1.32-1.95 |
|                              | Age 70-79              | 1.41 (12129)| 1.54 (7496)                   | 1.00 (972)            | 1.84 (839) |
|                              | 1.33-1.51              | 1.42-1.66   | 1.42-1.66                     | 1.64-2.05              | 1.60-2.09 |
### Appendix Table 4. Smoking history and mortality from 4 smoking-related diseases—mortality rate ratios (RR) comparing ever smokers vs. never smokers, 2016 to 2017, Tianjin, China

Deaths from selected diseases vs. deaths from control diseases, at ages 35-59, 60-69 and 70-79 years and sex

| Cause of death            | Age group | Sex | Case No of subjects ever/never smoked | Control No of subjects ever/never smoked | RR (95% CI) |
|---------------------------|-----------|-----|--------------------------------------|------------------------------------------|-------------|
| Lung cancer               | Age 35-59 | Men | 1063/353                             | 1064/812                                 | **2.11** (1.80-2.46) |
|                           |          | Women | 71/487                              | 124/1767                                 | **1.97** (1.43-2.70) |
|                           |          | Both | 1134/840                             | 1188/2579                                 | **2.82** (2.51-3.16) |
|                           | Age 60-69 | Men | 1990/585                             | 1207/993                                 | **2.81** (2.47-3.18) |
|                           |          | Women | 360/872                             | 225/2072                                 | **3.60** (2.98-4.36) |
|                           |          | Both | 2350/1457                            | 1432/3020                                 | **3.41** (3.11-3.74) |
|                           | Age 70-79 | Men | 1815/716                             | 1169/1383                                 | **3.05** (2.68-3.39) |
|                           |          | Women | 989/996                             | 451/2142                                 | **4.40** (3.84-5.05) |
|                           |          | Both | 2804/1712                            | 1620/3525                                 | **3.55** (3.26-3.86) |
| Other smoking-related cancer | Age 35-59 | Men | 1188/695                             | 1064/812                                 | **1.24** (1.08-1.41) |
|                           |          | Women | 52/568                               | 124/1767                                 | **1.31** (0.93-1.85) |
|                           |          | Both | 1240/1263                            | 1188/2579                                 | **2.09** (1.88-2.32) |
|                           | Age 60-69 | Men | 1406/876                             | 1207/993                                 | **1.31** (1.16-1.47) |
|                           |          | Women | 116/759                              | 225/2072                                 | **1.38** (1.08-1.76) |
|                           |          | Both | 1522/1635                            | 1432/3020                                 | **1.96** (1.78-2.15) |
|                           | Age 70-79 | Men | 893/911                              | 1169/1383                                 | **1.17** (1.03-1.32) |
|                           |          | Women | 242/885                              | 451/2142                                 | **1.30** (1.09-1.56) |
|                           |          | Both | 1135/1796                            | 1620/3525                                 | **1.38** (1.26-1.52) |
| Cardiovascular disease    | Age 35-59 | Men | 1872/1166                            | 1064/812                                 | **1.26** (1.12-1.42) |
|                           |          | Women | 84/760                               | 124/1767                                 | **1.43** (1.06-1.92) |
|                           |          | Both | 1956/1926                            | 1188/2579                                 | **2.25** (2.05-2.47) |
|                           | Age 60-69 | Men | 2094/1558                            | 1207/993                                 | **1.12** (1.01-1.25) |
|                           |          | Women | 237/1627                             | 225/2027                                 | **1.18** (0.97-1.44) |
|                           |          | Both | 2331/3185                            | 1432/3020                                 | **1.57** (1.45-1.71) |
|                           | Age 70-79 | Men | 2204/2676                            | 1169/1383                                 | **0.99** (0.90-1.09) |
|                           |          | Women | 980/3624                             | 451/2142                                 | **1.18** (1.04-1.34) |
|                           |          | Both | 3184/6300                            | 1620/3525                                 | **1.11** (1.03-1.19) |
| COPD                      | Age 35-59 | Men | 93/76                                | 1064/812                                 | **0.91** (0.66-1.26) |
|                           |          | Women | 12/101                               | 124/1767                                 | **1.55** (0.81-2.93) |
|                           |          | Both | 105/177                              | 1188/2579                                 | **1.22** (0.94-1.57) |
| Age     | Men       | Women     | Both      | CI        |
|---------|-----------|-----------|-----------|-----------|
| 60-69   | 251/171   | 49/197    | 300/368   | **1.22** (0.98-1.51) |
|         | 1207/993  | 225/2027  | 1432/3020 | **1.72** (1.45-2.03) |
| 70-79   | 508/383   | 331/589   | 839/972   | **1.56** (1.33-1.82) |
|         | 1169/1383 | 451/2142  | 1620/3520 | **1.84** (1.64-2.05) |
| **All interesting diseases** | | | | |
| Age 35-59 | 6199/3517 | 329/3114  | 6525/6631 | **1.33** (1.20-1.47) |
|         | 1064/812  | 124/1767  | 1188/2579 | **2.12** (1.97-2.30) |
| 60-69   | 8297/5405 | 1064/5734 | 9361/11139| **1.27** (1.16-1.40) |
|         | 1207/993  | 225/2027  | 1432/3020 | **1.53** (1.31-1.79) |
| 70-79   | 8663/8660 | 3466/10330| 12129/18790| **1.22** (1.12-1.33) |
|         | 1169/1383 | 451/2142  | 1620/3520 | **1.48** (1.32-1.65) |
|         |           |           |           | **1.41** (1.33-1.51) |

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