

Appendix 1: Case identification of selected health conditions (HCs)

HC case identification algorithms were sourced from the data dictionary for the Manatū Hauora – Ministry of Health chronic condition/significant health events dataset (CC),¹ the Virtual Diabetes Register (VDR) Technical Guide,² the Social Investment Agency mental health and addiction conditions data definition (SIA),³ Bowden et al. (MHBC),⁴ ACC (TBI)⁵ and Walesby et al. (dementia).⁶ The IDI health datasets searched were: Accident Compensation Corporation (ACC) injury claims; disability needs assessment and service coordination (SOCRATES); the Cancer Registry; laboratory claims, National Non-Admitted Patient Collection (NNPAC); pharmaceutical dispensing; public and private hospital discharges (NMDS); Programme for the Integration of Mental Health Data (PRIMHD); and chronic condition/significant health events (CC).

Appendix Table 1 shows the search criteria and datasets used for each HC, and Appendix Table 2 shows a summary of the definitions for each HC.

Appendix Table 1: Search algorithm sources and IDI datasets used for HC case identification.

HC	Cancer	COPD	CHD	Dementia	Diabetes	Gout	Stroke	TBI	MHBCs
Algorithm source	CC	CC	CC	Walesby	VDR	CC	CC	ACC	SIA & Bowden
ACC claims (diagnosis codes*)	X	X	X	X	X	X	X	X	X
Cancer register (all entries)	X	-	-	-	-	-	-	-	-
Chronic conditions table (all)	X	X	X	-	X	X	X	X	-
interRAI (diagnosis codes)	X	X	X	X	X	-	X	-	X
NNPAC (health specialty and purchase unit codes)	-	-	-	-	X	-	-	-	X
NMDS (private and public) (diagnosis* and procedure codes)	X	X	X	X	X	X	X	X	X
PRIMHD (diagnosis codes*)	X	X	X	X	X	X	X	X	X
SOCRATES (diagnosis codes)	X	X	X	X	X	X	X	X	X
Pharmaceutical dispensing (medication codes)	-	X	X	X	X	X	-	-	X
Laboratory tests (test codes)	-	-	-	-	X	-	-	-	-

*International Classification of Diseases 10th Revision (ICD-10) codes were used for these datasets.

Chronic obstructive pulmonary disease = COPD; coronary heart disease = CHD; mental health and behavioural conditions = MHBCs; traumatic brain injury = TBI.

Appendix Table 2: Summary of definitions for each HC.

HC	ICD codes	Other codes
Cancer	C00–C96, D45–47	SOCRATES: 2901 (Cancer). interRAI: Cancer.
COPD	J40–J44	SOCRATES: 2501 (COPD). interRAI: Pulmonary disease. Medication: Ipratropium Bromide, Salbutamol with Ipratropium Bromide, Tiotropium Bromide, or, only if no previous diagnosis of asthma: Aminophylline, Theophylline.
CHD (and AMI)	I20–25	SOCRATES: 2404 (AMI); 2405 (CHD). interRAI: Heart disease. NMDS procedures codes: 3530400, 3530500, 3531000–2, 3849700–7, 3850000–4, 3850300–4, 3863700, 9020100–3. Medication: Two or more dispensings within 12 months: Glyceryl trinitrate, Isosorbide dinitrate, Isosorbide mononitrate, Nicorandil, or Perhexiline maleate.
Dementia	F00–F04, F051, F107, F137, F187, F197, G3	SOCRATES: 1401 (Alzheimer’s); 1405 (Vascular dementia); 1499 (Other dementia). interRAI: Alzheimer’s or dementia. Medication: Donepezil or Rivastigmine
Diabetes	E10–11, E13–14 0240–0243	SOCRATES: 2801 (Diabetes). interRAI: Diabetes mellitus. NNPAC purchase unit codes: M96, M98, M20006, M2007. Medication: Insulin or oral hypoglycaemic agent (2 or more dispensings in 24m); Laboratory tests: 4 or more Glycated haemoglobin tests in 24 months (BG=2) AND 2 or more ACR, microalbumin or early morning urine tests (BP=8).
Gout	M10	SOCRATES: 2004 (Gout). Medication: Colchicine or Allopurinol (without malignant neoplasm C81–C96)
Stroke	I60–I64	SOCRATES: 2401 (Stroke). interRAI: Stroke/CVA
TBI	See Horspool et al. (2017) ⁵	SOCRATES: 1802 (Brain injury)
MHBCs	See Bowden et al. (2020) ⁴	SOCRATES: 1201 (ADHD); 1206, 1207, 1211 (ASD); 9006 (Social Communication Disorder); 130 (Psychiatric disorders [excluding 1301 Alcohol/drug related disorders]) interRAI: anxiety, bipolar disorder, depression, schizophrenia. NNPAC (service provision codes): Y00–Y18, Y30–Y39, Y50–Y58, Y71–Y77. Two or more dispensings within 12 months of any mental health medication, see Bowden et al. (2020) for codes. ⁴

Attention-deficit hyperactivity disorder = ADHD; autism spectrum disorder = ASD; chronic obstructive pulmonary disease = COPD; coronary heart disease = CHD; acute myocardial infarction = AMI; mental health and behavioural conditions = MHBCs; traumatic brain injury = TBI.

APPENDIX REFERENCES

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5. Horspool N, Crawford L, Rutherford L. Traumatic brain injury and the criminal justice system [Internet]. Wellington (NZ): Justice Sector; 2017 [cited 2023 Mar 18]. Available from: <https://www.justice.govt.nz/assets/Traumatic-Brain-Injury-paper-.pdf>
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