

APPENDIX 1 [as supplied by authors]

Operational definition of completed suicide and attempted suicide

Completed and attempted suicides were identified using approaches, previously described and validated in the GPRD (see MS references 9, 10, 11).

We identified all the Read or OXMIS coding for suicide (see listing in Table 1) in the medical records. Free text notes associated with the suicide records were extracted and anonymized at the MHRA. Two study team members (AR, PT) reviewed the free text; a third reviewer (SW) was responsible for a second independent review in order to finalize identification of all suicide cases (attempted or completed). All reviewers were blind to exposure. When there was disagreement, individual cases were discussed and consensus was reached.

When suicide coding was not associated with an administrative record of death, the event was counted as 'attempted suicide'. Suicide cases were considered as 'completed suicides' if these were associated with an administrative record of death within 30 days from the date of the medical record of suicide. This time window was allowed to ensure sufficient time for completing administrative and legal procedures and recording at the general practice.

Additionally, cases of completed suicide were identified by review of free text notes associated with any coding for death (see listing in Table 2).

We adopted a ‘fully inclusive’ approach in selecting coding for both death and suicide to ensure that miscoding did not prevent identification of suicide cases. Review of the free text notes associated with suicide and death coding aimed at optimizing the specificity of outcome identification and minimizing misclassification.

Table 1. Read and OXMIS terminology and associated coding for the identification of suicides in GPRD

Read/OXMIS Code	Read/OXMIS Term
U2...14	[X]Attempted suicide
U20..11	[X]Deliberate drug overdose / other poisoning
U30..11	[X]Deliberate drug poisoning
U41..00	[X]Hanging strangulation + suffocation undetermined intent
U209600	[X]Int self pois alcohol indust/construct area
U203600	[X]Int self pois antiparkinson drug indust/construct area
U206600	[X]Int self pois hallucinogen indust/construct area
U205600	[X]Int self pois narcotic drug indust/construct area
U200600	[X]Int self pois nonopioid analgesic indust/construct area
U20Az00	[X]Int self pois org solv,halogen hydrocarb, unspec place
U20Ay00	[X]Int self pois org solv,halogen hydrocarb,oth spec place
U20A600	[X]Int self pois org solvent,halogen hydrocarb,indust area
U207600	[X]Int self pois oth autonomic drug indust/construct area
U208600	[X]Int self pois oth/unsp drug/medic indust/construct area
U20B600	[X]Int self pois other gas/vapour indust/construct area
U20C600	[X]Int self pois pesticide indust/construct area
U204600	[X]Int self pois psychotropic drug indust/construct area
U202600	[X]Int self pois sedative hypnotic indust/construct area
U20y600	[X]Int self pois unspecif chemical indust/construct area
U209300	[X]Int self poison alcohol in sport/athletic area
U209y00	[X]Int self poison alcohol other spec place
U209200	[X]Int self poison alcohol school/pub admin area
U201300	[X]Int self poison antiepileptic in sport/athletic area
U201600	[X]Int self poison antiepileptic indust/construct area
U203y00	[X]Int self poison antiparkinson drug other spec place
U203300	[X]Int self poison antparkinson drug in sport/athletic area [X]Int self poison antparkinson drug school/pub admin area
U203200	[X]Int self poison antparkinson drug school/pub admin area
U206y00	[X]Int self poison hallucinogen other spec place
U206300	[X]Int self poison hallucinogenin sport/athletic area
U206200	[X]Int self poison hallucinogenschool/pub admin area
U205300	[X]Int self poison narcotic drug in sport/athletic area
U205y00	[X]Int self poison narcotic drug other spec place
U205200	[X]Int self poison narcotic drug school/pub admin area
U200300	[X]Int self poison nonopioid analges in sport/athletic area

U200200	[X]Int self poison nonopioid analges school/pub admin area
U200y00	[X]Int self poison nonopioid analgesic other spec place
U20A200	[X]Int self poison org solvent,halogen hydrocarb, school
U20A400	[X]Int self poison org solvent,halogen hydrocarb,in highway
U20A700	[X]Int self poison org solvent,halogen hydrocarb,on farm
U20A100	[X]Int self poison org solvent,halogen hydrocarb,res instit
U20A300	[X]Int self poison org solvent,halogen hydrocarb,sport area
U20A500	[X]Int self poison org solvent,halogen hydrocarb,trade area
U207300	[X]Int self poison oth autonom drug in sport/athletic area
U207200	[X]Int self poison oth autonom drug school/pub admin area
U207y00	[X]Int self poison oth autonomic drug other spec place
U208300	[X]Int self poison oth/uns drug/med in sport/athletic area
U208200	[X]Int self poison oth/uns drug/med school/pub admin area
U208y00	[X]Int self poison oth/unsp drug/medic other spec place
U20B300	[X]Int self poison other gas/vapour in sport/athletic area
U20By00	[X]Int self poison other gas/vapour other spec place
U20B200	[X]Int self poison other gas/vapour school/pub admin area
U20C300	[X]Int self poison pesticide in sport/athletic area
U20Cy00	[X]Int self poison pesticide other spec place
U20C200	[X]Int self poison pesticide school/pub admin area
U204300	[X]Int self poison psychotropic drug in sport/athletic area
U204y00	[X]Int self poison psychotropic drug other spec place
U204200	[X]Int self poison psychotropic drug school/pub admin area
U202300	[X]Int self poison sedative hypnotic in sport/athletic area
U202y00	[X]Int self poison sedative hypnotic other spec place
U202200	[X]Int self poison sedative hypnotic school/pub admin area
U20y300	[X]Int self poison unspecif chemical in sport/athletic area
U20yy00	[X]Int self poison unspecif chemical other spec place
U20y200	[X]Int self poison unspecif chemical school/pub admin area
U209000	[X]Int self poison/exposure to alcohol at home
U209700	[X]Int self poison/exposure to alcohol on farm
U201000	[X]Int self poison/exposure to antiepileptic at home
U201700	[X]Int self poison/exposure to antiepileptic on farm
U203000	[X]Int self poison/exposure to antiparkinson drug at home
U203700	[X]Int self poison/exposure to antiparkinson drug on farm
U206000	[X]Int self poison/exposure to hallucinogen at home
U206700	[X]Int self poison/exposure to hallucinogen on farm
U205000	[X]Int self poison/exposure to narcotic drug at home
U205700	[X]Int self poison/exposure to narcotic drug on farm
U200000	[X]Int self poison/exposure to nonopioid analgesic at home
U200700	[X]Int self poison/exposure to nonopioid analgesic on farm
U207000	[X]Int self poison/exposure to oth autonomic drug at home
U207700	[X]Int self poison/exposure to oth autonomic drug on farm
U208700	[X]Int self poison/exposure to oth/unsp drug/medic on farm
U208000	[X]Int self poison/exposure to oth/unsp drug/medicam home
U20B000	[X]Int self poison/exposure to other gas/vapour at home
U20B700	[X]Int self poison/exposure to other gas/vapour on farm
U208.00	[X]Int self poison/exposure to other/unspec

drug/medicament

U20C000 [X]Int self poison/exposure to pesticide at home
U20C700 [X]Int self poison/exposure to pesticide on farm
U204000 [X]Int self poison/exposure to psychotropic drug at home
U204700 [X]Int self poison/exposure to psychotropic drug on farm
U202000 [X]Int self poison/exposure to sedative hypnotic at home
U202700 [X]Int self poison/exposure to sedative hypnotic on farm
U20y000 [X]Int self poison/exposure to unspecif chemical at home
U20y700 [X]Int self poison/exposure to unspecif chemical on farm
U209400 [X]Intent self pois alcohol in street/highway
U209500 [X]Intent self pois alcohol trade/service area
U201400 [X]Intent self pois antiepileptic in street/highway
U201500 [X]Intent self pois antiepileptic trade/service area
U203400 [X]Intent self pois antiparkinson drug in street/highway
U203500 [X]Intent self pois antiparkinson drug trade/service area
U206400 [X]Intent self pois hallucinogen in street/highway
U206500 [X]Intent self pois hallucinogen trade/service area
U205400 [X]Intent self pois narcotic drug in street/highway
U205500 [X]Intent self pois narcotic drug trade/service area
[X]Intent self pois nonopioid analges school/pub admin
area
U201200
U200400 [X]Intent self pois nonopioid analgesic in street/highway
U200500 [X]Intent self pois nonopioid analgesic trade/service area
U20A000 [X]Intent self pois organ solvent,halogen hydrocarb, home
U207400 [X]Intent self pois oth autonomic drug in street/highway
U207500 [X]Intent self pois oth autonomic drug trade/service area
U208400 [X]Intent self pois oth/unsp drug/medic in street/highway
U208500 [X]Intent self pois oth/unsp drug/medic trade/service area
U20B400 [X]Intent self pois other gas/vapour in street/highway
U20B500 [X]Intent self pois other gas/vapour trade/service area
U20C400 [X]Intent self pois pesticide in street/highway
U20C500 [X]Intent self pois pesticide trade/service area
U204400 [X]Intent self pois psychotropic drug in street/highway
U204500 [X]Intent self pois psychotropic drug trade/service area
U202400 [X]Intent self pois sedative hypnotic in street/highway
U202500 [X]Intent self pois sedative hypnotic trade/service area
U20y400 [X]Intent self pois unspecif chemical in street/highway
U20y500 [X]Intent self pois unspecif chemical trade/service area
U209100 [X]Intent self poison alcohol at res institut
U209z00 [X]Intent self poison alcohol unspecif place
U201100 [X]Intent self poison antiepileptic at res institut
U201y00 [X]Intent self poison antiepileptic other spec place
U201z00 [X]Intent self poison antiepileptic unspecif place
U203100 [X]Intent self poison antiparkinson drug at res institut
U203z00 [X]Intent self poison antiparkinson drug unspecif place
U206100 [X]Intent self poison hallucinogen at res institut
U206z00 [X]Intent self poison hallucinogen unspecif place
U205100 [X]Intent self poison narcotic drug at res institut
U205z00 [X]Intent self poison narcotic drug unspecif place
U200100 [X]Intent self poison nonopioid analgesic at res institut
U200z00 [X]Intent self poison nonopioid analgesic unspecif place

U207100	[X]Intent self poison oth autonomic drug at res institut
U207z00	[X]Intent self poison oth autonomic drug unspecif place
U208z00	[X]Intent self poison oth/unsp drug/medic unspecif place
U208100	[X]Intent self poison oth/unsp drug/medicam res institut
U20B100	[X]Intent self poison other gas/vapour at res institut
U20Bz00	[X]Intent self poison other gas/vapour unspecif place
U20C100	[X]Intent self poison pesticide at res institut
U20Cz00	[X]Intent self poison pesticide unspecif place
U204100	[X]Intent self poison psychotropic drug at res institut
U204z00	[X]Intent self poison psychotropic drug unspecif place
U202100	[X]Intent self poison sedative hypnotic at res institut
U202z00	[X]Intent self poison sedative hypnotic unspecif place
U20y100	[X]Intent self poison unspecif chemical at res institut
U20yz00	[X]Intent self poison unspecif chemical unspecif place
U209.00	[X]Intent self poison/exposure to alcohol
U201.00	[X]Intent self poison/exposure to antiepileptic
U203.00	[X]Intent self poison/exposure to antiparkinson drug
U206.00	[X]Intent self poison/exposure to hallucinogen
U205.00	[X]Intent self poison/exposure to narcotic drug
U200.00	[X]Intent self poison/exposure to nonopioid analgesic
U207.00	[X]Intent self poison/exposure to oth autonomic drug
U20B.00	[X]Intent self poison/exposure to other gas/vapour
U20C.00	[X]Intent self poison/exposure to pesticide
U204.00	[X]Intent self poison/exposure to psychotropic drug
U202.00	[X]Intent self poison/exposure to sedative hypnotic
U20y.00	[X]Intent self poison/exposure to unspecif chemical
U20A.00	[X]Intentional self poison organ solvent,halogen hydrocarb
	[X]Intentional self poisoning/exposure to noxious substances
U20..00	
U204.12	[X]Overdose - amitriptyline
U202.18	[X]Overdose - amylobarbitone
U204.11	[X]Overdose - antidepressant
U200.13	[X]Overdose - aspirin
U202.17	[X]Overdose - barbiturate
U202.16	[X]Overdose - benzodiazepine
U202.12	[X]Overdose - diazepam
U202.14	[X]Overdose - flurazepam
U200.12	[X]Overdose - ibuprofen
U202.15	[X]Overdose - nitrazepam
U200.11	[X]Overdose - paracetamol
U202.11	[X]Overdose - sleeping tabs
U204.13	[X]Overdose - SSRI
U202.13	[X]Overdose - temazepam
U2...15	[X]Para-suicide
U400.00	[X]Poisoning/exposure, ? intent, to nonopioid analgesic
U402.00	[X]Poisoning/exposure, ? intent, to sedative hypnotic
U40y.00	[X]Poisoning/exposure, ? intent, to unspecif chemical
U2...13	[X]Suicide
SL90000	Amitriptyline poisoning
9947HN	ASPHYXIA DUE HANGING
9947TR	ASPHYXIA DUE STRANGULATION

SN47z00	Asphyxiation or strangulation NOS
9651P	ASPIRIN POISONING
SL51000	Aspirin poisoning
TK...15	Attempted suicide
9670A	BARBITURATE OVERDOSE
SL94.00	Benzodiazepine poisoning
TK...11	Cause of overdose - deliberate
9779DL	DELIBERATE OVERDOSE (DRUG)
ZX18.00	Hanging self
9651D	OVERDOSE ASPIRIN
9779L	OVERDOSE DRUG SUICIDAL
9779A	OVERDOSE DRUG(S)
SL...14	Overdose of biological substance
SL...15	Overdose of drug
SL52100	Paracetamol poisoning
L3009P	PARASUICIDE
TK...17	Para-suicide
TK...13	Poisoning - self-inflicted
SL51.00	Salicylate poisoning
SL7..00	Sedative and hypnotic drug poisoning
ZX1H.00	Self-asphyxiation
C110100	Self-induced hyperinsulinism
ZX1H200	Self-suffocation
9947TS	STRANGULATION
9947TA	STRANGULATION ATTEMPTED
SN47100	Suffocation by strangulation
9779NA	SUICIDAL OVERDOSE (DRUG)
3009D	SUICIDE
TK3z.00	Suicide + selfinflicted inj by hang/strangle/suffocate NOS
TK3y.00	Suicide + selfinflicted inj oth mean hang/strangle/suffocate
TKx0z00	Suicide + selfinflicted inj-jump/lie before moving obj NOS
TK3..00	Suicide + selfinflicted injury by hang/strangulate/suffocate
TK31.00	Suicide + selfinflicted injury by suffocation by plastic bag
TKx0.00	Suicide + selfinflicted injury-jump/lie before moving object
TKx0000	Suicide + selfinflicted injury-jumping before moving object
TKx0100	Suicide + selfinflicted injury-lying before moving object
TK06.00	Suicide + selfinflicted poisoning by agricultural chemical
TK00.00	Suicide + selfinflicted poisoning by analgesic/antipyretic
	Suicide + selfinflicted poisoning by arsenic + its
TK08.00	compounds
TK01.00	Suicide + selfinflicted poisoning by barbiturates
TK07.00	Suicide + selfinflicted poisoning by corrosive/caustic subst
TK1z.00	Suicide + selfinflicted poisoning by domestic gases NOS
TK05.00	Suicide + selfinflicted poisoning by drug or medicine NOS
TK10.00	Suicide + selfinflicted poisoning by gas via pipeline
	Suicide + selfinflicted poisoning by gases and vapours
TK2z.00	NOS
TK1..00	Suicide + selfinflicted poisoning by gases in domestic use
TK11.00	Suicide + selfinflicted poisoning by liquified petrol gas
TK20.00	Suicide + selfinflicted poisoning by motor veh exhaust gas
TK02.00	Suicide + selfinflicted poisoning by oth sedatives/hypnotics

TK04.00	Suicide + selfinflicted poisoning by other drugs/medicines
TK2y.00	Suicide + selfinflicted poisoning by other gases and vapours
TK0z.00	Suicide + selfinflicted poisoning by solid/liquid subst NOS
TK0..00	Suicide + selfinflicted poisoning by solid/liquid substances
TK03.00	Suicide + selfinflicted poisoning tranquilliser/psychotropic
TK...14	Suicide and self harm
TK01000	Suicide and self inflicted injury by Amylobarbitone
TK01100	Suicide and self inflicted injury by Barbitone
TK01z00	Suicide and self inflicted injury by barbiturates
TK01200	Suicide and self inflicted injury by Butabarbitone
TK01300	Suicide and self inflicted injury by Pentabarbitone
TK01400	Suicide and self inflicted injury by Phenobarbitone
TK01500	Suicide and self inflicted injury by Quinalbarbitone
TK...00	Suicide and selfinflicted injury
TKx1.00	Suicide and selfinflicted injury by burns or fire
TKx5.00	Suicide and selfinflicted injury by crashing motor vehicle
TKx6.00	Suicide and selfinflicted injury by crashing of aircraft
TK60.00	Suicide and selfinflicted injury by cutting
TK6..00	Suicide and selfinflicted injury by cutting and stabbing
	Suicide and selfinflicted injury by cutting and stabbing NOS
TK6z.00	NOS
TK4..00	Suicide and selfinflicted injury by drowning
TKx4.00	Suicide and selfinflicted injury by electrocution
TK55.00	Suicide and selfinflicted injury by explosives
TKx3.00	Suicide and selfinflicted injury by extremes of cold
TK5..00	Suicide and selfinflicted injury by firearms and explosives
TK5z.00	Suicide and selfinflicted injury by firearms/explosives NOS
TK50.00	Suicide and selfinflicted injury by handgun
TK30.00	Suicide and selfinflicted injury by hanging
TK52.00	Suicide and selfinflicted injury by hunting rifle
TK7..00	Suicide and selfinflicted injury by jumping from high place
TK53.00	Suicide and selfinflicted injury by military firearms
TK54.00	Suicide and selfinflicted injury by other firearm
TKx..00	Suicide and selfinflicted injury by other means
TKxz.00	Suicide and selfinflicted injury by other means NOS
TKxy.00	Suicide and selfinflicted injury by other specified means
TKx2.00	Suicide and selfinflicted injury by scald
TK51.00	Suicide and selfinflicted injury by shotgun
TK61.00	Suicide and selfinflicted injury by stabbing
TKx7.00	Suicide and selfinflicted injury caustic subst, excl poison
TKz..00	Suicide and selfinflicted injury NOS
	Suicide and selfinflicted poisoning by other carbon monoxide
TK21.00	monoxide
TK1y.00	Suicide and selfinflicted poisoning by other utility gas
3009C	SUICIDE ATTEMPT
9947TC	SUICIDE ATTEMPT STRANGULATION
TK7z.00	Suicide+selfinflicted injury-jump from high place NOS
TK72.00	Suicide+selfinflicted injury-jump from natural sites
	Suicide+selfinflicted injury-jump from oth manmade structure
TK71.00	structure

TK70.00

Suicide+selfinflicted injury-jump from residential premises

Table 2. Read and OXMIS coding for the identification of death in the GPRD

Read/OXMIS Code	Read/OXMIS Term
R212.00	[D]Death less than 24 hours from onset of illness [D]Death less than 24 hours from onset of illness
R212z00	NOS
R212000	[D]Death, not instantaneous cause unknown
R212100	[D]Died, with no sign of disease
R213000	[D]Found after death, unknown cause of death
R213100	[D]Found dead
R211.00	[D]Instantaneous death
R2...12	[D]Mortality, cause unsure
R21..00	[D]Sudden death, cause unknown
R21z.00	[D]Sudden death, cause unknown NOS
R213.00	[D]Unattended death
R213z00	[D]Unattended death NOS
ZV68011	[V]Issue of death certificate
RyuC.00	[X]Ill-defined and unknown causes of mortality
U3...13	[X]Murder
RyuC200	[X]Other ill-defined and unspecified causes of death
RyuC100	[X]Other sudden death, cause unknown
TGyz400	Accidentally killed NOS
94...11	Administration after pat. Died
9454	Ask for hosp death disch lett.
9452	Await hosp death disch letter
94B..00	Cause of death
947..00	Cause of death clarif. SD17/18
941..11	Certificate – death
94B..11	Condition fatal-cause of death
L0010GP	CORONER REFERRED TO
9433	Coroner report - paid for
9431	Coroner report – requested
9432	Coroner report - sent off
9441	Coroner's PM report awaited
944Z.00	Coroner's PM report NOS
9443	Coroner's PM report received
9442	Coroner's PM report requested
944..00	Coroner's post-mortem report
9482	Crem. Form part B completed
9483	Crem. Form part C arranged
9484	Crem. Form part C completed
948..00	Cremation certification
948Z.00	Cremation certification NOS
949..11	Dead - place patient died
9498	Dead on arrival at hospital

22J..12	Death
T140 F	DEATH
94...00	Death administration
94Z..00	Death administration NOS
9681D	DEATH ANAESTHETIC
T140 FH	DEATH AT HOME
9411	Death cert. Med A due
941Z.00	Death cert. Med A NOS
9412	Death cert. Med A signed
941..00	Death certificate form Med A
8HG..11	Death in hospital
T140 FP	DEATH IN HOSPITAL
9451	Death notif. From hospital
946..00	Death notif.- non.hosp source
949..12	Deceased - place patient died
T1400M	DIED
22J..13	Died
949..13	Died - place patient died
8HG..00	Died in hospital
795 DR	DROPPED DEAD
7962	FOUND DEAD
9499	Found dead at accident site
T0y0.00	Found dead on railway right-of-way unspecified
	Found dead on railway unspecified - other spec person
T0y0y00	
T0y0100	Found dead on railway unspecified - passenger
T0y0200	Found dead on railway unspecified - pedestrian
	Found dead on railway unspecified - unspecified person
T0y0z00	
9234	FP22-death
945Z.00	Hospital death disch. NOS
945..00	Hospital death discharge notif
T053.00	Killed by rolling stock
T053y00	Killed by rolling stock – other specified person
T053100	Killed by rolling stock – passenger
T053300	Killed by rolling stock – pedal cyclist
T053200	Killed by rolling stock – pedestrian
T053000	Killed by rolling stock – railway employee
T053z00	Killed by rolling stock – unspecified person
9413	Med A given to family
9414	Med A not signed-coroner case
22J..00	O/E – dead
22J..11	O/E - dead - condition fatal
22J2.00	O/E - dead – expected
22J4.00	O/E - dead - sudden death
22J6.00	O/E - dead - suspicious death
22J3.00	O/E - dead - unattended death
22J1.00	O/E - dead – unexpected
22JZ.00	O/E - dead NOS
2329	O/E - death rattle
236..12	O/E - respiratory death

22J..14	Patient died
T400	PATIENT DIED
949..00	Patient died - to record place
9491	Patient died at home
949A.00	Patient died in hospice
9495	Patient died in hospital
9493	Patient died in nursing home
9492	Patient died in part 3 accom.
949Z.00	Patient died in place NOS
9497	Patient died in publ.place NOS
9494	Patient died in resid.inst.NOS
9496	Patient died in street
9481	Patient for cremation
949..14	Place of death
94C..00	Post mortem report
L 917PM	POST MORTEM REPORT RECEIVED
94C0.00	Post mortem report received
7L1M000	Preoperative anaesthetic death
9453	Receiv hosp death disch letter
94A..11	Referral to coroner
L0010GN	REFERRED TO CORONER
943..00	Report for Coroner
943Z.00	Report for Coroner NOS
L 917WD	REPORT RECEIVED FROM CORONER
947..11	SD17 - cause of death clarif
947Z.00	SD17/18 cause of death NOS
9472	SD17/18 completed
9471	SD17/18 received-death clarif.
9473	SD17/18-no details, returned
947..12	SD18 - cause of death clarif
948..11	Stat B,C and F cremation certs
G575100	Sudden cardiac death, so described
T4002	SUDDEN DEATH
795 N	SUDDEN DEATH NONVIOLENT
94A..00	Unexpected death-Coroner told
7963	UNKNOWN CAUSE DEATH
T4001	VIOLENT DEATH