SUPPLEMENTARY MATERIAL

Contacts with primary and secondary healthcare before suicide by those under the care of mental health services: case-control whole-population-based study using personlevel linked routine data in Wales, UK during 2000-2015

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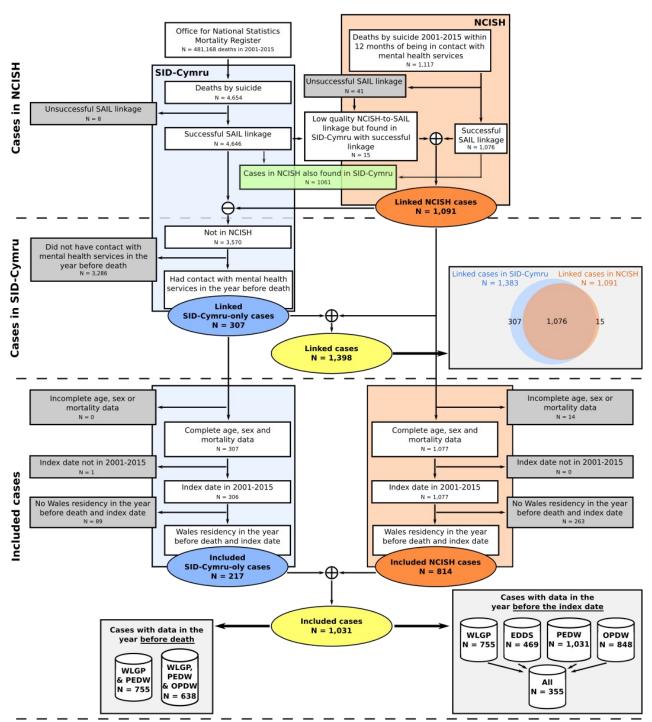
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NCISH, National Confidential Inquiry into Suicide and Safety in Mental Health; SID-Cymru, Suicide Information Database – Wales; WLGP, Welsh Longitudinal General Practice Dataset; EDDS, Emergency Department Dataset; PEDW, Patient Episode Dataset for Wales; OPDW, Outpatient Database for Wales

Supplementary Figure 1. Detailed flow diagram of cases.

Supplementary Table 1: Details of the SAIL data sources used.

Name	Description	Coverage
Welsh Demographic Service	An administrative register of all individuals in Wales that use NHS services, containing anonymised demographics and GP practice registration history with anonymised residential data	The whole population of Wales during the study period
Office for National Statistics – Mortality Register	Death register of all deaths and causes in Wales, coded using International Classification of Diseases (ICD), version 10 codes	The whole population of Wales during the study period
Welsh Longitudinal General Practice Dataset, WLGP	Primary care records with diagnoses, symptoms, investigations, prescribed medication, referrals, coded hospital contacts, and test results coded using Read Codes v2	77% (333/432) of all general practices in Wales
Emergency Department Dataset, EDDS	Administrative and clinical information (general reason for attendance and attendance group to identify types of contacts) for all NHS Wales Accident and Emergency department attendances	The whole population of Wales from 2009
Patient Episode Dataset for Wales, PEDW	Clinical information (specialty and diagnoses) of all NHS Wales hospital admissions (inpatient and day cases) – diagnostic information coded using ICD-10 codes	The whole population of Wales during the study period
Outpatient Database for Wales, OPDW	Attendance information for all NHS Wales hospital outpatient appointments. Since diagnostic information was not available, we used consultant main specialty and treatment specialty to identify mental health contacts	The whole population of Wales from 2004

SAIL, Secure Anonymised Information Linkage Databank;

Supplementary Table 2: List and details of identified contacts with services across the Welsh Longitudinal General Practice Dataset (WLGP), the Emergency Department Dataset for Wales (EDDS), the Patient Episode Dataset for Wales (PEDW), and the Outpatients Database for Wales (OPDW).

Name	Description
Contacts	
Any contact	WLGP Any entry excluding those with administrative codes and associated diagnoses such as 'letter from ED', but including telephone and face-to-face contacts with any member of the primary care team.
	EDDS, PEDW and OPDW Any entry.
Mental health specialty	WLGP Records of psychiatric or child and adolescent psychiatric speciality recorded in WLGP (https://conceptlibrary.saildatabank.com/concepts/C3368/detail/).
	PEDW and OPDW Consultant main specialty, treatment specialty visited and hospital episodes with a mental health primary diagnosis – ICD-10 codes 'F'.
Diagnoses	
Any diagnoses	WLGP Read codes with a capital letter root.
Mental health	WLGP Read codes 'E'.
	EDDS Internal diagnostic code for mental health.
	PEDW ICD10 codes 'F'.
Schizophrenia and other delusional disorders*	WLGP [John2018] https://conceptlibrary.saildatabank.com/concepts/C2716/version/6848/detail/
	PEDW [John2018] https://conceptlibrary.saildatabank.com/concepts/C2939/detail/
Bipolar affective disorder*	WLGP [John2018] https://conceptlibrary.saildatabank.com/concepts/C2714/version/6844/detail/
	PEDW https://conceptlibrary.saildatabank.com/concepts/C2932/detail/
Eating disorder*	WLGP [Wood2019, John2021] Read codes 'Eu500', 'Eu501', '1612', 'E271', 'R030'
	PEDW [John2021] ICD10 codes 'F50'
Dementia*	WLGP [Morgan2018; Ford2019] Read codes 'E00', '1461', 'E012', 'E041', 'Eu00'-'Eu02', 'F110'-'F112', 'F116', 'F118', 'F11x'-'F11z', 'F134', 'E02y1', 'Eu02y', 'Eu02z', 'Eu041', 'Eu057', 'Fyu30', and 'Fyu30'.
	PEDW [Morgan2018] ICD10 codes 'F00'-'F03', 'G30', 'F051', and 'G311'.
Personality disorder*	WLGP [Doyle2016] Read codes 'E21', 'Eu21', 'Eu60', 'Eu61', 'E02y4', 'Eu060', 'Eu340', 'Eu341', 'Eu845', 'Eu942'. Except codes 'E2121', 'E2122', 'E2140', 'E2141', 'E2151'-'E2153', 'Eu608'.
	PEDW [Korkelia2011] ICD-10 codes 'F60' and 'F61'.
Adjustment disorder/reaction*	WLGP [Morgan2018] Read codes 'Eu432'.
	PEDW [Gradus2010] ICD-10 codes 'F432'.
Organic disorder*	WLGP Read codes 'Eu0' except those used for dementia [Morgan2018]
	PEDW ICD-10 codes 'F00'-'F07' and 'F09' [Durking2010] except those used for dementia [Morgan2018; Ford2019]
Learning disability*	WLGP 1j9, 69DB, 8Ce6, 8H4f, 8HHP, 8Hg2, 918e, 94Z9, 9HB, 9N0y, 9hL, 9mA, Eu7, PJ0, E3, Eu814-Eu818
	PEDW F70-F73, F78-F79, F819, F84 (except F84.0, F84.1, F84.5), Q90-Q93, Q95.2-Q95.9, Q97.0, Q97.1, Q98.1, Q99.2, Q99.8,
Pervasive development disorder/autistic spectrum disorder*	WLGP [Underwood2021] https://conceptlibrary.saildatabank.com/concepts/C2709/version/6834/detail/
	PEDW [Underwood2021] ICD-10 codes 'F840', 'F841', 'F845' and 'F849'
ADHD/conduct disorder*	WLGP [John2022] https://conceptlibrary.saildatabank.com/concepts/C2708/version/6832/detail/
	PEDW [John2022]

	ICD-10 codes 'F90'
Somatoform/somatisatic disorder*	n WLGP Read codes 'Eu45'
disorder	
	PEDW ICD-10 codes 'F45'
Depression*	WLGP [John2016, Cornish2016] https://conceptlibrary.saildatabank.com/concepts/C3295/version/10153/detail/ Includes contacts with a recorded depression diagnosis, and contacts with a recorded antidepressant treatment or prescription following a previous depression diagnosis. Administrative codes that unequivocally indicate a diagnosis of depression are used as "depression diagnoses" by the algorithm.
	PEDW [John2016, Cornish2016] https://conceptlibrary.saildatabank.com/concepts/C2942/version/7736/detail/
Anxiety*	WLGP [John2016, Cornish2016] <u>https://conceptlibrary.saildatabank.com/concepts/C3297/version/10127/detail/</u> Includes contacts with a recorded anxiety diagnosis or symptom, and contacts with a recorded anxiolytic or hypnotic prescription following a previous anxiety diagnosis. Therapeutic procedures that unequivocally indicate a diagnosis of anxiety are used as "anxiety diagnoses" by the algorithm.
	PEDW [John2016, Cornish2016] https://conceptlibrary.saildatabank.com/concepts/C3297/version/10127/detail/
Injury & poisoning	WLGP Read codes 'S', 'T', 'U' Except: 'SL' (single code), 'U72' (single code), 'SL90', 'SLHz', 'U720' and 'SS' and their child codes.
	EDDS Attendances with any injury attendance groups except those identified as self-harm [Marchant2020].
	PEDW ICD-10 codes 'S00'-'S99' and 'T00'-'T98'.
Accidents	WLGP Read codes 'SS', 'T0'-'T9', 'TA'-'TH', 'TJ', 'U0', 'U1'
	EDDS Recorded attendance group 'accident'.
	PEDW ICD-10 codes 'V', 'W', 'X1'-'X5'
Self-harm	WLGP [Marchant2020] https://conceptlibrary.saildatabank.com/concepts/C3292/detail/
	EDDS [Marchant2020] Recorded attendance group 'deliberate SH' and attendance group of 'undetermined intent' when presenting with lacerations to wrist or forearm; and overdose or poisoning by prescribed drugs, non-prescribed/purchased drugs, elicit drugs, and unspecified. Codes referring to self-harm with alcohol were excluded.
	PEDW [Marchant2020] https://conceptlibrary.saildatabank.com/concepts/C3292/detail/
Alcohol misuse*	WLGP [Rees2022] https://conceptlibrary.saildatabank.com/concepts/C3293/detail/
	EDDS Internal diagnostic codes for alcohol poisoning and overdose and chronic alcohol abuse.
	PEDW [Rees2022] https://conceptlibrary.saildatabank.com/concepts/C3293/detail/
Drugs misuse*	WLGP [Rees2022] https://conceptlibrary.saildatabank.com/concepts/C3294/detail/
	EDDS Internal diagnostic codes for poisoning and overdose by illicit drug and chronic drug abuse.
	PEDW [Rees2022] https://conceptlibrary.saildatabank.com/concepts/C3294/detail/
Prescriptions (recorded	
Any prescription	Read code with a lower case letter root
Opiates	Read codes 8B23, 8B2M, 8B2N, 8B2P, 8B2Q, 8B2R, 8BE, a81, cg1, cg3, cg5, cg7, dia, dib, dic, did6, dj, j28O, j28V, j2pT, o4, oa2N, and oa2J, except dia8A-diaF, diaH, diaM, diaN, diaQ, diaR, diaV-diaZ, diaa, diac, diaf, diag, diaj, dial, diau. diay, diaz, dib1, dib2, dib4-dib7, dibC, dibL, dibN, dibO, dibF, dibT, dibU, dibV, dibV, dibZ, dibi, dibh, dibd, dibt, diby, dib1, dib, dib1, dic1, dic2, dic6, dicB-dic1, dicP, dicQ, dicT-dicX, dicZ, dicw, djm, o43, o4a, cg7c, dj3K, dj3L, dj3M, djkb, djkc, djkd, djyJ, djyK, djyL, o4e4-o4e8
Psychotropics	Includes Read codes from antidepressants, antipsychotics, anxiolytics, and hypnotics (see below)
Antidepressants	https://conceptlibrary.saildatabank.com/concepts/C2917/version/7757/detail/
Antipsychotics	Read codes d4, d5
Anxiolytics	https://conceptlibrary.saildatabank.com/concepts/C2924/version/7710/detail/
Hypnotics	https://conceptlibrary.saildatabank.com/concepts/C2925/version/7711/detail/
Lithium	Read codes d6
Unless otherwise specifi	ed ("single code"), when a Read code or an ICD-10 code is included, all its child codes are also included.

* Diagnosis available in NCISH data.

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Supplementary Table 3. Demographics of cases and controls in the study population (top half), and their mental health service contacts in the year before death for those with primary care, hospital admissions and hospital outpatient data in this period for the largest sub-cohort with the minimum required data sources (bottom half).

		Cases, N; % [95% CI]	Controls, N; % [95% CI]
	Total	1031 (100%)	5155 (100%)
Mal	es/Females		
	Females	328; 31.8% [29.0, 34.7]	1640; 31.8% [30.6, 33.1]
	Males	703; 68.19% [65.3, 71.0]	3515; 68.2% [66.9, 69.4]
Age	groups		
	[10, 24] years old	69; 6.7% [5.3, 8.4]	357; 6.93% [6.27, 7.66]
	[25, 64] years old	807; 78.3% [75.7, 80.7]	4029; 78.16% [77.01, 79.27]
	64+ years old	155; 15.0% [13.0, 17.3]	769; 14.92% [13.98, 15.92]
Dep	rivation index		
	Least deprived - 1	158; 15.3% [13.3, 17.7]	783; 15.2% [14.2, 16.2]
	2	170; 16.5% [14.3, 18.9]	863; 16.7% [15.7, 17.8]
	3	205; 19.9% [17.6, 22.4]	1021; 19.8% [18.7, 20.9]
	4	246; 23.9% [21.4, 26.6]	1227; 23.8% [22.7, 25.0]
	Most deprived - 5	252; 24.4% [21.9, 27.2]	1261; 24.5% [23.3, 25.7]
	Missing value	<5; 0.5% [0.2, 1.1]	<5; 0.1% [0.0, 0.2]
Area	a morphology		
	Urban	719; 69.7% [66.9, 72.5]	3527; 68.4% [67.1, 69.7]
	Rural	182; 17.7% [15.4, 20.1]	939; 18.2% [17.2, 19.3]
	Missing value	<5; 0.5% [0.2, 1.1]	<5; 0.1% [0.0, 0.2]
	Total	638 (100%)	3190 (100%)
Men	tal health service contacts in	primary care data	
	ital ilcalul sel vice contacts in		
<u></u>		245; 38.4% [37.7, 42.2]	1295; 40.6% [38.9, 42.3]
			1295; 40.6% [38.9, 42.3]
	Recorded contact		1295; 40.6% [38.9, 42.3] 926; 29.0% [27.5, 30.6]
	Recorded contact	hospital admissions data	
Men	Recorded contact tal health service contacts in Specialty	hospital admissions data 238; 38.4% [34.7, 42.2]	926; 29.0% [27.5, 30.6]
Men	Recorded contact Ital health service contacts in Specialty Health Resource Group	hospital admissions data 238; 38.4% [34.7, 42.2] 89; 13.9% [11.5, 16.9]	926; 29.0% [27.5, 30.6] 610; 19.1% [17.8, 20.5]
Men	Recorded contact Ital health service contacts in Specialty Health Resource Group Main diagnosis Any of the above	hospital admissions data 238; 38.4% [34.7, 42.2] 89; 13.9% [11.5, 16.9] 207; 32.4% [28.9, 36.2] 265; 41.5% [37.8, 45.4]	926; 29.0% [27.5, 30.6] 610; 19.1% [17.8, 20.5] 964; 30.2% [28.7, 31.8]
<u>Men</u>	Recorded contact Ital health service contacts in Specialty Health Resource Group Main diagnosis	hospital admissions data 238; 38.4% [34.7, 42.2] 89; 13.9% [11.5, 16.9] 207; 32.4% [28.9, 36.2] 265; 41.5% [37.8, 45.4]	926; 29.0% [27.5, 30.6] 610; 19.1% [17.8, 20.5] 964; 30.2% [28.7, 31.8]
Men	Recorded contacts in Ital health service contacts in Specialty Health Resource Group Main diagnosis Any of the above Ital health service contacts in	hospital admissions data 238; 38.4% [34.7, 42.2] 89; 13.9% [11.5, 16.9] 207; 32.4% [28.9, 36.2] 265; 41.5% [37.8, 45.4] hospital outpatients data	926; 29.0% [27.5, 30.6] 610; 19.1% [17.8, 20.5] 964; 30.2% [28.7, 31.8] 1162; 36.4% [34.8, 38.1]
Men Delote deam 	Recorded contacts in Ital health service contacts in Specialty Health Resource Group Main diagnosis Any of the above Ital health service contacts in	hospital admissions data 238; 38.4% [34.7, 42.2] 89; 13.9% [11.5, 16.9] 207; 32.4% [28.9, 36.2] 265; 41.5% [37.8, 45.4] hospital outpatients data 305; 47.8% [44.0, 51.7]	926; 29.0% [27.5, 30.6] 610; 19.1% [17.8, 20.5] 964; 30.2% [28.7, 31.8] 1162; 36.4% [34.8, 38.1]
Men Delote deam 	Recorded contact Ital health service contacts in Specialty Health Resource Group Main diagnosis Any of the above Ital health service contacts in Specialty	hospital admissions data 238; 38.4% [34.7, 42.2] 89; 13.9% [11.5, 16.9] 207; 32.4% [28.9, 36.2] 265; 41.5% [37.8, 45.4] hospital outpatients data 305; 47.8% [44.0, 51.7]	926; 29.0% [27.5, 30.6] 610; 19.1% [17.8, 20.5] 964; 30.2% [28.7, 31.8] 1162; 36.4% [34.8, 38.1]
Men Delote deam 	Recorded contacts in specialty Health Resource Group Main diagnosis Any of the above Main health service contacts in Specialty Specialty	hospital admissions data 238; 38.4% [34.7, 42.2] 89; 13.9% [11.5, 16.9] 207; 32.4% [28.9, 36.2] 265; 41.5% [37.8, 45.4] hospital outpatients data 305; 47.8% [44.0, 51.7]	926; 29.0% [27.5, 30.6] 610; 19.1% [17.8, 20.5] 964; 30.2% [28.7, 31.8] 1162; 36.4% [34.8, 38.1] 2467; 77.3% [75.9, 78.8]
Men Delote deam 	Recorded contacts in specialty Health Resource Group Main diagnosis Any of the above Main health service contacts in Specialty tal health service contacts in Only in primary care	hospital admissions data 238; 38.4% [34.7, 42.2] 89; 13.9% [11.5, 16.9] 207; 32.4% [28.9, 36.2] 265; 41.5% [37.8, 45.4] hospital outpatients data 305; 47.8% [44.0, 51.7] recorded 94; 14.7% [12.2, 17.7]	926; 29.0% [27.5, 30.6] 610; 19.1% [17.8, 20.5] 964; 30.2% [28.7, 31.8] 1162; 36.4% [34.8, 38.1] 2467; 77.3% [75.9, 78.8] <5; 0.2% [0.1, 0.4]

Numbers are counts, percentages and 95% confidence intervals of individuals.

Supplementary Table 4. Demographics of sub-cohorts of cases with different combinations of data sources available within the SAIL Databank in the year before death and before the index date.

		Cases w. WLGP, PEDW and hOPD data in the year before death (N; % [95% CI])		Cases with EDDS data in the year before the index date	Cases with PEDW data in the year before the index date	Cases with OPD data in the year before the index date	Cases with full data linkag in the year before the index date
Total	755 (100%)	638 (100%)	755 (100%)	469 (100%)	1031 (100%)	848 (100%)	355 (100%)
Males/Females							
Females	249; 33.0% [29.7%, 36.4%]	206; 32.3% [28.8%, 36.0%]	249; 33.0% [29.7%, 36.4%]	139; 29.6% [25.7%, 33.9%]	328; 31.8% [29.0%, 34.7%]	269; 31.73% [28.68%, 34.94%]	110; 31.0% [26.4%, 36.0%]
Males	506; 67.0% [63.6%, 70.3%]	432; 67.7% [64.0%, 71.2%]	506; 67.0% [63.6%, 70.3%]	330; 70.4% [66.0%, 74.3%]	703; 68.2% [65.3%, 71.0%]	579; 68.28% [65.07%, 71.33%]	245; 69.0% [64.0%, 73.6%]
Age groups							
Children & young people: [10, 24] y.o.	49; 6.5% [4.9%, 8.5%]	39; 6.1% [4.5%, 8.2%]	49; 6.5% [4.95%, 8.48%]	26; 5.55% [3.82%, 8%]	69; 6.7% [5.33%, 8.39%]	52; 6.14% [4.71%, 7.96%]	20; 5.64% [3.68%, 8.55%]
Adults: [25, 64] y.o.	583; 77.2% [74.1%, 80.1%]	496; 77.7% [74.4%, 80.8%]	583; 77.22% [74.1%, 80.07%]	373; 79.54% [75.65%, 82.94%]	807; 78.28% [75.66%, 80.69%]	670; 79.01% [76.15%, 81.62%]	278; 78.31% [73.74%, 82.29%]
Older population: 64+ y.o.	123; 16.3% [13.8%, 19.1%]	103; 16.1% [13.5%, 19.2%]	123; 16.3% [13.83%, 19.1%]	70; 14.93% [11.99%, 18.44%]	155; 15.04% [12.99%, 17.35%]	126; 14.86% [12.63%, 17.42%]	57; 16.06% [12.61%, 20.24%]
Deprivation index							
Least deprived - 1	125; 16.6% [14.1%, 19.4%]	111; 17.4% [14.7%, 20.5%]	125; 16.6% [14.1%, 19.4%]	74; 15.8% [12.8%, 19.4%]	158; 15.3% [13.3%, 17.7%]	137; 16.2% [13.8%, 18.8%]	58; 16.3% [12.9%, 20.5%]
2	111; 14.7% [12.4%, 17.4%]	92; 14.4% [11.9%, 17.4%]	111; 14.7% [12.4%, 17.4%]	83; 17.7% [14.5%, 21.4%]	170; 16.5% [14.3%, 18.9%]	142; 16.7% [14.4%, 19.4%]	55; 15.5% [12.1%, 19.6%]
3	157; 20.8% [18.1%, 23.8%]	131; 20.5% [17.6%, 23.8%]	157; 20.8% [18.1%, 23.8%]	90; 19.2% [15.9%, 23.0%]	205; 19.9% [17.6%, 22.4%]	164; 19.3% [16.8%, 22.1%]	74; 20.8% [16.9%, 25.4%]
4	170; 22.5% [19.7%, 25.6%]	141; 22.1% [19.1%, 25.5%]	170; 22.5% [19.7%, 25.6%]	111; 23.7% [20.0%, 27.7%]	246; 23.9% [21.4%, 26.6%]	197; 23.2% [20.5%, 26.2%]	81; 22.8% [18.7%, 27.5%]
Most deprived - 5	192; 25.4% [22.5%, 28.7%]	163; 25.5% [22.3%, 29.1%]	192; 25.4% [22.5%, 28.7%]	111; 23.7% [20.0%, 27.7%]	252; 24.4% [21.9%, 27.2%]	208; 24.5% [21.8%, 27.5%]	87; 24.5% [20.3%, 29.2%]
Missing deprivation value	<5; 0.7% [0.3%, 1.5%]	<5; 0.8% [0.3%, 1.8%]	<5; 0.7% [0.3%, 1.5%]	<5; 1.1% [0.5%, 2.5%]	<5; 0.5% [0.2%, 1.1%]	<5; 0.6% [0.3%, 1.4%]	<5; 1.4% [0.6%, 3.3%]
Area morphology							
Urban	553; 73.2% [70.0%, 76.3%]	463; 72.6% [69.0%, 75.9%]	553; 73.2% [70.0%, 76.3%]	332; 70.8% [66.5%, 74.7%]	719; 69.7% [66.9%, 72.5%]	591; 69.7% [66.5%, 72.7%]	262; 73.8% [69.0%, 78.1%]
Rural	117; 15.5% [13.1%, 18.3%]	104; 16.3% [13.6%, 19.4%]	117; 15.5% [13.1%, 18.3%]	76; 16.2% [13.1%, 19.8%]	182; 17.7% [15.4%, 20.1%]	155; 18.3% [15.8%, 21.0%]	54; 15.2% [11.8%, 19.3%]
Missing rurality value	<5; 0.7% [0.3%, 1.5%]	<5; 0.8% [0.3%, 1.8%]	<5; 0.7% [0.3%, 1.5%]	<5; 1.1% [0.5%, 2.5%]	<5; 0.5% [0.2%, 1.1%]	<5; 0.6% [0.3%, 1.4%]	<5; 1.4% [0.6%, 3.3%]

Numbers are counts, percentages and 95% confidence intervals of individuals.

SAIL, Secure Anonymised Information Linkage Databank; WLGP, Welsh Longitudinal General Practice Dataset; EDDS, Emergency Department Dataset for Wales; PEDW, Patient Episode Dataset for Wales; OPDW, Outpatients Database for Wales.

	NCISH	In SAIL	NCISH	NCISH		SAIL not
Diagnosis	(N)	(%)		not SAIL		NCISH(
			(N)	(%)	(%)	%)
Schizophrenia and other delusional disorders	89	75.3%	132	16.7%	50.8%	32.6%
Bipolar affective disorder	53	84.9%	83	10.8%	55.4%	33.7%
Depressive illness	213	91.1%	495	5.7%	52.3%	42.0%
Anxiety/phobia/panic disorder/OCD	24	87.5%	323	5.6%	23.8%	70.6%
Eating disorder	6	83.3%	12	<50.0%	50.0%	<50.0%
Dementia	<5		11	<45.5%	<45.5%	>54.5%
Personality disorder	48	62.5%	127	36.2%	34.6%	29.1%
Adjustment disorder/reaction	28	25.0%	82	46.3%	12.2%	41.5%
Organic disord	<5		18	<27.8%	<27.8%	72.2%
Learning disability	<5		<10			
Pervasive development disorder/autistic spectrum disorder	<5		<10			
ADHD/conduct disorder	<5		<10			
Somatoform/somatisation disorder	<5		<10			
Alcohol dependence/misuse	49	>89.8%	237	11.8%	45.6%	42.6%
Drug dependence/misuse	29	>82.8%	179	13.4%	35.2%	51.4%

Supplementary Table 5. Comparison of diagnostic information between NCISH and SAIL data sources for cases with primary care and hospital admission data (N = 755).

Columns are: number of cases with each primary diagnosis (NCISH) and the proportion of them with such diagnosis recorded in SAIL (In SAIL); number of cases with each diagnosis (NCISH or SAIL) and the proportion of them with such diagnosis recorded in NCISH only (NCISH not SAIL), both NCISH and SAIL (NCISH & SAIL), and SAIL only (SAIL not NCISH).

NCISH, National Confidential Inquiry into Suicide and Safety in Mental Health; SAIL, Secure Anonymised Information Linkage Databank

Supplementary Table 6 (part 1/2). Type of healthcare setting contacted before index date stratified by sex.

	nales cases % [95% CI])	Females controls (N; % [95% CI])	Single-window regression (OR [95% CI]; p-value)	Multi-window regression (OR [95% CI]; p-value)
Any healthcare sett	ing			
Sub-total 110	(100%)	550 (100%)		
1 week 53;	48.2% [39.1%, 57.4%]	273; 49.6% [45.5%, 53.8%]	1.0 [0.8, 1.2]; p=0.626	DNC
1 month 92;	83.6% [75.6%, 89.4%]	484; 88% [85%, 90.5%]	0.7 [0.5, 1.0]; p=0.034	DNC
1 year >10	5; 95.5% [89.8%, 98.1%]	>545; 99.1% [97.9%, 99.6%]	DNC	DNC
Primary care				
Sub-total 249	(100%)	1245 (100%)		
1 week 102	; 41.0% [35.0%, 47.2%]	485; 39.0% [36.3%, 41.7%]	1.1 [0.9, 1.3]; p=0.295	0.5 [0.3, 0.8]; p=0.005
1 month 185	; 74.3% [68.5%, 79.3%]	995; 79.9% [77.6%, 82.1%]	0.7 [0.6, 0.9]; p=<0.001	0.4 [0.3, 0.7]; p=<0.001
1 year 236	; 94.8% [91.3%, 96.9%]	1214; 97.5% [96.5%, 98.3%]	0.5 [0.3, 0.7]; p=<0.001	0.6 [0.4, 0.9]; p=0.023
Emergency departm	nent			
Sub-total 139	(100%)	695 (100%)		
1 week 12;	8.6% [5.0%, 14.5%]	18; 2.6% [1.7%, 4.1%]	3.8 [2.2, 6.7]; p=<0.001	6.8 [3.7, 12.5]; p=<0.001
1 month 27;	19.4% [13.7%, 26.8%]	47; 6.8% [5.1%, 8.9%]	3.5 [2.4, 5]; p=<0.001	4.9 [3.0, 8.0]; p=<0.001
1 year 95;	68.4% [60.2%, 75.5%]	273; 39.3% [35.7%, 43%]	3.4 [2.7, 4.3]; p=<0.001	2.9 [2.3, 3.8]; p=<0.001
Hospital admissions	S			
Sub-total 328	(100%)	1640 (100%)		
Emergency admissic	ons			
1 week 22;	6.7% [4.5%, 10%]	36; 2.2% [1.6%, 3%]	3.3 [2.2, 4.8]; p=<0.001	4.6 [3.0, 6.8]; p=<0.001
1 month 53;	16.2% [12.6%, 20.5%]	119; 7.3% [6.1%, 8.6%]	2.5 [2.0, 3.1]; p=<0.001	2.7 [2.0, 3.6]; p=<0.001
1 year 215	; 65.6% [60.3%, 70.5%]	839; 51.2% [48.7%, 53.6%]	1.9 [1.6, 2.2]; p=<0.001	1.6 [1.4, 1.9]; p=<0.001
Planned admissions				
1 week <5;	1.5% [0.7%, 3.5%]	17; 1.0% [0.7%, 1.7%]	DNC	0.4 [0.1, 0.9]; p=0.038
1 month 9; 2	.8% [1.5%, 5.1%]	56; 3.4% [2.6%, 4.4%]	0.8 [0.5, 1.2]; p=0.261	1.2 [0.7, 1.9]; p=0.516
1 year 77;	23.5% [19.2%, 28.4%]	327; 19.9% [18.1%, 22.0%]	1.2 [1.1, 1.5]; p=0.014	1.3 [1.0, 1.5]; p=0.022
Hospital outpatient	'S			
Sub-total 269	(100%)	1345 (100%)		
Attended appointme	<u>ents</u>			
1 week 19;	7.1% [4.6%, 10.8%]	85; 6.3% [5.1%, 7.8%]	1.1 [0.8, 1.5]; p=0.436	0.4 [0.2, 0.5]; p=<0.001
1 month 53;	19.7% [15.4%, 24.9%]	310; 23.1% [20.9%, 25.4%]	0.8 [0.7, 1.0]; p=0.029	0.3 [0.2, 0.3]; p=<0.001
1 year 162	; 60.2% [54.3%, 65.9%]	1114; 82.8% [80.7%, 84.8%]	0.3 [0.2, 0.3]; p=<0.001	0.2 [0.2, 0.3]; p=<0.001
Missed or cancelled	appointments			
1 week 7; 2	.6% [1.3%, 5.3%]	44; 3.3% [2.5%, 4.4%]	0.8 [0.5, 1.2]; p=0.313	0.9 [0.6, 1.5]; p=0.737
1 month 23;	8.6% [5.8%, 12.5%]	136; 10.1% [8.6%, 11.8%]	0.8 [0.7, 1.1]; p=0.172	1.1 [0.7, 1.5]; p=0.806
1 year 112	2; 41.6% [35.9%, 47.6%]	658; 48.9% [46.3%, 51.6%]	0.7 [0.6, 0.9]; p=<0.001	1.1 [0.9, 1.4]; p=0.221

Numbers are counts, percentages and 95% confidence intervals of individuals. Odds ratios from conditional logistic regression models for 'any' and each setting separately are shown. 'Single-window regression' models include a single dichotomous variable (1 week, 1 month or 1 year), while 'multi-window regression' models include a categorical variable encompassing all three time-windows in a non-overlapping way. Specified models did not converged (DNC) due to small numbers.

Supplementary Table 6 (part 2/2). Type of health setting contacted before index date stratified by sex.

Male cases (N; % [95% CI%])	Male controls (N; % [95% C1%])	Single-window regression (OR [95% CI]; p-value)	Multi-window regression (OR [95% CI]; p-value)
Any healthcare setting			
Sub-total 245 (100%)	1225 (100%)		
1 week 98; 40.0% [34.1%, 46.3%]	450; 36.7% [34.1%, 39.5%]	1.2 [1.0, 1.4]; p=0.100	0.3 [0.1, 0.6]; p=0.003
1 month 190; 77.6% [71.9%, 82.3%]	984; 80.3% [78%, 82.5%]	0.8 [0.7, 1.0]; p=0.074	0.2 [0.1, 0.5]; p=<0.001
1 year 239; 97.6% [94.8%, 98.9%]	1217; 99.4% [98.7%, 99.7%]	0.3 [0.1, 0.6]; p=<0.001	0.3 [0.1, 0.6]; p=0.003
Primary care			
Sub-total 506 (100%)	2530 (100%)		
1 week 167; 33.0% [29.1%, 37.2%]	757; 29.9% [28.2%, 31.7%]	1.2 [1.0, 1.3]; p=0.017	0.9 [0.7, 1.2]; p=0.469
1 month 346; 68.4% [64.2%, 72.3%]	1811; 71.6% [69.8%, 73.3%]	0.9 [0.8, 1.0]; p=0.012	0.7 [0.5, 0.9]; p=0.007
1 year 477; 94.3% [91.9%, 96.0%]	2410; 95.3% [94.4%, 96.0%]	0.8 [0.6, 1.1]; p=0.114	0.9 [0.7, 1.2]; p=0.453
Emergency department			
Sub-total 330 (100%)	1650 (100%)		
1 week 21; 6.4% [4.2%, 9.5%]	17; 1.0% [0.7%, 1.7%]	6.2 [3.7, 10.3]; p=<0.001	8.0 [4.7, 13.4]; p=<0.001
1 month 57; 17.3% [13.6%, 21.7%]	82; 5.0% [4%, 6.1%]	4.0 [3.1, 5.3]; p=<0.001	4.1 [3.0, 5.7]; p=<0.001
1 year 182; 55.2% [49.8%, 60.4%]	618; 37.5% [35.2%, 39.8%]	2.1 [1.8, 2.4]; p=<0.001	1.7 [1.4, 1.9]; p=<0.001
Hospital admissions			
Sub-total 703 (100%)	3515 (100%)		
Emergency admissions			
1 week 18; 2.6% [1.6%, 4.0%]	64; 1.8% [1.4%, 2.3%]	1.4 [1.0, 2.0]; p=0.034	1.6 [1.1, 2.2]; p=0.007
1 month 103; 14.7% [12.2%, 17.5%]	240; 6.8% [6.1%, 7.7%]	2.4 [2.0, 2.8]; p=<0.001	2.9 [2.4, 3.5]; p=<0.001
1 year 384; 54.6% [50.9%, 58.3%]	1638; 46.6% [45.0%, 48.3%]	1.4 [1.3, 1.5]; p=<0.001	1.2 [1.1, 1.3]; p=<0.001
Planned admissions			
1 week <5; 0.7% [0.3%, 1.7%]	13; 0.4% [0.2%, 0.6%]	DNC	1.0 [0.5, 2.2]; p=0.995
1 month 17; 2.4% [1.5%, 3.8%]	78; 2.2% [1.8%, 2.8%]	1.1 [0.8, 1.5]; p=0.579	1.0 [0.7, 1.4]; p=0.918
1 year 114; 16.2% [13.7%, 19.1%]	652; 18.6% [17.3%, 19.9%]	0.9 [0.8, 1.0]; p=0.01	0.8 [0.7, 0.9]; p=0.004
Hospital outpatients			
Sub-total 579 (100%)	2895 (100%)		
Attended appointments			
1 week 23; 4.0% [2.7%, 5.9%]	159; 5.5% [4.7%, 6.4%]	0.7 [0.6, 0.9]; p=0.007	0.3 [0.2, 0.4]; p=<0.001
1 month 78; 13.5% [10.9%, 16.5%]	605; 20.9% [19.5%, 22.4%]	0.6 [0.5, 0.7]; p=<0.001	0.3 [0.2, 0.3]; p=<0.001
1 year 300; 51.8% [47.8%, 55.9%]	2294; 79.3% [77.7%, 80.7%]	0.2 [0.2, 0.3]; p=<0.001	0.3 [0.2, 0.3]; p=<0.001
Missed or cancelled appointments			
1 week 17; 2.9% [1.9%, 4.7%]	68; 2.4% [1.9%, 3.0%]	1.3 [0.9, 1.7]; p=0.168	1.5 [1, 2.1]; p=0.038
1 month 37; 6.4% [4.7%, 8.7%]	234; 8.1% [7.2%, 9.1%]	0.8 [0.7, 1.0]; p=0.015	0.8 [0.6, 1]; p=0.046
1 year 186; 32.1% [28.5%, 36.0%]	1355; 46.8% [45.0%, 48.6%]	0.5 [0.5, 0.6]; p=<0.001	0.8 [0.7, 0.9]; p=<0.001

Numbers are counts, percentages and 95% confidence intervals of individuals. Odds ratios from conditional logistic regression models for 'any' and each setting separately are shown. 'Single-window regression' models include a single dichotomous variable (1 week, 1 month or 1 year), while 'multi-window regression' models include a categorical variable encompassing all three time-windows in a non-overlapping way.

Supplementary Table 7. Type of health setting contacted before index date stratified by cases in NCISH and cases in SID-Cymru-only not NCISH.

	Cases in NCISH (N; % [95% CI%])	Cases in SID-Cymru not in the NCISH (N; % [95% CI%])
Any healthcare	setting	
Sub-tota	l 255 (100%)	100 (100%)
1 week	3 107; 42.0% [36.1%, 48.1%]	44; 44.0% [34.7%, 53.8%]
1 month	1 206; 80.8% [75.5%, 85.2%]	76; 76.0% [66.8%, 83.3%]
1 yea	249; 97.7% [95%, 98.9%]	>95; 95.0% [88.8%, 97.9%]
Primary care		
Sub-tota	l 576 (100%)	179 (100%)
1 week	194; 33.7% [30%, 37.6%]	75; 41.9% [34.9%, 49.2%]
1 month	404; 70.1% [66.3%, 73.7%]	127; 71.0% [63.9%, 77.1%]
1 year	544; 94.5% [92.3%, 96%]	169; 94.4% [90%, 96.9%]
Emergency dep	artment	
Sub-tota	l 349 (100%)	120 (100%)
1 week	24; 6.9% [4.7%, 10%]	9; 7.5% [4.0%, 13.7%]
1 month	1 63; 18.1% [14.4%, 22.4%]	21; 17.5% [11.8%, 25.3%]
1 year	207; 59.3% [54.1%, 64.3%]	70; 58.3% [49.4%, 66.8%]
Hospital admiss	sions	
Sub-tota	l 814 (100%)	217 (100%)
Emergency adm	issions	
1 week	26; 3.2% [2.2%, 4.6%]	14; 6.5% [3.9%, 10.5%]
1 month	1 120; 14.8% [12.5%, 17.4%]	36; 16.6% [12.2%, 22.1%]
1 year	484; 59.5% [56.1%, 62.8%]	115; 53% [46.4%, 59.5%]
Planned admissi	ons	
1 week	x <5; 0.6% [0.3%, 1.4%]	<5; 2.3% [1.0%, 5.3%]
1 month	1 21; 2.6% [1.7%, 3.9%]	5; 2.3% [1.0%, 5.3%]
1 year	148; 18.2% [15.7%, 21%]	43; 19.8% [15.1%, 25.6%]
Hospital outpat	ients	
Sub-total	l 664 (100%)	184 (100%)
1 week	30; 4.5% [3.2%, 6.4%]	12; 6.5% [3.8%, 11.1%]
1 month	101; 15.2% [12.7%, 18.2%]	30; 16.3% [11.7%, 22.3%]
1 year	365; 55.0% [51.2%, 58.7%]	97; 52.7% [45.5%, 59.8%]
Missed or cance	lled appointments	
1 week	(19; 2.9% [1.8%, 4.4%]	5; 2.7% [1.2%, 6.2%]
1 month	1 50; 7.5% [5.8%, 9.8%]	10; 5.4% [3.0%, 9.7%]
1 year	236; 35.6% [32.0%, 39.3%]	62; 33.7% [27.3%, 40.8%]

NCISH, National Confidential Inquiry into Suicide and Safety in Mental Health; SID-Cymru, Suicide Information Database – Cymru Numbers are counts, percentages and 95% confidence intervals of individuals.

Supplementary Table 8 (part 1/2). Accident, injury and poisoning and self-harm contacts in the year before index date stratified by sex.

	Females cases (N; % [95% CI%])	Females controls (N; % [95% CI%])	Univariate regression (OR [95% CI]; p-value)	Multivariate regression (OR [95% CI]; p-value
Any healthcare sett	ing			
Sub-tot	al 110 (100%)	550 (100%)		
Accident	38; 34.6% [26.3%, 43.8%]	108; 19.6% [16.5%, 23.2%]	2.1 [1.6, 2.8]; p=<0.001	1.5 [1.1, 2.1]; p=0.024
Injury & poisoning	49; 44.6% [35.6%, 53.9%]	115; 20.9% [17.7%, 24.5%]	3.3 [2.5, 4.5]; p=<0.001	1.8 [1.2, 2.6]; p=0.004
Self-harm	36; 32.7% [24.7%, 42.0%]	55; 10.0% [7.8%, 12.8%]	4.7 [3.2, 6.8]; p=<0.001	3.5 [2.3, 5.2]; p=<0.001
Primary care				
Sub-tot	al 249 (100%)	1245 (100%)		
Accident	14; 5.6% [3.4%, 9.2%]	53; 4.3% [3.3%, 5.5%]	1.3 [0.9, 1.9]; p=0.124	1.4 [1, 2.1]; p=0.083
Injury & poisoning	20; 8.0% [5.3%, 12.1%]	94; 7.6% [6.2%, 9.2%]	1.1 [0.8, 1.4]; p=0.661	0.8 [0.6, 1.1]; p=0.157
Self-harm	48; 19.3% [14.9%, 24.6%]	95; 7.6% [6.3%, 9.2%]	3.1 [2.4, 4.1]; p=<0.001	3.2 [2.5, 4.3]; p=<0.001
Emergency departn	nent			
Sub-tot	al 139 (100%)	695 (100%)		
Accident	35; 25.2% [18.7%, 33%]	118; 17.0% [14.4%, 20%]	1.7 [1.3, 2.1]; p=<0.001	1.6 [1.2, 2.1]; p=0.004
Injury & poisoning	23; 16.6% [11.3%, 23.6%]	81; 11.7% [9.5%, 14.3%]	1.5 [1.1, 2.1]; p=0.01	1.2 [0.9, 1.7]; p=0.331
Self-harm	19; 13.7% [8.9%, 20.4%]	49; 7.1% [5.4%, 9.2%]	2.0 [1.4, 2.9]; p=<0.001	2.0 [1.4, 2.9]; p=<0.001
Hospital admissions	5			
Sub-tot	al 328 (100%)	1640 (100%)		
Accident	34; 10.4% [7.5%, 14.1%]	87; 5.3% [4.3%, 6.5%]	2.1 [1.6, 2.8]; p=<0.001	1.2 [0.8, 1.8]; p=0.402
Injury & poisoning	120; 36.6% [31.6%, 41.9%]	229; 14.0% [12.4%, 15.7%]	3.5 [2.9, 4.2]; p=<0.001	1.6 [1.1, 2.3]; p=0.029
Self-harm	96; 29.3% [24.6%, 34.4%]	138; 8.4% [7.2%, 9.9%]	4.6 [3.7, 5.8]; p=<0.001	3.1 [2, 4.6]; p=<0.001

Numbers are counts, percentages and 95% confidence intervals of individuals. Odds ratios from univariate and multivariate (i.e., including accident, injury and poisoning, and self-harm variables) conditional logistic regression models for 'any' and each healthcare setting separately are shown.

Supplementary Table 8 (part 2/2). Accident, injury and poisoning and self-harm contacts in the year before index date stratified by sex.

	Male cases (N; % [95% CI%])	Male controls (N; % [95% CI%])	Univariate regression (OR [95% CI]; p-value)	Multivariate regression (OR [95% CI]; p-value)
Any healthcare setti	ng			
Sub-tot	al 245 (100%)	1225 (100%)		
Accident	65; 26.5% [21.4%, 32.4%]	210; 17.2% [15.1%, 19.4%]	1.8 [1.4, 2.1]; p=<0.001	1.3 [1.0, 1.6]; p=0.057
Injury & poisoning	85; 34.7% [29.0%, 40.9%]	216; 17.6% [15.6%, 19.9%]	2.6 [2.1, 3.2]; p=<0.001	1.5 [1.2, 1.9]; p=0.003
Self-harm	65; 26.5% [21.4%, 32.4%]	95; 7.8% [6.4%, 9.4%]	4.5 [3.5, 5.9]; p=<0.001	3.6 [2.7, 4.9]; p=<0.001
Primary care				
Sub-tot	al 506 (100%)	2530 (100%)		
Accident	13; 2.6% [1.5%, 4.4%]	69; 2.7% [2.2%, 3.4%]	1.0 [0.7, 1.3]; p=0.73	0.9 [0.7, 1.3]; p=0.62
Injury & poisoning	44; 8.7% [6.6%, 11.5%]	187; 7.4% [6.4%, 8.5%]	1.2 [1, 1.5]; p=0.093	1.1 [0.9, 1.4]; p=0.29
Self-harm	72; 14.2% [11.5%, 17.6%]	145; 5.7% [4.9%, 6.7%]	3.1 [2.5, 3.9]; p=<0.001	3.1 [2.5, 3.8]; p=<0.001
Emergency departm	ient			
Sub-tot	al 330 (100%)	1650 (100%)		
Accident	65; 19.7% [15.8%, 24.3%]	248; 15% [13.4%, 16.8%]	1.4 [1.2, 1.7]; p=<0.001	1.2 [1.0, 1.5]; p=0.075
Injury & poisoning	43; 13.0% [9.8%, 17.1%]	151; 9.2% [7.9%, 10.6%]	1.5 [1.2, 1.9]; p=<0.001	1.3 [1.0, 1.7]; p=0.08
Self-harm	57; 17.3% [13.6%, 21.7%]	84; 5.1% [4.1%, 6.3%]	3.8 [2.9, 4.9]; p=<0.001	3.7 [2.9, 4.8]; p=<0.001
Hospital admissions				
Sub-tot	al 703 (100%)	3515 (100%)		
Accident	53; 7.5% [5.8%, 9.7%]	178; 5.1% [4.4%, 5.8%]	1.5 [1.3, 1.9]; p=<0.001	0.7 [0.5, 0.9]; p=0.004
Injury & poisoning	187; 26.6% [23.5%, 30%]	401; 11.4% [10.4%, 12.5%]	3.0 [2.6, 3.4]; p=<0.001	2.8 [2.1, 3.8]; p=<0.001
Self-harm	129; 18.4% [15.7%, 21.4%]	222; 6.3% [5.6%, 7.2%]	3.5 [3.0, 4.2]; p=<0.001	1.4 [1.0, 1.9]; p=0.032

Numbers are counts, percentages and 95% confidence intervals of individuals. Odds ratios from univariate and multivariate (i.e., including accident, injury and poisoning, and self-harm variables) conditional logistic regression models for 'any' and each healthcare setting separately are shown.

Supplementary Table 9. Accident, injury and poisoning and self-harm contacts in the year before index date stratified by cases in NCISH and cases in SID-Cymru-only.

	NCISH cases (N; % [95% CI%])	SID-Cymru only cases (N; % [95% CI%])
Any healthcare setting		
Sub-	total 255 (100%)	100 (100%)
Accident	67; 26.3% [21.3%, 32.0%]	36; 36.0% [27.3%, 45.8%]
Injury & poisoning	93; 36.5% [30.8%, 42.5%]	41; 41.0% [31.9%, 50.8%]
Self-harm	74; 29.0% [23.8%, 34.9%]	27; 27.0% [19.3%, 36.4%]
Primary care		
Sub-	total 576 (100%)	179 (100%)
Accident	21; 3.7% [2.4%, 5.5%]	6; 3.4% [1.6%, 7.1%]
Injury & poisoning	47; 8.2% [6.2%, 10.7%]	17; 9.5% [6.0%, 14.7%]
Self-harm	97; 16.9% [14.0%, 20.1%]	23; 12.9% [8.7%, 18.6%]
Emergency departmen	t	
Sub-	total 349 (100%)	120 (100%)
Accident	68; 19.5% [15.7%, 24.0%]	32; 26.7% [19.6%, 35.2%]
Injury & poisoning	38; 10.9% [8.0%, 14.6%]	28; 23.3% [16.7%, 31.7%]
Self-harm	52; 14.9% [11.6%, 19.0%]	24; 20.0% [13.8%, 28.0%]
Hospital admissions		
Sub-	total 814 (100%)	217 (100%)
Accident	66; 8.1% [6.4%, 10.2%]	21; 9.7% [6.4%, 14.4%]
Injury & poisoning	250; 30.7% [27.7%, 34.0%]	57; 26.3% [20.9%, 32.5%]
Self-harm	191; 23.5% [20.7%, 26.5%]	34; 15.7% [11.4%, 21.1%]

NCISH, National Confidential Inquiry into Suicide and Safety in Mental Health; SID-Cymru, Suicide Information Database – Cymru Numbers are counts, percentages and 95% confidence intervals of individuals.