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**Differing patterns in intentional and unintentional poisonings among young people in England, 1998-2014: a population based cohort study**

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## **ABSTRACT**

**Background:** Accurate and up to date data on changes in poisoning incidence among young people are lacking. Recent linkage of UK primary care, hospital and mortality data allows these to be quantified to inform service delivery.

**Methods:** An open cohort study of 1,736,527 young people aged 10-24 between 1998-2014 was conducted using linked data from the Clinical Practice Research Datalink, Hospital Episode Statistics and Office for National Statistics deaths. Incidence rates by poisoning intent were calculated by age, sex, deprivation and year.

**Results:** Total poisoning incidence rates increased by 25% from 1998/99-2013/14 (adjusted incidence rate ratio (aIRR) 1.25, 95%CI 1.20-1.30). Patterns differed markedly by intent. Intentional poisoning rates increased by 52% while unintentional rates remained unchanged. Intentional rates increased almost exclusively among females, gradually between 1998/99 and 2013/14 among 16-18 (88% increase) and 19-24 (36% increase) year olds but only increased among 10-15 year olds in the last 2 years (79% increase). A two-fold increased risk of poisoning for the most compared to least deprived quintile existed (aIRR 2.21, 95%CI 2.02-2.23) and remained over time.

**Conclusions:** Commissioning of primary and secondary prevention services needs to address the growing problem of intentional poisonings among young people.

## INTRODUCTION

Poisonings remain one of the leading causes of death among young people across Europe and North America, encompassing both unintentional and self-harm events.[1,2] In more recent years medically-attended poisonings among pre-school children have reduced,[3,4] but those among adolescents appear to have increased.[5] The existing literature examining poisoning time trends among young people is, however, either out of date or based on single data sources.[5-8] We previously reported poisoning incidence rates amongst 0-24 year olds from 1998-2011 using a large primary care dataset linked to hospitalisation data and found strong socio-economic gradients in all age groups. However time-trends or social gradients were not explored by poisoning intent.[9] We also reported poisoning incidence in 10-17 year olds between 1992-2012 using primary care data alone. We found intentional poisoning incidence increased with age up to 17 years, increased over time and strong socio-economic gradients.[5] As primary care records are likely to underestimate self-harm events by up to 30%,[10] this study uses a large primary care dataset linked to hospitalisation and mortality data. Given that self-harm incidence may increase beyond age 17 into early adulthood,[11,12] we also present analyses covering a wider age range, using more contemporaneous data, reporting variations in poisoning incidence by age, sex, intent, deprivation and time-trends that would be useful for informing planning and delivery of poison prevention and treatment services.

## METHODS

### Study population

In the UK, 98% of the population is registered with a general practitioner (GP)[13] and primary care records contain information on all health care utilisation. Information on emergency department (ED), outpatient clinic attendances and hospitalisations is provided to GPs for recording in the electronic record alongside all primary care consultations.

Data were obtained from CPRD, a database of routinely collected primary care data from 674 UK general practices. A subset of 395 practices within England have primary care data linked to hospitalisation data from Hospital Episode Statistics (HES) and Office for National Statistics (ONS) mortality data. Using these linked sources substantially improves capture of poisoning episodes compared to using CPRD or HES data alone.[10,14]

The study population was an open cohort capturing the CPRD registered population, with linked HES and ONS data available and aged 10-24 years between April 1<sup>st</sup> 1998 and March 31<sup>st</sup> 2014. Participants entered the cohort on the latest of: their 10<sup>th</sup> birthday, registration date with the practice, date the practice reached the CPRD defined data quality standard for completeness or first date of data collection from the practice within the study period. They exited the cohort at the earliest of: their 25<sup>th</sup> birthday, death, date they left the practice, or last day of data collection from the practice within the study period (figure 1).

### Outcome events

The study outcome was any poisoning event occurring between participants' entry and exit from the cohort and recorded within at least one of the data sources. Poisoning events were defined according to ICD-10 categories T36-65, X40-49, X60-69, Y10-19 and Y90-91, and identified using comprehensive ICD-10 (HES and ONS data) and Read (CPRD) code lists. We excluded iatrogenic, venomous animal and food poisonings. We also included one Office of Population Censuses and Surveys Classification of Interventions and Procedures version 4 (OPCS-4) code indicating a poisoning. Within the mortality data, only poisonings recorded as the primary cause of death were included. Code lists are provided in Supplementary Table S4.

We categorised poisonings as intentional, unintentional, or undifferentiated intent based on the code for each event providing most detail about intent. Where codes explicitly described intent using the words 'deliberate', 'intentional', 'suicide', 'self-inflicted', or 'self-poisoning' (intentional) or 'accidental' (unintentional) then they were classified as such. The Read code 'SL...15 Overdose of Drug' has previously been shown to be likely to indicate a definite self-harm event.[10] Based on this, Read codes including 'overdose' were classified as intentional, unless otherwise specified (see Supplementary Table S4). All remaining codes, recording undetermined or unknown intent or with no intent specified, were classified as undifferentiated. Events with both intentional and unintentional codes were classified as undifferentiated intent. Results from undifferentiated cases have been included in the total poisonings but not reported separately. Repeat poisonings in the same individual were included. We used an algorithm based on our previous work to exclude repeat codes likely to record the same event, including duplicate recording in the different databases.[14]

### Statistical analysis

Incidence rates (IR) per 100,000 person-years (PY) and 95% confidence intervals (95%CI), were calculated for each poisoning intent by sex, age, socio-economic deprivation (using quintiles of the Index of Multiple Deprivation 2010 (IMD) for England[15]), geographical area (administrative strategic health authority area) and calendar year. Age and year were assessed as time-varying covariates by Lexis expansion. IMD is a composite deprivation measure based on housing, employment, income, access to services, education and skills, crime, and living environment and was provided by CPRD, at a lower super output area level, typically around 650 households, based on the postcode of the practice.

Incidence rate ratios (IRRs), adjusted for available confounders, were calculated using negative binomial regression due to over-dispersion of poisoning events. Separate multivariable models were built for total poisonings and for each poisoning intent using a backward elimination method, based on likelihood ratio tests (LRTs) with a  $p$ -value of  $<0.05$ . Sex was included in all models *a priori*. All variables significant ( $p < 0.05$ ) on univariate analysis, were included in the full model. Variables were removed in order of least significance first. Once no more variables could be removed, those already removed were re-entered into the model and significant variables retained. Models were assessed for collinearity between age and year based on the variance inflation factor.

On the basis of existing evidence and theoretical plausibility, interactions between sex and age,[11] time period and sex,[11] time and age[16] plus time and socio-economic deprivation were assessed using LRTs comparing models with and without interaction terms ( $p < 0.01$ ), with stratified incidence rates presented where interactions were significant. Data were analysed using StataSE version 12.

### Sensitivity analysis

Three sensitivity analyses were conducted:

- (a) including poisonings recorded in ONS data that were not the primary cause of death but were involved in the death,
- (b) excluding individuals with less than one person-year of follow-up time, and
- (c) excluding five codes including the phrase 'injury and poisoning' (for example 'S...00 Injury and poisoning') as these may refer to another type of injury other than poisoning.

## RESULTS

The cohort consisted of 1,736,527 individuals contributing 7,209,529 person-years of follow up. 52% were female (table 1). Those with a poisoning event entered the cohort at a younger age (median 13.9 years, inter-quartile range (IQR) 10.0-18.5) and contributed more person-time (median 6.7 PY, IQR 3.2-10.2) than those without a poisoning (median age entering cohort 16.3 years, IQR 10.0-21.5, median PY contributed 2.8, IQR 1.1-6.3).

A total of 41,333 poisoning events were recorded from 31,509 cohort members. The IR for all poisonings was 559.4 per 100,000 PY, 95%CI 554.0-564.9. Two thirds (66%) of poisonings were intentional (IR 371.9 per 100,000 PY, 95%CI 367.4-376.3), 8% unintentional (42.2 per 100,000 PY, 95%CI 40.7-43.7) and 26% of undifferentiated intent (145.4 per 100,000 PY, 95%CI 142.6-148.2).

### **Sex and age distribution**

Both sexes exhibited different poisoning patterns by age ( $p$ -value for interaction term  $<0.001$  for each poisoning intent) with females having twice the rate of total poisonings of males (adjusted IRR (aIRR) 2.13, 95%CI 2.07-2.18, table 2). Peak poisoning incidence was at age 15 in females and age 20 in males (Supplementary Figure S1). Females showed a steep increase in incidence rates from age 12-15 then a gradual decline to age 24. Males showed a gradual increase in incidence rates across the ages of 10-20 years before a slow decline to age 24.

### **Socio-economic variations**

There was a strong socio-economic gradient in poisonings with higher incidence rates in the more deprived areas (table 2). Intentional poisoning risk doubled (aIRR 1.97, 95%CI 1.85-2.09) and unintentional poisoning risk increased roughly 50% (aIRR 1.55, 95%CI 1.31-1.83) for the most compared to least deprived areas.

### **Changes over time**

Figure 2 shows total, intentional and unintentional poisoning rates for males and females over time. Total poisoning rates increased by 25% (aIRR 1.25, 95%CI 1.20-1.30) from 1998/99-2001/02 to 2010/11-2013/14 (table 2). There was a 52% increase in intentional poisoning rates (aIRR 1.52, 95%CI 1.44-1.60) but no change in unintentional poisonings over this period.

Intentional poisonings increased among females over the period studied but remained static among males (figure 2,  $p$ -value for interaction term between time and sex  $<0.001$ ). This increase for females varied by age group (figure 2,  $p$ -value for interaction term between time and age  $<0.001$ ). The increase was steady over time amongst 16-18s, from 605.4 per 100,000 PY (95%CI 508.8-720.5) in 1998/99 to 1138.1 (95%CI 1042.8-1242.1) in 2013/14. Similarly in 19-24 year olds it increased from 503.4 per 100,000 PY (95%CI 441.6-573.9) in 1997/98 to 685.7 (95%CI 633.8-741.7) in 2013/14. In 10-15 year olds the increase was only really seen within the last 2 years, increasing from 300.3 per 100,000 PY (95%CI 267.6-337.0) in 2011/12 to 537.9 (95%CI 490.3-590.2) in 2013/14. The roughly doubled risk of an intentional poisoning among the most compared to least deprived quintile persisted across the period studied, but increases over time were most marked in quintiles 2,3 and 4 (figure 3,  $p$ -value for interaction term  $<0.001$ ).

Unintentional poisoning incidence rates remained unchanged over time (table 2, figure 2), hence interactions between time and sex, age or IMD were not assessed.

### **Sensitivity analysis**

Including ONS poisonings that were not the primary cause of death added 82 events to the total (41 unintentional and 41 other intent). This had little impact on incidence rates or any of the associations seen across any poisoning intent (Supplementary Table S1). Excluding individuals contributing less than one person-year from the cohort reduced the total poisoning rate from 559.4 per 100,000 PY (95%CI 554.0-564.9) to 535.1 (95%CI 529.7-540.6), but had little impact on associations seen across any of the poisoning intents (Supplementary Table S2). Excluding poisoning codes containing the phrase 'injury or poisoning' reduced the total poisonings from 41,333 to 36,352, exclusively within undifferentiated intent poisonings. For total poisonings the associations

seen for sex, age group and deprivation were altered (Supplementary Table S3) but none of the rates or associations for intentional or unintentional poisonings changed.

## **DISCUSSION**

### **Main finding of this study**

Using population-based linked primary care, hospitalisation and mortality data we have shown an increase of 52% in recorded medically-attended intentional poisonings from 1998-2014 amongst young people. These increases have occurred almost exclusively among females across all ages from 10-24 years. The largest increase in incidence was among 16-18 year old females. We have demonstrated very different patterns in poisoning epidemiology according to intent and a doubling of the poisoning risk for the most compared to least deprived quintile, which persisted over time.

### **What is already known on this topic**

Poisonings are among the most common causes of death for young people,[1,2] with those who have self-poisoned being at much greater risk of subsequent completed suicide than those who haven't.[17] Adolescent poisoning rates are higher in females than males.[11,18-20] Poisonings among 10-14 year olds in the US were shown to reduce from 1993-95 to 2000-04,[7] but increase in the UK among 15-19 year olds from 1987/8 to 1992/3[6] and 10-17 year olds between 1992 and 2012.[5] The existing literature examining this temporal relationship is, however, either out of date and based on single data sources[6-8] or likely to have significantly underestimated incidence.[5] Indeed most adolescent poisoning epidemiology studies to date have examined data from single hospitals or emergency departments[6,7,11,12,21-25] with few using national hospitalisation,[8,16,17] poison centre,[26] or large primary care datasets including data on primary and secondary care service use.[5,9]

### **What this study adds**

This is one of the largest population-based studies to date examining adolescent poisoning epidemiology, while CPRD is broadly representative of the demographics of the UK population.[27] By including primary care, hospitalisation and mortality data, this study will have captured many more medically attended poisonings than studies using single data sources.[10,14] Our rates are consistently higher than those reported from solely primary care,[5] hospitalisation[6,7,22,28] or ED attendance data.[8,29]

We must consider whether the increase in intentional poisonings demonstrated is real or instead linked to changing coding practices or hospitalisation thresholds. For example, The National Institute for Health and Care Excellence (NICE) issued guidance in 2004 suggesting all under-16s with a self-harm episode be admitted to hospital for further assessment.[30] Although this may partially explain the changes seen, our data do not show a step-change in incidence rates around 2004 and this would only apply to the 10-15 age group. Undifferentiated poisoning rates reduced over the period studied (results not shown) but to a much lesser degree than intentional poisonings and more so among males than females, suggesting that more precise coding practices can only be a partial explanation for our findings.

Much greater increases in intentional poisonings among females than males over time have also been shown from UK primary care data for 10-17 year olds in 1992-2012[5] and in attendances at one UK hospital for all self-harm, including but not limited to poisonings, among 12-24 year olds in 1990-2000.[11,31] Self-harm is still a problem amongst young males too however, with higher rates of suicide,[20] and fatal repetition of self-harm[18] among males than females, with previous self-harm among the strongest predictors of completed suicide.[32]

The increase in intentional poisonings amongst females may be due to changing perceptions among clinicians differentially attributing intent according to gender, differences in pubertal stages between males and females combined with a period of particular neurodevelopmental vulnerability around this time,[20] or gender differences in dealing with distress with self-harm appearing more acceptable amongst girls as a coping mechanism whereas boys tend towards other problem or disruptive behaviours instead [11].

This study showed intentional poisonings amongst 10-15 year old females increase mainly between 2012 and 2014. Although this finding should be interpreted with caution it may indicate a concerning new trend among younger adolescents. Including 10-24 year olds in this study, with the high incidence of poisonings around the age of transition between children's and adult mental health services demonstrated, highlights the need to pay specific attention to these young people in transition between services.

The static rate of unintentional poisonings shown is consistent with that demonstrated among 10-14 year olds between 1990-1999 from UK ED data[8] but contrary to the reduction among 10-17 year olds shown from primary care data alone between 1992-2012.[5] Our failure to show a significant downward trend may relate to the relatively small number of unintentional poisonings and a lack of statistical power to demonstrate such a change. The strong socio-economic gradient across all intents of poisoning demonstrated, with higher rates among those living in more deprived areas, is consistent with existing literature.[5,33]

This study has highlighted that future research should examine poisonings among young people according to different intents separately, as the epidemiology varies widely by intent. Further work examining poisoning substances at a population level is required to inform treatment and preventive strategies.

#### **Limitations of this study**

Despite using multiple data sources, we are still likely to have underestimated the burden of medically-attended poisonings. In the UK, primary care data should include information on all ED attendances as attendance details are sent back to the patient's GP. However some episodes may have been coded as very non-specific events, such as 'seen in emergency department' and not identified by our code lists, while on rare occasions EDs may have failed to notify the patient's GP. The UK does not have poison centres for public access. We may have missed a small number of ONS recorded poisonings in 1998/9 and 1999/2000 as ICD-9 codes were being used to record deaths in those 2 years, whereas our data only included deaths recorded by ICD-10 codes. This would apply only to deaths not recorded in HES or CPRD. Based on the data from subsequent years, the numbers we may have missed are very small, estimated to be a maximum of 28 poisonings in total. Given the number of poisonings in our study, this is unlikely to have an important impact on our findings.

A further limitation is the difficulty ascertaining intent of some poisoning events during clinical encounters, due to patient embarrassment or unwillingness to disclose intent. Indeed 26% of poisonings were of undifferentiated intent, leading us to underestimate intentional and/or unintentional events. Substances of abuse may present a particular challenge in this regard. However, our intent classification was consistent across all substances by relying on the intent recorded at the time of presentation. Coding accuracy is a potential source of bias in all database studies as data were primarily recorded for clinical and administrative purposes. However, CPRD has been shown to be valid for a variety of different disease outcomes.[34] We were only able to examine socio-economic deprivation based on the IMD score for the postcode of a patient's GP practice, not their home address, and this may not always accurately represent individual households' deprivation level. Finally, due to the high power afforded by the large cohort and



multiple significance tests, this may have allowed us to detect statistically significant differences that are of limited clinical importance.

### **Conclusions**

Given the sharp increase in intentional poisonings among young people demonstrated, treatment and preventive services need to be designed to meet the needs of young people of both genders and be responsive to the changing epidemiology. Schools, youth services, GPs and parents are well placed to educate and support young people showing early signs of psychological distress. However awareness of the size of the problem, especially the increasing incidence among the youngest adolescents, needs to be improved, as it is very often underestimated.[35]

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Table 1. Characteristics of the cohort

Characteristics	Number (%) of participants (N=1,736,527)	
	No poisoning events (N=1,705,018)	At least one poisoning event (N=31,509)
Sex		
Male	812,770(48)	12,345 (39)
Female	892,248(52)	19,164 (61)
Age (median years, IQR) entering cohort	16.3 (10.0-21.5)	13.9 (10.0-18.5)
Person-years (median, IQR) contributed	2.8 (1.1-6.3)	6.7 (3.2-10.2)
Index of Multiple Deprivation Quintile		
1 (least deprived)	231,391 (14)	3,021 (10)
2	362,948 (21)	5,834 (18)
3	340,261 (20)	6,867 (22)
4	392,703 (23)	7,826 (25)
5 (most deprived)	377,715 (22)	7,961 (25)

Table 2. Unadjusted and adjusted poisoning incidence rate ratios

	Poisoning incidence rate ratios (95% confidence intervals)					
	All		Intentional		Unintentional	
	Unadjusted	Adjusted†	Unadjusted	Adjusted†	Unadjusted	Adjusted‡
Sex						
Male	1.00	1.00	1.00	1.00	1.00	1.00
Female	2.13 (2.07-2.19)	2.13 (2.07-2.18)	3.14 (3.03-3.26)	3.17 (3.06-3.28)	1.23 (1.12-1.34)	1.23 (1.13-1.35)
Age group (years)						
10-15	1.00	1.00	1.00	1.00	1.00	1.00
16-18	2.58 (2.48-2.67)	2.53 (2.44-2.62)	3.99 (3.81-4.19)	3.87 (3.70-4.06)	1.69 (1.50-1.91)	1.68 (1.49-1.90)
19-24	2.30 (2.26-2.38)	2.26 (2.19-2.33)	3.78 (3.62-3.94)	3.73 (3.57-3.89)	1.91 (1.72-2.13)	1.89 (1.70-2.10)
Calendar period						
1998/99-2001/02	1.00	1.00	1.00	1.00	1.00	
2002/03-2005/06	1.15 (1.10-1.20)	1.12 (1.08-1.17)	1.17 (1.11-1.24)	1.14 (1.08-1.20)	0.90 (0.79-1.04)	Not significant in final model (p=0.75)
2006/07-2009/10	1.22 (1.17-1.27)	1.16 (1.12-1.21)	1.30 (1.22-1.37)	1.24 (1.17-1.30)	0.94 (0.82-1.08)	
2010/11-2013/14	1.31 (1.26-1.37)	1.25 (1.20-1.30)	1.60 (1.52-1.70)	1.52 (1.44-1.60)	0.93 (0.81-1.07)	
IMD quintile						
1 (least deprived)	1.00	1.00	1.00	1.00	1.00	1.00
2	1.45 (1.38-1.53)	1.53 (1.45-1.61)	1.45 (1.36-1.55)	1.46 (1.37-1.55)	1.18 (1.00-1.39)	1.20 (1.01-1.42)
3	1.93 (1.83-2.03)	2.02 (1.92-2.12)	1.47 (1.38-1.57)	1.37 (1.29-1.46)	1.22 (1.03-1.44)	1.25 (1.05-1.48)
4	2.01 (1.92-2.11)	2.23 (2.12-2.34)	1.82 (1.71-1.94)	1.69 (1.59-1.80)	1.61 (1.28-1.89)	1.51 (1.28-1.78)
5 (most deprived)	2.12 (2.02-2.23)	2.21 (2.10-2.32)	2.30 (2.16-2.45)	1.97 (1.85-2.09)	1.96 (1.67-2.29)	1.55 (1.31-1.83)

† Mutually adjusted for sex, age, calendar period, IMD and Area of England

‡ Mutually adjusted for sex, age, IMD and Area of England

Figure 1. Examples of participant entry and exit from the cohort

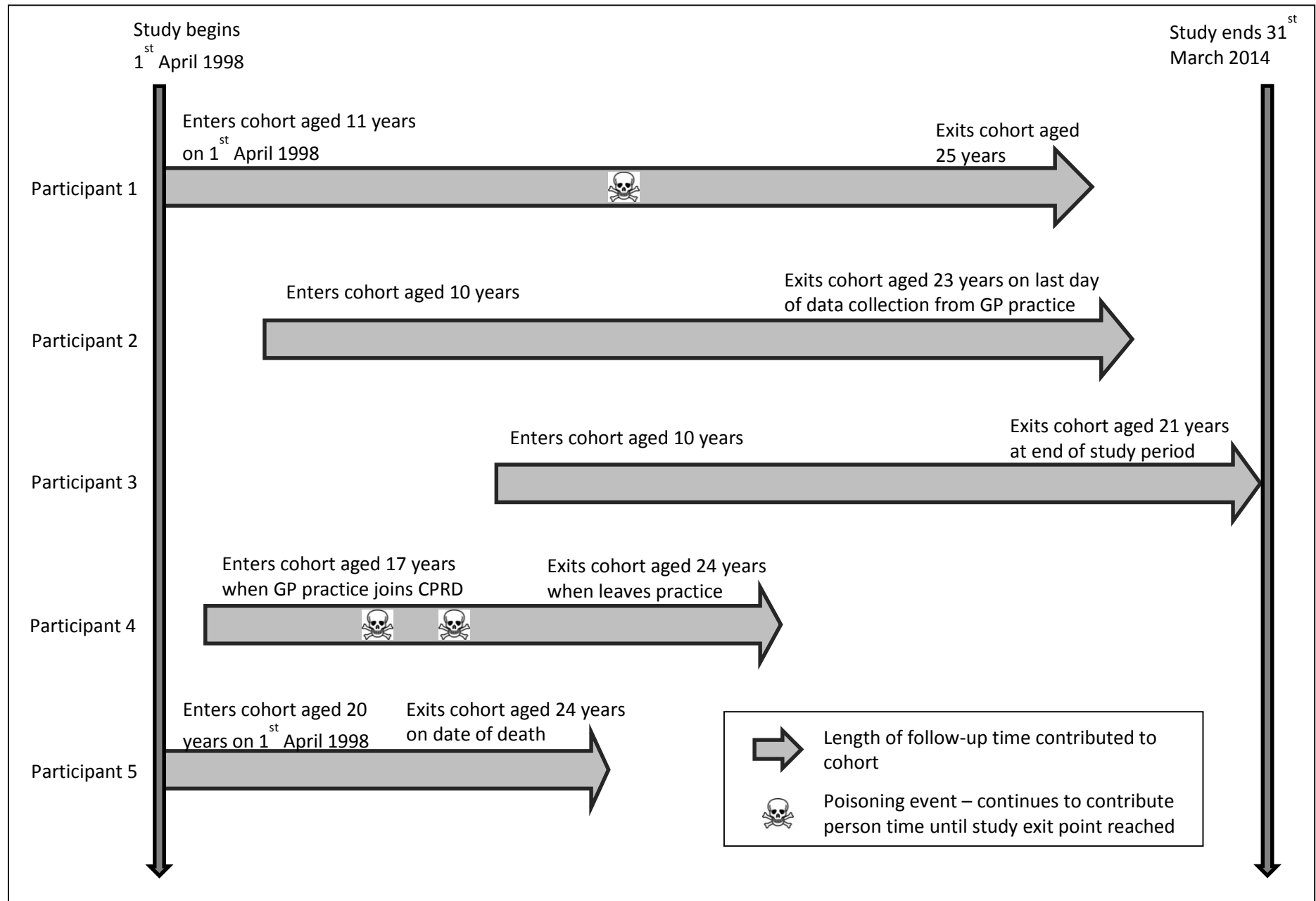


Figure 2. Total, intentional and unintentional poisoning incidence rates over time by age group for **a)** total poisonings in males, **b)** total poisonings in females, **c)** intentional poisonings in males, **d)** intentional poisonings in females, **e)** unintentional poisonings in males, **f)** unintentional poisonings in females

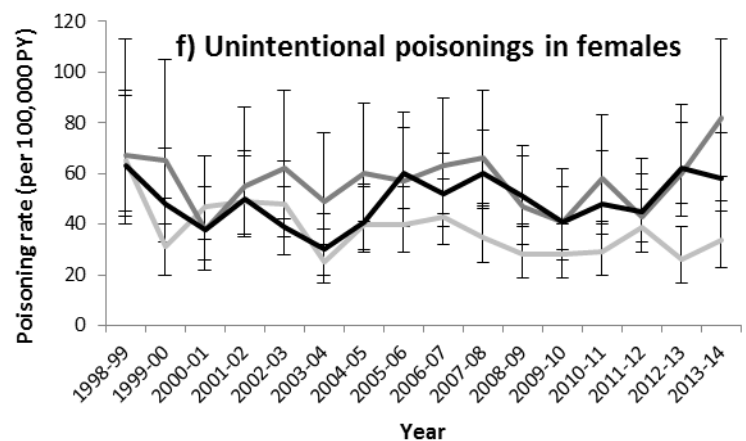
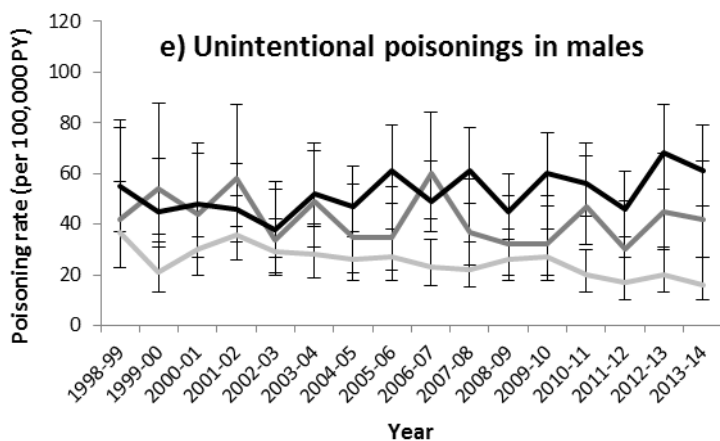
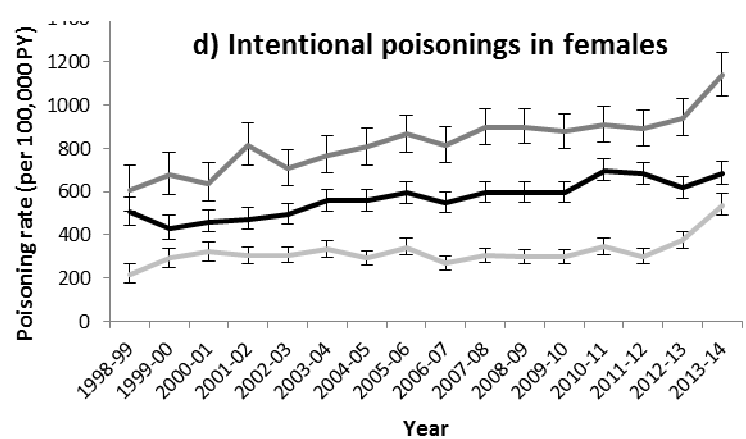
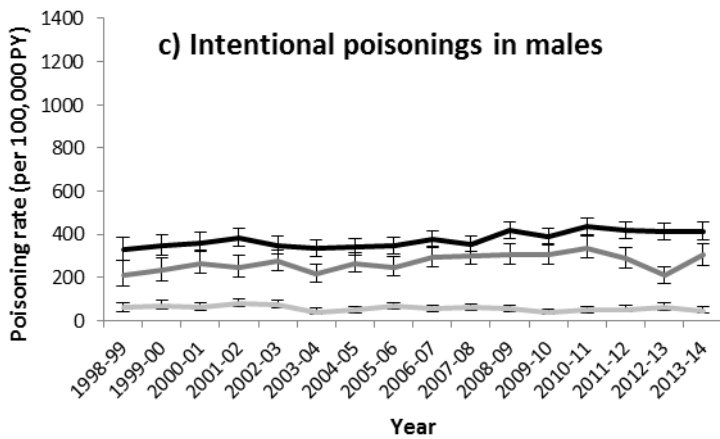
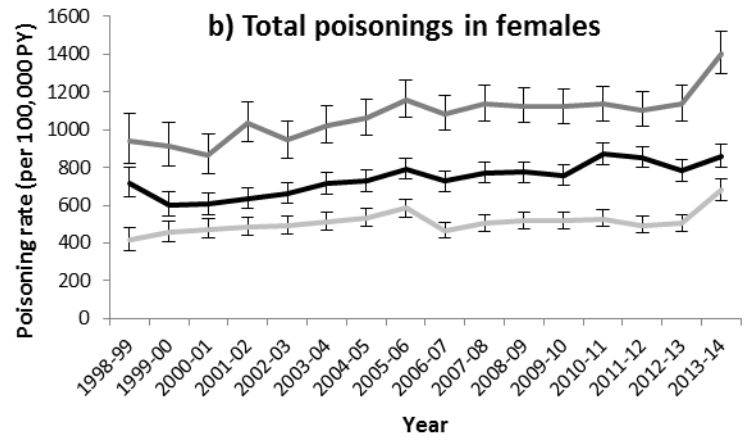
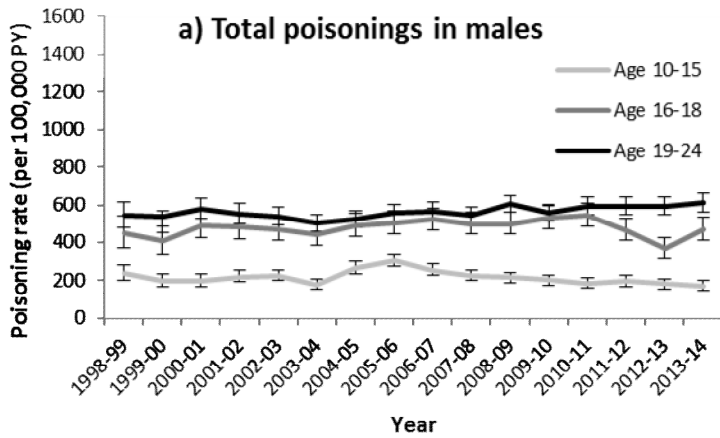
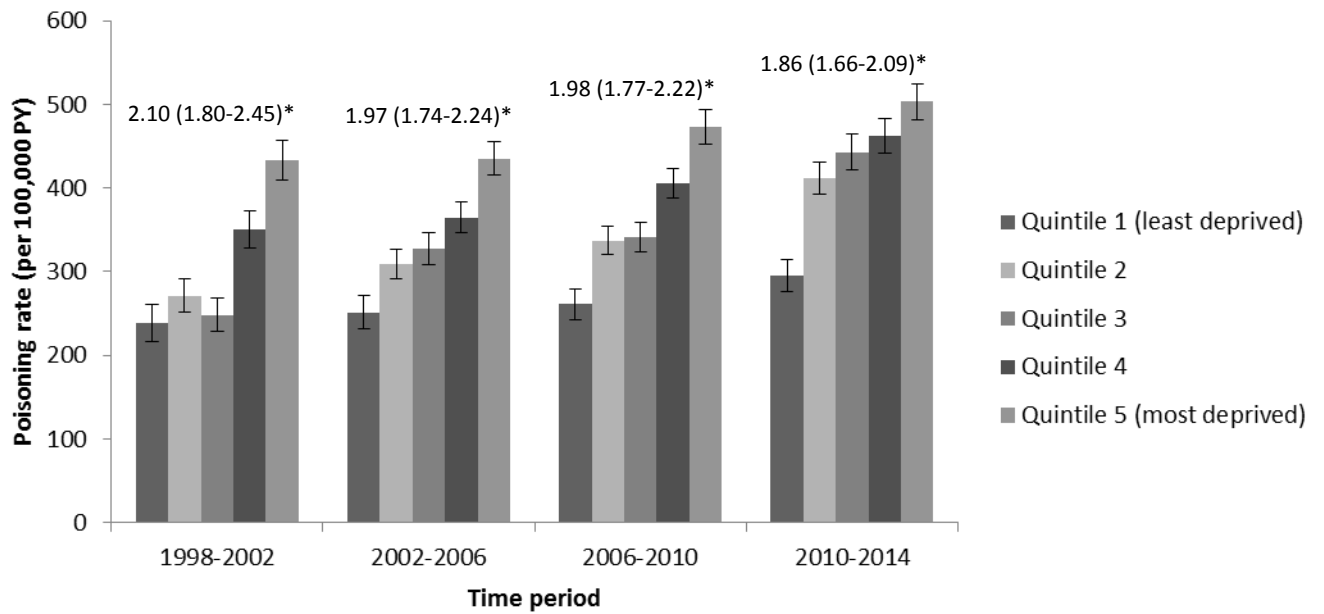


Figure 3. Intentional poisoning incidence rates by time period for different quintiles of the Index of Multiple Deprivation



\*Adjusted incidence rate ratio (95%CI) for the most deprived quintile compared to least deprived quintile for the given time period. Adjusted for sex, age and area of England.



## Supplementary files

Table S1. Adjusted incidence rate ratios for sensitivity analysis 1 (where poisonings were recorded as either the underlying or a contributory cause of death)

	<b>Adjusted incidence rate ratios (95% confidence intervals)</b>		
	Total poisonings <sup>†</sup>	Intentional poisonings <sup>†</sup>	Unintentional poisonings <sup>‡</sup>
Sex			
Male	1.00	1.00	1.00
Female	2.12 (2.06-2.17)	3.17 (3.06-3.28)	1.20 (1.09-1.31)
Age group (years)			
10-15	1.00	1.00	1.00
16-18	2.53 (2.44-2.62)	3.87 (3.70-4.06)	1.72 (1.52-1.94)
19-24	2.27 (2.20-2.34)	3.73 (3.57-3.89)	1.93 (1.74-2.15)
Calendar period			
1998/99-2001/02	1.00	1.00	Not significant in final model (LRT $p=0.73$ )
2002/03-2005/06	1.12 (1.08-1.17)	1.14 (1.28-1.20)	
2006/07-2009/10	1.16 (1.11-1.21)	1.24 (1.17-1.30)	
2010/11-2013/14	1.25 (1.20-1.30)	1.52 (1.44-1.60)	
IMD quintile			
1 (least deprived)	1.00	1.00	1.00
2	1.53 (1.45-1.61)	1.46 (1.37-1.55)	1.18 (1.01-1.40)
3	2.02 (1.92-2.12)	1.37 (1.29-1.46)	1.24 (1.05-1.47)
4	2.23 (2.12-2.34)	1.70 (1.59-1.80)	1.51 (1.28-1.78)
5 (most deprived)	2.21 (2.11-2.32)	1.97 (1.85-2.09)	1.54 (1.31-1.82)

<sup>†</sup> Mutually adjusted for sex, age, calendar period, IMD and Area of England

<sup>‡</sup> Mutually adjusted for sex, age, IMD and Area of England

Table S2. Adjusted incidence rate ratios for sensitivity analysis 2 (excluding individuals contributing less than 1 person-year)

	<b>Adjusted incidence rate ratios (95% confidence intervals)</b>		
	Total poisonings <sup>†</sup>	Intentional poisonings <sup>†</sup>	Unintentional poisonings <sup>‡</sup>
Sex			
Male	1.00	1.00	1.00
Female	2.09 (2.04-2.15)	3.15 (3.04-3.26)	1.21 (1.10-1.32)
Age group (years)			
10-15	1.00	1.00	1.00
16-18	2.38 (2.30-2.47)	3.63 (3.46-3.80)	1.60 (1.42-1.80)
19-24	2.14 (2.07-2.21)	3.52 (3.37-3.68)	1.74 (1.57-1.93)
Calendar period			
1998/99-2001/02	1.00	1.00	Not significant in final model (LRT $p=0.71$ )
2002/03-2005/06	1.11 (1.06-1.15)	1.12 (1.06-1.18)	
2006/07-2009/10	1.16 (1.11-1.21)	1.23 (1.16-1.29)	
2010/11-2013/14	1.26 (1.21-1.31)	1.51 (1.43-1.59)	
IMD quintile			
1 (least deprived)	1.00	1.00	1.00
2	1.51 (1.44-1.59)	1.44 (1.35-1.53)	1.18 (1.00-1.39)
3	1.99 (1.90-2.09)	1.32 (1.24-1.41)	1.21 (1.02-1.44)
4	2.24 (2.13-2.35)	1.65 (1.55-1.76)	1.50 (1.28-1.77)
5 (most deprived)	2.19 (2.08-2.30)	1.92 (1.80-2.04)	1.50 (1.28-1.77)

<sup>†</sup> Mutually adjusted for sex, age, calendar period, IMD and Area of England

<sup>‡</sup> Mutually adjusted for sex, age, IMD and Area of England

Table S3. Adjusted incidence rate ratios for sensitivity analysis 3 (excluding codes including the phrase 'injury or poisoning')

	Adjusted incidence rate ratios (95% confidence intervals)		
	Total poisonings†	Intentional poisonings†	Unintentional poisonings‡
Sex			
Male	1.00	1.00	1.00
Female	2.45 (2.38-2.52)	3.17 (3.06-3.28)	1.23 (1.12-1.35)
Age group (years)			
10-15	1.00	1.00	1.00
16-18	3.03 (2.92-3.15)	3.87 (3.70-4.06)	1.68 (1.49-1.90)
19-24	2.74 (2.65-2.84)	3.73 (3.57-3.89)	1.89 (1.70-2.10)
Calendar period			
1998/99-2001/02	1.00	1.00	Not significant in final model (LRT $p=0.75$ )
2002/03-2005/06	1.08 (1.04-1.13)	1.14 (1.08-1.20)	
2006/07-2009/10	1.14 (1.09-1.19)	1.24 (1.18-1.30)	
2010/11-2013/14	1.30 (1.25-1.36)	1.52 (1.44-1.59)	
IMD quintile			
1 (least deprived)	1.00	1.00	1.00
2	1.39 (1.32-1.46)	1.46 (1.37-1.55)	1.20 (1.01-1.42)
3	1.37 (1.30-1.44)	1.37 (1.29-1.46)	1.25 (1.06-1.49)
4	1.65 (1.56-1.73)	1.70 (1.60-1.81)	1.51 (1.28-1.79)
5 (most deprived)	1.78 (1.69-1.87)	1.97 (1.85-2.10)	1.55 (1.31-1.83)

† Mutually adjusted for sex, age, calendar period, IMD and Area of England

‡ Mutually adjusted for sex, age, IMD and Area of England

Figure S1. Poisoning incidence rates by age for males and females

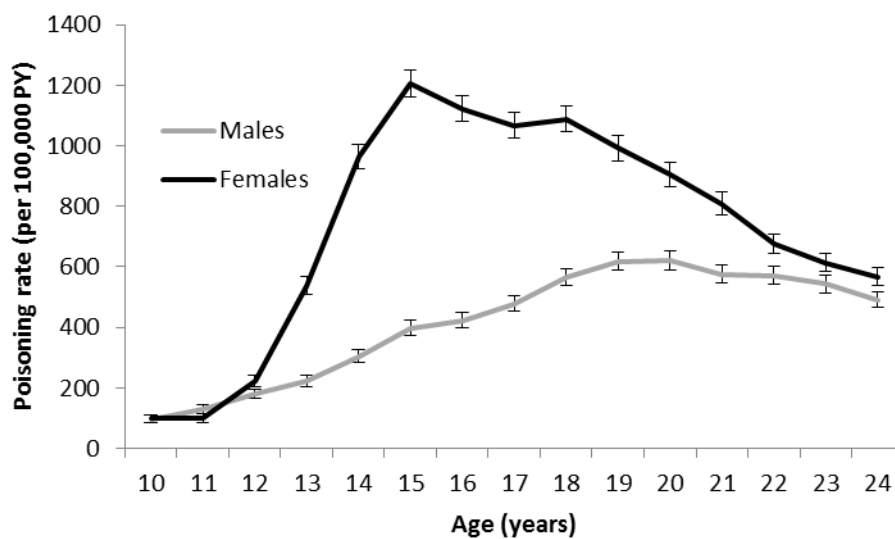


Table S4. Code list of codes searched for and used to record a poisoning event within the linked data

Code	Description	Intent category
<b>OPCS-4 codes</b>		
G473	Irrigation of stomach	Undifferentiated
<b>ICD-10 codes</b>		
T36.0	Poisoning: Penicillins	Undifferentiated
T36.1	Poisoning: Cefalosporins and other beta-lactam antibiotics	Undifferentiated
T36.4	Poisoning: Tetracyclines	Undifferentiated
T36.5	Poisoning: Aminoglycosides	Undifferentiated
T36.6	Poisoning: Rifamycins	Undifferentiated
T36.7	Poisoning: Antifungal antibiotics, systemically used	Undifferentiated
T36.8	Poisoning: Other systemic antibiotics	Undifferentiated
T36.9	Poisoning: Systemic antibiotic, unspecified	Undifferentiated
T37.2	Poisoning: Antimalarials and drugs acting on other blood protozoa	Undifferentiated
T37.5	Poisoning: Antiviral drugs	Undifferentiated
T37.8	Poisoning: Other specified systemic anti-infectives and antiparasitics	Undifferentiated
T38.2	Poisoning: Antithyroid drugs	Undifferentiated
T38.3	Poisoning: Insulin and oral hypoglycaemic [antidiabetic] drugs	Undifferentiated
T38.4	Poisoning: Oral contraceptives	Undifferentiated
T38.6	Poisoning: Antigonadotrophins, antiestrogens, antiandrogens, not elsewhere classified	Undifferentiated
T38.7	Poisoning: Androgens and anabolic congeners	Undifferentiated
T39.0	Poisoning: Salicylates	Undifferentiated
T39.1	Poisoning: 4-Aminophenol derivatives	Undifferentiated
T39.3	Poisoning: Other nonsteroidal anti-inflammatory drugs [NSAID]	Undifferentiated
T39.8	Poisoning: Other nonopioid analgesics and antipyretics, not elsewhere classified	Undifferentiated
T39.9	Poisoning: Nonopioid analgesic, antipyretic and antirheumatic, unspecified	Undifferentiated
T40.1	Poisoning: Heroin	Undifferentiated
T40.2	Poisoning: Other opioids	Undifferentiated
T40.3	Poisoning: Methadone	Undifferentiated
T40.4	Poisoning: Other synthetic narcotics	Undifferentiated
T40.5	Poisoning: Cocaine	Undifferentiated
T40.7	Poisoning: Cannabis (derivatives)	Undifferentiated
T40.8	Poisoning: Lysergide [LSD]	Undifferentiated
T41.2	Poisoning: Other and unspecified general anaesthetics	Undifferentiated
T41.3	Poisoning: Local anaesthetics	Undifferentiated
T41.4	Poisoning: Anaesthetic, unspecified	Undifferentiated
T42.0	Poisoning: Hydantoin derivatives	Undifferentiated
T42.1	Poisoning: Iminostilbenes	Undifferentiated
T42.4	Poisoning: Benzodiazepines	Undifferentiated
T42.5	Poisoning: Mixed antiepileptics, not elsewhere classified	Undifferentiated
T42.6	Poisoning: Other antiepileptic and sedative-hypnotic drugs	Undifferentiated
T42.7	Poisoning: Antiepileptic and sedative-hypnotic drugs, unspecified	Undifferentiated
T42.8	Poisoning: Antiparkinsonism drugs and other central muscle-tone depressants	Undifferentiated
T43.0	Poisoning: Tricyclic and tetracyclic antidepressants	Undifferentiated
T43.2	Poisoning: Other and unspecified antidepressants	Undifferentiated
T43.3	Poisoning: Phenothiazine antipsychotics and neuroleptics	Undifferentiated
T43.5	Poisoning: Other and unspecified antipsychotics and neuroleptics	Undifferentiated
T43.6	Poisoning: Psychostimulants with abuse potential	Undifferentiated
T43.9	Poisoning: Psychotropic drug, unspecified	Undifferentiated
T44.3	Poisoning: Other parasympatholytics [anticholinergics and antimuscarinics] and spasmolytics, not elsewhere classified	Undifferentiated
T44.9	Poisoning: Other and unspecified drugs primarily affecting the autonomic nervous system	Undifferentiated
T45.0	Poisoning: Antiallergic and antiemetic drugs	Undifferentiated
T45.1	Poisoning: Antineoplastic and immunosuppressive drugs	Undifferentiated
T45.4	Poisoning: Iron and its compounds	Undifferentiated
T45.5	Poisoning: Anticoagulants	Undifferentiated

T45.8	Poisoning: Other primarily systemic and haematological agents	Undifferentiated
T47.1	Poisoning: Other antacids and anti-gastric-secretion drugs	Undifferentiated
T48.3	Poisoning: Antitussives	Undifferentiated
T48.6	Poisoning: Antiasthmatics, not elsewhere classified	Undifferentiated
T49.0	Poisoning: Local antifungal, anti-infective and anti-inflammatory drugs, not elsewhere classified	Undifferentiated
T49.3	Poisoning: Emollients, demulcents and protectants	Undifferentiated
T49.4	Poisoning: Keratolytics, keratoplastics and other hair treatment drugs and preparations	Undifferentiated
T49.7	Poisoning: Dental drugs, topically applied	Undifferentiated
T50.5	Poisoning: Appetite depressants	Undifferentiated
T50.8	Poisoning: Diagnostic agents	Undifferentiated
T50.9	Poisoning: Other and unspecified drugs, medicaments and biological substances	Undifferentiated
T51.0	Toxic effect: Ethanol	Undifferentiated
T51.8	Toxic effect: Other alcohols	Undifferentiated
T51.9	Toxic effect: Alcohol, unspecified	Undifferentiated
T52.0	Toxic effect: Petroleum products	Undifferentiated
T52.4	Toxic effect: Ketones	Undifferentiated
T54.9	Toxic effect: Corrosive substance, unspecified	Undifferentiated
T56.8	Toxic effect: Other metals	Undifferentiated
T56.9	Toxic effect: Metal, unspecified	Undifferentiated
T58	Toxic effect of carbon monoxide	Undifferentiated
T59.0	Toxic effect: Nitrogen oxides	Undifferentiated
T59.3	Toxic effect: Lacrimogenic gas	Undifferentiated
T59.8	Toxic effect: Other specified gases, fumes and vapours	Undifferentiated
T59.9	Toxic effect: Gases, fumes and vapours, unspecified	Undifferentiated
T60.9	Toxic effect: Pesticide, unspecified	Undifferentiated
T62.9	Toxic effect: Noxious substance eaten as food, unspecified	Undifferentiated
T65.6	Toxic effect: Paints and dyes, not elsewhere classified	Undifferentiated
T65.8	Toxic effect: Toxic effect of other specified substances	Undifferentiated
T65.9	Toxic effect: Toxic effect of unspecified substance	Undifferentiated
X40	Accidental poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics	Accidental
X41	Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified	Accidental
X42	Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified	Accidental
X43	Accidental poisoning by and exposure to other drugs acting on the autonomic nervous system	Accidental
X44	Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	Accidental
X45	Accidental poisoning by and exposure to alcohol	Accidental
X46	Accidental poisoning by and exposure to organic solvents and halogenated hydrocarbons and	Accidental
X47	Accidental poisoning by and exposure to other gases and vapours	Accidental
X48	Accidental poisoning by and exposure to pesticides	Accidental
X49	Accidental poisoning by and exposure to other and unspecified chemicals and noxious substances	Accidental
X60	Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics	Intentional
X61	Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified	Intentional
X62	Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified	Intentional
X63	Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system	Intentional
X64	Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	Intentional
X65	Intentional self-poisoning by and exposure to alcohol	Intentional
X66	Intentional self-poisoning by and exposure to organic solvents and halogenated hydrocarbons and	Intentional
X67	Intentional self-poisoning by and exposure to other gases and vapours	Intentional
X68	Intentional self-poisoning by and exposure to pesticides	Intentional
X69	Intentional self-poisoning by and exposure to other and unspecified chemicals and noxious substances	Intentional
Y10	Poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics, undetermined intent	Undifferentiated
Y11	Poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified, undetermined intent	Undifferentiated
Y12	Poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified, undetermined intent	Undifferentiated

Y13	Poisoning by and exposure to other drugs acting on the autonomic nervous system, undetermined intent	Undifferentiated
Y14	Poisoning by and exposure to other and unspecified drugs, medicaments and biological substances, undetermined intent	Undifferentiated
Y15	Poisoning by and exposure to alcohol, undetermined intent	Undifferentiated
Y17	Poisoning by and exposure to other gases and vapours, undetermined intent	Undifferentiated
Y19	Poisoning by and exposure to other and unspecified chemicals and noxious substances,	Undifferentiated
Y904	Blood alcohol level of 80-99 mg/100 ml	Undifferentiated
Y905	Blood alcohol level of 100-119 mg/100 ml	Undifferentiated
Y906	Blood alcohol level of 120-199 mg/100 ml	Undifferentiated
Y907	Blood alcohol level of 200-239 mg/100 ml	Undifferentiated
Y908	Blood alcohol level of 240 mg/100 ml or more	Undifferentiated
Y911	Moderate alcohol intoxication	Undifferentiated
Y912	Severe alcohol intoxication	Undifferentiated
Y913	Very severe alcohol intoxication	Undifferentiated
<b>Read codes</b>		
14K1.00	Intentional overdose of prescription only medication	Intentional
1JP..00	Suspected drug overdose	Intentional
44W8100	Lithium level high - toxic	Undifferentiated
44X..00	Blood toxic substance levels	Undifferentiated
E014.00	Pathological alcohol intoxication	Undifferentiated
E014.11	Drunkenness - pathological	Undifferentiated
E022.00	Pathological drug intoxication	Undifferentiated
E230.00	Acute alcoholic intoxication in alcoholism	Undifferentiated
E230.11	Alcohol dependence with acute alcoholic intoxication	Undifferentiated
E230000	Acute alcoholic intoxication, unspecified, in alcoholism	Undifferentiated
E230200	Episodic acute alcoholic intoxication in alcoholism	Undifferentiated
E230z00	Acute alcoholic intoxication in alcoholism NOS	Undifferentiated
E250.11	Drunkenness NOS	Undifferentiated
E250.14	Intoxication - alcohol	Undifferentiated
Eu10000	[X]Mental & behav dis due to use alcohol: acute intoxication	Undifferentiated
Eu10011	[X]Acute alcoholic drunkenness	Undifferentiated
Eu11000	[X]Mental & behav dis due to use opioids: acute intoxication	Undifferentiated
Eu12000	[X]Mental & behav dis due cannabinoids: acute intoxication	Undifferentiated
Eu14000	[X]Mental & behav dis due to use cocaine: acute intoxication	Undifferentiated
Eu15000	[X]Mnt/beh dis due oth stim inc caffein: acute intoxication	Undifferentiated
Eu16000	[X]Mental & behav dis due hallucinogens: acute intoxicatn	Undifferentiated
Eu18000	[X]Mental & behav dis due vol solvents: acute intoxication	Undifferentiated
S....00	Injury and poisoning	Undifferentiated
SC...00	Late effects injury/poisoning/toxic effects/external causes	Undifferentiated
SC40.00	Late effect of poison drug/medicament/biological substance	Undifferentiated
SC41.11	Late effect of poison	Undifferentiated
SL...00	Poisoning	Undifferentiated
SL...12	Drug poisoning	Undifferentiated
SL...14	Overdose of biological substance	Intentional
SL...15	Overdose of drug	Intentional
SL...16	Poisoning by drug and biological substances	Undifferentiated
SL0..00	Antibiotic poisoning	Undifferentiated
SL00000	Ampicillin poisoning	Undifferentiated
SL04200	Minocycline poisoning	Undifferentiated
SL04300	Oxytetracycline poisoning	Undifferentiated
SL05000	Cefalexin poisoning	Undifferentiated
SL1..00	Other anti-infective poisoning	Undifferentiated
SL12200	Lead compound poisoning	Undifferentiated
SL12300	Mercury compound poisoning	Undifferentiated
SL14.00	Antimalarial drug poisoning	Undifferentiated
SL14000	Chloroquine poisoning	Undifferentiated
SL21.11	Anabolic steroid poisoning	Undifferentiated
SL22000	Oral contraceptive poisoning	Undifferentiated
SL22200	Combined oestrogen and progesterone poisoning	Undifferentiated

SL23000	Acetohexamide poisoning	Undifferentiated
SL23400	Insulin poisoning	Undifferentiated
SL28.00	Antithyroid agent poisoning	Undifferentiated
SL28000	Iodide poisoning	Undifferentiated
SL30.13	Antihistamine poisoning	Undifferentiated
SL31000	Azathioprine poisoning	Undifferentiated
SL35.00	Vitamin poisoning NEC	Undifferentiated
SL3y000	Heavy metal agonist poisoning	Undifferentiated
SL40100	Ferrous sulphate poisoning	Undifferentiated
SL47100	Human fibrinogen poisoning	Undifferentiated
SL47z00	Natural blood or blood product poisoning NOS	Undifferentiated
SL5..00	Analgesic, antipyretic and antirheumatic drug poisoning	Undifferentiated
SL5..11	Analgesic poisoning	Undifferentiated
SL50100	Heroin poisoning	Undifferentiated
SL50300	Codeine (methyilmorphine) poisoning	Undifferentiated
SL50500	Morphine poisoning	Undifferentiated
SL50700	Dihydrocodeine poisoning	Undifferentiated
SL50z00	Opiate or narcotic poisoning NOS	Undifferentiated
SL51.00	Salicylate poisoning	Undifferentiated
SL51000	Aspirin poisoning	Undifferentiated
SL52100	Paracetamol poisoning	Undifferentiated
SL54200	Ibuprofen poisoning	Undifferentiated
SL54300	Naproxen poisoning	Undifferentiated
SL54400	Mefenamic acid poisoning	Undifferentiated
SL5xz00	Non-narcotic analgesic poisoning NOS	Undifferentiated
SL5y100	Analgesic poisoning, NEC	Undifferentiated
SL5z.00	Analgesic, antipyretic or antirheumatic poisoning NOS	Undifferentiated
SL61000	Phenytoin poisoning	Undifferentiated
SL6x100	Poisoning by carbamazepine	Undifferentiated
SL7..00	Sedative and hypnotic drug poisoning	Undifferentiated
SL7..11	Hypnotic poisoning	Undifferentiated
SL71.00	Chloral hydrate poisoning	Undifferentiated
SL7z.00	Sedative and hypnotic drug poisoning NOS	Undifferentiated
SL83000	Ketamine poisoning	Undifferentiated
SL85000	Cocaine poisoning	Undifferentiated
SL85100	Lidocaine poisoning	Undifferentiated
SL9..00	Psychotropic agent poisoning	Undifferentiated
SL90211	MAOI - monoamine oxidase inhibitor poisoning	Undifferentiated
SL91300	Promazine poisoning	Undifferentiated
SL94.00	Benzodiazepine poisoning	Undifferentiated
SL96000	Cannabis poisoning	Undifferentiated
SL96100	Lysergide (LSD) poisoning	Undifferentiated
SL97000	Amphetamine poisoning	Undifferentiated
SL97100	Caffeine poisoning	Undifferentiated
SL97200	Ecstasy poisoning	Undifferentiated
SL9y.00	Other psychotropic agent poisoning	Undifferentiated
SLA..00	Central nervous system stimulant poisoning	Undifferentiated
SLAy.00	Other central nervous system stimulant poisoning	Undifferentiated
SLB..00	Autonomic nervous system drug poisoning	Undifferentiated
SLB3000	Phenoxybenzamine poisoning	Undifferentiated
SLC3.00	Ganglion-blocker poisoning	Undifferentiated
SLD..00	Gastrointestinal agent poisoning	Undifferentiated
SLD2000	Diocetyl sulphosuccinate poisoning	Undifferentiated
SLE2000	Acetazolamide poisoning	Undifferentiated
SLF7100	Salbutamol poisoning	Undifferentiated
SLG2.12	Local detergent poisoning	Undifferentiated
SLG4.00	Hair treatment poisoning	Undifferentiated
SLH..00	Other and unspecified drug and medicament poisoning	Undifferentiated
SLH3.00	Alcohol deterrent poisoning	Undifferentiated
SLHyz00	Other drug and medicament poisoning NOS	Undifferentiated
SLHz.00	Drug and medicament poisoning NOS	Undifferentiated

SLz..00	Drug, medicament or biological substance poisoning NOS	Undifferentiated
SM...00	Nonmedicinal agent causing toxic effects	Undifferentiated
SM0..00	Alcohol causing toxic effect	Undifferentiated
SM00.00	Ethyl alcohol causing toxic effect	Undifferentiated
SM00000	Ethanol causing toxic effect	Undifferentiated
SM00100	Denatured alcohol causing toxic effect	Undifferentiated
SM0z.00	Alcohol causing toxic effect NOS	Undifferentiated
SM1..00	Petroleum product causing toxic effect	Undifferentiated
SM13.00	Paraffin wax causing toxic effect	Undifferentiated
SM2..00	Other solvents causing toxic effect	Undifferentiated
SM2y000	Acetone causing toxic effect	Undifferentiated
SM2z.00	Solvents causing toxic effect NOS	Undifferentiated
SM3..00	Corrosives/acids/caustic alkalis causing toxic effect	Undifferentiated
SM30000	Phenol causing toxic effect	Undifferentiated
SM31000	Hydrochloric acid causing toxic effect	Undifferentiated
SM31200	Sulphuric acid causing toxic effect	Undifferentiated
SM32.00	Caustic alkalis causing toxic effect	Undifferentiated
SM3z.00	Corrosive/acid/caustic alkali causing toxic effect NOS	Undifferentiated
SM6..00	Carbon monoxide causing toxic effect	Undifferentiated
SM7..00	Other gases, fumes or vapours causing toxic effect	Undifferentiated
SM70.00	Liquefied petrol gas causing toxic effect	Undifferentiated
SM70100	Propane causing toxic effect	Undifferentiated
SM75.11	Tear gas toxic effect	Undifferentiated
SM76.00	Chlorine gas causing toxic effect	Undifferentiated
SM79.00	Toxic effect of hydrogen sulfide	Undifferentiated
SM7A.00	Toxic effect of carbon dioxide	Undifferentiated
SM7y200	Smoke inhalation	Undifferentiated
SM7yz00	Other gas, fume and vapour causing toxic effect NOS	Undifferentiated
SM7z.00	Gases, fumes or vapours causing toxic effect NOS	Undifferentiated
SM7z.11	Smoke inhalation	Undifferentiated
SM81.00	Mushrooms causing toxic effect	Undifferentiated
SM82.12	Plants - toxic effect	Undifferentiated
SM9..00	Other nonmedicinal substances causing toxic effect	Undifferentiated
SM93.00	Organophosphate and carbamate causing toxic effect	Undifferentiated
SM93200	Malathion causing toxic effect	Undifferentiated
SM93500	Phosdrin causing toxic effect	Undifferentiated
SM96.11	Detergent toxic effect	Undifferentiated
SM96.12	Soap - toxic effect	Undifferentiated
SMX..00	Toxic effect of paints and dyes, NEC	Undifferentiated
SyuGJ00	[X]Toxic effect of other specified substances	Undifferentiated
Sz...00	Injury and poisoning NOS	Undifferentiated
T...00	Causes of injury and poisoning	Undifferentiated
T470.00	Accidental poisoning by gases or fumes on ship	Accidental
T8...00	Accidental poisoning by drugs, medicines and biologicals	Accidental
T8...11	Cause of overdose - accidental	Accidental
T80..00	Accidental poisoning by analgesics,antipyretic,antirheumatic	Accidental
T800.00	Accidental poisoning by heroin	Accidental
T803000	Accidental poisoning by aspirin	Accidental
T804100	Accidental poisoning by paracetamol	Accidental
T806300	Accidental poisoning by ibuprofen	Accidental
T815.00	Accidental poisoning by quinalbarbitone	Accidental
T820.00	Accidental poisoning by chloral hydrate	Accidental
T832100	Accidental poisoning by diazepam	Accidental
T83yz00	Accidental poisoning by other tranquillisers NOS	Accidental
T840.00	Accidental poisoning by antidepressants	Accidental
T842000	Accidental poisoning by amphetamine	Accidental
T842100	Accidental poisoning by caffeine	Accidental
T85..00	Accidental poisoning by other drugs acting on nervous system	Accidental
T852000	Accidental poisoning by cocaine	Accidental
T85y.00	Accid. poisoning by other drugs acting on nervous system OS	Accidental
T88..00	Accidental poisoning by other drugs	Accidental

T886.00	Accidental poisoning by muscle + respiratory system drugs	Accidental
T88yz00	Accidental poisoning by other drugs NOS	Accidental
T8z..00	Accidental poisoning by drugs NOS	Accidental
T9...00	Accidental poisoning by other non-drug substances	Accidental
T90..00	Accidental poisoning by alcohol, NEC	Accidental
T900.00	Accidental poisoning by alcoholic beverages	Accidental
T901100	Accidental poisoning by methylated spirit	Accidental
T901300	Accidental poisoning by ethanol, NOS	Accidental
T90z.00	Accidental poisoning by alcohol NOS	Accidental
T91..00	Accidental poisoning by household agents	Accidental
T910.00	Accidental poisoning by synthetic detergents and shampoos	Accidental
T911.00	Accidental poisoning by soap products	Accidental
T913z00	Accidental poisoning by other cleaning agents NOS	Accidental
T914.00	Accidental poisoning by disinfectants	Accidental
T915.00	Accidental poisoning by lead paints	Accidental
T916.00	Accidental poisoning by other paints and varnishes	Accidental
T916200	Accidental poisoning by non-lead paints	Accidental
T91z.00	Accidental poisoning by household agents NOS	Accidental
T92..00	Accidental poisoning by petrol products	Accidental
T921200	Accidental poisoning by petrol	Accidental
T924z00	Accidental poisoning by other solvents NOS	Accidental
T935.00	Accidental poisoning by herbicides	Accidental
T936000	Accidental poisoning by organic mercurials	Accidental
T938100	Accidental poisoning by methyl bromide	Accidental
T94..00	Accidental poisoning by corrosives and caustics NEC	Accidental
T941.00	Accidental poisoning by acids	Accidental
T941000	Accidental poisoning by hydrochloric acid	Accidental
T95..00	Accidental poisoning from foodstuffs and poisonous plants	Accidental
T953100	Accidental poisoning from seeds	Accidental
T955.00	Accidental poisoning from mushrooms and other fungi	Accidental
T955000	Accidental poisoning from mushrooms	Accidental
T95y.00	Accidental poisoning by other foods	Accidental
T960.00	Accidental poisoning by lead and its compounds and fumes	Accidental
T965000	Accidental poisoning by plant food	Accidental
T97..00	Accidental poisoning by gas distributed by pipeline	Accidental
T970.00	Accidental poisoning by carbon monoxide from piped gas	Accidental
T973.00	Accidental poisoning by piped natural gas	Accidental
T98..00	Accidental poisoning by other utility gas + carbon monoxide	Accidental
T981300	Accidental poisoning by heating gas NOS	Accidental
T98y200	Accidental poisoning by CO - fuels in industrial use	Accidental
T98yz00	Accidental poisoning by carbon monoxide from oth source NOS	Accidental
T98z.00	Accidental poisoning by carbon monoxide NOS	Accidental
T99..00	Accidental poisoning by other gases and vapours	Accidental
T99y000	Accidental poisoning by chlorine	Accidental
T9z..00	Accidental poisoning NOS	Accidental
TE57.00	Toxic reactions caused by other plants	Undifferentiated
TH02.00	Late effects of accidental poisoning	Accidental
TK...11	Cause of overdose - deliberate	Intentional
TK...13	Poisoning - self-inflicted	Intentional
TK0..00	Suicide + selfinflicted poisoning by solid/liquid substances	Intentional
TK00.00	Suicide + selfinflicted poisoning by analgesic/antipyretic	Intentional
TK02.00	Suicide + selfinflicted poisoning by oth sedatives/hypnotics	Intentional
TK03.00	Suicide + selfinflicted poisoning tranquilliser/psychotropic	Intentional
TK04.00	Suicide + selfinflicted poisoning by other drugs/medicines	Intentional
TK05.00	Suicide + selfinflicted poisoning by drug or medicine NOS	Intentional
TK07.00	Suicide + selfinflicted poisoning by corrosive/caustic subst	Intentional
TK0z.00	Suicide + selfinflicted poisoning by solid/liquid subst NOS	Intentional
TK20.00	Suicide + selfinflicted poisoning by motor veh exhaust gas	Intentional
TN...11	Poisoning undetermined - accidentally or purposely inflicted	Undifferentiated
TN1..00	Injury ?accidental, poisoning by gases in domestic use	Undetermined
TN87.00	Injury ?accidental, by caustic substances, except poisoning	Undifferentiated



Tz...00	Causes of injury and poisoning NOS	Undifferentiated
U1A..00	[X]Accidental poisoning by + exposure to noxious substances	Accidental
U1A..11	[X]Accidental drug / other poisoning	Accidental
U1A..12	[X]Accidental drug overdose / other poisoning	Accidental
U1A0.11	[X]Accidental poisoning with paracetamol	Accidental
U1A4.13	[X]Accidental poisoning with SSRI	Accidental
U1A5.00	[X]Accident poisoning/exposure to narcotic drug	Accidental
U1A8.00	[X]Accident poison/exposure to other/unspec drug/medicament	Accidental
U1A9.00	[X]Accident poisoning/exposure to alcohol	Accidental
U1A9000	[X]Accident poison/exposure to alcohol at home	Accidental
U1A9z00	[X]Accid poison/expos to alcohol unspecif place	Accidental
U1AA.11	[X]Accidental poisoning from glue solvent	Accidental
U1AA000	[X]Accid poison/expos organ solvent,halogen hydrocarb, home	Accidental
U1AB.00	[X]Accident poisoning/exposure to other gas/vapour	Accidental
U1AB.11	[X]Accidental carbon monoxide poisoning	Accidental
U1Ay.00	[X]Accident poisoning/exposure to unspecif chemical	Accidental
U1Ay200	[X]Acc poison/expos unspecif chemical school/pub admin area	Accidental
U20..00	[X]Intentional self poisoning/exposure to noxious substances	Intentional
U20..11	[X]Deliberate drug overdose / other poisoning	Intentional
U200.00	[X]Intent self poison/exposure to nonopioid analgesic	Intentional
U200.11	[X]Overdose - paracetamol	Intentional
U200.12	[X]Overdose - ibuprofen	Intentional
U200.13	[X]Overdose - aspirin	Intentional
U200000	[X]Int self poison/exposure to nonopioid analgesic at home	Intentional
U200100	[X]Intent self poison nonopioid analgesic at res institut	Intentional
U200y00	[X]Int self poison nonopioid analgesic other spec place	Intentional
U200z00	[X]Intent self poison nonopioid analgesic unspecif place	Intentional
U201.00	[X]Intent self poison/exposure to antiepileptic	Intentional
U202.11	[X]Overdose - sleeping tabs	Intentional
U204.00	[X]Intent self poison/exposure to psychotropic drug	Intentional
U204.11	[X]Overdose - antidepressant	Intentional
U204.12	[X]Overdose - amitriptyline	Intentional
U204000	[X]Int self poison/exposure to psychotropic drug at home	Intentional
U205.00	[X]Intent self poison/exposure to narcotic drug	Intentional
U205.11	[X]Overdose - heroin	Intentional
U208.00	[X]Int self poison/exposure to other/unspec drug/medicament	Intentional
U208z00	[X]Intent self poison oth/unsp drug/medic unspecif place	Intentional
U209.00	[X]Intent self poison/exposure to alcohol	Intentional
U209000	[X]Int self poison/exposure to alcohol at home	Intentional
U20A.00	[X]Intentional self poison organ solvent,halogen hydrocarb	Intentional
U20A.11	[X]Self poisoning from glue solvent	Intentional
U20B.00	[X]Intent self poison/exposure to other gas/vapour	Intentional
U20B.11	[X]Self carbon monoxide poisoning	Intentional
U20B200	[X]Int self poison other gas/vapour school/pub admin area	Intentional
U20y.00	[X]Intent self poison/exposure to unspecif chemical	Intentional
U20y000	[X]Int self poison/exposure to unspecif chemical at home	Intentional
U20yz00	[X]Intent self poison unspecif chemical unspecif place	Intentional
U30..11	[X]Deliberate drug poisoning	Intentional
U40..00	[X]Poisoning/expos to noxious substance,undetermined intent	Undifferentiated
U404.00	[X]Poisoning/exposure, ? intent, to psychotropic drug	Undifferentiated
U405.00	[X]Poisoning/exposure, ? intent, to narcotic drug	Undifferentiated
U409.00	[X]Poisoning/exposure, ? intent, to alcohol	Undifferentiated
U40A.00	[X]Pois/exposure,?intent,to organ solvent,halogen hydrocarb	Undifferentiated
U40B.00	[X]Poisoning/exposure, ? intent, to other gas/vapour	Undifferentiated
U40y.00	[X]Poisoning/exposure, ? intent, to unspecif chemical	Undifferentiated
U81..00	[X]Evid of alcohol involv determind by level of intoxication	Undifferentiated
ZV71A00	[V]Obs for suspected toxic effect from ingested substance	Undifferentiated
ZX1P.00	Swallowing substances	Undifferentiated