**Supplementary material**

**Diagnoses with ICD-codes**

The outcome variable, ESKD, was based on the 10th revision of the International Classification of Diseases (ICD) or the Classification of Surgical Procedures. ESKD was defined as N18.5 (i.e., CKD stage 5), T82.4, Y84.1, Z49, Z94.0, and Z99.2 (ICD-10 codes for ESKD, dialysis or transplantation), and V9211, V9212, V9200, V9531, V9532, V9507, KAS00, KAS10, KAS20, KAS40, KAS50, KAS60, KAS96, KAS97, JAK10, TJA33, TJA35, and TKA20 (surgical codes for transplantation or dialysis). Individuals with an ESKD diagnosed before 1998, i.e. during the years 1987-1997 (according to ICD-9 1987-1996 V56, 585G, V42A, V45B. 996B, and E879B, and ICD-10 diagnosed in 1997) were excluded. We also identified co-morbidities according to ICD-10 for the following diagnoses: COPD (J40-J47), obesity (E65-E68), CHD (I20-I25), diabetes mellitus (E10-E14), alcoholism and related disorders (F10 and K70), stroke (I60-I69), hypertension (I10-I19), congestive heart failure (I50), atrial fibrillation (I48), gout (M10), acute kidney failure (N17), renal tubulo-interstitial diseases (N10-N16), post-procedural kidney failure (N99.0) and glomerular diseases (N00-N08).

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| **Supplementary Table 1a. Baseline characteristics and incident cases of ESKD the first-generation male population** | | | | | | | | | | | |
|  | Born in Sweden | | | | |  | Foreign-born | | | | |
|  | Total population | |  | ESKD diagnosis | |  | Total population | |  | ESKD diagnosis | |
|  | No | % |  | No. | % |  | No | % |  | No. | % |
| Total | 2500165 |  |  | 9630 | 0.39 |  | 551228 |  |  | 1470 | 0.27 |
| Educational level |  |  |  |  |  |  |  |  |  |  |  |
| ≤ 9 | 734725 | 29.4 |  | 4170 | 43.3 |  | 214011 | 38.8 |  | 582 | 39.6 |
| 10-12 | 656147 | 26.2 |  | 2375 | 24.7 |  | 105704 | 19.2 |  | 324 | 22.0 |
| > 12 | 1109293 | 44.4 |  | 3085 | 32.0 |  | 231513 | 42.0 |  | 564 | 38.4 |
| Region of residence |  |  |  |  |  |  |  |  |  |  |  |
| Large cities | 835191 | 33.4 |  | 3528 | 36.6 |  | 137415 | 24.9 |  | 679 | 46.2 |
| Southern Sweden | 1175766 | 47.0 |  | 4448 | 46.2 |  | 96905 | 17.6 |  | 370 | 25.2 |
| Northern Sweden | 489208 | 19.6 |  | 1654 | 17.2 |  | 316908 | 57.5 |  | 421 | 28.6 |
| Marital status |  |  |  |  |  |  |  |  |  |  |  |
| Married | 1233844 | 49.4 |  | 6741 | 70.0 |  | 427835 | 77.6 |  | 1077 | 73.3 |
| Not married | 1266321 | 50.6 |  | 2889 | 30.0 |  | 123393 | 22.4 |  | 393 | 26.7 |
| Neighbourhood deprivation |  |  |  |  |  |  |  |  |  |  |  |
| Low | 400838 | 16.0 |  | 1399 | 14.5 |  | 24042 | 4.4 |  | 102 | 6.9 |
| Middle | 1330069 | 53.2 |  | 5353 | 55.6 |  | 98024 | 17.8 |  | 449 | 30.5 |
| High | 285859 | 11.4 |  | 1168 | 12.1 |  | 53075 | 9.6 |  | 213 | 14.5 |
| Unknown | 483399 | 19.3 |  | 1710 | 17.8 |  | 376087 | 68.2 |  | 706 | 48.0 |
| Hospital diagnoses |  |  |  |  |  |  |  |  |  |  |  |
| COPD | 108126 | 4.3 |  | 831 | 8.6 |  | 17181 | 3.1 |  | 141 | 9.6 |
| Obesity | 19511 | 0.8 |  | 162 | 1.7 |  | 3938 | 0.7 |  | 46 | 3.1 |
| CHD | 272992 | 10.9 |  | 3624 | 37.6 |  | 37789 | 6.9 |  | 576 | 39.2 |
| Diabetes | 160270 | 6.4 |  | 3406 | 35.4 |  | 28594 | 5.2 |  | 617 | 42.0 |
| Alcoholism | 76981 | 3.1 |  | 413 | 4.3 |  | 12252 | 2.2 |  | 64 | 4.4 |
| Stroke | 168574 | 6.7 |  | 1741 | 18.1 |  | 18422 | 3.3 |  | 254 | 17.3 |
| Hypertension | 316184 | 12.6 |  | 5620 | 58.4 |  | 42818 | 7.8 |  | 846 | 57.6 |
| Heart failure | 151406 | 6.1 |  | 2856 | 29.7 |  | 15754 | 2.9 |  | 450 | 30.6 |
| Atrial fibrillation | 180928 | 7.2 |  | 2126 | 22.1 |  | 16941 | 3.1 |  | 247 | 16.8 |
| Gout | 20108 | 0.8 |  | 599 | 6.2 |  | 2944 | 0.5 |  | 118 | 8.0 |
| Acute kidney failure | 15540 | 0.6 |  | 1842 | 19.1 |  | 1734 | 0.3 |  | 302 | 20.5 |
| Renal tubulo-interstitial disease | 41802 | 1.7 |  | 1469 | 15.3 |  | 5198 | 0.9 |  | 235 | 16.0 |
| Post-procedural kidney failure | 439 | 0.0 |  | 86 | 0.9 |  | 43 | 0.0 |  | 7 | 0.5 |
| Glomerular disease | 10539 | 0.4 |  | 2575 | 26.7 |  | 1570 | 0.3 |  | 426 | 29.0 |

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| **Supplementary Table 1b. Baseline characteristics and incident cases of ESKD the first-generation female population** | | | | | | | | | | | |
|  | Born in Sweden | | | | |  | Foreign-born | | | | |
|  | Total population | |  | ESKD diagnosis | |  | Total population | |  | ESKD diagnosis | |
|  | No | % |  | No. | % |  | No | % |  | No. | % |
| Total | 2806546 |  |  | 5615 | 0.20 |  | 591710 |  |  | 883 | 0.15 |
| Educational level |  |  |  |  |  |  |  |  |  |  |  |
| ≤ 9 | 832415 | 29.7 |  | 2588 | 46.1 |  | 235440 | 39.8 |  | 455 | 51.5 |
| 10-12 | 756431 | 27.0 |  | 1798 | 32.0 |  | 110137 | 18.6 |  | 207 | 23.4 |
| > 12 | 1217700 | 43.4 |  | 1229 | 21.9 |  | 246133 | 41.6 |  | 221 | 25.0 |
| Region of residence |  |  |  |  |  |  |  |  |  |  |  |
| Large cities | 951077 | 33.9 |  | 2057 | 36.6 |  | 145085 | 24.5 |  | 377 | 42.7 |
| Southern Sweden | 1317847 | 47.0 |  | 2594 | 46.2 |  | 105810 | 17.9 |  | 251 | 28.4 |
| Northern Sweden | 537622 | 19.2 |  | 964 | 17.2 |  | 340815 | 57.6 |  | 255 | 28.9 |
| Marital status |  |  |  |  |  |  |  |  |  |  |  |
| Married | 2536237 | 90.4 |  | 4993 | 88.9 |  | 560436 | 94.7 |  | 780 | 88.3 |
| Not married | 270309 | 9.6 |  | 622 | 11.1 |  | 31274 | 5.3 |  | 103 | 11.7 |
| Neighbourhood deprivation |  |  |  |  |  |  |  |  |  |  |  |
| Low | 438034 | 15.6 |  | 757 | 13.5 |  | 28127 | 4.8 |  | 70 | 7.9 |
| Middle | 1504588 | 53.6 |  | 3099 | 55.2 |  | 110689 | 18.7 |  | 288 | 32.6 |
| High | 329362 | 11.7 |  | 774 | 13.8 |  | 53796 | 9.1 |  | 146 | 16.5 |
| Unknown | 534562 | 19.0 |  | 985 | 17.5 |  | 399098 | 67.4 |  | 379 | 42.9 |
| Hospital diagnoses |  |  |  |  |  |  |  |  |  |  |  |
| COPD | 142129 | 5.1 |  | 612 | 10.9 |  | 21449 | 3.6 |  | 95 | 10.8 |
| Obesity | 50706 | 1.8 |  | 180 | 3.2 |  | 11214 | 1.9 |  | 40 | 4.5 |
| CHD | 198127 | 7.1 |  | 1599 | 28.5 |  | 24667 | 4.2 |  | 254 | 28.8 |
| Diabetes | 139031 | 5.0 |  | 1888 | 33.6 |  | 21424 | 3.6 |  | 313 | 35.4 |
| Alcoholism | 40815 | 1.5 |  | 108 | 1.9 |  | 6300 | 1.1 |  | 13 | 1.5 |
| Stroke | 167564 | 6.0 |  | 912 | 16.2 |  | 16969 | 2.9 |  | 139 | 15.7 |
| Hypertension | 353439 | 12.6 |  | 3082 | 54.9 |  | 47283 | 8.0 |  | 527 | 59.7 |
| Heart failure | 143401 | 5.1 |  | 1476 | 26.3 |  | 13428 | 2.3 |  | 244 | 27.6 |
| Atrial fibrillation | 153895 | 5.5 |  | 942 | 16.8 |  | 15070 | 2.5 |  | 135 | 15.3 |
| Gout | 8937 | 0.3 |  | 266 | 4.7 |  | 1123 | 0.2 |  | 42 | 4.8 |
| Acute kidney failure | 11245 | 0.4 |  | 1074 | 19.1 |  | 1131 | 0.2 |  | 144 | 16.3 |
| Renal tubulo-interstitial disease | 54164 | 1.9 |  | 1108 | 19.7 |  | 9592 | 1.6 |  | 202 | 22.9 |
| Post-procedural kidney failure | 271 | 0.0 |  | 47 | 0.8 |  | 28 | 0.0 |  | 8 | 0.9 |
| Glomerular disease | 7860 | 0.3 |  | 1291 | 23.0 |  | 1473 | 0.2 |  | 254 | 28.8 |

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| **Supplementary Table 1c. Baseline characteristics and incident cases of ESKD in the second-generation population** | | | | | | | | | | | |
|  | Swedish-born parents | | | | |  | Foreign-born parents | | | | |
|  | Total population | |  | ESKD diagnosis | |  | Total population | |  | ESKD diagnosis | |
|  | No | % |  | No. | % |  | No | % |  | No. | % |
| Total | 6706240 |  |  | 11465 |  |  | 1690137 |  |  | 1279 |  |
| Gender |  |  |  |  |  |  |  |  |  |  |  |
| Males | 3423929 | 51.1 |  | 7311 | 63.8 |  | 866983 | 51.3 |  | 816 | 63.8 |
| Females | 3282311 | 48.9 |  | 4154 | 36.2 |  | 823154 | 48.7 |  | 463 | 36.2 |
| Educational level |  |  |  |  |  |  |  |  |  |  |  |
| ≤ 9 | 2369656 | 35.3 |  | 4058 | 35.4 |  | 926248 | 54.8 |  | 420 | 32.8 |
| 10-12 | 1280865 | 19.1 |  | 3457 | 30.2 |  | 195296 | 11.6 |  | 391 | 30.6 |
| > 12 | 3055719 | 45.6 |  | 3950 | 34.5 |  | 568593 | 33.6 |  | 468 | 36.6 |
| Region of residence |  |  |  |  |  |  |  |  |  |  |  |
| Large cities | 1672298 | 24.9 |  | 4087 | 35.6 |  | 373620 | 22.1 |  | 537 | 42.0 |
| Southern Sweden | 2358198 | 35.2 |  | 5100 | 44.5 |  | 294048 | 17.4 |  | 403 | 31.5 |
| Northern Sweden | 2675744 | 39.9 |  | 2278 | 19.9 |  | 1022469 | 60.5 |  | 339 | 26.5 |
| Marital status |  |  |  |  |  |  |  |  |  |  |  |
| Married | 4885665 | 72.9 |  | 7591 | 66.2 |  | 1356423 | 80.3 |  | 775 | 60.6 |
| Not married | 1820575 | 27.1 |  | 3874 | 33.8 |  | 333714 | 19.7 |  | 504 | 39.4 |
| Neighbourhood deprivation |  |  |  |  |  |  |  |  |  |  |  |
| Low | 849888 | 12.7 |  | 1550 | 13.5 |  | 89094 | 5.3 |  | 125 | 9.8 |
| Middle | 2660123 | 39.7 |  | 6076 | 53.0 |  | 316479 | 18.7 |  | 507 | 39.6 |
| High | 556381 | 8.3 |  | 1470 | 12.8 |  | 127452 | 7.5 |  | 180 | 14.1 |
| Unknown | 2639848 | 39.4 |  | 2369 | 20.7 |  | 1157112 | 68.5 |  | 467 | 36.5 |
| Hospital diagnoses |  |  |  |  |  |  |  |  |  |  |  |
| COPD | 341966 | 5.1 |  | 1027 | 9.0 |  | 78370 | 4.6 |  | 100 | 7.8 |
| Obesity | 91193 | 1.4 |  | 407 | 3.5 |  | 24962 | 1.5 |  | 57 | 4.5 |
| CHD | 202376 | 3.0 |  | 2980 | 26.0 |  | 15352 | 0.9 |  | 214 | 16.7 |
| Diabetes | 201085 | 3.0 |  | 4258 | 37.1 |  | 20916 | 1.2 |  | 401 | 31.4 |
| Alcoholism | 152288 | 2.3 |  | 593 | 5.2 |  | 33008 | 2.0 |  | 81 | 6.3 |
| Stroke | 123272 | 1.8 |  | 1616 | 14.1 |  | 10098 | 0.6 |  | 154 | 12.0 |
| Hypertension | 415568 | 6.2 |  | 6263 | 54.6 |  | 36612 | 2.2 |  | 604 | 47.2 |
| Heart failure | 72001 | 1.1 |  | 2239 | 19.5 |  | 5206 | 0.3 |  | 179 | 14.0 |
| Atrial fibrillation | 128916 | 1.9 |  | 1604 | 14.0 |  | 9060 | 0.5 |  | 110 | 8.6 |
| Gout | 16258 | 0.2 |  | 639 | 5.6 |  | 1923 | 0.1 |  | 65 | 5.1 |
| Acute kidney failure | 12491 | 0.2 |  | 2220 | 19.4 |  | 1325 | 0.1 |  | 255 | 19.9 |
| Renal tubulo-interstitial disease | 93195 | 1.4 |  | 2218 | 19.3 |  | 20958 | 1.2 |  | 278 | 21.7 |
| Post-procedural kidney failure | 324 | 0.0 |  | 83 | 0.7 |  | 23 | 0.0 |  | 4 | 0.3 |
| Glomerular disease | 18800 | 0.3 |  | 3584 | 31.3 |  | 3307 | 0.2 |  | 443 | 34.6 |
| Model 1: adjusted for birth year, gender and region of residence in Sweden; Model 2: adjusted for birth year, gender, region of residence in Sweden, educational level, marital status, and neighborhood deprivation. Model 3: Model 2 + comorbidities.  Bold values are significant | | | | | | | | | | | |

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| **Supplementary Table 2a. Incidence of end stage kidney disease in male immigrants and Swedish-born men expressed as hazard ratios (HR) with 95% confidence intervals (95% CI)** | | | | | | | | | | | |
|  | Model 1 | | |  | Model 2 | | |  | Model 3 | | |
|  | HR | 95% CI | |  | HR | 95% CI | |  | HR | 95% CI | |
| Sweden | 1 |  |  |  | 1 |  |  |  | 1 |  |  |
| **All foreign-born men** | 1.01 | 0.96 | 1.07 |  | **1.11** | **1.05** | **1.17** |  | **1.10** | **1.04** | **1.16** |
| **Nordic countries** | **0.77** | **0.70** | **0.86** |  | **0.83** | **0.75** | **0.91** |  | **0.83** | **0.75** | **0.92** |
| Denmark | 0.91 | 0.74 | 1.12 |  | 0.91 | 0.74 | 1.12 |  | 1.05 | 0.85 | 1.29 |
| Finland | **0.74** | **0.66** | **0.84** |  | **0.81** | **0.71** | **0.92** |  | **0.75** | **0.66** | **0.85** |
| Iceland | **0.24** | **0.06** | **0.97** |  | 0.28 | 0.07 | 1.10 |  | 0.49 | 0.12 | 1.95 |
| Norway | 0.81 | 0.63 | 1.04 |  | 0.86 | 0.67 | 1.11 |  | 1.04 | 0.81 | 1.34 |
| **Southern Europe** | **0.69** | **0.54** | **0.89** |  | **0.78** | **0.61** | **0.99** |  | 0.97 | 0.75 | 1.23 |
| France | 0.46 | 0.17 | 1.22 |  | 0.55 | 0.21 | 1.46 |  | 0.61 | 0.23 | 1.62 |
| Greece | **0.55** | **0.35** | **0.85** |  | **0.61** | **0.40** | **0.95** |  | 0.99 | 0.64 | 1.54 |
| Italy | 0.71 | 0.45 | 1.12 |  | 0.81 | 0.51 | 1.27 |  | 0.90 | 0.57 | 1.41 |
| Spain | 0.97 | 0.55 | 1.71 |  | 1.11 | 0.63 | 1.96 |  | 1.10 | 0.62 | 1.93 |
| Other Southern European countries | 1.17 | 0.61 | 2.25 |  | 1.17 | 0.61 | 2.25 |  | 1.25 | 0.65 | 2.40 |
| **Western Europe** | 0.90 | 0.76 | 1.07 |  | 1.00 | 0.84 | 1.20 |  | 1.03 | 0.87 | 1.23 |
| The Netherlands | 0.47 | 0.20 | 1.14 |  | 0.53 | 0.22 | 1.28 |  | 0.63 | 0.26 | 1.51 |
| UK and Ireland | 0.93 | 0.63 | 1.36 |  | 1.09 | 0.74 | 1.60 |  | 1.16 | 0.79 | 1.70 |
| Germany | 0.92 | 0.73 | 1.16 |  | 1.00 | 0.79 | 1.26 |  | 1.03 | 0.82 | 1.30 |
| Austria | 0.97 | 0.60 | 1.56 |  | 1.08 | 0.67 | 1.74 |  | 1.36 | 0.84 | 2.19 |
| Other Western European countries | 1.09 | 0.55 | 2.19 |  | 1.30 | 0.65 | 2.60 |  | 0.72 | 0.36 | 1.45 |
| **Eastern Europe** | **1.53** | **1.33** | **1.75** |  | **1.62** | **1.42** | **1.86** |  | **1.27** | **1.11** | **1.46** |
| Bosnia | **1.76** | **1.31** | **2.37** |  | **2.45** | **1.82** | **3.30** |  | **1.86** | **1.38** | **2.51** |
| Yugoslavia | **1.37** | **1.15** | **1.64** |  | **1.39** | **1.16** | **1.66** |  | 1.07 | 0.90 | 1.28 |
| Croatia | 1.33 | 0.69 | 2.55 |  | 1.23 | 0.64 | 2.37 |  | 1.18 | 0.61 | 2.26 |
| Romania | **1.84** | **1.20** | **2.82** |  | **1.92** | **1.25** | **2.95** |  | 1.33 | 0.87 | 2.05 |
| Bulgaria | 1.61 | 0.72 | 3.58 |  | 1.78 | 0.80 | 3.97 |  | **2.71** | **1.22** | **6.03** |
| Other Eastern European countries | **2.90** | **1.68** | **4.99** |  | **2.82** | **1.63** | **4.86** |  | **2.37** | **1.38** | **4.09** |
| **Baltic countries** | 1.04 | 0.73 | 1.47 |  | 1.14 | 0.80 | 1.62 |  | 1.03 | 0.72 | 1.46 |
| Estonia | 1.08 | 0.74 | 1.58 |  | 1.18 | 0.81 | 1.72 |  | 1.05 | 0.72 | 1.53 |
| Latvia | 0.80 | 0.30 | 2.13 |  | 0.90 | 0.34 | 2.40 |  | 0.91 | 0.34 | 2.41 |
| **Central Europe** | 1.06 | 0.86 | 1.30 |  | 1.10 | 0.89 | 1.36 |  | 1.03 | 0.84 | 1.27 |
| Poland | 0.93 | 0.67 | 1.30 |  | 0.98 | 0.70 | 1.36 |  | 0.84 | 0.61 | 1.18 |
| Other Central European countries | 0.91 | 0.54 | 1.53 |  | 0.97 | 0.57 | 1.64 |  | 1.16 | 0.68 | 1.95 |
| Hungary | 1.28 | 0.93 | 1.75 |  | 1.30 | 0.95 | 1.79 |  | 1.23 | 0.90 | 1.68 |
| **Africa** | **2.01** | **1.64** | **2.47** |  | **2.36** | **1.92** | **2.90** |  | **2.13** | **1.73** | **2.62** |
| **Northern America** | 0.99 | 0.68 | 1.44 |  | 1.14 | 0.79 | 1.65 |  | **1.50** | **1.03** | **2.17** |
| **Latin America** | 1.01 | 0.76 | 1.34 |  | 1.13 | 0.85 | 1.50 |  | 1.24 | 0.93 | 1.65 |
| Chile | 1.30 | 0.94 | 1.79 |  | 1.44 | 1.05 | 1.98 |  | 1.48 | 1.08 | 2.04 |
| Other South American countries | 0.55 | 0.29 | 1.01 |  | 0.63 | 0.34 | 1.17 |  | 0.77 | 0.42 | 1.44 |
| **Asia** | **1.52** | **1.35** | **1.70** |  | **1.69** | **1.51** | **1.90** |  | **1.54** | **1.37** | **1.73** |
| Turkey | **1.33** | **1.02** | **1.74** |  | **1.46** | **1.12** | **1.91** |  | **1.44** | **1.10** | **1.88** |
| Lebanon | **1.94** | **1.39** | **2.73** |  | **2.03** | **1.45** | **2.85** |  | **1.84** | **1.31** | **2.58** |
| Iran | 0.73 | 0.53 | 1.02 |  | 0.79 | 0.56 | 1.10 |  | 0.74 | 0.53 | 1.04 |
| Iraq | **2.07** | **1.65** | **2.60** |  | **2.59** | **2.06** | **3.26** |  | **2.17** | **1.72** | **2.73** |
| Other Asian countries | **1.80** | **1.50** | **2.17** |  | **2.03** | **1.68** | **2.45** |  | **1.80** | **1.49** | **2.17** |
| **Russia** | 0.75 | 0.39 | 1.44 |  | 0.83 | 0.43 | 1.59 |  | 0.99 | 0.51 | 1.90 |
| Model 1: adjusted for birth year, gender and region of residence in Sweden; Model 2: adjusted for birth year, gender, region of residence in Sweden, educational level, marital status, and neighborhood deprivation. Model 3: Model 2 + comorbidities.  Bold values are significant | | | | | | | | | | | |

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| **Supplementary Table 2b. Incidence of end stage kidney disease in female immigrants and Swedish-born women expressed as hazard ratios (HR) with 95% confidence intervals (95% CI)** | | | | | | | | | | | |
|  | Model 1 | | |  | Model 2 | | |  | Model 3 | | |
|  | HR | 95% CI | |  | HR | 95% CI | |  | HR | 95% CI | |
| Sweden | 1 |  |  |  | 1 |  |  |  | 1 |  |  |
| **All foreign-born women** | **1.08** | **1.00** | **1.16** |  | **1.12** | **1.04** | **1.20** |  | **1.12** | **1.04** | **1.21** |
| **Nordic countries** | 0.96 | 0.86 | 1.07 |  | 0.96 | 0.86 | 1.07 |  | 1.00 | 0.90 | 1.11 |
| Denmark | 1.26 | 0.98 | 1.63 |  | 1.23 | 0.96 | 1.58 |  | **1.51** | **1.17** | **1.94** |
| Finland | 0.88 | 0.77 | 1.01 |  | 0.89 | 0.78 | 1.02 |  | 0.89 | 0.78 | 1.02 |
| Iceland | 0.63 | 0.20 | 1.97 |  | 0.67 | 0.22 | 2.07 |  | 1.26 | 0.41 | 3.92 |
| Norway | 1.09 | 0.85 | 1.40 |  | 1.08 | 0.84 | 1.38 |  | 1.13 | 0.89 | 1.45 |
| **Southern Europe** | 0.79 | 0.53 | 1.18 |  | 0.82 | 0.55 | 1.22 |  | 1.23 | 0.82 | 1.83 |
| France | 1.05 | 0.40 | 2.80 |  | 1.28 | 0.48 | 3.40 |  | 1.70 | 0.64 | 4.53 |
| Greece | 0.62 | 0.31 | 1.25 |  | 0.62 | 0.31 | 1.24 |  | 1.11 | 0.56 | 2.23 |
| Italy | 0.86 | 0.38 | 1.91 |  | 0.92 | 0.41 | 2.05 |  | 1.46 | 0.66 | 3.26 |
| Spain | 1.50 | 0.67 | 3.33 |  | 1.61 | 0.72 | 3.58 |  | 1.55 | 0.70 | 3.46 |
| Other Southern European countries | - |  |  |  | - |  |  |  | - |  |  |
| **Western Europe** | 0.93 | 0.73 | 1.18 |  | 1.01 | 0.80 | 1.29 |  | 0.83 | 0.65 | 1.06 |
| The Netherlands | 1.02 | 0.38 | 2.72 |  | 1.16 | 0.44 | 3.10 |  | 1.67 | 0.63 | 4.44 |
| UK and Ireland | 0.50 | 0.21 | 1.20 |  | 0.57 | 0.24 | 1.36 |  | 0.92 | 0.38 | 2.20 |
| Germany | 1.09 | 0.83 | 1.42 |  | 1.17 | 0.89 | 1.53 |  | 0.81 | 0.61 | 1.06 |
| Austria | 0.31 | 0.08 | 1.25 |  | 0.34 | 0.08 | 1.35 |  | 0.37 | 0.09 | 1.48 |
| Other Western European countries | 1.00 | 0.32 | 3.11 |  | 1.19 | 0.39 | 3.70 |  | 1.95 | 0.63 | 6.05 |
| **Eastern Europe** | **1.56** | **1.29** | **1.90** |  | **1.59** | **1.31** | **1.93** |  | **1.33** | **1.09** | **1.61** |
| Bosnia | 1.21 | 0.76 | 1.93 |  | **1.60** | **1.00** | **2.56** |  | 1.26 | 0.79 | 2.02 |
| Yugoslavia | **1.63** | **1.28** | **2.07** |  | **1.52** | **1.20** | **1.94** |  | 1.22 | 0.95 | 1.55 |
| Croatia | 1.96 | 0.88 | 4.37 |  | 1.81 | 0.81 | 4.04 |  | 1.87 | 0.84 | 4.16 |
| Romania | 1.16 | 0.55 | 2.44 |  | 1.30 | 0.62 | 2.72 |  | 1.43 | 0.68 | 3.00 |
| Bulgaria | 1.11 | 0.28 | 4.45 |  | 1.34 | 0.33 | 5.35 |  | 1.73 | 0.43 | 6.94 |
| Other Eastern European countries | **3.77** | **1.88** | **7.55** |  | **3.54** | **1.77** | **7.10** |  | **2.90** | **1.45** | **5.82** |
| **Baltic countries** | 0.52 | 0.27 | 1.00 |  | 0.61 | 0.32 | 1.17 |  | 0.60 | 0.31 | 1.15 |
| Estonia | 0.49 | 0.23 | 1.03 |  | 0.56 | 0.27 | 1.18 |  | 0.53 | 0.25 | 1.11 |
| Latvia | 0.67 | 0.17 | 2.67 |  | 0.86 | 0.22 | 3.45 |  | 1.11 | 0.28 | 4.43 |
| **Central Europe** | 0.96 | 0.73 | 1.28 |  | 1.04 | 0.78 | 1.38 |  | 1.05 | 0.79 | 1.39 |
| Poland | 0.89 | 0.61 | 1.30 |  | 0.96 | 0.65 | 1.39 |  | 0.96 | 0.66 | 1.41 |
| Other Central European countries | 1.31 | 0.71 | 2.44 |  | 1.46 | 0.79 | 2.72 |  | 1.65 | 0.89 | 3.07 |
| Hungary | 0.93 | 0.51 | 1.67 |  | 0.98 | 0.54 | 1.77 |  | 0.93 | 0.52 | 1.69 |
| **Africa** | **1.78** | **1.22** | **2.58** |  | **1.95** | **1.34** | **2.84** |  | **1.80** | **1.23** | **2.61** |
| **Northern America** | 0.84 | 0.48 | 1.49 |  | 0.97 | 0.55 | 1.71 |  | 1.41 | 0.80 | 2.48 |
| **Latin America** | **1.48** | **1.07** | **2.05** |  | **1.57** | **1.13** | **2.17** |  | **1.64** | **1.18** | **2.27** |
| Chile | 1.38 | 0.89 | 2.13 |  | 1.39 | 0.89 | 2.16 |  | 1.38 | 0.89 | 2.15 |
| Other South American countries | **1.64** | **1.02** | **2.63** |  | **1.84** | **1.14** | **2.97** |  | **2.09** | **1.30** | **3.37** |
| **Asia** | **1.64** | **1.40** | **1.92** |  | **1.72** | **1.47** | **2.02** |  | **1.51** | **1.29** | **1.77** |
| Turkey | **1.76** | **1.25** | **2.50** |  | **1.62** | **1.14** | **2.31** |  | 1.39 | 0.98 | 1.97 |
| Lebanon | 1.34 | 0.72 | 2.49 |  | 1.25 | 0.67 | 2.34 |  | 1.13 | 0.61 | 2.11 |
| Iran | 1.07 | 0.69 | 1.66 |  | 1.21 | 0.78 | 1.87 |  | 1.32 | 0.85 | 2.05 |
| Iraq | **2.44** | **1.77** | **3.38** |  | **2.96** | **2.13** | **4.11** |  | **2.65** | **1.91** | **3.68** |
| Other Asian countries | **1.60** | **1.26** | **2.05** |  | **1.70** | **1.33** | **2.17** |  | **1.37** | **1.07** | **1.75** |
| **Russia** | 0.71 | 0.34 | 1.50 |  | 0.86 | 0.41 | 1.81 |  | 0.89 | 0.43 | 1.87 |
| Model 1: adjusted for birth year, gender and region of residence in Sweden; Model 2: adjusted for birth year, gender, region of residence in Sweden, educational level, marital status, and neighborhood deprivation. Model 3: Model 2 + comorbidities.  Bold values are significant | | | | | | | | | | | |

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| **Supplementary Table 2c. Incidence of end stage kidney disease in second-generation immigrants and Swedish-born persons with Swedish-born parents expressed as hazard ratios (HR) with 95% confidence intervals (95% CI)** | | | | | | | | | | | |
|  | Model 1 | | |  | Model 2 | | |  | Model 3 | | |
|  | HR | 95% CI | |  | HR | 95% CI | |  | HR | 95% CI | |
| Sweden | 1 |  |  |  | 1 |  |  |  | 1 |  |  |
| **All with foreign-born parents** | 0.94 | 0.89 | 1.00 |  | **0.93** | **0.88** | **0.99** |  | 0.98 | 0.92 | 1.04 |
| **Nordic countries** | 0.95 | 0.87 | 1.02 |  | 0.92 | 0.85 | 1.00 |  | 0.96 | 0.89 | 1.04 |
| Denmark | 1.04 | 0.87 | 1.24 |  | 0.99 | 0.83 | 1.18 |  | 1.16 | 0.97 | 1.38 |
| Finland | **0.87** | **0.79** | **0.97** |  | **0.86** | **0.77** | **0.95** |  | **0.89** | **0.80** | **0.98** |
| Iceland | 0.19 | 0.03 | 1.37 |  | 0.19 | 0.03 | 1.31 |  | 0.27 | 0.04 | 1.91 |
| Norway | 1.10 | 0.95 | 1.28 |  | 1.08 | 0.93 | 1.26 |  | 1.04 | 0.89 | 1.20 |
| **Southern Europe** | **0.71** | **0.51** | **0.98** |  | **0.70** | **0.50** | **0.96** |  | 0.95 | 0.69 | 1.31 |
| France | 0.51 | 0.19 | 1.35 |  | 0.53 | 0.20 | 1.41 |  | 0.73 | 0.27 | 1.95 |
| Greece | **0.53** | **0.27** | **1.01** |  | **0.50** | **0.26** | **0.96** |  | 0.74 | 0.38 | 1.42 |
| Italy | 0.94 | 0.57 | 1.56 |  | 0.94 | 0.56 | 1.55 |  | 1.30 | 0.79 | 2.17 |
| Spain | 0.40 | 0.13 | 1.25 |  | 0.40 | 0.13 | 1.24 |  | 0.49 | 0.16 | 1.52 |
| Other Southern European countries | 1.60 | 0.72 | 3.56 |  | 1.48 | 0.66 | 3.30 |  | 1.64 | 0.74 | 3.65 |
| **Western Europe** | 0.84 | 0.71 | 1.00 |  | 0.87 | 0.73 | 1.03 |  | 1.02 | 0.86 | 1.21 |
| The Netherlands | 1.44 | 0.83 | 2.48 |  | 1.46 | 0.85 | 2.52 |  | **2.12** | **1.23** | **3.65** |
| UK and Ireland | 0.78 | 0.47 | 1.30 |  | 0.81 | 0.49 | 1.34 |  | 0.97 | 0.58 | 1.61 |
| Germany | 0.81 | 0.65 | 1.00 |  | 0.83 | 0.67 | 1.03 |  | 0.94 | 0.76 | 1.17 |
| Austria | 0.86 | 0.51 | 1.46 |  | 0.90 | 0.53 | 1.52 |  | 1.13 | 0.67 | 1.90 |
| Other Western European countries | 0.67 | 0.25 | 1.79 |  | 0.70 | 0.26 | 1.88 |  | 0.89 | 0.33 | 2.37 |
| **Eastern Europe** | **1.25** | **1.01** | **1.54** |  | **1.23** | **1.00** | **1.53** |  | 0.90 | 0.73 | 1.12 |
| Bosnia | **1.59** | **1.01** | **2.50** |  | **1.87** | **1.19** | **2.94** |  | **1.83** | **1.16** | **2.88** |
| Yugoslavia | 1.28 | 0.99 | 1.64 |  | 1.21 | 0.94 | 1.56 |  | 0.78 | 0.61 | 1.01 |
| Croatia | 0.90 | 0.23 | 3.60 |  | 0.87 | 0.22 | 3.46 |  | 1.07 | 0.27 | 4.28 |
| Roumania | 0.54 | 0.18 | 1.68 |  | 0.55 | 0.18 | 1.71 |  | 0.62 | 0.20 | 1.92 |
| Bulgaria | - |  |  |  |  |  | - |  |  |  | - |
| Other Eastern European countries | 2.17 | 0.70 | 6.73 |  | 2.03 | 0.66 | 6.31 |  | 2.19 | 0.71 | 6.80 |
| **Baltic countries** | 0.87 | 0.65 | 1.15 |  | 0.92 | 0.69 | 1.23 |  | 1.08 | 0.81 | 1.44 |
| Estonia | 0.78 | 0.56 | 1.08 |  | 0.83 | 0.60 | 1.15 |  | 0.97 | 0.70 | 1.34 |
| Latvia | 1.35 | 0.75 | 2.44 |  | 1.47 | 0.81 | 2.65 |  | 1.76 | 0.98 | 3.19 |
| **Central Europe** | 0.88 | 0.67 | 1.15 |  | 0.89 | 0.68 | 1.16 |  | 0.91 | 0.69 | 1.19 |
| Poland | 0.98 | 0.68 | 1.41 |  | 0.99 | 0.68 | 1.42 |  | 0.92 | 0.64 | 1.32 |
| Other Central European countries | 0.61 | 0.29 | 1.28 |  | 0.63 | 0.30 | 1.32 |  | 0.76 | 0.36 | 1.60 |
| Hungary | 0.90 | 0.56 | 1.44 |  | 0.89 | 0.55 | 1.43 |  | 0.98 | 0.61 | 1.57 |
| **Africa** | 1.26 | 0.84 | 1.88 |  | 1.25 | 0.84 | 1.87 |  | 1.13 | 0.76 | 1.69 |
| **Northern America** | 0.75 | 0.54 | 1.03 |  | 0.77 | 0.56 | 1.06 |  | 0.92 | 0.67 | 1.27 |
| **Latin America** | 0.59 | 0.34 | 1.02 |  | **0.57** | **0.33** | **0.99** |  | **0.57** | **0.33** | **0.98** |
| Chile | 0.77 | 0.41 | 1.43 |  | 0.73 | 0.39 | 1.36 |  | 0.72 | 0.39 | 1.33 |
| Other South American countries | 0.34 | 0.11 | 1.04 |  | 0.33 | 0.11 | 1.03 |  | 0.34 | 0.11 | 1.05 |
| **Asia** | **1.32** | **1.10** | **1.58** |  | **1.29** | **1.07** | **1.55** |  | **1.23** | **1.02** | **1.48** |
| Turkey | 1.14 | 0.79 | 1.65 |  | 1.06 | 0.74 | 1.53 |  | 1.09 | 0.75 | 1.57 |
| Lebanon | **2.43** | **1.58** | **3.74** |  | **2.31** | **1.50** | **3.55** |  | **2.03** | **1.32** | **3.12** |
| Iran | 0.85 | 0.48 | 1.50 |  | 0.86 | 0.49 | 1.52 |  | 0.82 | 0.47 | 1.45 |
| Iraq | 1.43 | 0.92 | 2.22 |  | 1.48 | 0.95 | 2.30 |  | 1.25 | 0.80 | 1.95 |
| Other Asian countries | 1.31 | 0.96 | 1.79 |  | 1.30 | 0.95 | 1.78 |  | 1.27 | 0.93 | 1.74 |
| **Russia** | 1.17 | 0.76 | 1.79 |  | 1.20 | 0.78 | 1.84 |  | 1.44 | 0.94 | 2.20 |
| Model 1: adjusted for birth year, gender and region of residence in Sweden; Model 2: adjusted for birth year, gender, region of residence in Sweden, educational level, marital status, and neighborhood deprivation. Model 3: Model 2 + comorbidities.  Bold values are significant | | | | | | | | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Supplementary Table 3. Population attributable fractions (PAF) of CKD in the first-generation male and female individuals, and second-generation**  **immigrants with men and women combined\*** | | | | | | | | | | | | | | | | | | | | | | | |
|  | First-generation study population | | | | | | | | | | | | | | |  | Second-generation study population | | | | | | |
|  | Swedish-born men | | |  | Foreign-born men | | |  | Swedish-born women | | |  | Foreign-born women | | |  | Swedish-born parents | | |  | Foreign-born parents | | |
|  | PAF | 95% CI | |  | PAFs | 95% CI | |  | PAF | 95% CI | |  | PAFs | 95% CI | |  | PAF | 95% CI | |  | PAFs | 95% CI | |
| Gender, males  (ref. Females) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 6.5 | 5.3 | 7.7 |  | 5.8 | 1.1 | 10.0 |
| Region of residence  (ref. Large cities) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |  |  |  | 0 |  |  |
| Southern Sweden | -10.1 | -13.0 | -7.5 |  | -6.3 | -11.3 | -1.9 |  | -8.8 | -13.0 | -5.1 |  | -3.9 | -10.5 | 1.6 |  | -7.9 | -10.4 | -5.0 |  | -2.7 | -8. 4 | 2.1 |
| Northern Sweden | -6.4 | -8.1 | -5.1 |  | -6.7 | -11.7 | -2.2 |  | -6.4 | -8.5 | -4.3 |  | -2.2 | -8.2 | 2.6 |  | -7.0 | -8.5 | -5. 3 |  | -7.0 | -12.5 | -2.0 |
| Educational level  (ref. ≤ 9 years) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |  |  |  | 0 |  |  |
| 10-12 | -0.6 | -1.9 | 0.7 |  | 0.4 | -2.7 | 3.2 |  | 1.2 | -0.7 | 3.2 |  | -1.0 | -5.5 | 2.9 |  | -1.3 | -3.0 | 0 |  | 5.7 | 1.5 | 9.1 |
| >12 | -3.2 | -4.8 | -1.3 |  | 4.7 | 0.4 | 8.4 |  | -4.5 | -6.9 | -2.4 |  | -2.2 | -7.5 | 2.3 |  | -7.6 | -9.2 | -5.6 |  | -8.0 | -14.9 | -2.3 |
| Marital status  (ref. Married) | -1.3 | -2.6 | 0.3 |  | 4.3 | 1.3 | 6.9 |  | 1.7 | 0.9 | 2.5 |  | -0.7 | -3.7 | 1.7 |  | -4.6 | -6.4 | -3.0 |  | -4. 9 | -11. 8 | 1.5 |
| Neighbourhood deprivation  (ref. Low) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |  |  |  | 0 |  |  |
| Middle | 6.0 | 2.6 | 8.9 |  | 3.5 | -3.0 | 8.7 |  | 4.1 | 0 | 8.0 |  | -4.9 | -16.1 | 3.8 |  | 7.3 | 4.8 | 9.9 |  | 3.6 | -4.4 | 10.3 |
| High | 1.4 | 0.5 | 2.2 |  | 1.8 | -1.8 | 4.5 |  | 1.7 | 0.4 | 2.8 |  | -0.9 | -6.7 | 3.5 |  | 2.0 | 1.2 | 2.7 |  | -1.7 | -6.0 | 1.5 |
| Unknown | -5.6 | -7.6 | -3.9 |  | -2.5 | -15.2 | 7.7 |  | -5.5 | -8.2 | -3.3 |  | -29.8 | -52.4 | -12.8 |  | -3.7 | -5.5 | -2. 5 |  | -12.8 | -24.3 | -3. 2 |
| Hospital diagnoses |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| COPD | -0.4 | -1.1 | 0.3 |  | -0.2 | -2.1 | 1.4 |  | 0.1 | -0.3 | 0.6 |  | 1.9 | -0.2 | 3.6 |  | 0.7 | 0.1 | 1.2 |  | 2.1 | 0.7 | 3.2 |
| Obesity | -0.6 | -1.0 | -0.3 |  | -0.9 | -2.3 | 0.1 |  | -0.0 | -0.6 | 0.4 |  | -2.2 | -4.9 | -0.3 |  | -0.9 | -1.4 | -0.4 |  | -2. 9 | -5.3 | -1.1 |
| CHD | 9.7 | 8.5 | 11.1 |  | 13.2 | 9.7 | 16.3 |  | 8.3 | 6.9 | 9.6 |  | 6.8 | 2.6 | 10.3 |  | 6.5 | 5.5 | 7.4 |  | 2.5 | -0.2 | 4.8 |
| Diabetes | **18.9** | 18.1 | 19.7 |  | **24.3** | 21.9 | 26.4 |  | **21.4** | 20.6 | 22.2 |  | **20.6** | 18.0 | 22.8 |  | **24.0** | 23.4 | 24.6 |  | **20.3** | 18.4 | 22.0 |
| Alcoholism | 0.7 | 0.3 | 1.0 |  | 0.9 | -0.2 | 1.7 |  | 0.5 | 0.2 | 0.7 |  | -0.2 | -1.5 | .5 |  | 1.0 | 0.7 | 1.3 |  | 0. 7 | -0.8 | 1.8 |
| Stroke | -0.2 | -1.4 | 0.7 |  | 3.3 | 1.1 | 5.2 |  | 0.8 | -0.5 | 1.9 |  | 4.9 | 2.5 | 6.8 |  | 2.6 | 1.9 | 3. 3 |  | 4.3 | 2.6 | 5.6 |
| Hypertension | **39.4** | 38.5 | 40.2 |  | **40.6** | 38.2 | 42.6 |  | **35.5** | 34.3 | 36.7 |  | **45.6** | 43.0 | 47.7 |  | **38.4** | 37.6 | 39.1 |  | **37.8** | 36. | 39.3 |
| Heart failure | 13.8 | 13.0 | 14.6 |  | **17.7** | 15.7 | 19.4 |  | 11.8 | 10.7 | 12.9 |  | 13.2 | 10.0 | 15.9 |  | 9.0 | 8.4 | 9.6 |  | 4.6 | 2.3 | 6.4 |
| Atrial fibrillation | -1.2 | -2.5 | 0 |  | -3.0 | -6.2 | -0.2 |  | -2.1 | -3.7 | -0.7 |  | 0.9 | -2.5 | 3.6 |  | 0.5 | -0.3 | 1.3 |  | 0.7 | -1.4 | 2.5 |
| Gout | 1.9 | 1.6 | 2.3 |  | 3 | 1.99 | 3.9 |  | 1.4 | 0.9 | 1.8 |  | 2.2 | 1.3 | 2.9 |  | 1.3 | 0.9 | 1.6 |  | -1.0 | -3.1 | 0.5 |
| Acute kidney failure | **16.1** | 15.9 | 16.3 |  | **17.5** | 17.0 | 17.9 |  | **16.8** | 16.7 | 17.0 |  | **14.2** | 13.7 | 14.6 |  | **16.3** | 16.2 | 16.5 |  | **17.7** | 17.3 | 18.1 |
| Renal tubulo-  interstitial disease | **9.8** | 9.5 | 10.1 |  | 11.1 | 10.3 | 11.8 |  | **14.8** | 14.5 | 15.2 |  | **17.7** | 16.8 | 18.6 |  | **14.8** | 14.6 | 15.0 |  | **17.3** | 16.6 | 18.0 |
| Post-procedual  kidney failure | 0.7 | 0.7 | 0.8 |  | 0.5 | 0.4 | 0.5 |  | 0.6 | 0.6 | 0.7 |  | 0.8 | 0.7 | 0.9 |  | 0.5 | 0.4 | 0.5 |  | 0.3 | 0.2 | 0.3 |
| Glomerular disease | **25.7** | 25.6 | 25.7 |  | **27.7** | 27.5 | 27.9 |  | **22.2** | 22.1 | 22.2 |  | **27.9** | 27.7 | 28.0 |  | **30.2** | 30.1 | 30.2 |  | **33.6** | 33.5 | 33.8 |
| \*:Full adjusted model.  The five diagnoses with highest PAFs shown in Bold | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |