

## APPENDIX 1

Prescribing, deprescribing and potential adverse effects of proton pump inhibitors in older patients with multimorbidity: an observational study

**Supplemental Text S1.** Defined Daily Doses (DDD) for proton pump inhibitors (PPIs):

- 1) Omeprazole: 20 mg
- 2) Pantoprazole: 40 mg
- 3) Lansoprazole: 30 mg
- 4) Rabeprazole: 20 mg
- 5) Esomeprazole: 30 mg
- 6) Dexlansoprazole: 30 mg

**Supplemental Text S2.** Defined Daily Doses (DDD) for PPIs: A02BC01-08, A02BC53, A02BD01-07, A02BD09, A02BD10-13, B01AC56.

**Supplemental Text S3.** PPI indications, and related International Classification of Diseases (ICD) German Modification version 10 or ATC codes.

- 1) Gastro-oesophageal reflux disease with oesophagitis: ICD K21.0
- 2) Gastro-oesophageal reflux disease without oesophagitis: K21.9;
- 3) Barrett's oesophagus: ICD K22.5;
- 4) *H. pylori* infection: ICD B98.0!;
- 5) Acute gastritis: ICD K29.0, K29.1, K29.7;
- 6) Gastro-duodenal ulcer: ICD K26.x, K27.x;
- 7) Peptic gastro-intestinal bleeding: ICD K21.0x, K21.9x, K22.1x, K22.7x, K25.x, K26.x, K27.x, K29.0 (with x = 0, 2, 4, or 6);
- 8) Non-steroidal anti-inflammatory drug (NSAID): ATC M01AA01-06, M01AB01-09, M01AB12-17, M01AB51, M01AB55, M01AC01-06, M01AC56, M01AE01-18, M01AE51-53, M01A5E6, M01AG01-04, M01AH01-07, M01AX01-02, M01AX04-05, M01AX07, M01AX12-14, M01AX17-18, M01AX21-26, M01AX68;
- 9) Antiplatelet medication: ATC B01AC01-27, B01AC30, B01AC56.

**Supplemental Text S4.** ICD codes for clinical outcomes:

- Fracture: ICD S02.x, S12.x, S22.x, S32.x, S42.x, S52.x, S62.x, S72.x, S82.x, S92.x, T02.x, T08.x, T10.x, T12.x, T14.2x;
- Pneumonia: ICD J12.x-J18.x;
- *C. difficile*: ICD A04.7, A04.70, A04.71, A04.72, A04.73, A04.79;
- Other intestinal bacterial infection: ICD A00.0-1+9, A01.0-4, A02.0-2, A02.8-9, A03.0-3, A03.8-9, A04 A04.0-9, A09.0;

- Acute interstitial nephritis: ICD N10;
- Gastrointestinal bleeding: ICD K21.0x, K21.9x, K22.1x, K22.7x, K25.x, K26.x, K27.x, K29.0 (with x = 0, 2, 4, or 6).