**Supplementary material**

**eTable 1. Description of ICD-10 codes used to define the comorbidities assess in the study (based on the Swedish National Study of Aging and Care in Kungsholmen (SNAC-K) coding).**

|  |  |
| --- | --- |
| **ISCHEMIC HEART DISEASE** | |
| **Included ICD-10 codes and labels** | |
| I20 | Angina pectoris |
| I21 | Acute myocardial infarction |
| I22 | Subsequent myocardial infarction |
| I24 | Other acute ischaemic heart diseases |
| I25 | Chronic ischaemic heart disease |
| Z951 | Presence of aortocoronary bypass graft |
| Z955 | Presence of coronary angioplasty implant and graft |
| Additional parameters | Use of organic nitrates (C01DA) or ranolazine (C01EB18) |
| **HEART FAILURE** | |
| **Included ICD-10 codes and labels** | |
| I110 | Hypertensive heart disease with (congestive) heart failure |
| I130 | Hypertensive heart and renal disease with (congestive) heart failure |
| I132 | Hypertensive heart and renal disease with both (congestive) heart failure and renal failure |
| I27 | Other pulmonary heart diseases |
| I280 | Arteriovenous fistula of pulmonary vessels |
| I42 | Cardiomyopathy |
| I43 | Cardiomyopathy in diseases classified elsewhere |
| I50 | Heart failure |
| I515 | Myocardial degeneration |
| I517 | Cardiomegaly |
| I528 | Other heart disorders in other diseases classified elsewhere |
| Z941 | Heart transplant status |
| Z943 | Heart and lungs transplant status |
| **CEREBROVASCULAR DISEASE** | |
| **Included ICD-10 codes and labels** | |
| G45 | Transient cerebral ischaemic attacks and related syndromes |
| G46 | Vascular syndromes of brain in cerebrovascular diseases |
| I60 | Subarachnoid haemorrhage |
| I61 | Intracerebral haemorrhage |
| I62 | Other nontraumatic intracranial haemorrhage |
| I63 | Cerebral infarction |
| I64 | Stroke, not specified as haemorrhage or infarction |
| I67 | Other cerebrovascular diseases |
| I69 | Sequelae of cerebrovascular disease |
| **PERIPHERAL VASCULAR DISEASE** | |
| **Included ICD-10 codes and labels** | |
| I702 | Atherosclerosis of arteries of extremities |
| I73 | Other peripheral vascular diseases |
| I792 | Peripheral angiopathy in diseases classified elsewhere |
| I798 | Other disorders of arteries, arterioles and capillaries in diseases classified elsewhere |
| Additional parameters | Use of cilostazol (B01AC23) |
| **Excluded ICD-10 codes and labels** | |
| I731 | Thromboangiitis obliterans [Buerger] |
| I738 | Other specified peripheral vascular diseases |
| **CHRONIC KIDNEY DISEASES** | |
| **Included ICD-10 codes and labels** | |
| I120 | Hypertensive renal disease with renal failure |
| I130 | Hypertensive heart and renal disease with (congestive) heart failure |
| I131 | Hypertensive heart and renal disease with renal failure |
| I132 | Hypertensive heart and renal disease with both (congestive) heart failure and renal failure |
| I139 | Hypertensive heart and renal disease, unspecified |
| N01 | Rapidly progressive nephritic syndrome |
| N03 | Chronic nephritic syndrome |
| N04 | Nephrotic syndrome |
| N05 | Unspecified nephritic syndrome |
| N07 | Hereditary nephropathy, not elsewhere classified |
| N08 | Glomerular disorders in diseases classified elsewhere |
| N11 | Chronic tubulo-interstitial nephritis |
| N183 | Chronic kidney disease, stage 3 |
| N184 | Chronic kidney disease, stage 4 |
| N185 | Chronic kidney disease, stage 5 |
| N189 | Chronic kidney disease, unspecified |
| Q60 | Renal agenesis and other reduction defects of kidney |
| Q611 | Polycystic kidney, autosomal recessive |
| Q612 | Polycystic kidney, autosomal dominant |
| Q613 | Polycystic kidney, unspecified |
| Q614 | Renal dysplasia |
| Q615 | Medullary cystic kidney |
| Q618 | Other cystic kidney diseases |
| Q619 | Cystic kidney disease, unspecified |
| Z905 | Acquired absence of kidney |
| Z940 | Kidney transplant status |
| Additional parameters | Glomerular filtration rate <60 ml/min/1.73m2 (assessed using the CKD-EPI equation)2 |
| **CHRONIC LIVER DISEASES** | |
| **Included ICD-10 codes and labels** | |
| B18 | Chronic viral hepatitis |
| K70 | Alcoholic liver disease |
| K713 | Toxic liver disease with chronic persistent hepatitis |
| K714 | Toxic liver disease with chronic lobular hepatitis |
| K715 | Toxic liver disease with chronic active hepatitis |
| K717 | Toxic liver disease with fibrosis and cirrhosis of liver |
| K721 | Chronic hepatic failure |
| K73 | Chronic hepatitis, not elsewhere classified |
| K74 | Fibrosis and cirrhosis of liver |
| K753 | Granulomatous hepatitis, not elsewhere classified |
| K754 | Autoimmune hepatitis |
| K758 | Other specified inflammatory liver diseases |
| K761 | Chronic passive congestion of liver |
| K766 | Portal hypertension |
| K767 | Hepatorenal syndrome |
| K778 | Liver disorders in other diseases classified elsewhere |
| Q446 | Cystic disease of liver |
| Z944 | Liver transplant status |
| **Excluded ICD-10 codes and labels** | |
| K700 | Alcoholic fatty liver |
| K701 | Alcoholic hepatitis |
| **COPD, EMPHYSEMA, CHRONIC BRONCHITIS** | |
| **Included ICD-10 codes and labels** | |
| J41 | Simple and mucopurulent chronic bronchitis |
| J42 | Unspecified chronic bronchitis |
| J43 | Emphysema |
| J44 | Other chronic obstructive pulmonary disease |
| J47 | Bronchiectasis |
| Additional parameters | Use of anticholinergics (R03BB) |
| **DEMENTIA** | |
| **Included ICD-10 codes and labels** | |
| F00 | Dementia in Alzheimer disease |
| F01 | Vascular dementia |
| F02 | Dementia in other diseases classified elsewhere |
| F03 | Unspecified dementia |
| F051 | Delirium superimposed on dementia |
| G30 | Alzheimer disease |
| G31 | Other degenerative diseases of nervous system, not elsewhere classified |
| Additional parameters | Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (assessed by two different physicians, and a third one in case of disagreement)  Use of anticholinesterases (N06DA) or memantine (N06DX01) |
| **DIABETES** | |
| **Included ICD-10 codes and labels** | |
| E10 | Insulin-dependent diabetes mellitus |
| E11 | Non-insulin-dependent diabetes mellitus |
| E13 | Other specified diabetes mellitus |
| E14 | Unspecified diabetes mellitus |
| E891 | Postprocedural hypoinsulinaemia |
| Additional parameters | Glycated hemoglobin (A1C) ≥6.5%  Use of antidiabetics (A10) |
| **HEMATOLOGICAL NEOPLASMS** | |
| **Included ICD-10 codes and labels** | |
| C81 | Hodgkin lymphoma |
| C82 | Follicular lymphoma |
| C83 | Non-follicular lymphoma |
| C84 | Mature T/NK-cell lymphomas |
| C85 | Other and unspecified types of non-Hodgkin lymphoma |
| C86 | Other specified types of T/NK-cell lymphoma |
| C88 | Malignant immunoproliferative diseases |
| C90 | Multiple myeloma and malignant plasma cell neoplasms |
| C91 | Lymphoid leukaemia |
| C92 | Myeloid leukaemia |
| C93 | Monocytic leukaemia |
| C94 | Other leukaemias of specified cell type |
| C95 | Leukaemia of unspecified cell type |
| C96 | Other and unspecified malignant neoplasms of lymphoid, haematopoietic and related tissue |
| **SOLID NEOPLASMS** | |
| **Included ICD-10 codes and labels** | |
| C | Malignant neoplasms |
| D00 | Carcinoma in situ of oral cavity, oesophagus and stomach |
| D01 | Carcinoma in situ of other and unspecified digestive organs |
| D02 | Carcinoma in situ of middle ear and respiratory system |
| D03 | Melanoma in situ |
| D04 | Carcinoma in situ of skin |
| D05 | Carcinoma in situ of breast |
| D06 | Carcinoma in situ of cervix uteri |
| D07 | Carcinoma in situ of other and unspecified genital organs |
| D09 | Carcinoma in situ of other and unspecified sites |
| D320 | Benign neoplasm: Cerebral meninges |
| D321 | Benign neoplasm: Spinal meninges |
| D329 | Benign neoplasm: Meninges, unspecified |
| D330 | Benign neoplasm: Brain, supratentorial |
| D331 | Benign neoplasm: Brain, infratentorial |
| D332 | Benign neoplasm: Brain, unspecified |
| D333 | Benign neoplasm: Cranial nerves |
| D334 | Benign neoplasm: Spinal cord |
| Q85 | Phakomatoses, not elsewhere classified |
| **Excluded ICD-10 codes and labels** | |
| C81 | Hodgkin lymphoma |
| C82 | Follicular lymphoma |
| C83 | Non-follicular lymphoma |
| C84 | Mature T/NK-cell lymphomas |
| C85 | Other and unspecified types of non-Hodgkin lymphoma |
| C86 | Other specified types of T/NK-cell lymphoma |
| C88 | Malignant immunoproliferative diseases |
| C90 | Multiple myeloma and malignant plasma cell neoplasms |
| C91 | Lymphoid leukaemia |
| C92 | Myeloid leukaemia |
| C93 | Monocytic leukaemia |
| C94 | Other leukaemias of specified cell type |
| C95 | Leukaemia of unspecified cell type |
| C96 | Other and unspecified malignant neoplasms of lymphoid, haematopoietic and related tissue |

**eTable 2. Additional clinical and drug-related parameters used in SNAC-K to define specific chronic conditions.**

|  |  |
| --- | --- |
| **Condition** | **Clinical and drug-related parameters** |
| **Chronic kidney diseases** | Glomerular filtration rate <60 ml/min/1.73m2 (assessed using the CKD-EPI equation)1 |
| **COPD, Emphysema, Chronic Bronchitis** | Use of anticholinergics (R03BB) |
| **Dementia** | Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised2 (assessed by two different physicians, and a third one in case of disagreement)  Use of anticholinesterases (N06DA) or memantine (N06DX01) |
| **Diabetes** | Glycated hemoglobin (A1C) ≥6.5%3  Use of antidiabetics (A10) |
| **Ischemic heart disease** | Use of organic nitrates (C01DA) or ranolazine (C01EB18) |
| **Peripheral vascular disease** | Use of cilostazol (B01AC23) |

\*The ATC codes corresponding to each drug are shown in brackets. Only those drugs that can be unequivocally linked to chronic conditions were considered. The selection of ATC codes was based on a literature review and the clinical judgment of physicians.

NOTE: The criteria presented in this table were used in addition to the diagnoses assigned in SNAC-K.

1 Levey AS, Stevens LA, Schmid CH, Zhang YL, Castro AF, Feldman HI, et al. A new equation to estimate glomerular filtration rate. Ann Intern Med. 2009;150(9):604–12.

2 American Psychiatric Association. Diagnostic and statistical manual of mental disorders (3rd ed., text rev.). Washington, DC; 1987.

3 American Diabetes Association. Standards of Medical Care in Diabetes. Diabetes Care. 2016;39(Suppl 1):S4-5.

4 European Association for Cardiovascular Prevention & Rehabilitation, Reiner Z, Catapano AL, De Backer G, Graham I, Taskinen MR, et al. ESC/EAS Guidelines for the management of dyslipidaemias: the Task Force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and the European Atherosclerosis Society (EAS). Eur Heart J. 2011;32(14):1769–818.

5 Mancia G, De Backer G, Dominiczak A, Cifkova R, Fagard R, Germano G, et al. 2007 Guidelines for the management of arterial hypertension: The Task Force for the Management of Arterial Hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). Eur Heart J. 2007;28(12):1462–536.

eTable 3. Sexually transmitted infections in people with mpox (with and without HIV) and in people with HIV and without mpox

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sexually transmitted infections (STIs) | People with mpox  N=2122 | | |  | PWH without mpox2  N=22477 |  |
|  | All mpox cases | PWoH  (n=1280) | PWH¨  (n=842) | p-value |  | p-value |
| Total number of STIs at the moment of mpox, n (%) |  |  |  | 0.207 |  |  |
| 1 | 305 (14.4) | 196 (15.3) | 109 (13.0) |  | NA |  |
| 2 | 43 (2.0) | 21 (1.6) | 22 (2.6) |  | NA |  |
| >2 | 2 (0.09) | 1 (0.08) | 1 (0.1) |  | NA |  |
| Total number of STIs 2 years before mpox, n (%) |  |  |  | 0.129 |  |  |
| 1 | 448 (21.1) | 265 (20.7) | 183 (21.7) |  | 1319 (5.9) | <0.0001 |
| 2 | 246 (11.6) | 140 (11.0) | 106 (12.6) |  | 508 (2.3) | <0.0001 |
| 3 | 124 (5.9) | 76 (5.9) | 48 (5.7) |  | 172 (0.8) | <0.0001 |
| >3 | 100 (4.7) | 60 (4.7) | 40 (4.8) |  | 102 ( | <0.0001 |
| Syphilis |  |  |  |  |  |  |
| Syphilis at mpox diagnosis, n (%)1 | 34 (1.6) | 15 (1.2) | 19 (2.3) | 0.052 | NA |  |
| Syphilis in the 2 years before mpox, n (%) | 205 (9.7) | 96 (7.5) | 109 (13.0) | <0.0001 | 697 (3.1) | <0.0001 |
| Number of syphilis events in the 2 years before mpox, n (%) |  |  |  |  |  |  |
| 1 | 182 (8.6) | 89 (7.0) | 93 (11.1) |  | 577 (2.6) |  |
| 2 | 20 (0.9) | 6 (0.5) | 14 (1.7) |  | 110 (0.5) |  |
| >2 | 3 (0.1) | 1 (0.08) | 2 (0.24) |  | 10 (0.04) |  |
| Gonorrhoea |  |  |  |  |  |  |
| Gonorrhoea at mpox diagnosis, n (%)1 | 220 (10.4) | 147 (11.5) | 73 (8.7) | 0.037 | NA |  |
| Gonorrhoea in the 2 years before mpox, n (%) | 650 (30.7) | 403 (31.5) | 247 (29.3) | 0.29 | 1147 (5.1) | <0.0001 |
| Number of Neisseria gonorrhoeae events in the 2 years before mpox, n (%) |  |  |  |  |  |  |
| 1 | 451 (21.3) | 276 (21.6) | 175 (20.8) |  | 947 (4.2) |  |
| 2 | 160 (7.5) | 103 (8.1) | 57 (6.8) |  | 158 (0.7) |  |
| >2 | 39 (1.8) | 24 (1.9) | 15 (1.8) |  | 42 (0.2) |  |
| Chlamydia trachomatis |  |  |  |  |  |  |
| Chlamydia at mpox diagnosis, n (%)1 | 117 (5.4) | 69 (5.3) | 49 (5.8) | 0.62 | NA |  |
| Chlamydia in the 2 years before mpox, n (%) | 426 (20.1) | 269 (21.0) | 157 (18.7) | 0.18 | 802 (3.6) | <0.0001 |
| Number of Chlamydia events in the 2 years before mpox, n (%) |  |  |  |  |  |  |
| 1 | 339 (16.0) | 210 (16.4) | 129 (15.3) |  | 706 (3.1) |  |
| 2 | 75 (3.5) | 54 (4.2) | 21 (2.5) |  | 93 (0.4) |  |
| >2 | 12 (0.6) | 5 (0.4) | 7 (0.8) |  | 3 (0.01) |  |
| Lymphogranuloma venereum (LGV) |  |  |  |  |  |  |
| LGV diagnosed at mpox diagnosis, n (%)1 | 25 (1.2) | 10 (0.8) | 15 (1.8) | 0.037 | NA |  |
| LGV in the 2 years before mpox, n (%) | 117 (5.5) | 52 (4.1) | 65 (7.7) | <0.0001 | 177 (0.8) | <0.0001 |
| Number of LGV events in the 2 years before mpox, n (%) |  |  |  |  |  |  |
| 1 | 109 (5.1) | 47 (3.7) | 62 (7.4) |  | 168 (0.8) |  |
| 2 | 7 (0.3) | 5 (0.4) | 2 (0.2) |  | 8 (0.04) |  |
| >2 | 1 (0.05) | 0 | 1 (0.1) |  | 1 (0) |  |

1 Time window of +/- 8 weeks.

2 Sexually transmitted infections in the time period from 01.05.2022 to 01.05.2022

Abbreviations: LGV, lymphogranuloma venereum; PWH, people with HIV; PWoH, people without HIV; STI, sexually transmitted infections.