**Supplement Appendix 1.** ICD-10 codes selected as conditions needing palliative care

|  |  |
| --- | --- |
| Underlying cause of death | ICD-10 codes |
| Malignant neoplasm | C00-C97 |
| Heart disease including cerebrovascular disease | I00-I52 (excluding I12 and I13.1), I60–I69 |
| Renal disease | N17, N18, N28, I12, I13.1 |
| Liver disease | K70–K77 |
| Respiratory disease | J06–J18, J20-J22, J40–J47, J96 |
| Neurodegenerative disease | G10, G12.2, G20, G23.1, G35, G90.3 |
| Alzheimer’s, dementia and senility | F01, F03, G30, R54 |
| HIV/AIDS | B20–B24 |

ICD-10, International Statistical Classification of Diseases and Related Health Problems, Tenth Revision.

Conditions needing palliative care were selected according to codes previously published.1,2

1. Murtagh FE, Bausewein C, Verne J, et al. How many people need palliative care? A study developing and comparing methods for population-based estimates. Palliat Med 2014; 28(1): 49-58.

2. Gomes B, Pinheiro MJ, Lopes S, et al. Risk factors for hospital death in conditions needing palliative care: Nationwide population-based death certificate study. Palliat Med 2018; 32(4): 891-901.

**Supplementary Appendix 2.** Data source for each municipal variable

|  |  |
| --- | --- |
| Variable | Source |
| Number of home end-of-life care clinics as of 2016 Mar 31 | Local data on home healthcare by the Ministry of Health, Labour and Welfare |
| Number of physicians working mainly at clinics as of 2016 Oct 1 | Survey of physicians, dentists and pharmacists by the Ministry of Health, Labour and Welfare |
| Number of hospital beds as of 2016 Oct 1 | Survey of medical institutions by the Ministry of Health, Labour and Welfare |
| Number of special nursing home beds as of 2016 Oct 1 | Survey of institutions and establishments for long-term care by the Ministry of Health, Labour and Welfare |
| Number of fee-based home beds as of 2016 Oct 1 | Survey of social welfare institutions by the Ministry of Health, Labour and Welfare |
| Total population and elderly population as of 2016 Jan 1 | Basic resident register and population data by the Ministry of Internal Affairs and Communications |