

PROMiSe data linkage: proof of concept

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Step 1: Data collection

Location (CCG, Practice, LSOA)

Demographics (Age, Gender, Ethnicity, IMD)

Comorbidities

Prescribing

Measurement variables (Height, Weight, BP)

Exposures (Smoking, Alcohol)

Example codeset

Variables

Column structures

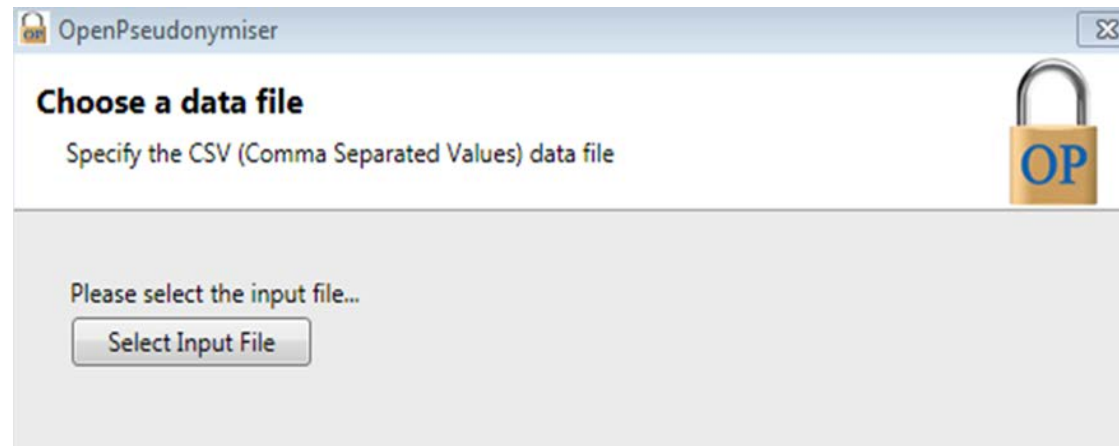
Clinical concepts

Read codes

	A	B	C	D
1	REPORT 3 COMORBIDITIES QOF			
2	*QOF Business Rules v37.0 Version Date: 09/06/2017			
3	% include all daughter codes			
4	Variable name	Variable name	Field types	EMIS Read codes
14	Cancer term	cancerterm	Text	
15	Cancer date	cancerdate	Date	
16	Coronary Heart Disease (CHD) code	chdcode	Text	G3, G30%, G31%, G32%, G33%, G34%, G35%, G38%, G39%, G3y%, G3z, Gyu3%
17	Coronary Heart Disease (CHD) term	chdterm	Text	
18	Coronary Heart Disease (CHD) date	chddate	Date	
19	Chronic kidney disease code	ckdcode	Text	1Z12,1Z13, 1Z14, 1Z15, 1Z16, 1Z1B, 1Z1C, 1Z1D, 1Z1E, 1Z1F, 1Z1G, 1Z1H, 1Z1J, 1Z1K, 1Z1L, 1Z1T, 1Z1V, 1Z1W, 1Z1X, 1Z1Y,1Z1Z, 1Z1a, 1Z1b, 1Z1c, 1Z1d, 1Z1e, 1Z1f,K053, K054, K055
20	Chronic kidney disease term	ckdterm	Text	
21	Chronic kidney disease date	ckddate	Date	
22	COPD code	copdcode	Text	H3, H31%, H310%, H32%, H312%, H36, H37, H38, H39, H3A, H3B, H3y%, H3z, H4640, H4641, H5832, Hyu30, Hyu31
23	COPD term	copdterm	Text	
24	COPD date	copddate	Date	
	Depression code	depcode	Text	E0013, E0021, E112%, E113%, E118, E11y2, E11z2, E130, E135, E2003, E201, E202, E203, E204, E205
	1 Demographics 2 Clinic & imaging 3 Comorbidities QOF 3a. Charlson comorbid			

Step 2: Pseudonymise identifiers

NHS numbers encrypted using OpenP software



www.openpseudonymiser.org

Step 3: data linkage

37 out of 50 patients matched

SQL Server database administered by NEL CSU

Data linked for patients with a GP registration

One line per patient (wide data)

Results

	SK_PatientID01	CCG	SK_ServiceProviderID	DateRegistered	DateRegisteredEnd	LSOACode	SK_PatientID02	Year of Birth	Age at search date	Gender	SK_PatientID03	Ethnicity Code
1	137746	Tower Hamlets CCG	16199	2011-09-29	NULL	E01004202	137746	1988-01-01	30.485968514	Female	137746	900
2	184149	Tower Hamlets CCG	16177	2015-01-06	NULL	E01004312	184149	1983-01-01	35.485284052	Female	184149	900
3	249885	Tower Hamlets CCG	16204	1996-01-15	NULL	E01004222	249885	1990-01-01	28.484599589	Female	249885	94
4	253710	Tower Hamlets CCG	15978	2013-06-20	NULL	E01004247	253710	1973-01-01	45.483915126	Male	253710	99
5	263030	City & Hackney CCG	28726	1981-03-26	NULL	E01001780	263030	1937-01-01	81.483915126	Female	263030	900
6	321389	Newham CCG	16357	2004-11-08	NULL	E01003106	NULL	NULL	NULL	NULL	321389	93
7	328614	Tower Hamlets CCG	15979	2014-04-04	NULL	E01004251	328614	1959-01-01	59.485284052	Female	328614	9E
8	336742	Tower Hamlets CCG	15658	2005-11-21	NULL	E01004308	336742	1971-01-01	47.485284052	Female	336742	9C
9	343674	Tower Hamlets CCG	15974	1997-01-10	NULL	E01004214	343674	1989-01-01	29.483915126	Female	343674	90
10	419650	Tower Hamlets CCG	16203	2012-07-09	NULL	E01004268	419650	1987-01-01	31.485284052	Female	419650	90
11	447085	Tower Hamlets CCG	16177	2011-04-06	NULL	E01004318	447085	1981-01-01	37.483915126	Female	447085	99