**Supplementary Table S1. Preferred terms for identifying of dementia cases by SMQ (code: 20000097) broad searching.**

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| **No.** | **Preferred term code** | **Preferred terms** |
| 1 | 10011384 | Creutzfeldt-Jakob disease |
| 2 | 10012267 | Dementia |
| 3 | 10012271 | Dementia Alzheimer's type |
| 4 | 10012293 | Dementia of the Alzheimer's type, uncomplicated |
| 5 | 10012294 | Dementia of the Alzheimer's type, with delirium |
| 6 | 10012295 | Dementia of the Alzheimer's type, with delusions |
| 7 | 10012296 | Dementia of the Alzheimer's type, with depressed mood |
| 8 | 10036631 | Presenile dementia |
| 9 | 10036813 | Progressive supranuclear palsy |
| 10 | 10039966 | Senile dementia |
| 11 | 10057678 | Vascular dementia |
| 12 | 10063629 | Hippocampal sclerosis |
| 13 | 10064199 | Variant Creutzfeldt-Jakob disease |
| 14 | 10065424 | Mini mental status examination abnormal |
| 15 | 10067889 | Dementia with Lewy bodies |
| 16 | 10068968 | Frontotemporal dementia |
| 17 | 10070997 | Korsakoff's syndrome |
| 18 | 10075174 | Mixed dementia |
| 19 | 10077237 | Scatolia |
| 20 | 10078036 | Early onset familial Alzheimer's disease |
| 21 | 10078208 | Corticobasal degeneration |
| 22 | 10079301 | Prion disease |
| 23 | 10079991 | Clinical dementia rating scale score abnormal |
| 24 | 10001488 | Aggression |
| 25 | 10001497 | Agitation |
| 26 | 10001949 | Amnesia |
| 27 | 10002711 | Anterograde amnesia |
| 28 | 10002942 | Apathy |
| 29 | 10002948 | Aphasia |
| 30 | 10003062 | Apraxia |
| 31 | 10008096 | Cerebral atrophy |
| 32 | 10008398 | Change in sustained attention |
| 33 | 10010305 | Confusional state |
| 34 | 10012218 | Delirium |
| 35 | 10012239 | Delusion |
| 36 | 10012251 | Delusional disorder, jealous type |
| 37 | 10012255 | Delusional disorder, unspecified type |
| 38 | 10013142 | Disinhibition |
| 39 | 10013395 | Disorientation |
| 40 | 10016322 | Feeling abnormal |
| 41 | 10016759 | Flat affect |
| 42 | 10019063 | Hallucination |
| 43 | 10019070 | Hallucination, auditory |
| 44 | 10019075 | Hallucination, visual |
| 45 | 10019079 | Hallucinations, mixed |
| 46 | 10020400 | Hostility |
| 47 | 10021030 | Hypomania |
| 48 | 10021403 | Illusion |
| 49 | 10021588 | Inappropriate affect |
| 50 | 10022035 | Initial insomnia |
| 51 | 10023236 | Judgement impaired |
| 52 | 10024092 | Learning disability |
| 53 | 10027175 | Memory impairment |
| 54 | 10027374 | Mental impairment |
| 55 | 10027940 | Mood altered |
| 56 | 10027951 | Mood swings |
| 57 | 10027977 | Morose |
| 58 | 10028899 | Negativism |
| 59 | 10034719 | Personality change |
| 60 | 10037249 | Psychotic behaviour |
| 61 | 10038743 | Restlessness |
| 62 | 10040045 | Separation anxiety disorder |
| 63 | 10041243 | Social avoidant behaviour |
| 64 | 10041347 | Somnambulism |
| 65 | 10041349 | Somnolence |
| 66 | 10041466 | Speech disorder |
| 67 | 10042635 | Suspiciousness |
| 68 | 10043431 | Thinking abnormal |
| 69 | 10044380 | Transient global amnesia |
| 70 | 10048294 | Mental status changes |
| 71 | 10048663 | Agnosia |
| 72 | 10050013 | Abulia |
| 73 | 10052236 | Cerebral atrophy congenital |
| 74 | 10052393 | Borderline mental impairment |
| 75 | 10054196 | Affect lability |
| 76 | 10057224 | Irritability postvaccinal |
| 77 | 10057668 | Cognitive disorder |
| 78 | 10058709 | Sopor |
| 79 | 10060082 | Intelligence test abnormal |
| 80 | 10061108 | Disturbance in social behaviour |
| 81 | 10061265 | Learning disorder |
| 82 | 10061284 | Mental disorder |
| 83 | 10061422 | Abnormal behaviour |
| 84 | 10061423 | Amnestic disorder |
| 85 | 10061920 | Psychotic disorder |
| 86 | 10065426 | Neuropsychological test abnormal |
| 87 | 10068855 | Symbolic dysfunction |
| 88 | 10070240 | Sexually inappropriate behaviour |
| 89 | 10070246 | Executive dysfunction |
| 90 | 10070920 | Visual cortex atrophy |
| 91 | 10071176 | Impaired reasoning |
| 92 | 10074570 | Vascular cognitive impairment |
| 93 | 10074616 | Prodromal Alzheimer's disease |
| 94 | 10077174 | Neuritic plaques |
| 95 | 10077244 | Defiant behaviour |
| 96 | 10078497 | Neuropsychiatric symptoms |
| 97 | 10079487 | Loss of personal independence in daily activities |
| 98 | 10080880 | Visuospatial deficit |
| 99 | 10081268 | Primary progressive aphasia |

**Supplementary Table S2. Two-by-two contingency table for ROR and PRR analyses**

|  |  |  |
| --- | --- | --- |
| **Drugs** | **Dementia cases** | **All other adverse event cases** |
| PPIs | a | b |
| All other drugs | c | d |
| ROR = , 95%CI for ROR =  PRR = , 95%CI for PRR = | | |

PPIs: proton pump inhibitors; ROR: reporting odds ratio; PRR: proportional reporting ratio; 95%CI: 95% confidence interval.