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| Supplementary Table 1Read codes used to identify dementias of interest |
| Disease | Read code | Description |
| Alzheimer's disease | Eu00.00 Eu00000 Eu00011 Eu00012 Eu00013 Eu00100 Eu00111 Eu00112 Eu00113 Eu00200 Eu00z00 Eu00z11 F110.00 F110000 F110100 Fyu3000 | [X]\*Dementia in Alzheimer's Dementia in Alzheimer's disease with early onset [X]Presenile dementia,AlzheimerPrimary degenerative dementia, Alzheimer's type, presenile onset [X]Alzheimer's disease type 2 [X]Late onset Alzheimer’s dementia [X]Alzheimer's disease type 1 [X]Senile dementia, Alzheimer Primary degenerative dementia of Alzheimer's type, senile onset [X]Atypical/mixed Alzheimer's [X]Alzheimer's disease unspecified[X]Alzheimer's dementia unspecifiedAlzheimer's disease Alzheimer disease with early onset Alzheimer's disease with late onset [X]Other Alzheimer's disease |
| Dementia with Lewy bodies | Eu02500 F116.00 | [X]Lewy body dementiaLewy body disease |
| Frontotemporal dementia | Eu02000 F111.00 F118.00  | [X]Dementia in Pick's disease Pick's disease Frontotemporal degeneration |
| Normal-pressure hydrocephalus | F113000  | Normal pressure hydrocephalus |
| Parkinson's dementia | Eu02300F11x900  | [X]Dementia in Parkinson'sCerebral degenerative Parkinson disease |
| Vascular dementia | E004.00E004.11 E004000 E004100 E004200 E004300 E004z00 Eu01.00 Eu01.11 Eu01000 Eu01100 Eu01111 Eu01200 Eu01300 Eu01y00 Eu01z00 | Arteriosclerotic dementia Multi infarct dementia Arteriosclerotic dementia-uncomplicatedArteriosclerotic dementia+deliriumArteriosclerotic dementia+paranoiaArteriosclerotic dementia+depressionArteriosclerotic dementia NOS [X]Vascular dementia [X]Arteriosclerotic dementia [X]Vascular dementia of acute onset [X]Multi-infarct dementia [X]Predominantly cortical dementia [X]Subcortical vascular dementia [X]Mix cortical/subcortical vascular dementia[X]Other vascular dementia [X]Vascular dementia unspecified |
| Other dementia-like conditions | 1461.001B1A.00 1B1A.12 28E..00 28E0. 28E1. 28E2. 388m.00 388m.11 388V .00 3A...12 3AD1.00 3AD2.00 3AD3.00 3AE..00 3AE1.00 3AE2.00 3AE3.00 3AE4.00 3AE5.00 3AE6.00 3AF..00 6AB..00 7P10400 8HTY.00 E00..00 E00..11 E00..12 E000.00 e000.00E001.00 E001000 E001100 E001200 E001300 E001z00 E002.00 E002000 E002100 E002z00 E003.00 E00y.00 E00y.11 E00z.00 E0110 E011000 E0111 E011100 E0112 E011200 E011z E011z00 E012.00 E012.11 E0120 E012000 E02y1 E02y100 E02y2 E041.00 E2A1000 E2A1100 Eu02.00 Eu02z00 Eu02z11 Eu02z12 Eu02z13 Eu02z14 Eu02z15 Eu02z16 Eu04100 Eu05700 Eu10611 Eu10711 F11x000 Z7C1.00 Z7CE415 Z7CE611 Z7CE615 Z7CE616 Z7CEA11 Z7CEA13 Z7CEH13 Z7CEH15 Z7CFO00 Z7CFO11 ZR1H.00 ZR1I.00 ZR1T.00 ZR2X.00 ZR2X.12 ZR2X.13 ZR3V .00 ZR3V.11 ZR3V .12 ZRa3.00 ZRa3.11 ZRaA.00 ZRaA.11 ZRaA100 ZRaA200 ZRaY .00 ZRhS.00 ZRhS.11 ZRhS100 ZRrg.00 ZRrh.00 ZRrO.00 ZRrO.11 ZRV9.00 ZRV9.11 ZRVa.00 ZRVa.11 ZS7C500 | H/O: dementia Memory loss – amnesia Memory loss symptom Cognitive decline Mild cognitive impairment Moderate cognitive impairment Severe cognitive impairment Mini-mental state examination MMSE score Mini mental state score Dementia assessment Ten item dementia test Thirty seven item dementia test Six item cognitive impairment test Global deterioration scale: assessment of primary degenerative dementia GDS level 2 - very mild cognitive decline GDS level 3 - mild cognitive decline GDS level 4 - moderate cognitive decline GDS level 5 - moderately severe cognitive decline GDS level 6 - severe cognitive decline GDS level 7 - very severe cognitive decline Addenbrooke's cognitive examination revised Dementia annual review Neuropsychology test of memory Referral to memory clinic Senile and presenile organic psychotic conditions Senile dementia Senile/presenile dementia Senile dementia-uncomplicated Uncomplicated senile dementia Presenile dementia Presenile dementia – uncomplicatedPresenile dementia + delirium Presenile dementia + paranoia Preseniledementia+depressionPresenile dementia NOS Senile dementia with depressive or paranoid features Senile dementia + paranoia Senile dementia + depression Senile dementia with depressive or paranoid features NOS Senile dementia + delirium Other senile and presenile organic psychoses Presbyophrenic psychosis Senile or presenile psychoses NOS Korsakov's alcoholic psychosis Korsakov's alcoholic psychosis Korsakov + peripheral neuritis Korsakov's alcoholic psychosis with peripheral neuritis Wernicke-Korsakov syndrome Wernicke-Korsakov syndrome Alcohol amnestic syndrome NOS Alcohol amnestic syndrome NOS Other alcoholic dementia Alcoholic dementia NOS Chronic alcoholic brain syndromeChronic alcoholic brain syndrome Drug-induced dementia Drug-induced dementia Drug-induced amnestic syndrome Dementia in conditions EC Mild memory disturbance Organic memory impairment [X]Dementia in disease EC [X]Unspecified dementia [X]Presenile dementia NOS [X]Presenile psychosis NOS [X]Primary degenerative dementia NOS [X]Senile dementia NOS [X]Senile psychosis NOS [X]Senile dementia,depression/paranoia[X]Delirium superimposed on dementia [X]Mild cognitive disorder [X]Korsakov's psychosis, alcohol induced [X]Alcoholic dementia NOS Cerebral degeneration due to alcoholism Impaired cognition Loss of memory Memory loss Loss of memory LOM - Loss of memory Impairment of working memory Impairment of primary memory Bad memory Poor memory Poor long-term memory Long-term memory loss Allen cognitive level screening tool Allen cognitive performance test Arizona battery for communication disorders of dementia Blessed dementia rating scale BDRS - Blessed dementia rating scale Information-memory-concentration test Clinical dementia rating scale DRS - Clinical dementia rating scale CDR - Clinical dementia rating scale Middlesex elderly assessment of mental state MEAMS - Middlesex elderly assessment of mental state Mini-mental state examination MMSE - Mini-mental state examination Modified mini-mental state 3MS examination Modified mini-mental state examination Neurobehavioral cognitive status examination Rivermead behavioral memory test RBMT - Rivermead behavioral memory test Rivermead behavioral memory test - adult version Wechsler memory scale revised Williams memory assessment scales Wechsler memory scale WMS - Wechsler memory scale Kendrick battery for detection of dementia in the elderly Kendrick cognitive tests for the elderly Lowenstein occupational therapy cognitive assessment LOTCA - Lowenstein occupational therapy cognitive assessment Language disorder of dementia |

\*[X] indicates terms that have been added to the Read codes in order to ensure that every International Classification of Diseases 10th revisioncode is cross-mapped to (from a Read code).

GDS, GlobalDeterioration Scale; MMSE, Mini-Mental State Examination; NOS, not otherwise specified.

Supplementary Table 2

International Classification of Diseases 10th revision (ICD-10) codes used to identify dementias of interest

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| Disease | ICD-10 Code | Description |
| Alzheimer’s disease | G30.x F00.x | Alzheimer disease Dementia in Alzheimer disease |
| Dementia with Lewy bodies | G31.8 | Other specified degenerative diseases of nervous system (Grey-matter degeneration, Lewy body disease, subacute necrotizing encephalopathy) |
| Frontotemporal dementia | G31.0.F02.0 | Circumscribed brain atrophy (frontotemporal dementia, Pick disease, progressive isolated aphasia) Dementia in Pick disease |
| Normal-pressure hydrocephalus | G91.2 | Normal pressure hydrocephalus |
| Parkinson's dementia | F02.3 | Dementia in Parkinson disease |
| Vascular dementia | F01.x | Vascular dementia |
| Other dementia-like conditions | F10.5 F10.6 F10.7.G31.2 F11.6 F12.6 F13.6 F14.6 F15.6.F16.6 F17.6 F18.6 F19.6.E51.2F04 R41.3 R41.1 R44.0 R41.2 F02.1 F02.2 F02.8 F03 F05.1 F06.7 F29 G31.1 G31.9 G32.x | Mental and behavioral disorders due to use of psychotic disorder Mental and behavioral disorders due to use of alcohol, amnestic syndrome Mental and behavioral disorders due to use of alcohol, residual and late-onset psychotic disorder Degeneration of nervous system due to alcohol Mental and behavioral disorders due to use of opioids, amnesic syndrome Mental and behavioral disorders due to use of cannabinoids, amnesic syndrome Mental and behavioral disorders due use of sedatives or hypnotics, amnesic syndrome Mental and behavioral disorders due to use of cocaine, amnesic syndrome Mental and behavioral disorders due to use of other stimulants including caffeine, amnesic syndrome Mental and behavioral disorders due to use of hallucinogens, amnesic syndrome Mental and behavioral disorders due to use of tobacco, amnesic syndrome Mental and behavioral disorders due to use of volatile solvents, amnesic syndrome Mental and behavioral disorders due to multiple drug use and use of other psychoactive substances, amnesic syndrome Wernicke encephalopathy Organic amnesic syndrome, not induced by alcohol or other psychoactive substances Other amnesia Anterograde amnesia Auditory hallucinations Retrograde amnesia Dementia in Creutzfeldt-Jakob disease Dementia in Huntington diseaseDementia in other specified diseases classified elsewhere Unspecified dementiaDelirium superimposed on dementiaMild cognitive disorderUnspecified nonorganic psychosisSenile degeneration of brain, not elsewhere classified Degenerative disease of nervous system, unspecifiedOther degenerative disorders of nervous system in diseases classified elsewhere |

Supplementary Table 3

Estimation of costs for each category of resource use

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| Category of resource use | Cost estimation |
| Consultations | Calculated using the unit costs available from the Personal Social Services Research Unit (PSSRU) [1].Per-minute cost of an encounter for nurses by consultation type (clinical, surgery, home visit, telephone) was multiplied by the average length of a consultation to obtain an estimated unit cost per consultation with a nurse. This cost was then applied to each consultation record for that type. The average cost of a GP consultation was directly available from PSSRU for each consultation type. Total consultation costs were estimated as the sum of costs for all consultations across both types of providers.  |
| Referrals and laboratory/diagnostic tests | Costs for referrals for outpatient visits as well as laboratory and diagnostic tests were calculated using the unit costs available from the National Health Service (NHS).  |
| Hospitalizations | Hospital Episodes Statistics (HES) data contain information at both episode and spell levels (a spell consists of one or more consecutive and/or overlapping episode). Because the NHS pays hospitals at the spell level, the costs of hospitalizations were calculated using the unit costs for each spell-level Healthcare Resource Group (HRG) as available from the NHS [2]. HRGs depend on a variety of data elements associated with a hospital stay, including procedures and diagnoses, length of stay, number of days with critical care service, physician specialty, and patient age. The HRG for each spell was identified using the HRG 4+ Grouper (available from the NHS [2]). The spell cost was determined by the HRG as well as admission method (e.g., elective versus non-elective), patient classification (e.g., day case versus regular day/night admission), and length of stay.  |
| Prescription drugs | Estimated using First Databank [3], which provides the price for drugs by package size (e.g., 28 tablets) within each multilex code. The Clinical Practice Research DataLink(CPRD) data did not contain information about package size but instead provided the quantity prescribed. Therefore, the cost of each prescription was estimated by multiplying the quantity prescribed by the median price per unit for that product (identified by multilex codes). Price per unit (e.g., per tablet) was calculated by dividing price per package-by-package size. The median price per unit was calculated across all records for a product. |

# REFERENCES

[1] Personal Social Services Research Unit (PSSRU) (2012) Unit costs of health and social care 2012, http://www.pssru.ac.uk/project-pages/unit-costs/2012/, Accessed on June 30, 2015.

[2] UK Department of Health. National schedule of reference costs 2012-13 for NHS trusts and NHS foundation trusts. Available at: https://www.gov.uk/government/publications/nhs-reference-costs-2012-to-2013, Last updated January 22, 2015, Accessed on June 30, 2015.

[3] First Databank, www.fdbhealth.co.uk, Accessed February 5, 2015.