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SUBSTANCE MISUSE PROGRAMME

Drug deaths in Wales 2016

About Public Health Wales

Public Health Wales exists to protect and improve health and wellbeing and reduce health inequalities for people in Wales. We work locally, nationally and internationally, with our partners and communities.

The Substance Misuse Programme works to address both the current and emerging public health threats in Wales and in line with the overarching strategic objective to '**reduce health inequalities, and prevent or reduce communicable and non-communicable disease, wider harms and premature death related to drugs and alcohol**'.

Substance Misuse Programme

Public Health Wales

No.2 Capital Quarter

Tyndall Street

Cardiff

CF10 4BZ

Tel: 02920 404499

www.publichealthwales.org/substancemisuse

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Introduction

According to data from the Office for National Statistics (ONS), drug related deaths have risen across the UK and in 2016 reached the highest ever recorded levels. This document presents the available ONS data for Wales along with interpretation of the data, with stated caveats, to detail where the increases in drug deaths have occurred and amongst what populations in order to support service providers and commissioners to tackle this trend.

It is important to make two distinctions in interpreting the data:

1. Firstly, the distinction between **registered year of death**: routinely reported by ONS and specifying the year in which the death was confirmed by the Coroner's office; and, **date of death year**: the actual year of death. Date of death year data are incomplete for 2016. Accurate comparisons with other countries may be confounded due to delays in registering deaths.
2. Secondly, the distinction between **drug poisoning deaths**: deaths from drugs including both illicit drugs and prescription only medicines (POMs) or over the counter (OTC) drugs and **drug misuse deaths**: deaths resulting from use of illicit drugs only.

Executive summary

- The European age standardised rate (EASR) for drug misuse deaths registered in 2016 in Wales was 8.0 per 100,000, compared with 5.8 per 100,000 population in 2015
- Registered drug poisoning deaths in Wales increased by 13.9 per cent, from 238 in 2015 to 271 in 2016 and drug misuse deaths accounted for 69 per cent of these deaths.
- Drug misuse deaths increased by 14.3 per cent, from 168 in 2015 to 192 in 2016
- The increase in drug misuse deaths in 2016 was not due to an increase in deaths with heroin/morphine as primary cause stated on the death certificate. This may be due to increases in the availability of take-home Naloxone
- The highest number of drug misuse deaths occurred within the 35-39 age group in 2016 but it is worthy of note that increases in drug misuse deaths were also recorded in all age categories from 40-44 onwards in this last year
- Almost 34 per cent of those dying of drug misuse between 2001 and 2016 came from the most deprived areas, rising to 58.3 per cent for those in the most deprived quintile

Drug deaths in context

Across the UK there are different methods for recorded drug poisoning and drug misuse deaths. As such, comparison with rates in Scotland is not possible, however, data produced by the Office for National Statistics (ONS) allows for comparison between England and Wales. With the exception of 2014, Wales has had higher rates of drug misuse deaths per million population than England since 2005, as shown in Chart 1. The rate of drug misuse deaths in Wales rose from 58.3 per million in 2015 to 66.9 per million in 2016.

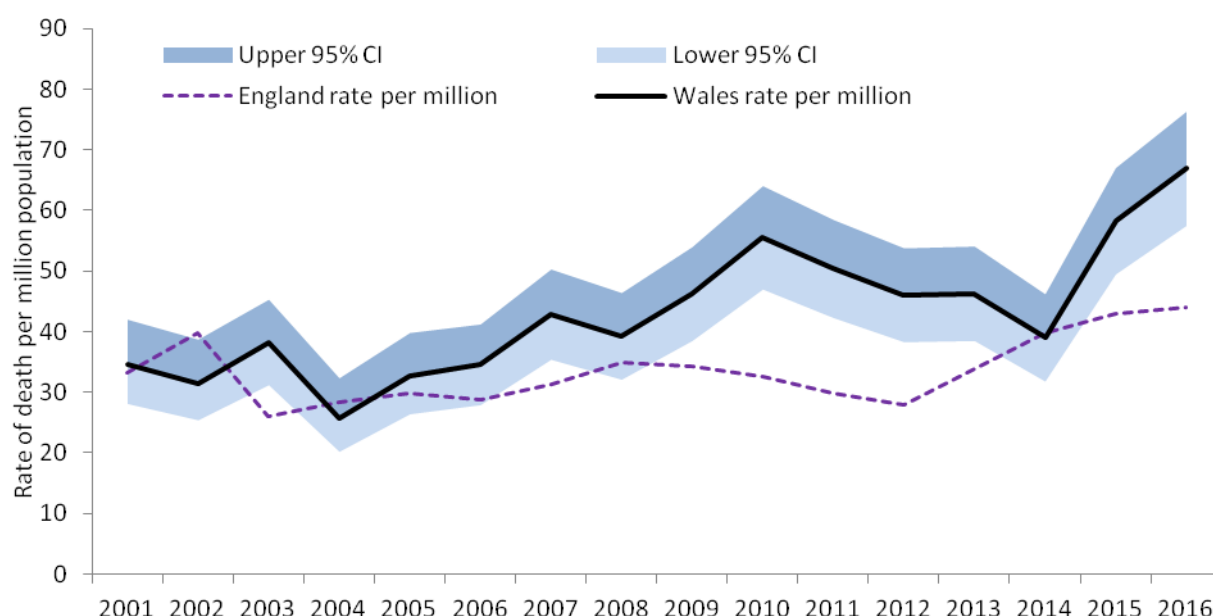


Chart 1: Age standardised rates per million population of drug misuse deaths in England and Wales by registered year of death, with 95% confidence intervals, 2001-2016

Drug related deaths: year of registration and year of death

Drug misuse deaths are typically reported by year of registration. This is because deaths identified as possibly involving drugs are referred to a coroner and may require an investigative process including inquest. Therefore reporting by year of death may not include deaths which have occurred but not yet been registered and reporting by year of registration may include deaths that occurred one or more years previously. As such, this reporting method may introduce the possibility that variation in registration delays between years and geographical areas may mask key trends in the data. In previous years this delay has been evident, as shown in Chart 2, however, in 2016, the median delay was 158 days for England and 159.5 days for Wales. Drug deaths by year of registration will be the measure used throughout this document.

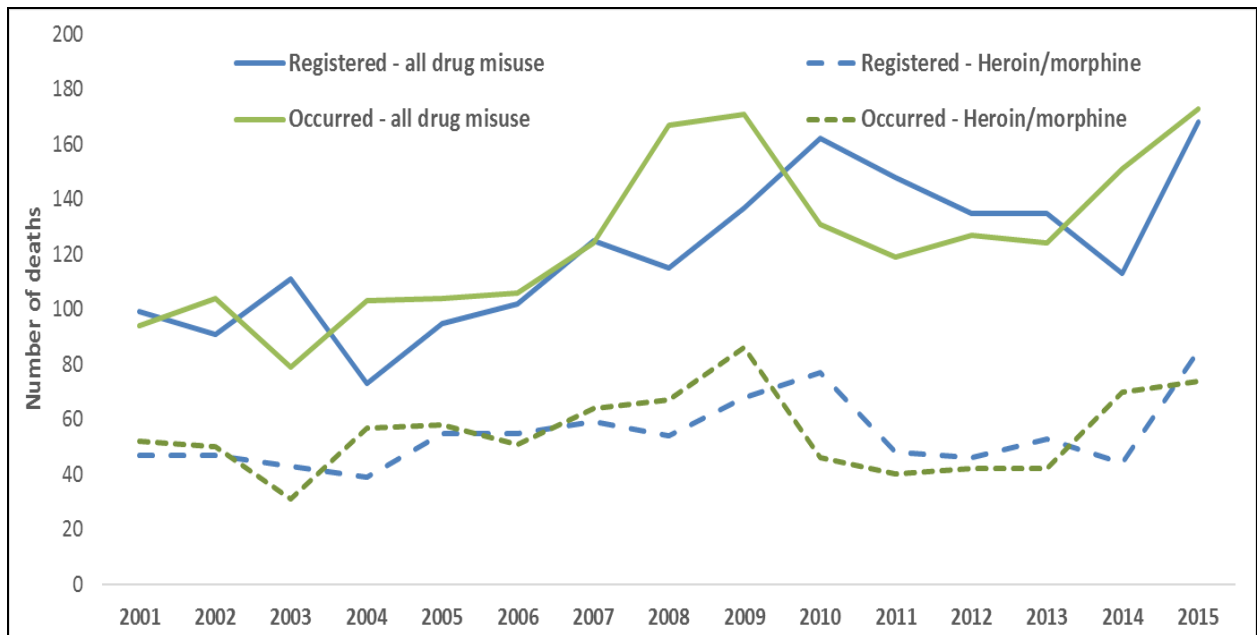


Chart 2: Median delay in registration for drug misuse deaths, England and Wales, deaths registered 2001 to 2015

Drug poisoning and drug misuse death profile

In 2016, 271 deaths from drug poisoning were registered in Wales, an increase of 13.9 per cent on the 238 registered in the previous calendar year. Of those deaths, 192 were deaths resulting from drug misuse (see Appendix A) an increase of 14.3 per cent on 2015 when 168 drug misuse deaths were registered. Chart 3 shows drug poisoning deaths in Wales by year of registration, highlighting drug misuse deaths. In 2016, drug misuse accounted for 69 per cent of drug poisoning deaths. This proportion is relatively stable over time.

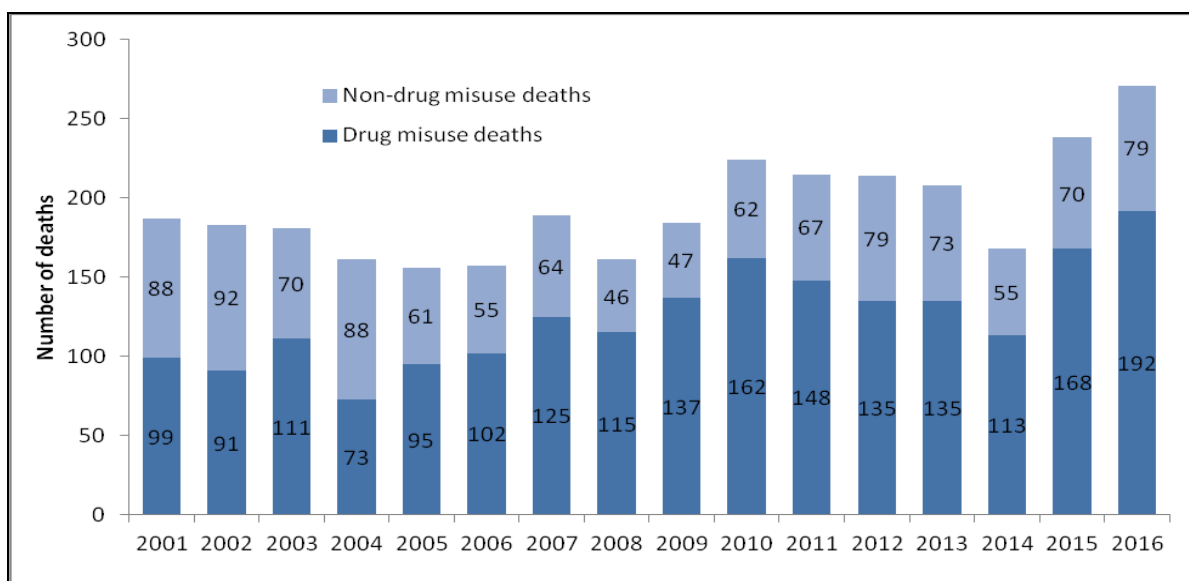


Chart 3: Deaths from drug poisoning and drug misuse by year of registration, Wales, 2001-16

A substantial proportion of drug misuse deaths registered in Wales each year involve heroin/morphine, ranging from 57.9 per cent in 2005 to 32.4 per cent in 2011. However, in the last year, the number of drug misuse deaths recording heroin/morphine has decreased from the previous year by 1 accounting for 43.8 per cent of drug misuse deaths. The increases in drug misuse deaths in the last year are a result of drugs other than heroin/morphine as shown in Chart 4.

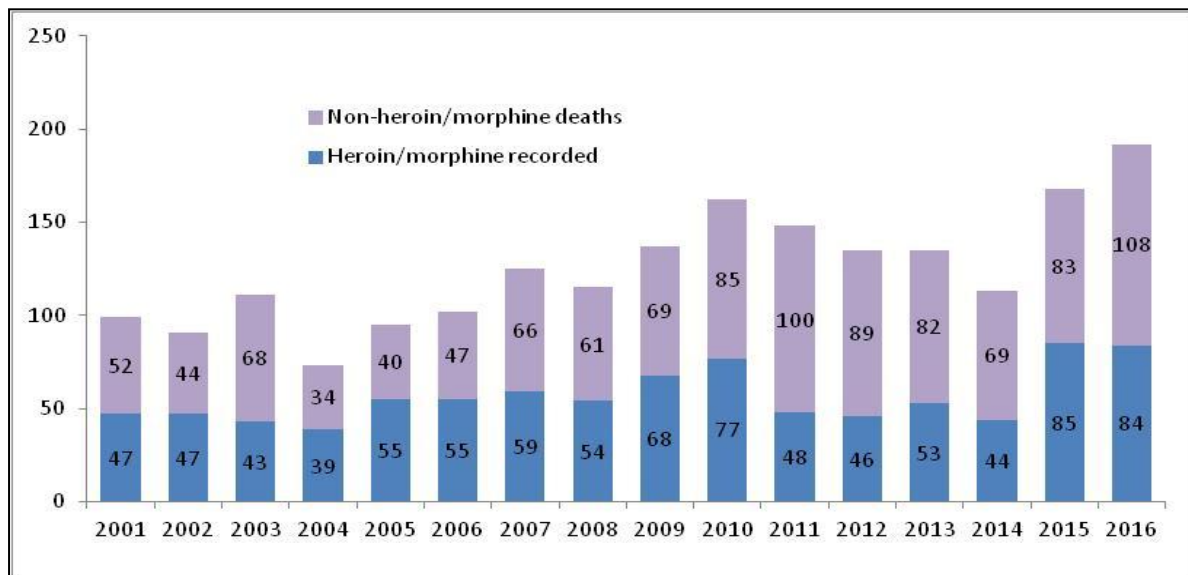


Chart 4: Drug misuse deaths by year of registration and presence or absence of heroin/morphine on the death certificate, Wales 2001-2016.

The increase in drug misuse deaths in 2016 were driven by increases in three main drug categories: other opiates (not heroin/morphine), benzodiazepines and cocaine, as well as poly-drug use. Increases in these specific drug groups are shown in Chart 5.

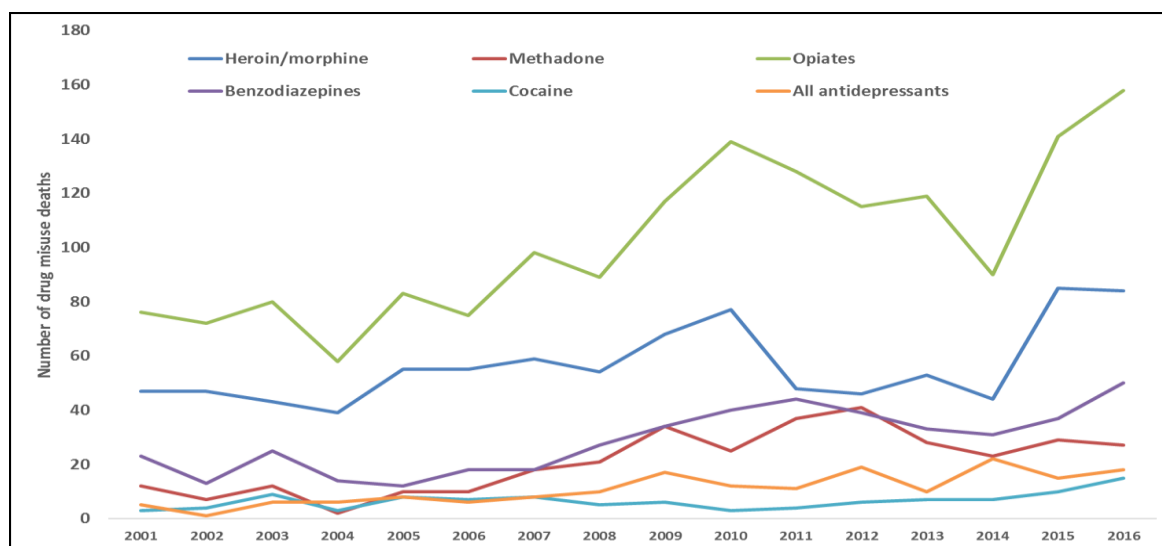


Chart 5: Drug misuse deaths by named illicit drug groups and registered year of death 2001-2016. N.B. deaths from 'Heroin/Morphine' are a subset of 'Opiate' deaths.

As indicated in Charts 4 and 5, the time trend data support the evidence of a reported 'heroin drought' beginning around 2010, with heroin supplies returning from 2014 to levels more commonly seen in previous years.

In addition to named substances recorded as primary drug on the death certificate, evidence indicates that poly-drug use is present in the majority of deaths. Alcohol use may contribute to fatal drug poisoning and in 2016 was toxicologically evidenced in 25.5 per cent of drug misuse deaths as shown in Chart 6. The proportion of drug misuse deaths where alcohol was also present has ranged from a high of 43.8 per cent in 2010 to a low of 20.0 per cent in 2015.

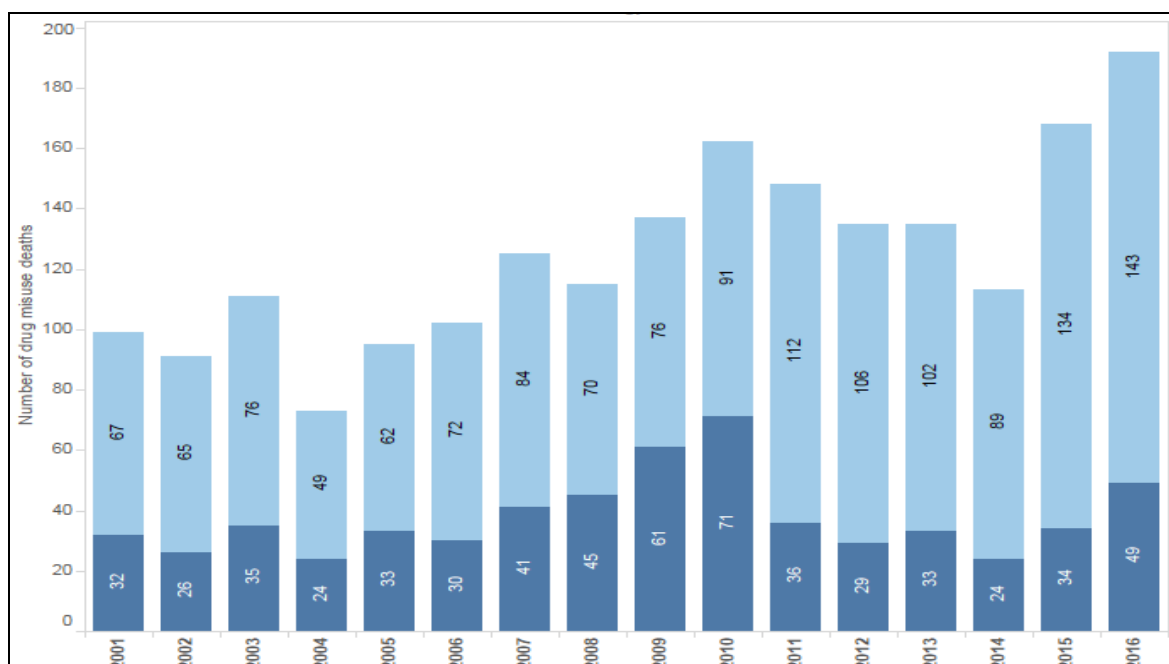


Chart 6 – Number of drug misuse deaths where alcohol was also indicated on the death certificate (dark blue) by registered year of death, 2001-2016

Chart 7 indicates the number of other toxicologically confirmed drugs found alongside the drug reported as primary drug on the death certificate. The complexity and completeness of poly-drug use warrants further detailed investigation, particularly in respect of robust toxicological investigations if an individual is found with evidence of heroin use at scene.

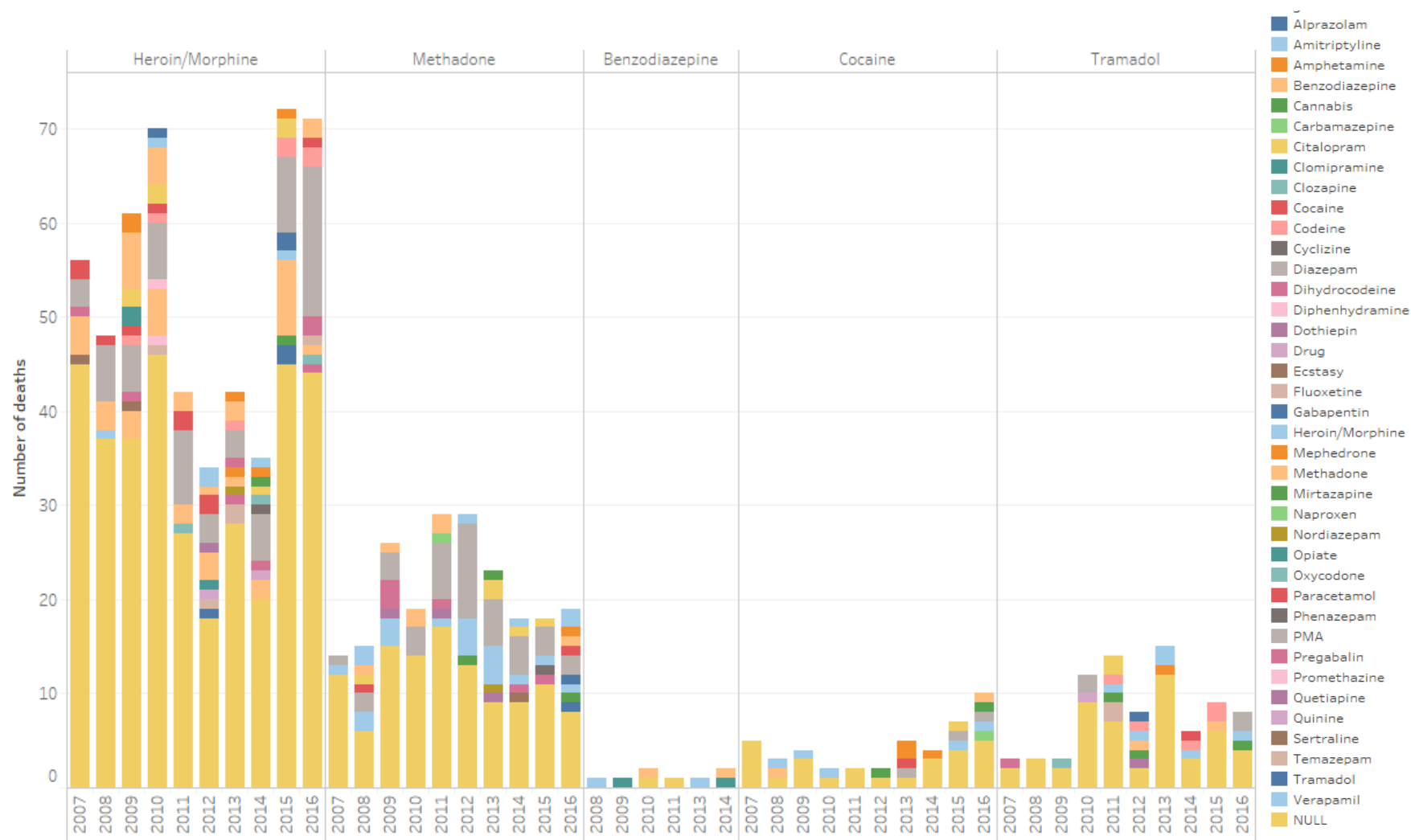


Chart 7: Drug misuse deaths with named primary drug category and other drugs identified by registered year of death, Wales 2007-16

For drug misuse deaths recorded as resulting primarily from heroin and morphine in 2016, 44 (62 per cent) had no other drug recorded. Following discussion with those responsible for the investigation of drug misuse deaths across Wales, variation exists in relation to the level and depth of toxicology tests requested and performed routinely and as such this data may not fully reflect the extent of substances used in combination and resulting in fatal drug poisonings. Chart 6 further indicates that deaths involving benzodiazepines often include other substances in the primary position, particularly heroin/morphine with benzodiazepines in the second, third or fourth mention on the death certificate. The data perhaps indicate the substitution of methadone or other opioid drugs, to a small degree, during the period of the 'heroin drought' around 2011-13

Deaths involving cocaine were very low and stable in the period 2008-13 before rising to 10 deaths in each of the years 2014-16. Deaths involving New Psychoactive Substances (NPS) also remain relatively low, with a total of 8 deaths in 2015 decreasing to 4 deaths in 2016 as shown in Chart 8. Over the last ten years, Mephedrone has been recorded in 10 deaths, GHB in 7 deaths and synthetic cannabinoids in three deaths.

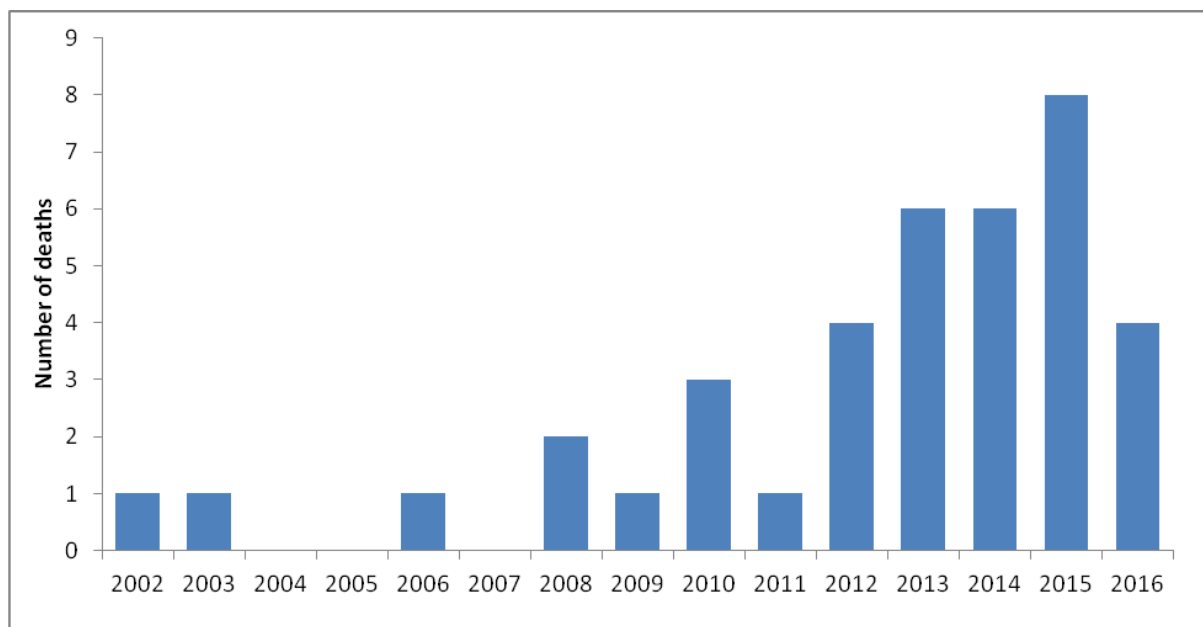


Chart 8: Drug misuse deaths involving new psychoactive substances by year of registration, Wales 2002-2016

The list of NPS used in the ONS classification is provided in Appendix B.

Demographics

Sex

Males account for the majority of deaths in all years for which data are available, and in 2016 accounted for 76 per cent of drug misuse deaths, broadly consistent with previous years as shown in Chart 9.

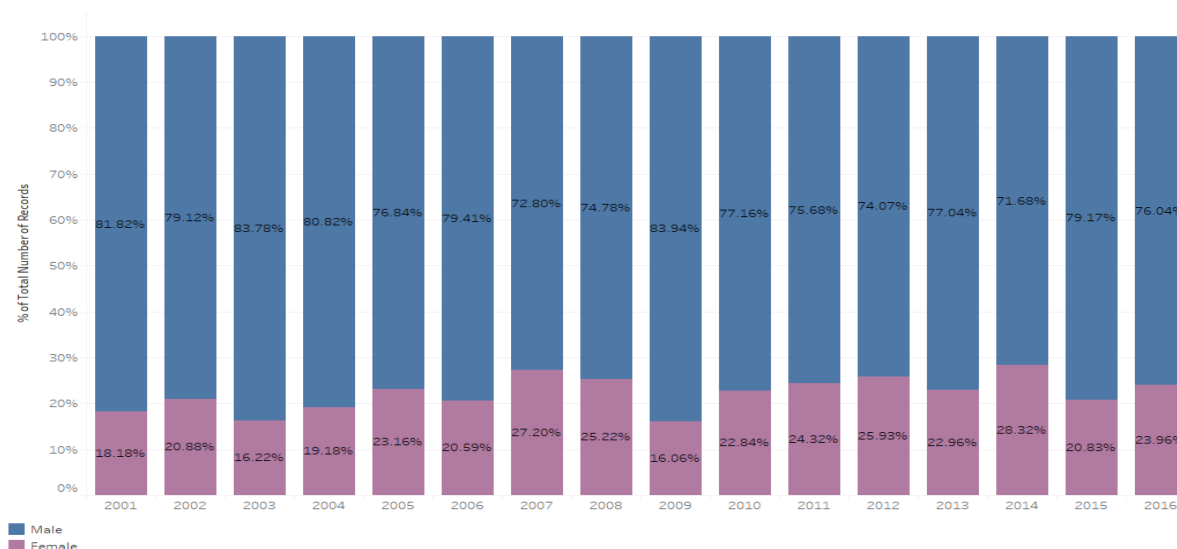


Chart 9 – Proportion of total drug misuse deaths by registered year of death and sex, Wales 2001-2016

The trend in drug misuse mortality amongst males can be seen to mirror overall drug misuse deaths trends as shown in Chart 6. However, it is notable that mortality amongst women appears to show different trends, although the smaller numbers of deaths occurring amongst women make identifying trends more challenging. Where deaths amongst men peaked in 2010 before reducing from 2011 through to 2014 before rising sharply again in 2015, deaths amongst women rose in 2010 and remained relatively stable with a substantial increase in the last year, to 46 deaths in 2016 as shown in Chart 10.

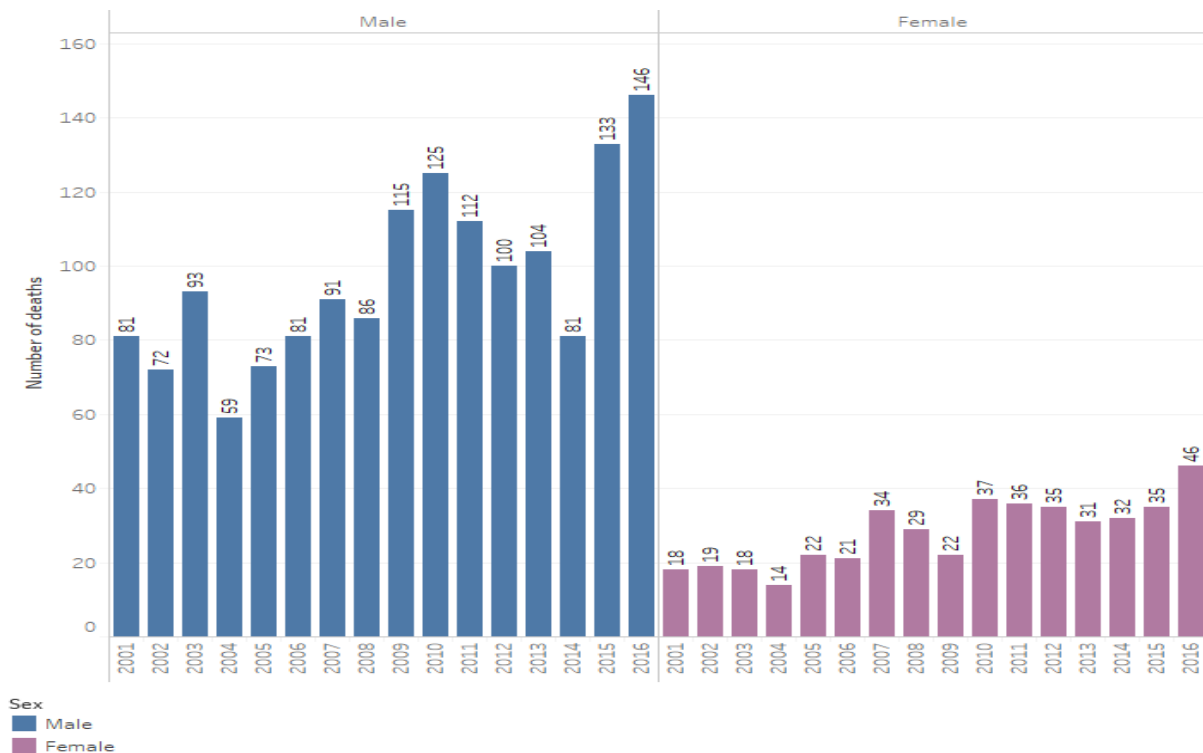


Chart 10: Number of drug misuse deaths by registered year of death and gender, Wales 2001-16

The pattern of heroin/morphine (primary mention) for males and females largely mirrors the overall pattern of drug misuse deaths, as shown in Chart 11.

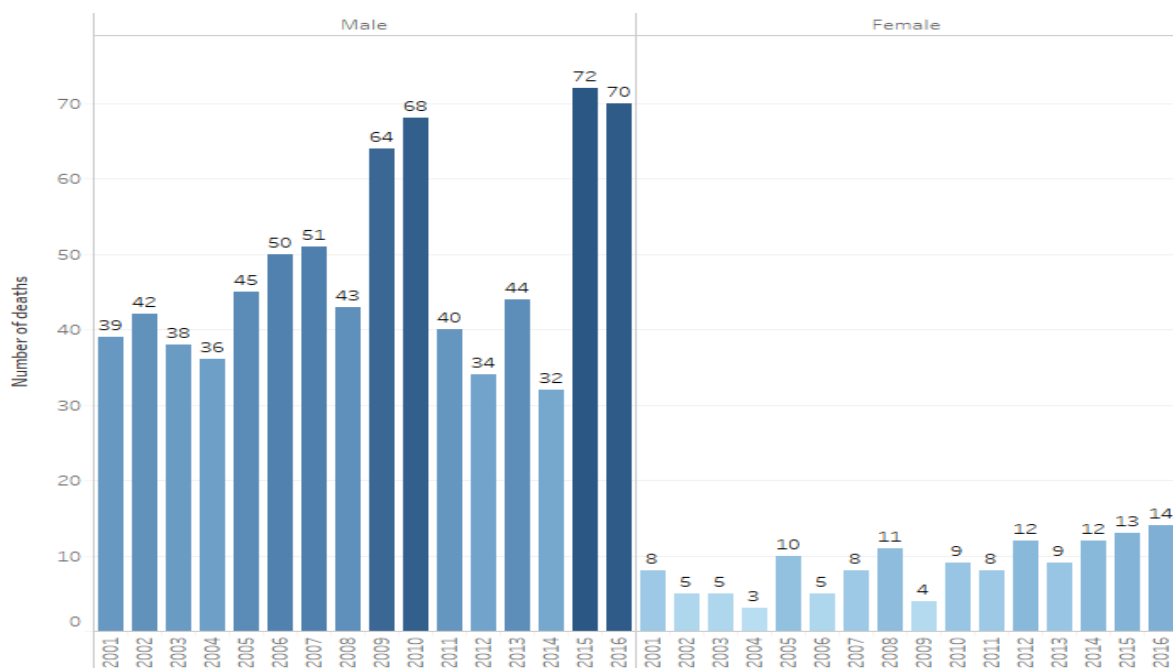


Chart 11 – Deaths from heroin/morphine (primary record) by sex and registered year of death, Wales 2001-2016

Whilst the proportion of deaths involving heroin/morphine appears generally to have declined amongst men over the period 2011-2014 before increasing dramatically in 2015, amongst women the proportion of drug misuse deaths involving heroin/morphine appears to have relatively more stable. However, whilst the number of drug misuse deaths amongst females as a result of primary heroin/morphine increased in 2016, the proportion dying from drugs other than heroin/morphine increased at a greater rate as indicated in Chart 12.

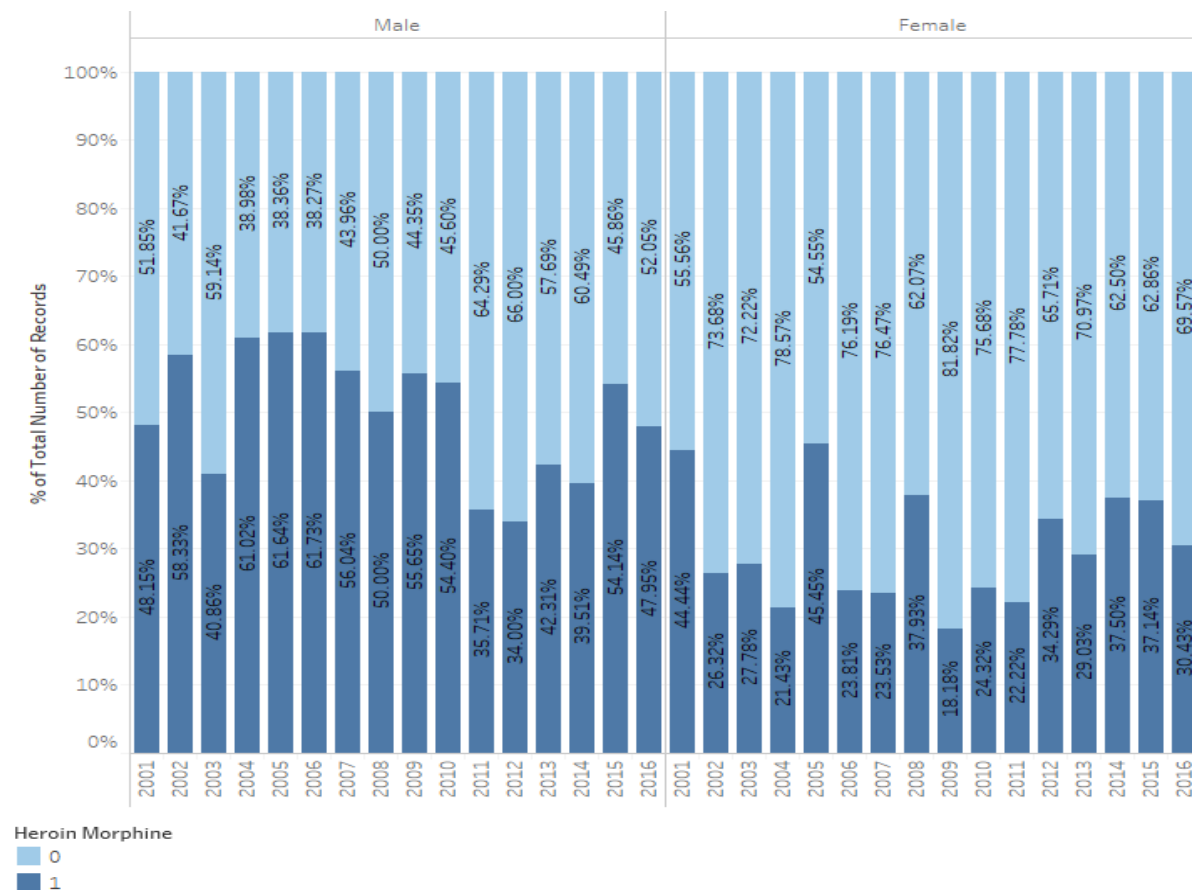


Chart 12: Proportion of drug misuse deaths in Wales involving heroin/morphine (dark blue), by registered year of death and sex, Wales 2001-16

Age

The age of those dying of drug misuse also appears to show a number of distinct patterns since 2001, as seen in Chart 113. The highest number of drug misuse deaths occurred within the 35-39 age group in 2016 but it is worthy of note that increases in drug misuse deaths were also recorded in all age categories from 40-44 onwards in this last year. There has been a linear trend in increases in deaths among those aged 40-44 years since 2013, even more dramatically identifiable in the 45-49 and 50+ age groups. Amongst younger people, whilst the numbers are low, there is an increase year on year in drug misuse deaths amongst under 25 year olds for the years 2014-16 but deaths amongst 25-29 and 30-34 show a different pattern with no change or decreases between 2015 and 2016.

In terms of sex, as indicated in Chart 13, drug misuse deaths amongst females occur predominantly in the 25-29 and the 50+ age categories both in terms of numbers but also proportional to deaths in males.

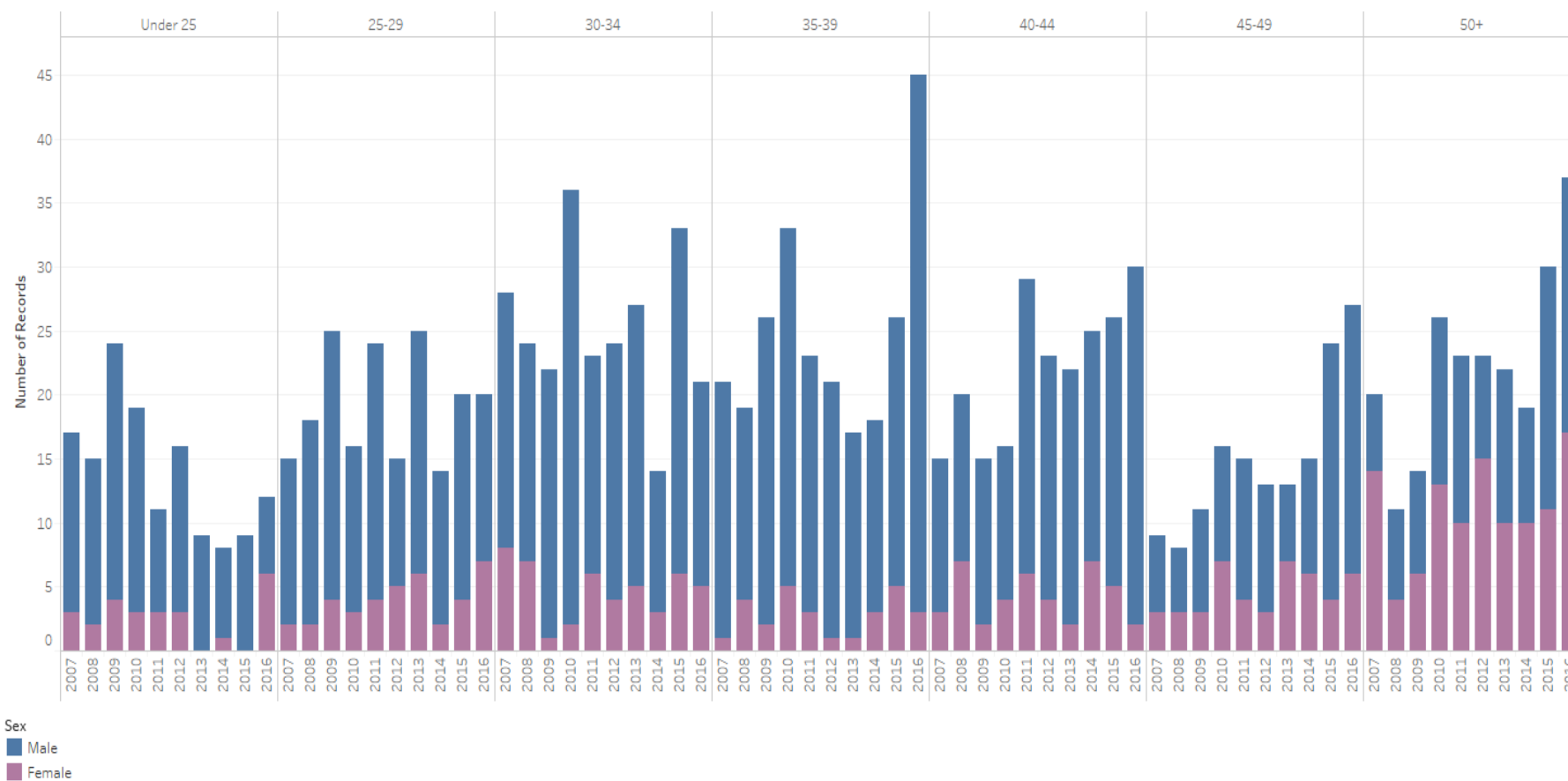


Chart 13: Number of deaths in Wales from drug misuse by registered year of death, gender (males in blue) and age band, 2007-16

Geographic location

Changes in drug misuse deaths by area require calculations involving small numbers, and as such should be treated with caution. Deaths from drug misuse and deaths involving heroin/morphine are shown in Chart 14.

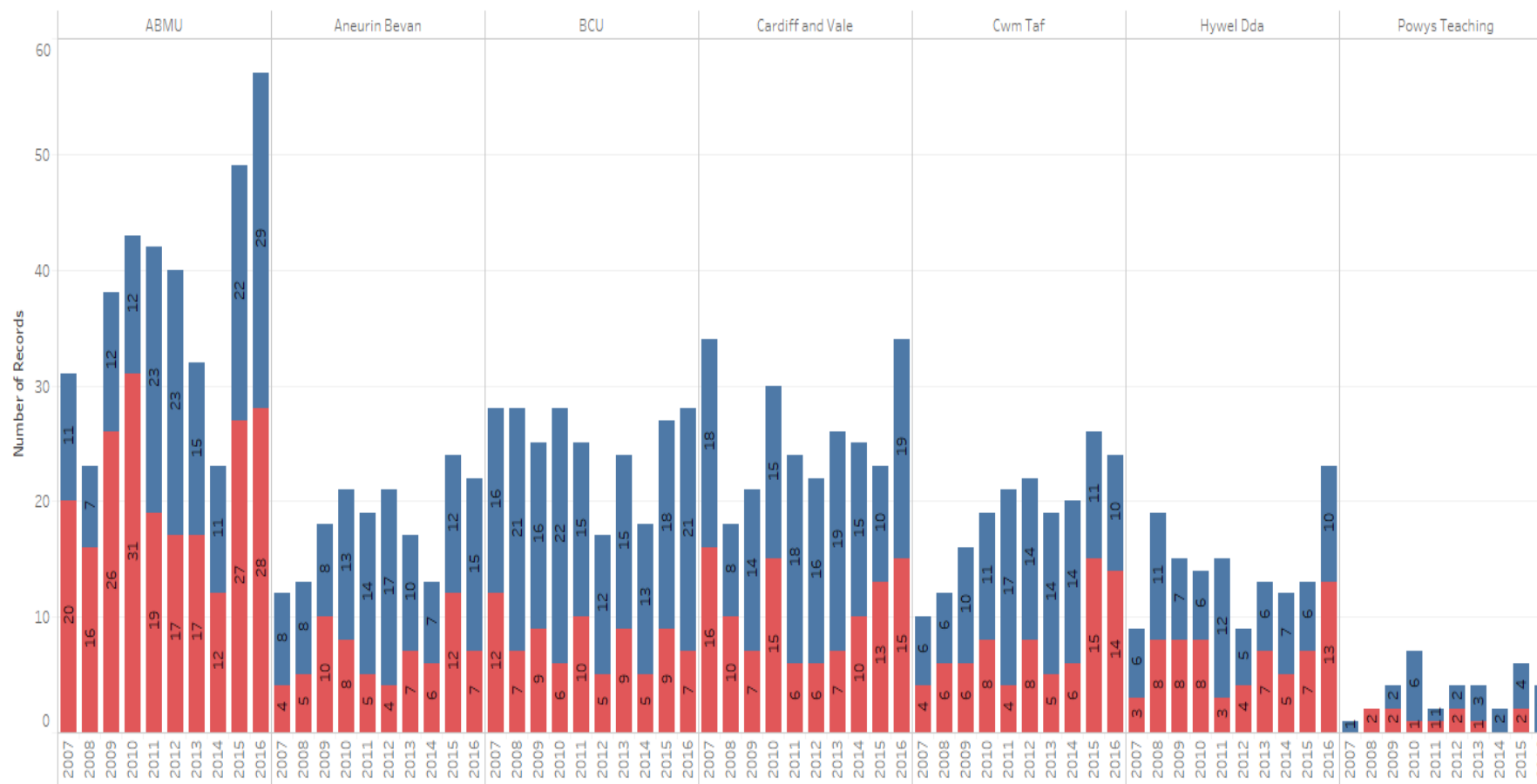


Chart 14: Number of drug misuse deaths and number of deaths involving heroin/morphine (in red), by registered year of death and Health Board area, Wales, 2007-16

The broad geographic pattern of drug misuse deaths is presented in Figure I for the years 2013-16. As shown, drug misuse deaths centre on urban areas with high density populations including people who use / inject drugs.

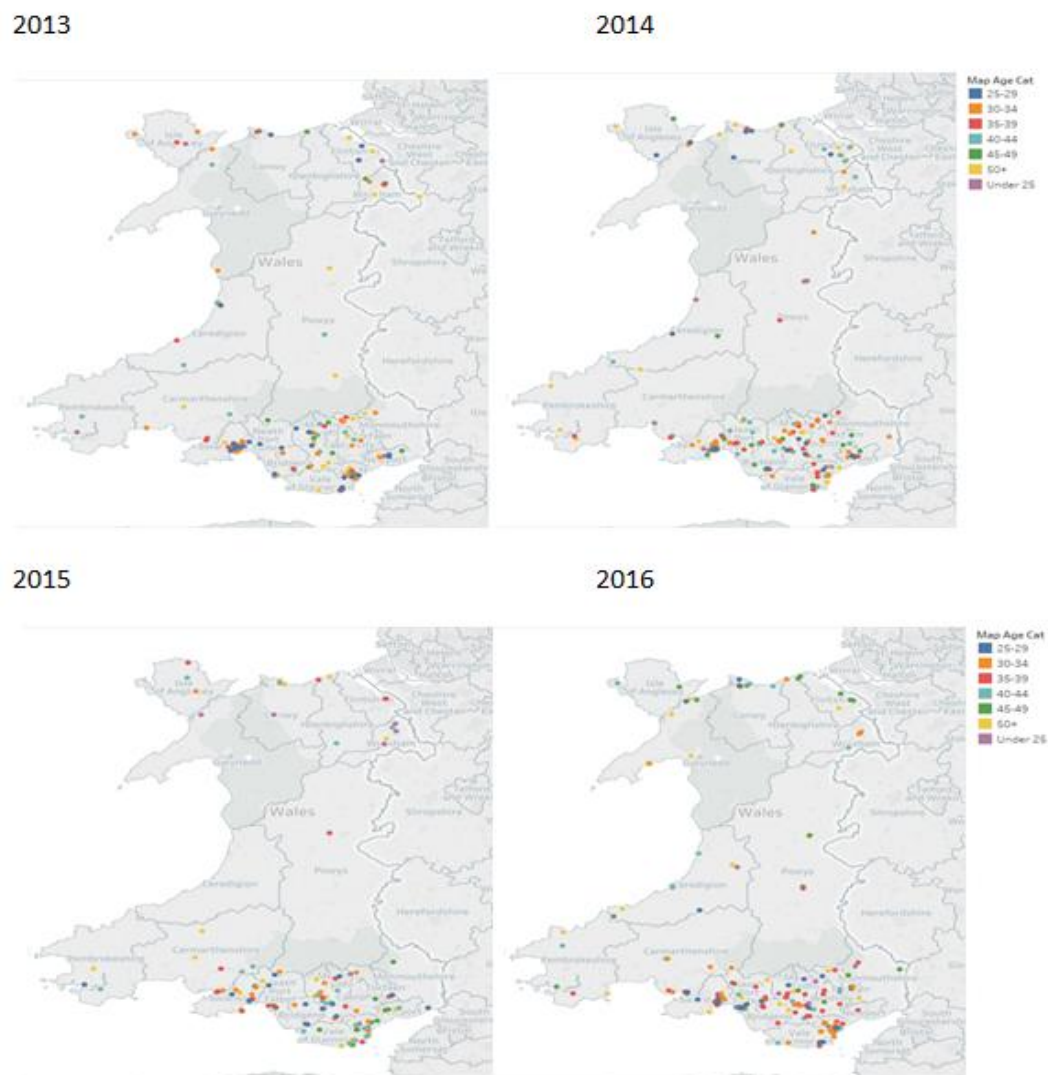


Figure I- Drug misuse deaths by registered year of death and age category in Wales 2013 to 2016

Due to differences in population size, age structure and rural/urban divides, it is more appropriate for the purposes of comparison between areas to use standardised rates. The European age standardised rate (EASR) for drug misuse deaths registered in 2016 in Wales was 8.0 per 100,000, compared with 5.8 per 100,000 population in 2015. Rates varied substantially across health board areas with ABMU recording the highest rate at 11.4 per 100,000 population in 2016, a rise in rate of 1.6 per 100,000 population as shown in Chart 15 (upper graph). ABMU and Cwm Taf health board areas both had higher rates than the Wales average. Substantial increases in rates were recorded in Cardiff & Vale health board area with increases of 2 deaths per 100,000 population and Hywel Dda with an increase in rate of 3.5 deaths per 100,000 population in 2016 compared with 2015.

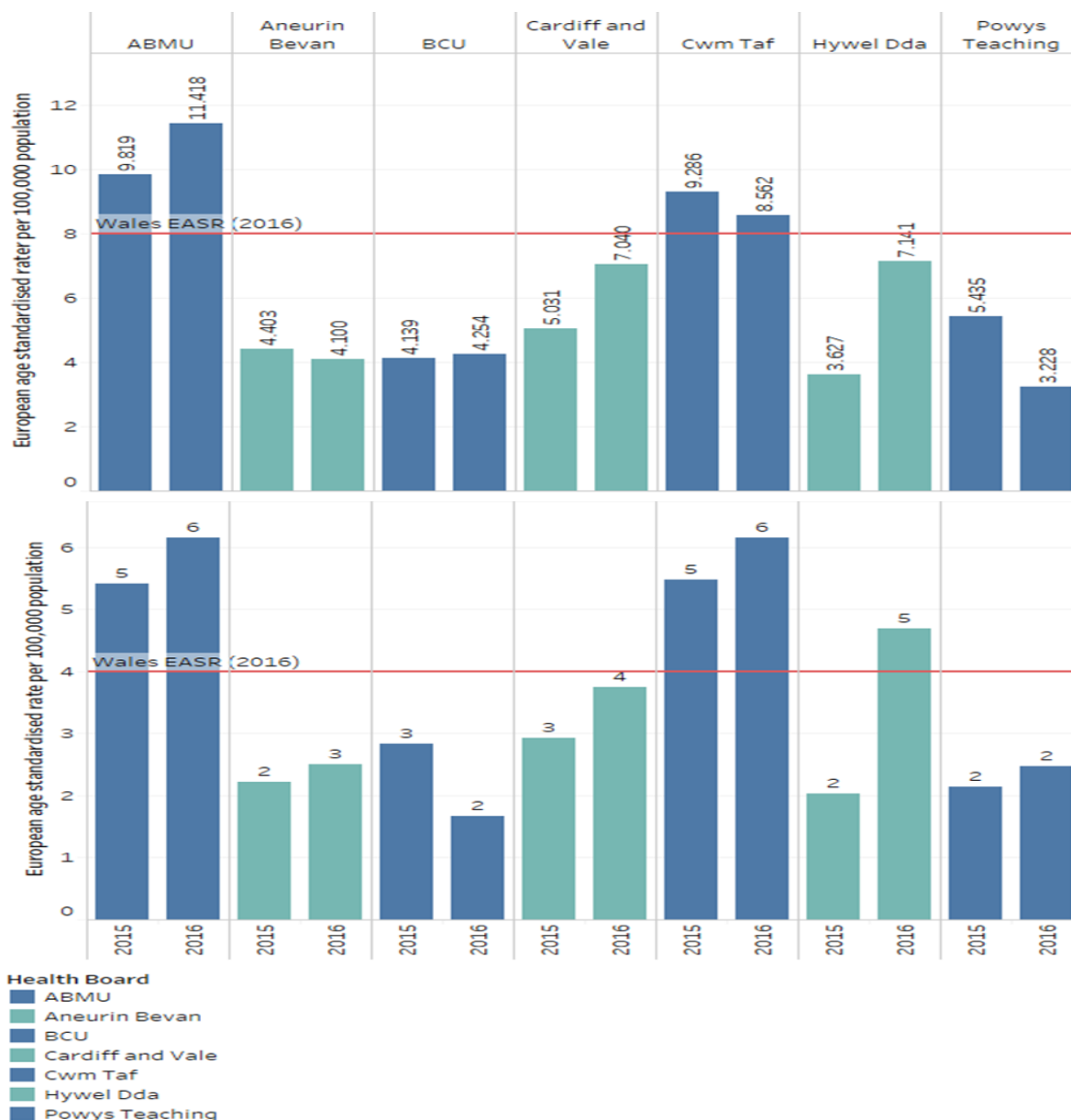


Chart I5: European Age Standardised Rate per 100,000 population of drug misuse deaths in Wales, all and those involving heroin/morphine (lower graph), by Health Board area and registered year of death 2015 and 2016

This data presented at a local authority level is presented in Table I. As indicated, the highest rate was recorded in Neath Port Talbot at 18.03 per 100,000 population.

Table 1 – European age standardised rates of drug misuse death per 100,000 population by Local Authority in Wales.

Local Authority	EASR per 100,000 population
Isle of Anglesey	3.34
Blaenau Gwent	7.78
Bridgend	5.12
Caerphilly	3.64
Cardiff	7.86
Carmarthenshire	6.63
Ceredigion	12.14
Conwy	7.18
Denbighshire	3.59
Flintshire	2.45
Gwynedd	6.75
Merthyr Tydfil	1.43
Monmouthshire	3.92
Neath Port Talbot	18.03
Newport	0.74
Pembrokeshire	4.56
Powys	3.23
Rhondda Cynon Taf	10.33
Swansea	11.47
Torfaen	8.13
Vale of Glamorgan	6.18
Wrexham	3.07

Drug misuse deaths and deprivation

Drug harms are typically associated with social and economic deprivation and this relationship is strikingly illustrated in data on drug misuse deaths. Taking all drug misuse deaths occurring between 2001 and 2016 (2,001 deaths), Chart 16 shows that 6.1 times as many individuals who died of drug misuse over this period in Wales came from the 10% most deprived areas compared with the 10% least deprived areas. Indeed, almost 34 per cent of those dying of drug misuse between 2001 and 2016 came from the most deprived areas, rising to 58.3 per cent for those in the most deprived quintile.

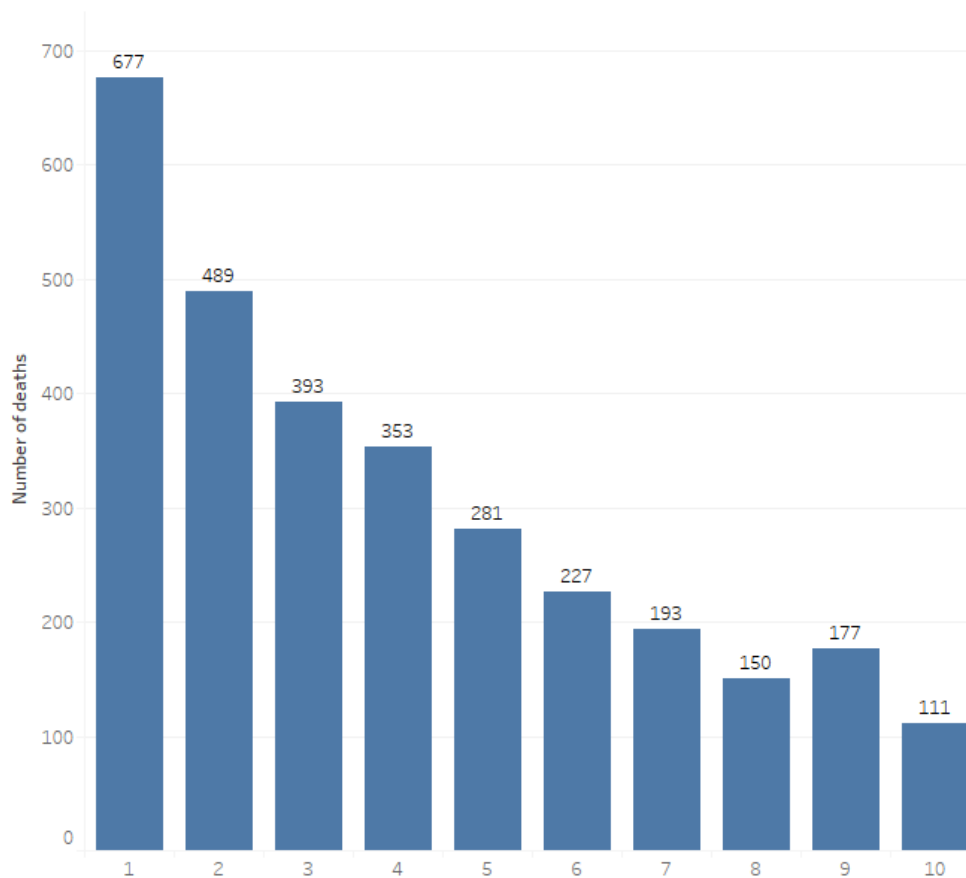


Chart 16: Drug misuse deaths occurring between 2001 and 2016 by deprivation decile.

Underlying causes of death

Chart 1717 shows the proportion of drug misuse deaths categorised by the underlying cause of death. Data are presented by year of registration, as changes in classification practice are likely to be better understood by the year of classification than the year of death. The marked change in the data between 2010 and 2011 is understood to be as a result of changes in guidance given to those allocating the codes. Whilst there is variation over the most recent five years in terms of the proportions of deaths categorised by each code, it is not clear how far these reflect actual changes in intentionality of those dying of these causes and variation in categorisation practices between different practitioners.

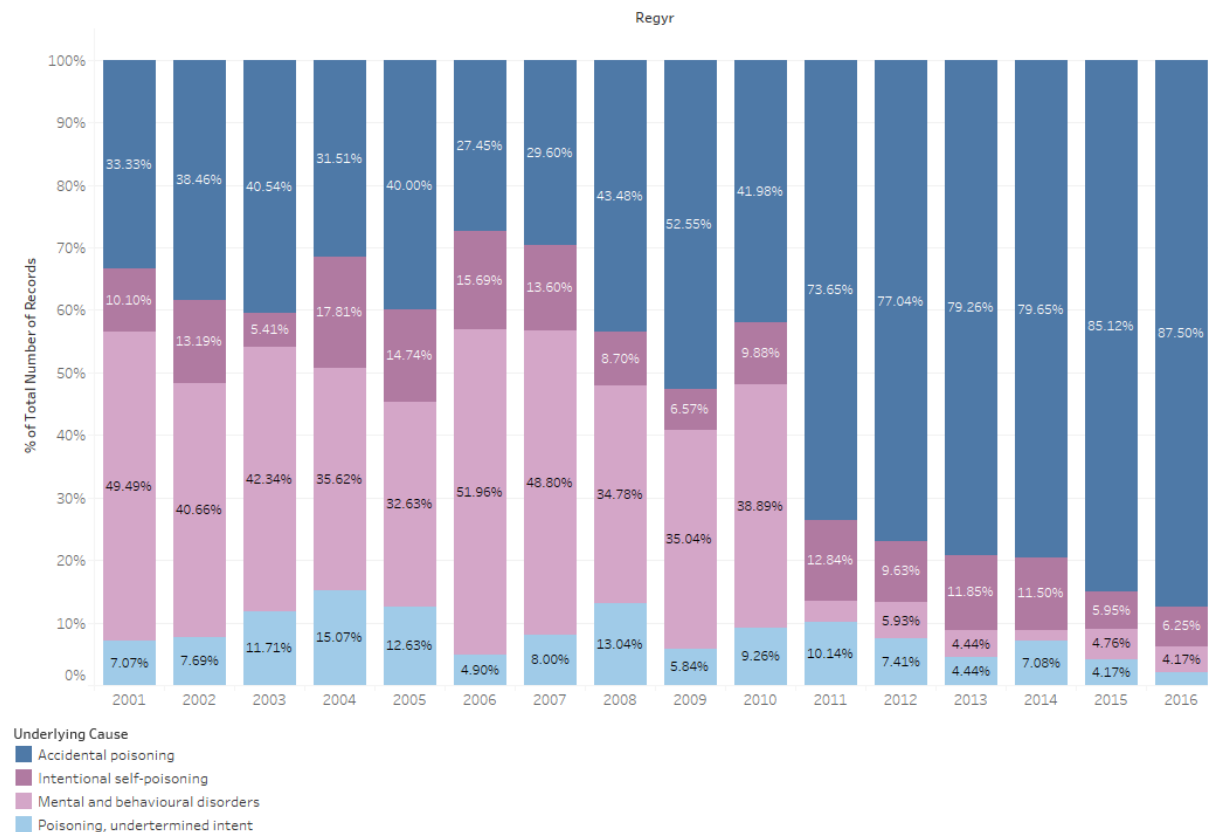


Chart 17: Underlying cause of death for drug misuse deaths by year of registration, Wales 2001-16

Appendix A: Data and Definitions

'Drug related deaths' typically encompasses two measures. Deaths related to both licit and illicit drugs are typically described as 'drug poisoning deaths.' 'Drug misuse deaths', which is the preferred measure for analysis of drug related deaths in the context of substance misuse strategies, include only illicit drugs (i.e. those controlled under the 1971 Misuse of Drugs Act and not prescribed to the individual). Drug misuse deaths are therefore a subset of both 'drug poisoning deaths' and 'drug related deaths'. All figures in this document refer to drug misuse deaths unless otherwise indicated.

Drug poisoning and drug misuse deaths are identified using the 10th edition of the International Classification of Disease codes (ICD-10 codes). Where the underlying cause of death is classified by a code indicating:

- Mental and behavioural disorders due to drug use (excluding alcohol and tobacco)
- Accidental poisoning by drugs, medicaments and biological substance
- Intentional self-poisoning by drugs, medicaments and biological substances
- Poisoning by drugs, medicaments and biological substances, undetermined intent
- Assault by drugs, medicaments and biological substances

The Office for National Statistics (ONS) classifies the death as 'drug related'. 'Drug poisoning deaths' include all deaths so classified; 'drug misuse deaths' include those deaths in which a substance controlled under the Misuse of Drugs Act 1971 (MDA) is identified. Note that since substances can be added to the definitions included in the MDA via secondary legislation, previously published numbers of deaths are subject to revision. Further, it is not typically possible to distinguish between heroin and morphine in toxicology tests on deceased persons, and therefore deaths involving these substances are conventionally described as describing 'heroin/morphine'. Note also that intentional poisoning and poisoning of undetermined intent are categorised by the ONS as 'suicides'.

Figures for drug related deaths are typically reported by year of registration of the death. All deaths where use of illicit drugs is considered a possible factor are referred to a Coroner, leading to a delay between death and registration. This delay in turn means that a substantial number of deaths are registered in a different year to that in which they occurred. Whilst reporting by year of registration enables a comprehensive list of deaths to be analysed and allows comparison between UK countries, changes in the length of time taken to register drug misuse deaths may suppress or enhance annual trends in the data.

Further details of the methods used by the ONS to identify drug related deaths can be found at: <http://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deathsrelatedtdrugpoisoninginenglandandwales/2015registrations#quality-and-methodology>

The ONS publishes annual figures for drug related deaths, with the most recent report available at: <http://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deathsrelatedtdrugpoisoninginenglandandwales/2015registrations>

Most of these figures are presented for England and Wales, with only a small number of headline figures broken down annually by UK country. The Mortality team at the ONS provide Public Health Wales with detailed figures for Wales by special arrangement. Where detailed in this document, figures for England have been calculated by subtracting figures for Wales from figures for England and Wales. This method is expected to provide accurate figures, but has not been cross-checked with the ONS.

Appendix B: Named ‘New Psychoactive Substances’ for drug misuse death analysis by Office for National Statistics

1-(benzofuran-5-yl)-N-methylpropan-2-amine
1-(Benzofuran-5-yl)-propan-2-amine
1-(Benzofuran-6-yl)-propan-2-amine
2-aminoindane
2-(1H-Indol-5-yl)-1-methylethylamine
25B-NBOMe
25C-NBOMe
25I-NBOMe
2-diphenylmethylpyrrolidine
3-methoxyphencyclidine
3f-phenmetrazine
4,4'-DMAR
4-Fluoroephedrine
4-Fluoromethcathinone
4-Methoxymethcathinone
4-Methylamphetamine
4-Methylethcathinone
5-EAPB
5F-ADB
5F-AKB-48
5F-PB-22
AB-CHMINACA
Acetylfentanyl
AH-7921
Alpha-methyltryptamine
Alpha-PVP
APB
APDB
Butylone
BZP
Cathinone
Clephedrone
Desoxyipiradrol
Diclazepam
Diphenidine
EAPB
Ethylphenidate
Etizolam
Flubromazepam
Flubromazolam
Fluoromethamphetamine

Fluoromethcathinone
Fluorophenmetrazine
GHB
Khat
MDDA
MDMB-CHMICA
Mephedrone
Methiopropamine
Methoxetamine
Methoxphenidine
Methylenedioxypropylvalerone
Methylethcathinone
Methylone
Mexedrone
N-Methyl-3-phenyl-norbornan-2-amine
Phenazepam
Pyrazolam
Synthetic cannabinoid
TFMPP
U-47700