**Appendix 1: Diagnosis classification according ICD-10**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Chapter\* | ICD-10 code | Disease name | Diagnosis categories | *n* of visits | % |
| I | A00-B99 | Certain infections and parasitic diseases | Infectious diseases |  5812 |  0.85 |
| II | C00-D48 | Neoplasms | Pneumonia ,AOS |  31 |  0.01 |
| III | D50-D89 | Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism | Pneumonia ,AOS |  243 |  0.04 |
| IV | E00-E90 | Endocrine, nutritional and metabolic diseases | Pneumonia ,AOS |  3469 |  0.50 |
| V | F00-F99 | Mental and behavioural disorders | Pneumonia ,AOS |  169 |  0.02 |
| VI | G00-G99 | Diseases of the nervous system | Pneumonia ,AOS |  149 |  0.02 |
|  |  |  | Sleep disorders (G47) |  216 |  0.03 |
| VII | H00-H59 | Diseases of the eye and adnexa | Other Lower respiratory infections, AOS |  81 |  0.01 |
| VIII | H60-H95 | Diseases of the ear and mastoid process | Other Lower respiratory infections, AOS |  67 |  0.01 |
| IX | I00-I99 | Diseases of the circulatory system | Pneumonia ,AOS |  104 |  0.02 |
| X | J00-J99 | Diseases of the respiratory system |  |  |  |
|  | J00-J06 | Acute upper respiratory infections | Pharyngitis infection |  27118 |  3.94 |
|  | J09-J18 | Influenza and pneumonia | Pneumonia | 126887 | 18.46 |
|  |  |  | Influenza (J10-J11) |  575 |  0.08 |
|  | J20-J22 | Other acute lower respiratory infections | Bronchitis (J20) |  15639 |  2.27 |
|  |  |  | Bronchiolitis (J21) |  20785 |  3.02 |
|  | J30-J39 | Other diseases of upper respiratory tract\* | Vasomotor and allergic rhinitis(J30-J31) |  62951 |  9.16 |
|  |  |  | Sinusitis, Disorders of nose and nasal sinuses(J32-J34) |  125 |  0.02 |
|  |  |  | Pharyngitis infection (J35-J38) |  221 |  0.03 |
|  |  |  | Influenza (J39) |  682 |  0.10 |
|  | J40-J47 | Chronic lower respiratory diseases\* | Bronchitis (J40,J42) | 173578 | 25.25 |
|  |  |  | Emphysema (J43,J44) |  1319 |  0.19 |
|  |  |  | Asthma, Status asthmaticus (J45,J46) |  73443 | 10.68 |
|  |  |  | Bronchiectasis (J47) |  125 |  0.02 |
|  | J60-J70 | Lung diseases due to external agents\* | Pneumonitis due to solids and liquids |  529 |  0.08 |
|  | J80-J84 | Other respiratory diseases principally affecting the interstitium | Respiratory diseases principally affecting the interstitium |  187 |  0.03 |
|  | J85-J86 | Suppurative and necrotic conditions of lower respiratory tract | Suppurative and necrotic conditions of lower respiratory tract |  60 |  0.01 |
|  | J90-J94 | Other diseases of pleura | Diseases of pleura |  291 |  0.04 |
|  | J95-J99 | Other diseases of the respiratory system | Pneumonia ,AOS | 122040 | 17.75 |
| XI | K00-K93 | Diseases of the digestive system | Other Lower respiratory infections, AOS |  1629 |  0.24 |
| XII | L00-L99 | Diseases of the skin and subcutaneous tissue | Atopic dermatitis |  352 |  0.05 |
| XIII | M00-M99 | Diseases of the musculoskeletal system and connective tissue | Pneumonia ,AOS |  79 |  0.01 |
|  |  |  | Disorders of cartilage (M94) |  27 |  0.01 |
| XIV | N00-N99 | Diseases of the genitourinary system | Pneumonia ,AOS |  148 |  0.02 |
| XV | O00-O99 | Pregnancy, childbirth and the puerperium | - | - | - |
| XVI | P00-P96 | Certain conditions originating in the perinatal period | Respiratory disorders specific to the perinatal period(P07) |  241 |  0.04 |
|  |  |  | Bronchopulmonary dysplasia originating in the perinatal period (P27) |  609 |  0.09 |
| XVII | Q00-Q99 | Congenital malformations, deformations and chromosomal abnormalities | Congenital malformations |  985 |  0.14 |
| XVIII | R00-R99 | Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified | Other Lower respiratory infections, AOS (R05,R50) | 40576 |  5.90 |
|  |  |  | Bronchitis (R06) |  871 |  0.13 |
|  |  |  | Pharyngitis infection (R07) |  102 |  0.01 |
| XIX | S00-T98 | Injury, poisoning and certain other consequences of external causes | Pneumonia ,AOS |  37 |  0.01 |
| XX | V01-Y98 | External causes of morbidity and mortality | - | - | - |
| XXI | Z00-Z99 | Factors influencing health status and contact with health services | Influenza |  4900  |  0.71 |
| XXII | U00-U85 | Codes for special purposes | - | - | - |

\*Source from: WHO, https://icd.who.int/browse10/2016/en

AOS：affecting other systems

**Appendix 2: Missing rate and distribution comparison of gender and age**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variables | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | Total | P value |
| Total visits | 28329 | 43548 | 67457 | 58392 | 64115 | 71568 | 81851 | 88121 | 93254 | 101419 | 698054 |  |
| Diagnosis missing, visits | 543 | 778 | 949 | 855 | 1602 | 1718 | 1027 | 1235 | 1025 | 870 | 10602 |  |
| Missing rate of diagnosis (%) | 1.9 | 1.8 | 1.4 | 1.5 | 2.5 | 2.4 | 1.2 | 1.4 | 1.1 | 0.9 | 1.5 |  |
| Age, *n*(%) |  |  |  |  |  |  |  |  |  |  |  | <0.001 |
|  <1 y | 132(24.4) | 209(26.8) | 272(28.6) | 244(28.5) | 379(23.8) | 463(27.0) | 305(29.8) | 285(23.2) | 280(27.3) | 148(17.0) | 2717(25.7) |  |
|  1 to < 4 | 198(36.3) | 305(39.2) | 360(37.9) | 347(40.6) | 696(43.4) | 745(43.3) | 424(41.3) | 531(42.9) | 397(38.7) | 395(45.4) | 4398(42.7) |  |
|  4 to < 7 | 124(22.9) | 155(20.0) | 213(22.5) | 168(19.7) | 366(22.8) | 362(21.1) | 202(19.6) | 292(23.6) | 253(24.7) | 221(25.4) | 2356(22.0) |  |
|  7 to < 12 | 76(14.0) | 92(11.8) | 89(9.4) | 78(9.1) | 143(8.9) | 130(7.6) | 85(8.2) | 111(9.0) | 83(8.1) | 85(9.8) | 972(8.4) |  |
|  12 to < 18 | 13(2.4) | 17(2.2) | 15(1.6) | 18(2.1) | 18(1.1) | 18(1.0) | 11(1.1) | 16(1.3) | 12(1.2) | 21(2.4) | 159(1.2) |  |
| Sex, *n*(%) |  |  |  |  |  |  |  |  |  |  |  | 0.187 |
|  Male | 345(63.5) | 508(65.3) | 587(61.9) | 523(61.2) | 977(61.0) | 1077(62.7) | 616(60.0) | 737(59.7) | 612(59.7) | 517(59.4) | 6499(61.3) |  |
|  Female | 198(36.5) | 270(34.7) | 362(38.1) | 332(38.8) | 625(39.0) | 641(37.3) | 411(40.0) | 498(40.3) | 413(40.3) | 353(40.6) | 4103(38.7) |  |

**Appendix 3: Age and gender distribution of patients through 10 years, 2009-2018**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variables | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | Total | P value |
| *n* of patients | 13837 | 18852 | 30712 | 27014 | 27257 | 27690 | 31128 | 32097 | 37233 | 39754 | 285574 |  |
| Payer type, *n*(%) |  |  |  |  |  |  |  |  |  |  |  | <0.001 |
| Government insurance | 7072(51.1) | 8987(47.7) | 13413(43.7) | 11600(42.9) | 11480(42.1) | 11541(41.7) | 12899(41.4) | 14627(45.6) | 17061(45.8) | 18663(46.9) | 127343(44.6) |  |
|  Self-finance | 6765(48.9) | 9865(52.3) | 17299(56.3) | 15414(57.1) | 15777(57.9) | 16149(58.3) | 18229(58.3) | 17470(54.4) | 20172(54.2) | 21091(53.1) | 158231(55.4) |  |
| Sex, *n*(%) |  |  |  |  |  |  |  |  |  |  |  | <0.001 |
|  Male | 8568(61.9) | 11639(61.7) | 18478(60.2) | 16319(60.4) | 16471(60.4) | 16933(61.2) | 18424(59.2) | 18682(58.2) | 21657(58.2) | 23021(57.9) | 170192(59.6) |  |
|  Female | 5269(38.1) | 7213(38.3) | 12234(39.8) | 10695(39.6) | 10786(39.6) | 10757(38.8) | 12704(40.8) | 13415(41.8) | 15576(41.8) | 16733(42.1) | 115382(40.4) |  |