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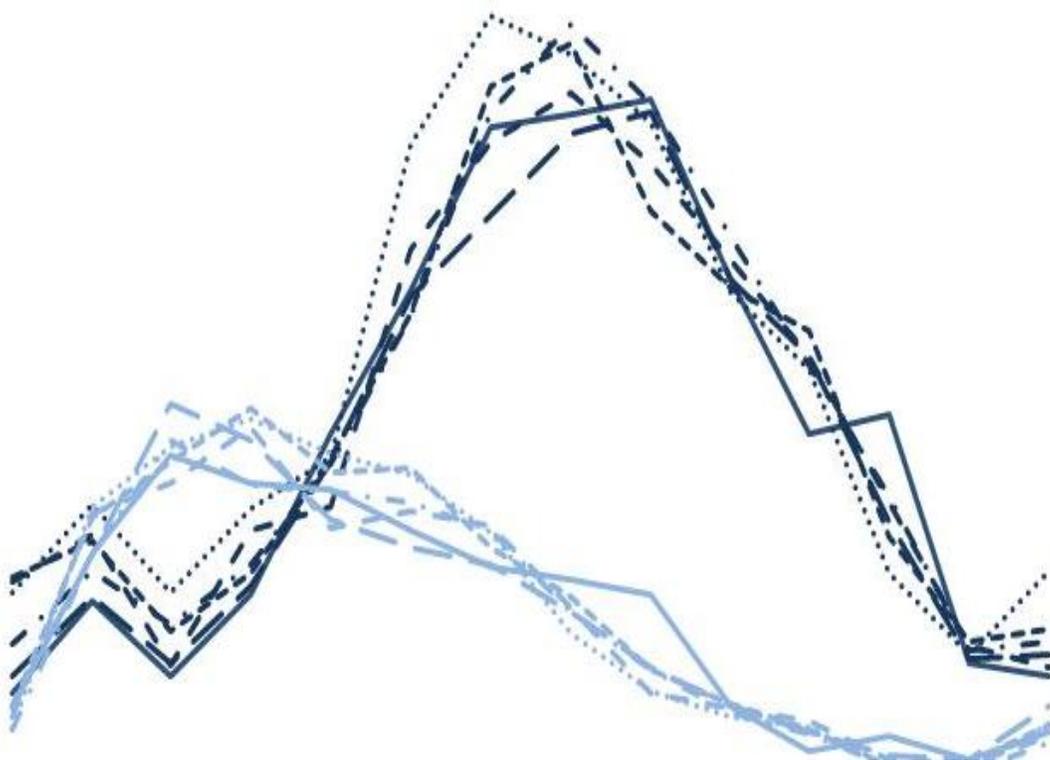


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READING BETWEEN THE LINES:

The Annual Profile of Substance Misuse in Wales 2013-14



**Annual statistical report on alcohol and drug
use on health, social care and education
services through the life course**

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Contents

1.0	Introduction.....	6
2.0	Executive Summary.....	7
3.0	Headline population trends	8
3.1	Alcohol specific and illicit drug poisoning hospital admissions.....	8
3.2	Alcohol related deaths and deaths from drug misuse 2013.....	9
3.3	Alcohol specific and alcohol attributable hospital admissions	10
3.4	Self reported drinking in relation to recommended guidelines.....	12
3.5	Self report use of illicit drugs	14
3.5	Substance misuse service referrals.....	16
4	Pre and post natal health.....	17
4.1	Conditions originating in the perinatal period: Foetal alcohol syndrome	17
4.2	Foetus and Newborn affected by maternal use of or withdrawal from drugs of addiction.....	17
5	Children and young people (aged up to 24 years).....	18
5.1	School aged children.....	18
5.1.1	Children in care with parental substance misuse.....	18
5.1.2	School exclusions due to substance misuse	20
5.2	Children and young people aged up to 24	21
5.2.1	Hospital admissions for alcohol specific conditions	21
5.2.2	Psychiatric hospital admissions for alcohol specific diagnoses in children and young people.....	22
5.2.3	Hospital admissions for poisoning by illicit drugs (primary diagnosis) in children and young people.....	23
5.2.4	Hospital admissions for poisoning by named illicit drugs in children and young people.....	24
5.2.5	Prevalence of Problem Drug Use, young people aged 15-29	26
5.2.6	Young people who inject drugs (aged up to 24 years) who are accessing Needle and Syringe Programmes	27
5.2.8	Referrals to substance misuse treatment services amongst young people aged under 20 years	30
6	Working age adults (aged 25 to 49)	31

6.1	Hospital admissions for alcohol specific conditions	31
6.1.1	Hospital admissions by age.....	31
6.1.3	Hospital admissions for alcohol specific admissions (any position) by gender	32
6.1.4	Hospital admissions for alcohol specific admissions (any position) by geographic area of residence	33
6.2	Hospital admissions for poisoning with named illicit drugs in working aged adults (25-49 years).....	36
6.2.1	Hospital admission for poisoning with named illicit drugs by year	36
6.2.2	Hospital admission for poisoning with named illicit drugs by age band and gender 2013-14	37
6.2.3	Hospital admission for poisoning with named illicit drugs (any position) by drug type.....	37
6.3	Prevalence of Problem Drug Use	39
6.4	Individuals accessing Needle and Syringe Programmes	40
6.5	Self-reported use of illicit drugs in the past year by adults aged 16-59 years.....	43
6.6	Referrals to substance misuse treatment services in Wales amongst working age adults (20-49 years old).....	44
7	Older people (aged 50 years and above).....	45
7.1	Hospital admissions for alcohol specific conditions	45
7.1.1	Hospital admissions by age band 2008-09 to 2013-14	45
7.1.2	Hospital admissions for alcohol specific conditions in primary and any position, by age band 2013-14.....	46
7.2	Hospital admissions for poisoning by named illicit drugs	48
7.3	Older people accessing Needle and Syringe Programmes.....	49
7.4	Referrals to substance misuse treatment services in older people (aged 50 years and above).....	50
8	Injecting drug use: risk behaviours and blood borne viruses	51
8.1	Direct and indirect sharing.....	51
8.2	Prevalence of BBVs amongst people who inject drugs in Wales and uptake of hepatitis B vaccination.....	51
8.3	Prevalence of HIV infection amongst people who inject drugs.....	52
9	Deaths related to substance misuse	54
9.1	Alcohol related deaths.....	54
9.1.1	Alcohol deaths by age and gender	55

9.1.2	Alcohol deaths by gender and Health Board area of residence	56
9.2	Drug related deaths.....	58
9.2.1	Deaths by drug poisoning and drug misuse deaths by gender	58
9.2.2	Rates of drug misuse deaths per 100,000 population by gender	59
9.2.3	Drug misuse deaths by named illicit drug in the primary position.....	59
9.2.4	Drug misuse deaths by age and gender	60
9.2.5	Rates of drug misuse deaths by gender and health board area of residence.....	61
10	Police recorded drugs offences and purity of drugs seized by the police: all ages	64
	Appendix 1: Hospital admissions related to alcohol, definitions	68
	Appendix 2: Alcohol related deaths, definitions	75
	Appendix 3: Hospital admissions for poisoning by illicit drugs, definitions.....	77
	Appendix 4: Drug related deaths, definitions	78
	Appendix 5: Confidence intervals	82
	Appendix 6: Calculating population rates of hospital admission, mortality and other public health indicators.....	83
	Appendix 7: Problem drug use: definitions and estimations of prevalence.....	84

1.0 Introduction

This statistical report provides a summary of routinely-reported substance misuse related evidence currently available in Wales. Evidence is drawn from a number of data sources including information from the Patient Episode Database Wales (PEDW), the Harm Reduction Database (HRD) Wales, Office for National Statistics (ONS) information, Education, and Home Office data. This report is intended for use alongside the Welsh Government Substance Misuse report on treatment activity for the same period to provide a complete profile on the scale and nature of substance misuse, both drug and alcohol use, in Wales.

This year, the profile report will be structured to better explore the evidence relating to substance misuse over the life course, from prenatal and maternal use of drugs and alcohol, through to substance misuse in older people. The profile will also evidence geographic variations in the health harms related to both drugs and alcohol in terms of hospital admissions, disease rates and deaths.

The report also includes a wider range of measures, reflecting the most recent developments in contemporary research on substance misuse. Notably, these additional measures include alcohol attributable admissions to general hospitals, a measure which includes conditions which evidence suggests are partially due to alcohol consumption when considered across the whole population. This measure, presented alongside data on alcohol specific admissions (i.e. those conditions which are solely due to alcohol) allows for a more detailed and nuanced understanding of the health harms caused by alcohol. Further details on alcohol attributable and alcohol specific measures are given in the text and the appendices.

Within section I, the report presents population based data relating to self report use and objective measures including hospital admissions in order to provide an overview of the context and extent of health harms and risk behaviour related to drug and alcohol use in Wales. Subsequent sections will then focus on specific age groups: Children and young people (aged 0-24 years), working aged adults (aged 25-49 years) and older people (aged 50 years and above) and, where data is available, provide geographic profile by health board and local authority. It is hoped that by doing so, this report will prove an essential resource both to those responsible for providing and planning health and related services that prevent and/or address the harms associated with drug and alcohol misuse¹ in Wales and the wider UK, as well as those with a broader interest in substance misuse, wider social determinants and implications.

¹ Alcohol misuse in this report refers to drinking more than the recommended limits of alcohol consumption. Further information available from: <http://staging.nhsinform.com/health-library/articles/a/alcohol-misuse/definition>

2.0 Executive Summary

Children and young people (0-24 years)

- As at 31 March 2013, there were a total of 4,935 of cases of children in need registered with local authorities in Wales where parental substance misuse (including alcohol misuse) was recorded as the relevant parental factor, representing 25 per cent of all cases of children in need in Wales
- The proportion of all school exclusions accounted for by substance misuse rose from 2.4 to 2.8 per cent
- Between 2008-09 and 2013-14, the total number of young people aged 0-24 admitted with an alcohol specific diagnosis in the primary position (i.e. where this diagnosis was recorded as the primary reason for admission) in Wales fell by 41.3 per cent, from 525 to 308
- 503 children and young people (age up to 24 years) were admitted to hospitals in Wales in 2013-14 for poisoning by illicit drugs in the primary position, representing a decrease of 7.4 per cent (40 admissions) on the previous year

Working aged adults (25-49 years)

- The total number of hospital admissions for alcohol specific conditions amongst working aged adults has decreased by 10.8 per cent over the period 2008-09 to 2013-14 (3476 and 3,099 admissions respectively)
- Alcohol related deaths fell from 504 in 2012 to 467 in 2013, a reduction of 7.3 per cent. This fall was due primarily to a reduction in alcohol related deaths in working aged women (aged 25-49 years) and women over 65 years
- There were 2,886 admissions with diagnosis of poisoning with named illicit drugs in any position (i.e. any drug related condition noted) in 2013-14, of which 62.7 per cent were males. This represented an increase of 10.1 per cent on the previous year
- Over the five year period from 2009-10 to 2013-14, the annual number of referrals to substance misuse treatment in this age group has declined by 9.2 per cent, from 20,205 to 18,342 referrals. The proportion of referrals for alcohol misuse has remained relatively stable at around 51 per cent

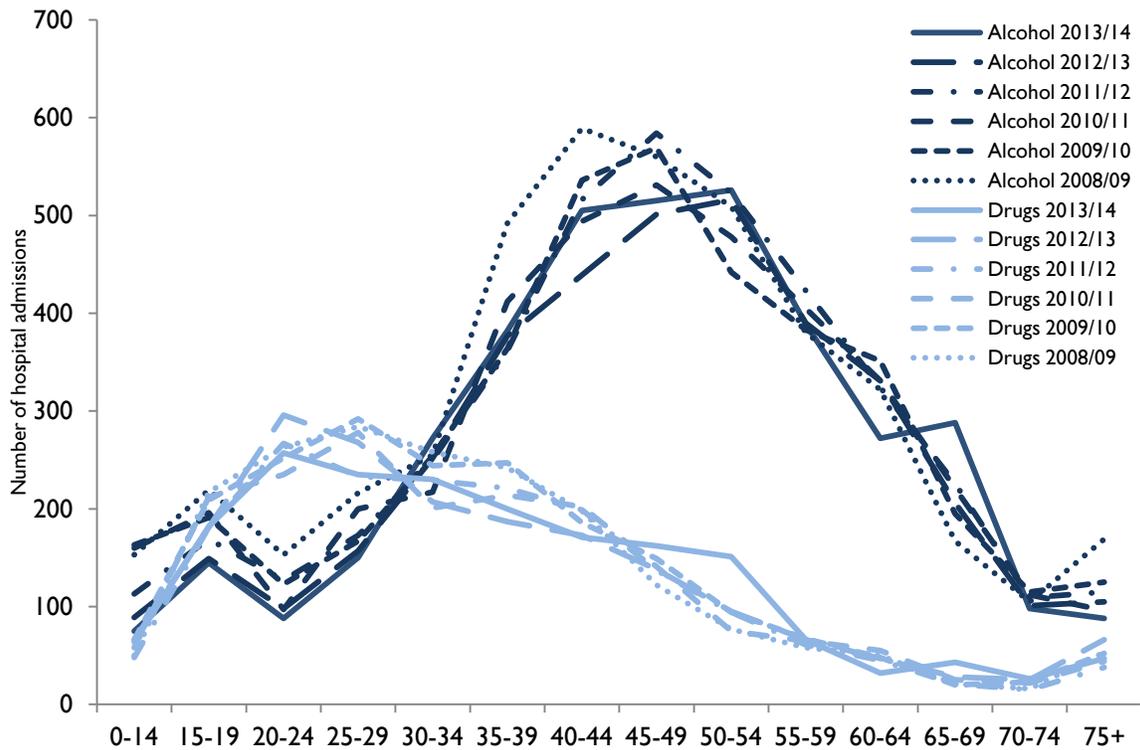
Older people (Aged 50 years and above)

- Hospital admissions for alcohol specific conditions remain relatively stable over time within this age group with less than 5 per cent change year on year in any given year across the period 2008-09 to 2013-14
- The older age group is the only age group in which referrals to substance misuse treatment services is increasing. Overall, referrals for any alcohol or drug misuse in this age group have increased by 15.8 per cent over the five year period 2009-10 to 2013-14

3.0 Headline population trends

3.1 Alcohol specific and illicit drug poisoning hospital admissions

In order to gain an overall sense of the relative harms associated with substance misuse over the life course it is useful to observe standard measures over time, for example hospital admissions, a measure representative perhaps of more problematic use, for both alcohol and drugs. As indicated in Chart 1, the impact of illicit drug use is observed primarily amongst younger people, reaching a peak within the 20-29 year age categories compared to alcohol hospital admissions which peak at ages 40-54 years and to a far higher level. In 2014 there were three times more hospital admissions for alcohol specific conditions compared to illicit drug poisonings (11,869 admissions and 3,962 admissions respectively). This trend has remained relatively consistent year on year over the 6 years shown. It is important to note that drug and alcohol users are not exclusive groups and as such individuals may present with both drug and alcohol health harms over the life course.



Source: Patient Episode Database for Wales, 2014

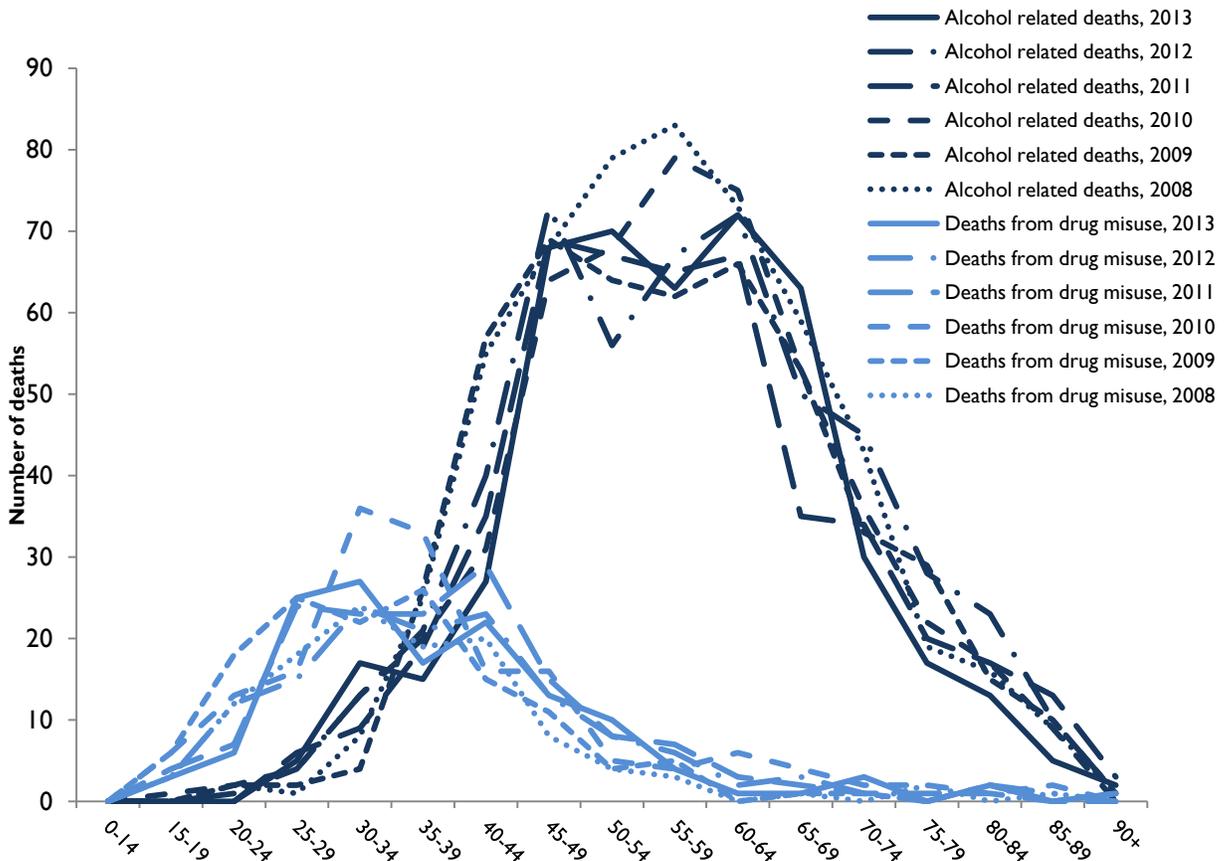
Chart 1: Hospital admissions for alcohol specific conditions² and poisoning by illicit drugs³ diagnoses in the primary position, all ages, 2008/09 to 2013/14

² 'Alcohol specific conditions' are those conditions considered to be entirely caused by alcohol. See Appendix 1 for further details.

³ 'Poisoning by named illicit drugs' refers to admissions described with an ICD-10 code that refers to a specific illicit drug. See Appendix 3 for further details.

3.2 Alcohol related deaths and deaths from drug misuse 2013

The pattern presented in hospital admissions for alcohol specific conditions and illicit drug poisonings is mirrored in the death data represented in Chart 2, albeit with a later onset and at far lower numbers. The peak age for drug misuse⁴ deaths was amongst those aged 30-34 in 2013. The data for alcohol related deaths indicate a fairly consistent number of deaths within each of the age groups 45-49 years to 60-64 years in 2013. In the last year, alcohol related deaths numbers were 3.4 times higher than drug misuse deaths (467 and 135 deaths respectively). Detailed analysis of alcohol related and drug misuse deaths are provided in Section 8.



Source: Office for National Statistics, 2014

Chart 2: Alcohol related deaths and deaths from drug misuse, all ages, 2008/09 to 2013/14

⁴ See Appendices 2 and 4 for detailed explanation of the terms 'alcohol related death' and 'death from drug misuse'

3.3 Alcohol specific and alcohol attributable hospital admissions

Alcohol misuse results in substantial health harms on a population basis as well as on an individual and community level. However, hospital admissions for alcohol specific conditions, conditions relating specifically to alcohol use e.g. alcoholic liver disease, represent only a proportion of the overall health harms associated with alcohol and measures have been developed to better assess the full impact – alcohol-attributable conditions⁵, which describe conditions where alcohol is a contributing factor and include Cardiac arrhythmias, Ischaemic stroke and a range of cancers. Chart 3 indicates the numbers of hospital admissions in Wales over a 5 year period by both alcohol specific and alcohol-attributable measures. The data indicate that whilst the number of hospital admissions for alcohol specific condition (any position) is gradually decreasing, with a total of 15,071 admissions in 2012, admissions for broad measure alcohol-attributable conditions are increasing over time with 34,077 admissions in the same year.

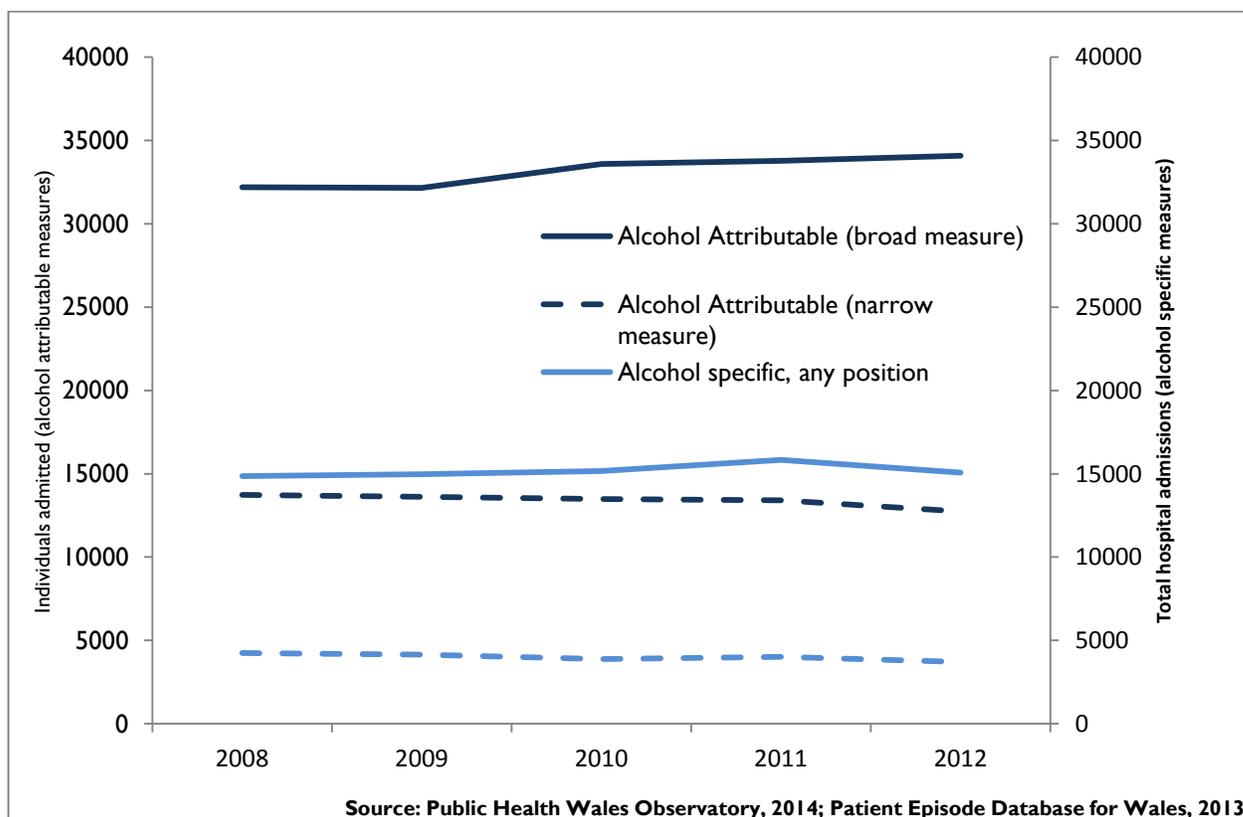
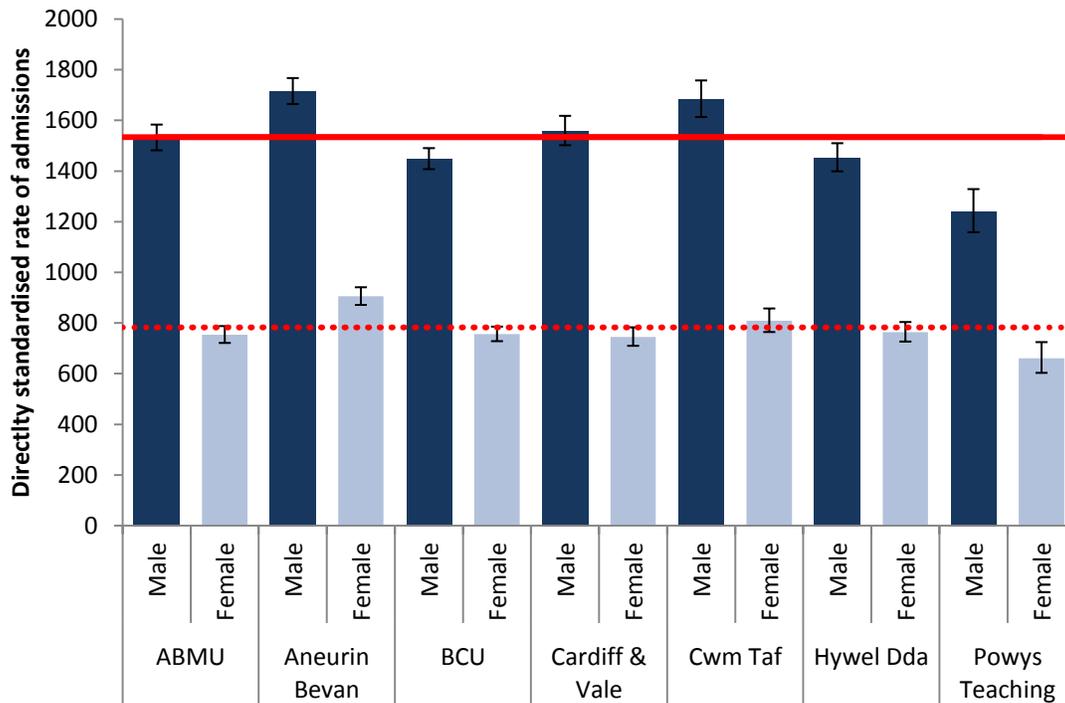


Chart 3: Hospital admissions for alcohol-attributable conditions (broad and narrow measures) and alcohol specific conditions (primary and any diagnostic position)⁶, 2008-12

⁵ See Appendix I for explanation of alcohol attributable conditions

⁶ 'Primary' diagnostic position indicates that the condition was recorded as the primary reason for admission. 'Any' diagnostic position indicates that the condition was noted on admission, but not necessarily as the primary reason for admission. Note that 'primary' admissions are therefore a subset of 'any' admissions. See Section 5.2.1 and Appendix I for further details.

Focussing in on alcohol-attributable hospital admissions, it is useful to analyse both gender and geographic variations in numbers of admissions. As indicated in Chart 4, the directly standardised rate⁷ in Wales for males was 1,534 admissions and 782 for females. In both Aneurin Bevan and Cwm Taf health board areas, admission rates are higher than the average for both males and females, whereas in BCU, ABMU, Powys and Hywel Dda health board admissions are lower in both. Cardiff and Vale represents a mixed picture with higher than average admissions for males and lower than average for females. It is important to note that age profiles are not available for alcohol-attributable conditions at this time and later sections highlight hospital admissions for alcohol specific conditions by age.



Source: Public Health Wales Observatory, 2014; Patient Episode Database for Wales, 2014

Chart 4: Directly standardised rates of hospital admissions for alcohol attributable conditions (broad measure), by gender and geographic area of residence (with 95 per cent confidence intervals⁸) 2012

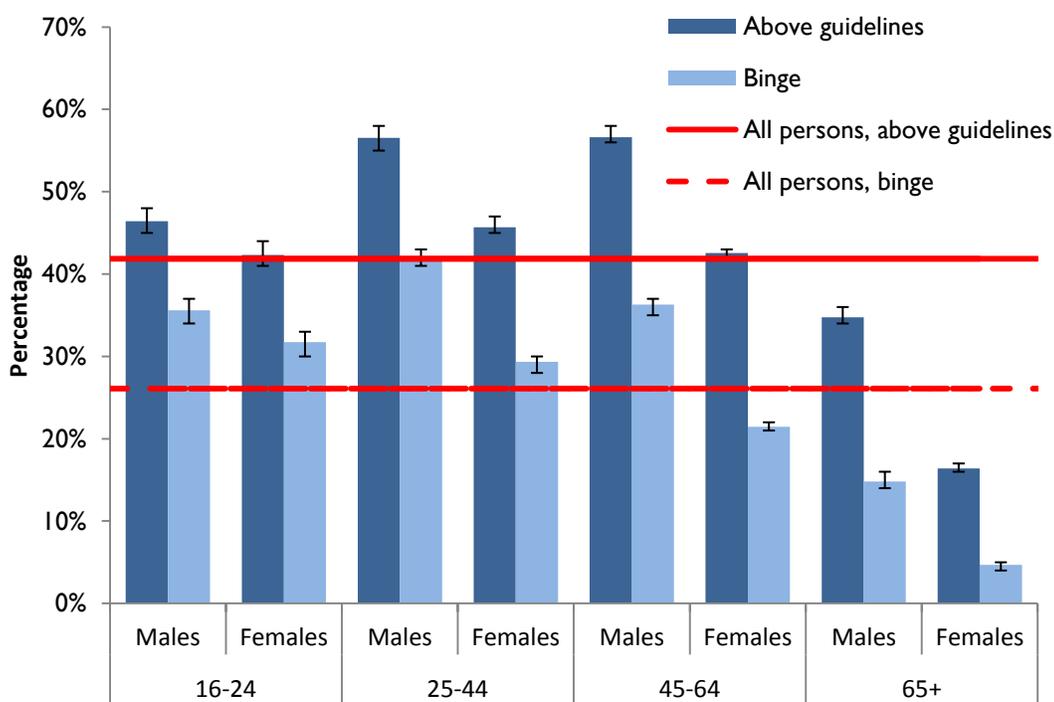
⁷ An informative and robust statistical method to compare deaths over time is to use a directly standardised rate (DSR) which compares the actual mortality rate in given populations (which may vary because those populations have a disproportionate number of older or younger people) with the rate that would be expected if the population had a standard age structure. Direct standardisation also allows for the calculation of confidence intervals which quantify the imprecision in the estimate of a particular value. Further details of direct standardisation and confidence intervals are given in Appendices 5 and 6.

⁸ 'Confidence Intervals' describe a range of values used to quantify the imprecision in the estimate of a particular value. '95 per cent' refers the probability that an actual value falls within a specified range. In the case of all graphs in this report, the range of values that statistical analysis suggests will contain the actual value with 95 per cent probability are represented by error bars around a specific value. For more details see Appendix 5.

3.4 Self reported drinking in relation to recommended guidelines

The Welsh Health Survey⁹ provides a mechanism to estimate the proportion of the population (aged over 16 years) self reporting ‘binge drinking’ (defined as drinking more than 8 units for men and more than 6 units for women on heaviest drinking day of the previous week) and ‘drinking above guidelines’ (more than 4 units for men and 3 units for women per day on at least one day in the previous week).

As indicated in Chart 5, 57 per cent of males in both the 25-44 and 45-64 year age categories reported ‘drinking above guidelines’. Lower rates were observed in the younger and older age groups (46 per cent in 16-24 age group and 35 per cent in 65+ years). This pattern is reflected amongst females, although at lower levels, with the highest self report use, 46 per cent in the 24-44 age group. ‘Binge drinking’ was reported by between 36-42 per cent of males and 21-32 per cent of females in age groups up to 64 years. Again, lower rates were reported in the older age group (5 per cent of females and 15 per cent of males). The ‘all persons’/ average proportion reporting ‘drinking above guidelines’ was 42 per cent and for ‘binge drinking’ was 26 per cent.

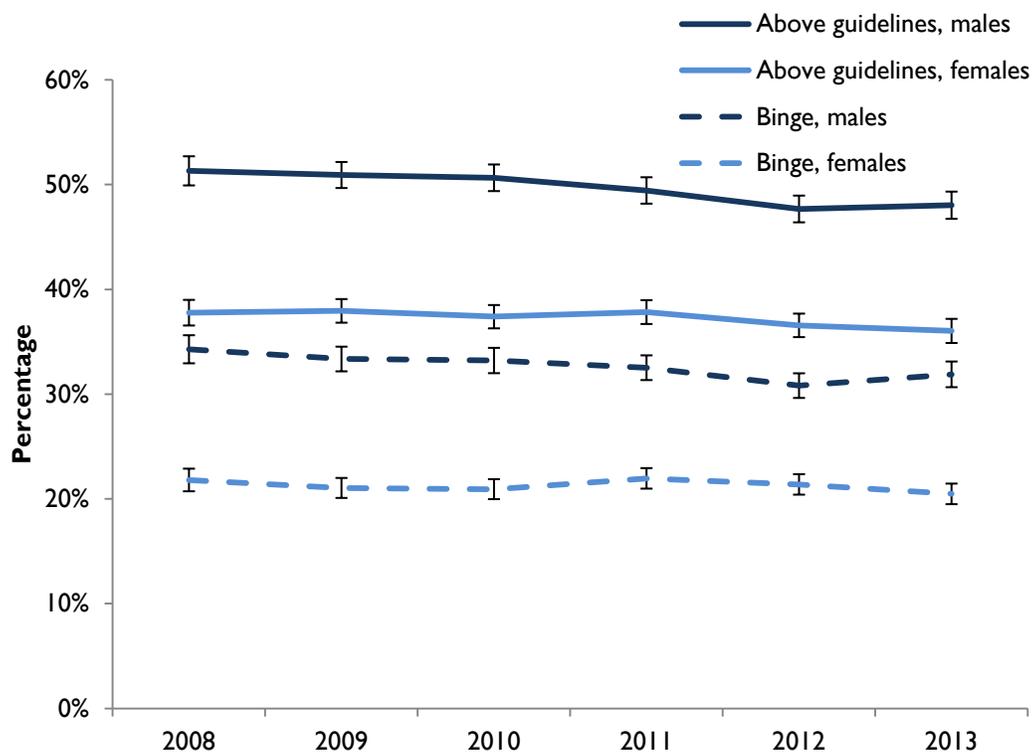


Source: Public Health Wales Observatory, 2014; Welsh Health Survey, 2013

Chart 5: Self reported ‘drinking above guidelines’ and ‘binge drinking’ by age group (standardised rate) and gender (with 95 per cent confidence intervals) 2008-13; all persons rates 2013

⁹ Further information on the Welsh Health Survey, along with annual reports, is available at: Welsh Government | Welsh Health Survey

Whilst self report levels of both 'binge drinking' and 'drinking above guidelines' remain high, analysis of self-report data over individual years indicate a decline in these behaviours since 2008 as shown in Chart 6. Self-report 'drinking above guidelines' has decreased from 51.3 per cent to 48 per cent amongst males and from 37.8 per cent to 36 per cent in females over the six year period. The self-report data on 'binge drinking' followed a similar trend in females with a decrease from 21.8 per cent to 20.5 per cent, however, amongst males the proportion decreased from 34.3 per cent in 2008 to 30.8 per cent in 2012 but in the last year rose to 31.9 per cent.



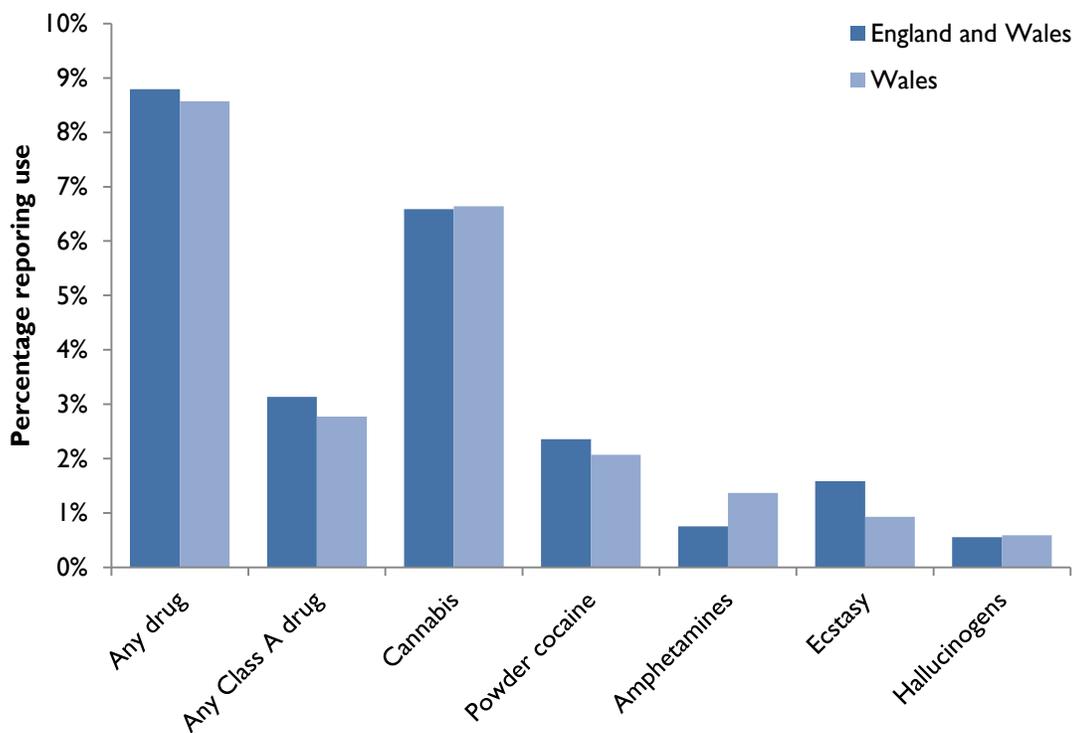
Source: Public Health Wales Observatory, 2014; Welsh Health Survey, 2014

Chart 6: Self reported 'drinking above guidelines' and 'binge drinking', age standardised rate by year and gender (95 per cent confidence intervals) 2008-13

The data indicate that interventions targeted at specific age groups may prove useful in reducing alcohol misuse and challenging the public perception that alcohol misuse is most prevalent in the younger age groups (aged 16-24).

3.5 Self report use of illicit drugs

The Crime Survey for England and Wales¹⁰ provides annual data on self-report use of illicit drugs. It is important to note that not all illicit drugs or drugs not yet classified - 'new psychoactive substances' are included in the survey and as such it does not represent a full picture of illicit drug use nor a measure of problematic drug use but may be useful in terms of trend analysis. As indicated in Chart 7, amongst young people and adults in Wales (aged 16-59 years), 8.6 per cent reported 'any illicit drug use' in the last year with 6.6 per cent of respondents reporting cannabis use. In relation to combined England and Wales data, higher levels of cannabis, amphetamine and hallucinogen use were reported in Wales but lower levels of powder cocaine and ecstasy for the year 2013-14.



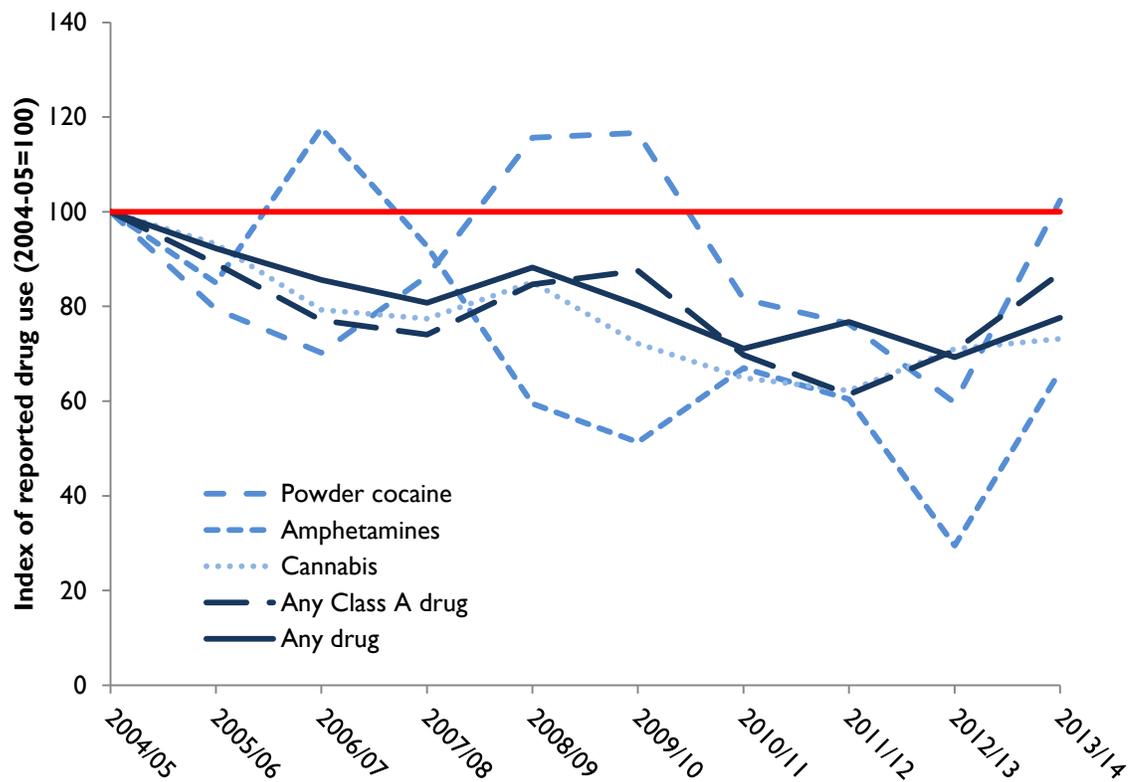
Source: Crime Survey for England and Wales, 2014

Chart 7: Proportion of adults aged 16-59 reporting use of specific illicit drugs, comparison of Wales and England and Wales, 2013-14

¹⁰ Further information on the Crime Survey for England and Wales, along with access to the data outlined within this document is available at: [Crime in England and Wales, Year Ending March 2014 - ONS](#)

Over time patterns of drug use may change, with new drugs entering the market or becoming more wide spread whilst others may fall out of use. Analysis of the Crime Survey data over time for young people and adults in Wales reflects this as indicated in Chart 8. Taking 2004/05 as a baseline, the data indicate that self-report use of amphetamines and cocaine have fluctuated substantially over the 9 year period – as amphetamine use decreases, a corresponding rise in cocaine use is observed over the period 2007-8 to 2009-10. Subsequent dips and rises in self-report use indicating a dynamic relationship which may reflect the impact of purity, economics and the emergence and availability of stimulant alternatives on the market e.g. mephedrone, the use of which was not measured within the survey.

Overall, following a downward trend in use of ‘Any drug’ and ‘Any Class A drug’ self report use has risen in 2013-14 to levels last reported in 2009-10.



Source: Crime Survey for England and Wales, Home Office, 2004-05 to 2013-14

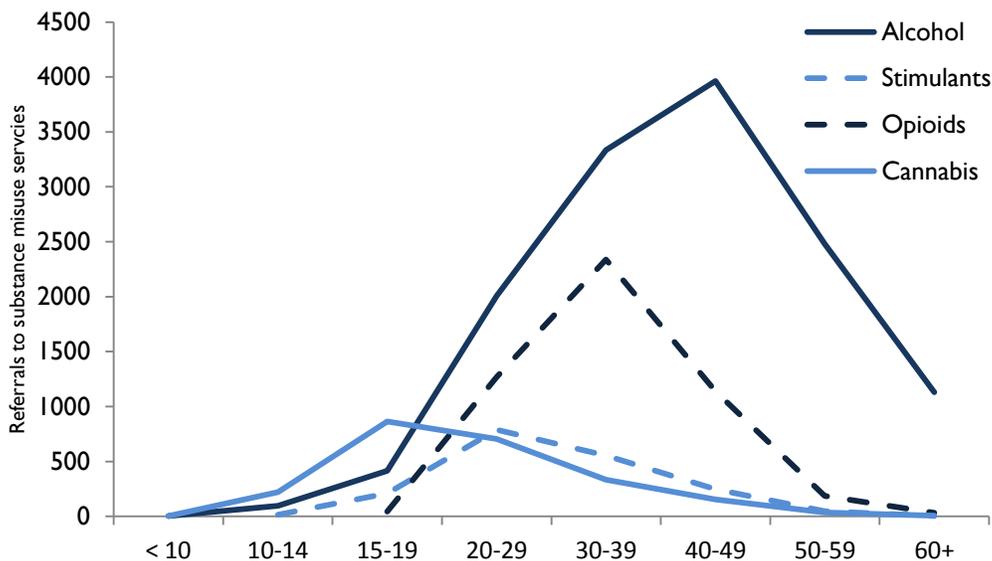
Chart 8: Index of illicit drug use reported by young people and adults aged 16-59 years resident in Wales, 2004-05 to 2013-14 (2004-05=100)

3.5 Substance misuse service referrals

Across Wales, the Welsh National Database for Substance Misuse¹¹ provides a mechanism for recording all referrals, assessments and treatment episodes in substances misuse services for both drug and alcohol. The delay between onset and seeking support for problematic substance misuse may vary depending on the circumstances of the individual, type of substance and the degree to which substance use impacts on health and social measures including employment, housing, finances, criminality etc. As shown in Chart 9, the number of referrals and age of individuals being referred to substance misuse services varies substantially by substance type.

Amongst the under 20 year olds, Cannabis represents the most frequent substance for referral with a peak in referrals (n=864) amongst those aged 15-19 years. Problematic primary stimulant use referrals peak amongst the 20-29 year age group with 787 referrals and an equivalent number of referrals for problematic cannabis use. Within this age band, referral for primary opioid and alcohol misuse outstrip stimulant referrals.

Consistent with UK evidence, the primary opioid use population is an aging cohort and in Wales peaks amongst the 30-39 year age group (n=2,338), however, at this age group there are higher number of referrals with primary alcohol misuse (n=3,334). Alcohol referrals peak in the 40-49 year age band, consistent with the hospital admissions data in Chart 1.



Source: Welsh National Database for Substance Misuse, 2014

Chart 9: Age profile of individuals referred to substance misuse services by selected substance type¹² 2013-14

¹¹ Further information and WNDSM annual reports are available at: [Welsh Government | Substance misuse statistics](#)

¹² Chart 9 aggregates a number of substances listed on the Welsh National Database for Substance Misuse (WNDSM) into broader categories. Specifically, 'stimulants' includes cocaine, crack cocaine, amphetamines, ecstasy, mephedrone and other stimulants and 'opioids' includes heroin, methadone and other opiates.

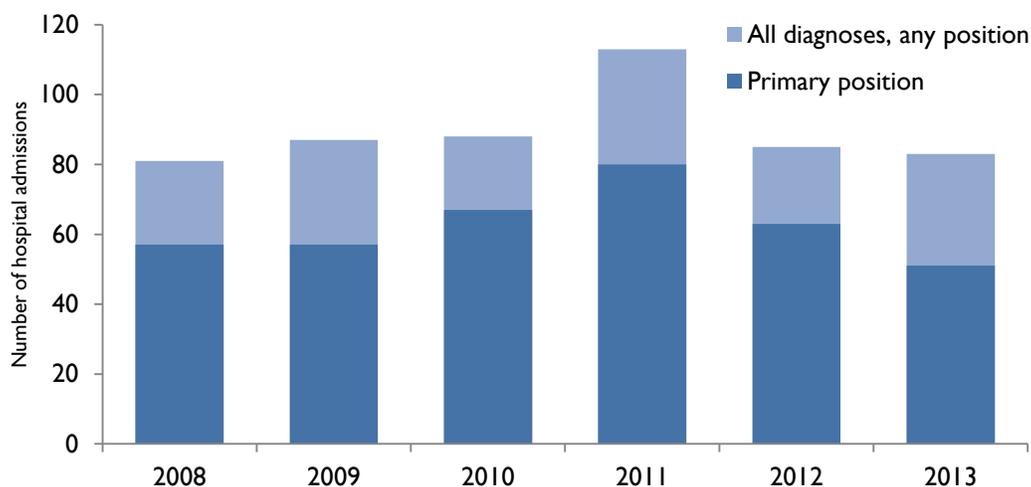
4 Pre and post natal health

4.1 Conditions originating in the perinatal period: Foetal alcohol syndrome

Foetal alcohol syndrome (FAS) is a serious condition in which affected children have facial abnormalities, restricted growth, learning and behavioural disorders and physiological problems resulting from maternal consumption of alcohol during pregnancy.¹³ The number of hospital admissions vary and over the six year period 2008-09 to 2013-14 have ranged from 6 to 19 admissions showing no linear trend. There were a total of 7 admissions in 2013-14.

4.2 Foetus and Newborn affected by maternal use of or withdrawal from drugs of addiction

In relation to diagnoses (any position) of foetus and newborn suffering from maternal use of or withdrawal from drugs of addiction¹⁴, an increase of 39.5 per cent was reported over the period 2008 – 2011, from 81 to 113 hospital admissions but have decreased in 2013 to levels comparable with 2008. In 2013, a fall of 19 per cent, from 63 to 51 admissions, was recorded in diagnosis in the primary position; however, there was little change in the number diagnosed with these conditions in any position, with 85 recorded in 2012 compared to 83 in 2013 as indicated in Chart 10.



Source: Patient Episode Database for Wales, 2014

Chart 10: Foetus and newborn affected by maternal use of, or withdrawal from, drugs of addiction in Wales 2008 to 2013

¹³ Further information on Foetal Alcohol Syndrome and related conditions is available at: [Fetal Alcohol Syndrome | Doctor | Patient.co.uk](http://FetalAlcoholSyndrome.DoctorPatient.co.uk)

¹⁴ 'Use of or withdrawal from drugs of addiction' includes two ICD-10 codes (see Appendix 1): P04.4 Foetus and newborn affected by other maternal medication) and P96.1 (Neonatal withdrawal symptoms from maternal use of drugs of addiction)

5 Children and young people (aged up to 24 years)

5.1 School aged children

5.1.1 Children in care with parental substance misuse

There were a total of 4,935 of cases of children in need¹⁵ registered with local authorities in Wales where parental substance misuse (including alcohol misuse) was recorded as the relevant parental factor (as at 31 March 2013). This figure was 2 per cent lower than the previous year and represented 25 per cent of all cases of children in need in Wales on that date. Geographic variability exists at health board in relation to the population rate at which children are deemed to be in need, for all cases as well as cases for parental substance misuse. The rates for both these measures and the respective Welsh averages are shown in Chart 11.

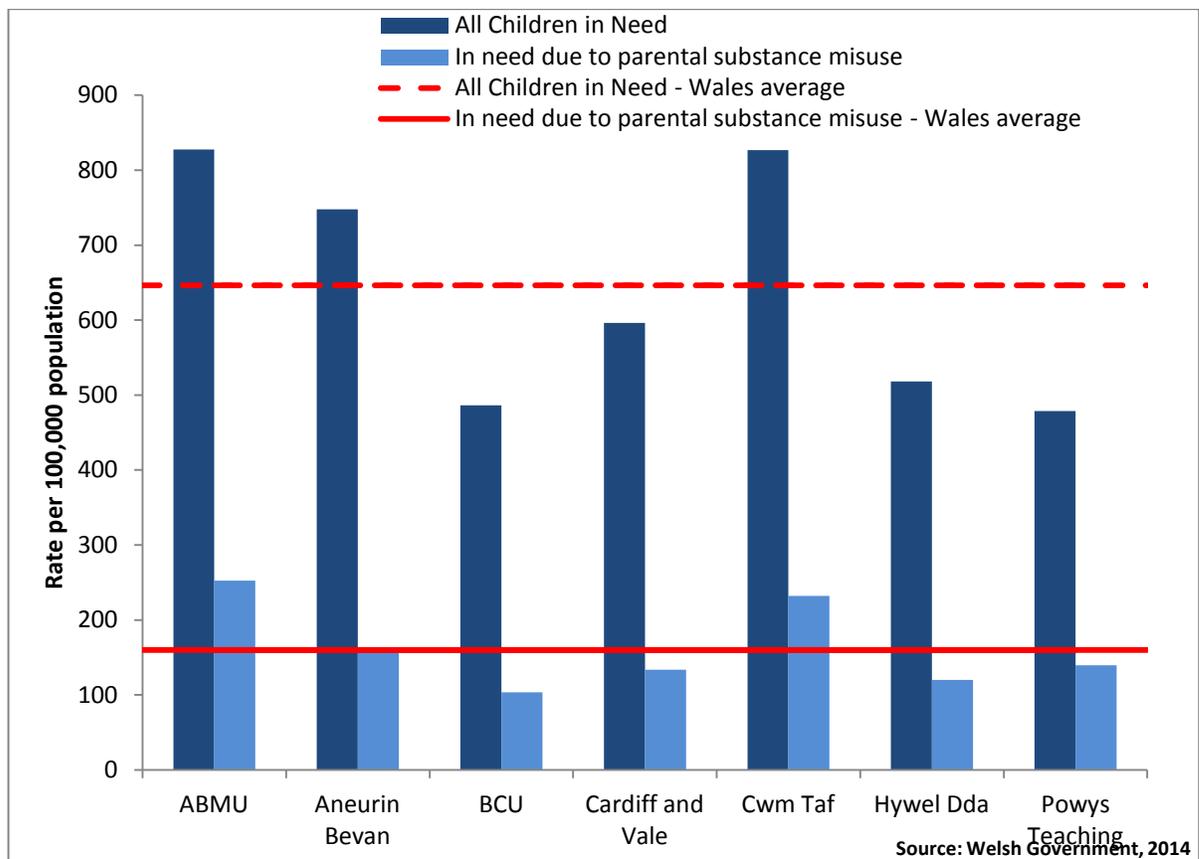
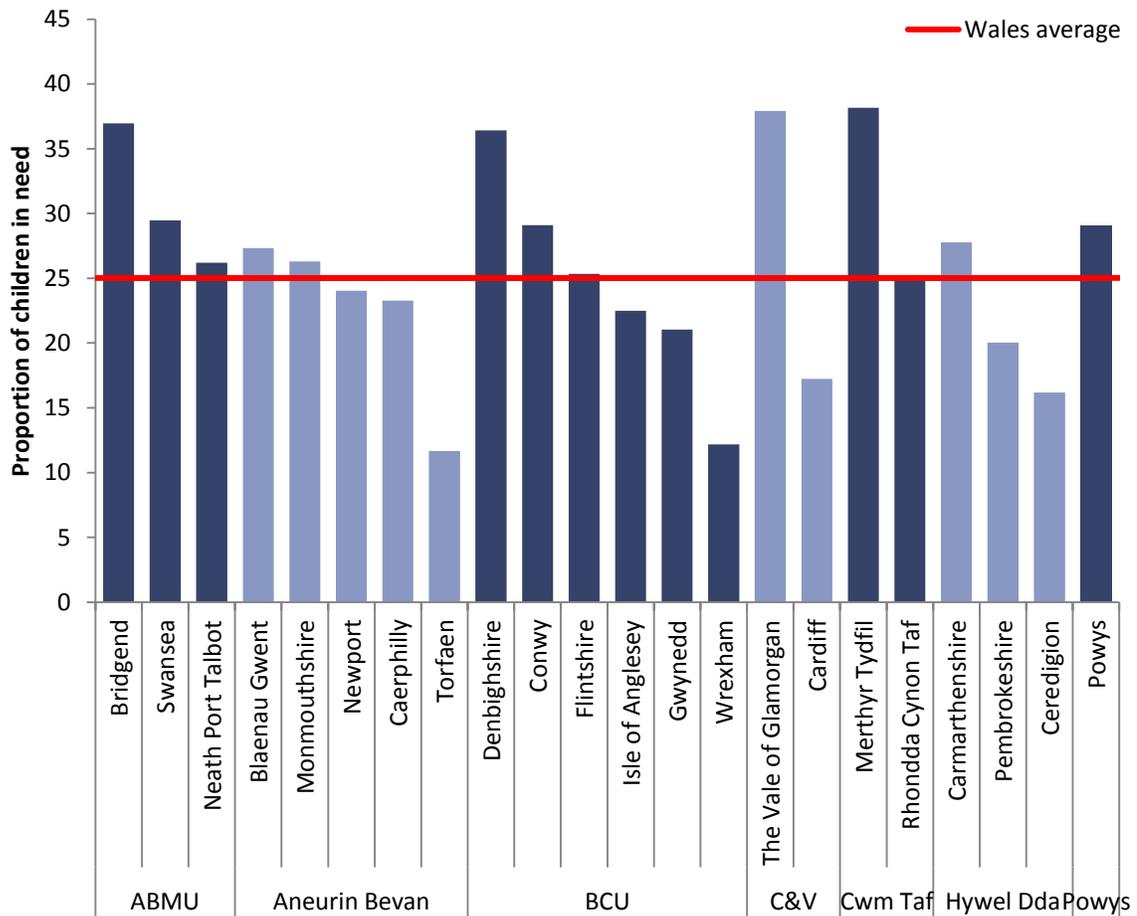


Chart 11: Crude population rates of children in need, all cases and cases in which parental substance misuse is recorded, by Welsh Health Board, 2013

¹⁵ The term 'child in need' is set out in the Children's Act (1989) as a child who is likely to have their health significantly impaired, or who is unlikely to maintain a reasonable standard of health and development without the provision of local authority children's services, or who is disabled. This is distinct from children 'in care' or 'looked after' (where a local authority has taken responsibility for care of a child in place of the child's parents) or 'children on the child protection register' which refers to children for whom there is a plan for protection in place.

Within health board areas there was also variation between local authorities in the proportion of cases of children in need in which parental substance and alcohol misuse was the relevant parental factor. Torfaen and Wrexham recorded the lowest proportion of cases involving parental substance and alcohol misuse with 11.7 per cent and 12.2 per cent of cases respectively involving parental substance or alcohol misuse. The highest proportion of children in need cases involving parental substance or alcohol misuse were found in Bridgend (37 per cent of all cases), Merthyr Tydfil (38.2 per cent), the Vale of Glamorgan (37.9 per cent) and Denbighshire (36.4 per cent) as shown in Chart 12.

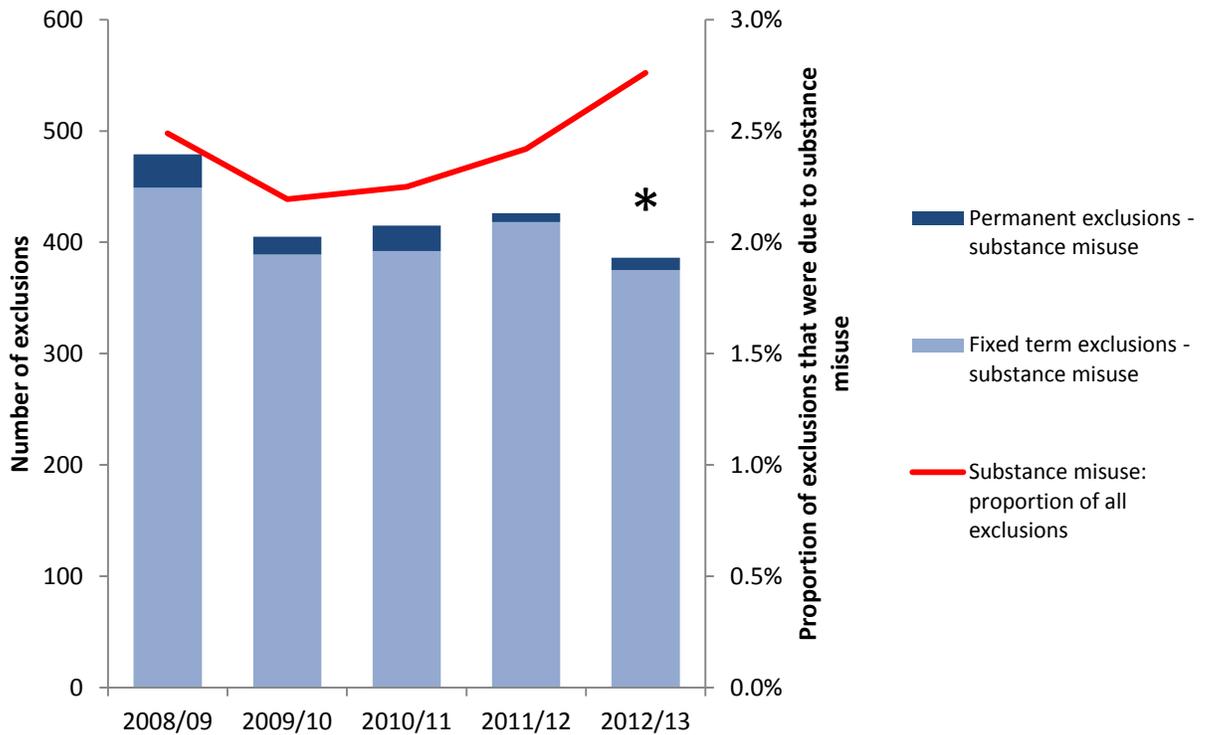


Source: StatsWales, 2014

Chart 12: Proportion of cases of children in need with parental substance misuse by Welsh Local Authority, 2013

5.1.2 School exclusions due to substance misuse

A total of 375 fixed term exclusions and 11 permanent pupil exclusions were imposed in schools in Wales in 2012-13 due to substance misuse¹⁶. Whilst the number of permanent exclusions rose slightly from 8 in 2011-12, the number of fixed term exclusions fell by 43, a reduction of 10.3 per cent compared with the previous year. However, this fall occurred in the context of a decrease in the overall number of exclusions (permanent and fixed term) recorded, from 17,610 in 2011-12 to 13,981 in 2012-13 (a reduction of 20.6 per cent). Therefore the proportion of all exclusions accounted for by substance misuse rose from 2.4 to 2.8 per cent as shown in Chart 13.



* Data collection methodology changed for 2012/13

Source: Welsh Government, 2014

Chart 13: Proportions of school exclusions due to substance misuse, Wales, 2008-09 to 2012-13

* Note that data for the year 2012-13 were collected using a different methodology to that of previous years and may not be comparable. Investigation into the quality of the 2012-13 data, which, unlike previous years, did not include figures from pupil referral units, is ongoing and the figures presented here may differ from those published in forthcoming official statistical releases.

¹⁶ It is not possible to describe the nature of the substance misuse in terms of alcohol use or specific drug type and this information is not reported routinely.

5.2 Children and young people aged up to 24

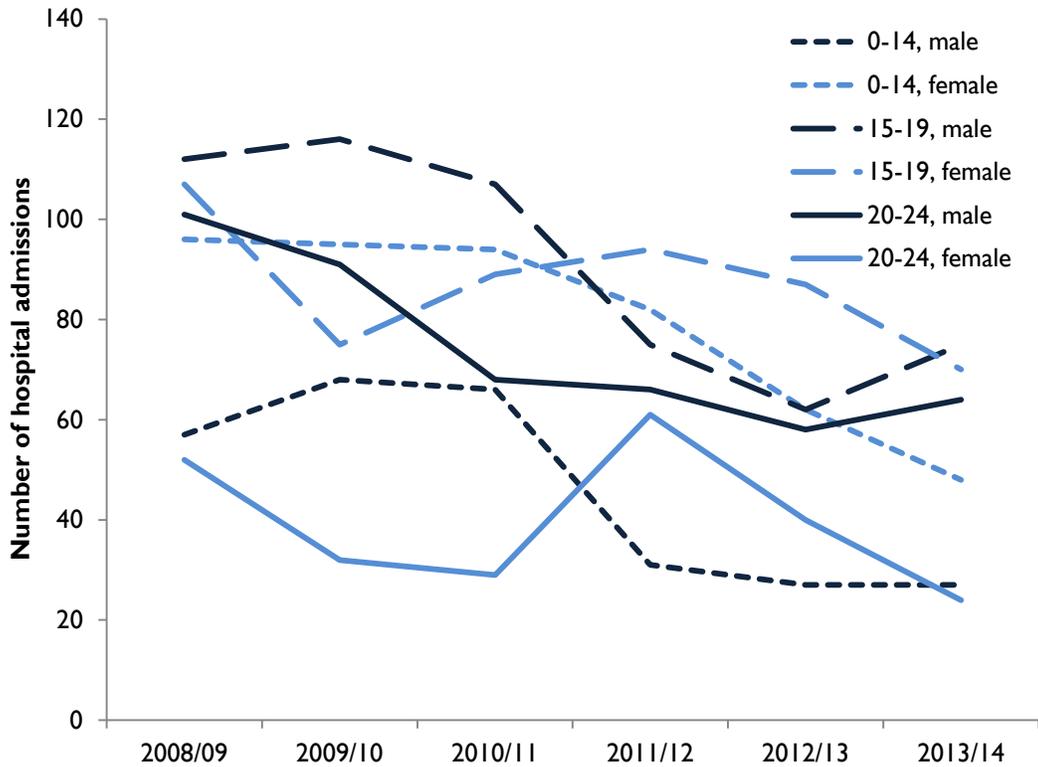
5.2.1 Hospital admissions for alcohol specific conditions

There are a number of specific acute and chronic health problems associated with alcohol misuse. These include damage to the digestive system, mental and behavioural disorders and liver damage including hepatitis and alcoholic cirrhosis of the liver. The patient episode database Wales (PEDW) provides information on hospital episodes within the general population in Wales. Following admission, a diagnosis of the condition to be treated is made which can be recorded as either 'primary' or 'any mention of'. In addition, alcohol diagnoses can be 'alcohol specific' (where the condition diagnosed is considered to be 100 per cent attributable to alcohol) or 'alcohol attributable' (where the condition is considered to be partially due to alcohol when evaluated across the population). Further details of 'alcohol specific' and 'alcohol attributable' conditions are given in Appendix I.

The majority of children and young people are admitted for acute intoxication, with the proportion recorded with this condition in the primary position accounting for between 69 and 76 per cent of all admissions amongst these age groups.

Between 2008-09 and 2013-14, the total number of young people aged 0-24 admitted with an alcohol specific diagnosis in the primary position in Wales fell by 41.3 per cent, from 525 to 308.

Alcohol specific admissions amongst young females continued on the downward trend observed since 2011-12, however, a more complex picture exists amongst young males; in 0-14 year old males admissions remained stable but rose by 21 per cent compared with the previous year amongst 15-19 year olds and by 10.3 per cent amongst 20-24. These figures for 15-24 year old males showed a reversal of downward trends over the previous three years. Data for alcohol specific admissions amongst young people is presented in Chart 14.



Source: Patient Episode Database for Wales, 2014

Chart 14: Hospital admissions with an alcohol specific primary diagnosis in males and females aged 0-14, 15-19 and 20-24 years, 2008/09 to 2013/14

5.2.2 Psychiatric hospital admissions for alcohol specific diagnoses in children and young people

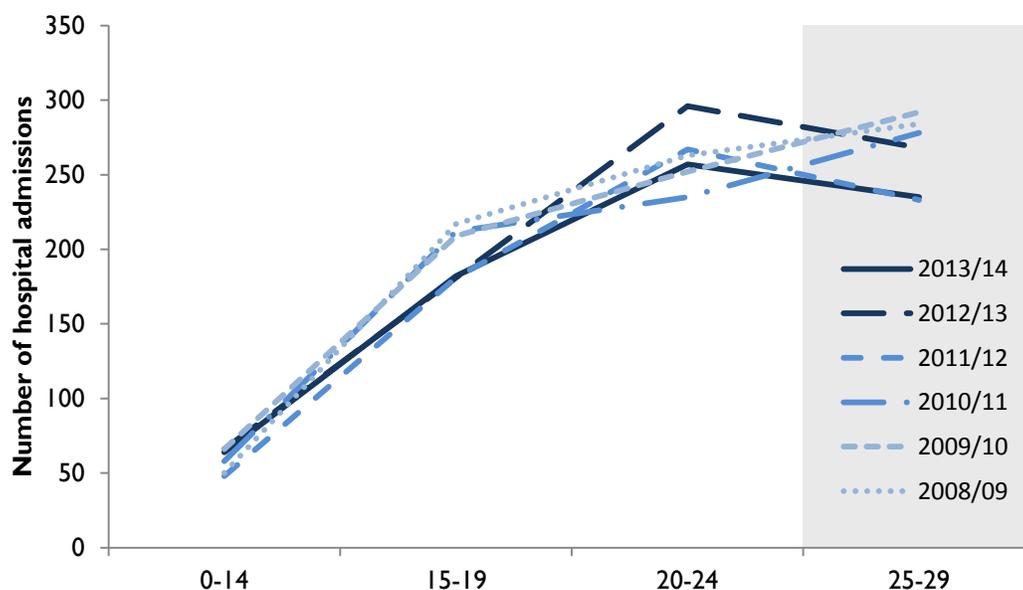
Psychiatric hospital admissions with alcohol specific diagnosis in the primary position rose from two to seven admissions in the 15-19 age group but fell from 28 to 15 in the 20-24 age group. In both these age groups admission numbers have shown a decline since 2008-09, when there were 16 admissions amongst 15-19 year olds and 24 amongst 20-24 year olds.

5.2.3 Hospital admissions for poisoning by illicit drugs¹⁷ (primary diagnosis) in children and young people

Overall, there were 503 children and young people (age up to 24 years) admitted to hospitals in Wales in 2013-14 for poisoning by illicit drugs in the primary position, representing a decrease of 7.4 per cent (40 admissions) on the previous year and comparable to the figures for 2010-11 and 2011-12 (505 and 496 admissions respectively).

Over the last six year period (2008-09 to 2013-14) the number of admissions in the 0-14 year age group has remained relatively stable (between 48 and 66 admissions annually, 64 admissions in 2012-13). The number of individuals admitted within the 15-19 age band has been stable over the past three years with 182 admissions in 2013-14, a decrease of 16 per cent from 2008-09. Amongst the 20-24 age band, admissions have ranged from a low of 235 admissions in 2010-11 to a high of 296 in 2012-13, an increase of 26 per cent, however, admissions in 2013-14 have decreased to 257.

However, as indicated in Chart 15, there are now higher numbers of admissions for poisoning with illicit drugs (primary position) in the 20-24 year age group than in the 25-29 years age group. This represents a shift in admissions data from previous years: for the period 2008-09 to 2010-11 there were higher numbers of admissions in the 25-29 years than 20-24 years but since 2011-12, higher numbers of admissions are reported in the 20-24 years age group than for 25-29 year.



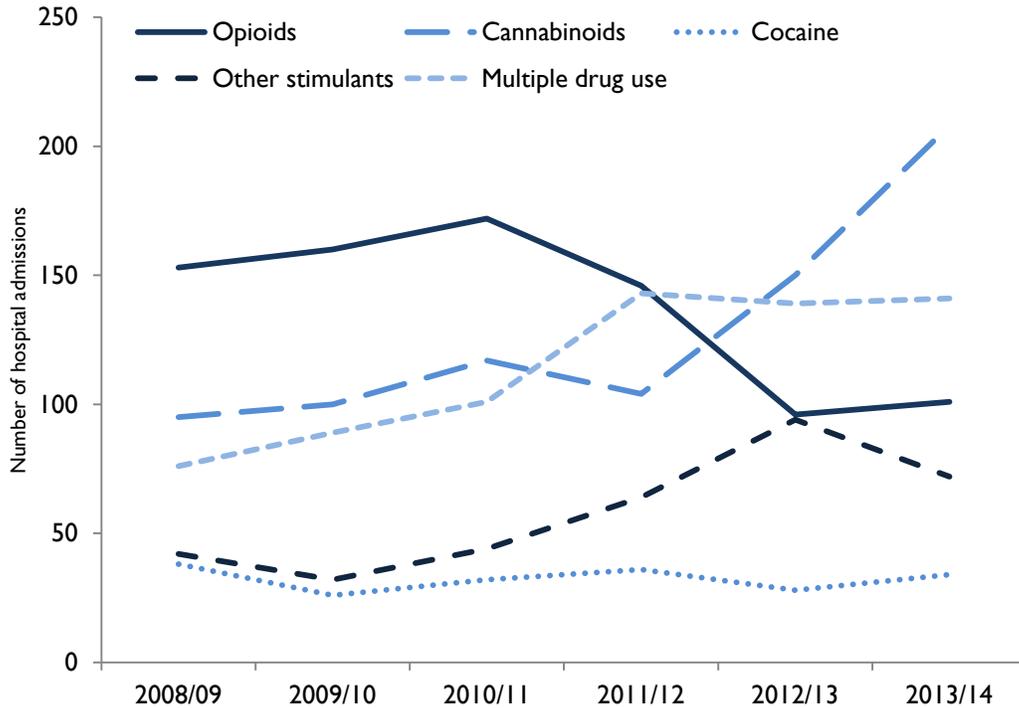
Source: Patient Episode Database for Wales (PEDW), 2014

Chart 15: Hospital admissions for poisoning with illicit drugs (primary position) in children and young people by age band in Wales, 2008-09 to 2013-14

¹⁷ See Appendix 3 for definition of 'poisoning by illicit drugs'.

5.2.4 Hospital admissions for poisoning by named illicit drugs in children and young people

A total of 577 children and young people were admitted for poisoning by named illicit drugs (any position) in 2013-14 representing an increase of 37.4 per cent over the six year period from 2008-09. However, as indicated in Chart 16, admissions have varied by illicit drug type.



Source: Patient Episode Database for Wales

Chart 16: Hospital admissions for poisoning with named illicit drugs (any position) in young people aged 0-24 in Wales, 2008-09 to 2013-14

Amongst young people (0-24 years) over the six year period (2008-09 to 2013-14):

- Admission for poisonings by **opioids** have decreased by 34 per cent from 153 admissions in 2008-09 to 101 in 2013-14
- Admissions for poisonings by **Cannabinoids** (including Cannabis and Synthetic Cannabinoid Receptor Agonists (SCRAs)¹⁸) have increased by 54.3 per cent from 95 in 2008-09 to 208 in 2013-14
- Admissions for poisonings by **Cocaine** have remained stable with 38 admissions in 2008-09 and 34 in 2013-14

¹⁸ Further information on Synthetic Cannabinoid Receptor Agonist, Cannabis and cannabinoid products is available at: <http://www.emcdda.europa.eu/publications/drug-profiles/synthetic-cannabinoids>

- Admission for poisonings by **'Other Stimulants'** have fluctuated year on year ranging from 32 in 2009-10 to 94 in 2012-13 but decreased to 72 admissions in 2013-14
- Admissions for poisonings by **'Multiple drugs'** increased by 88 per cent from 76 admissions in 2008-09 to 143 in 2011-12 but have remained relatively stable since then with 141 admissions in 2013-14
- Admissions for **hallucinogens** and **sedatives** remain low (less than 15 admissions) and there were no admissions for poisoning by **volatile substances** in Wales in 2013-14

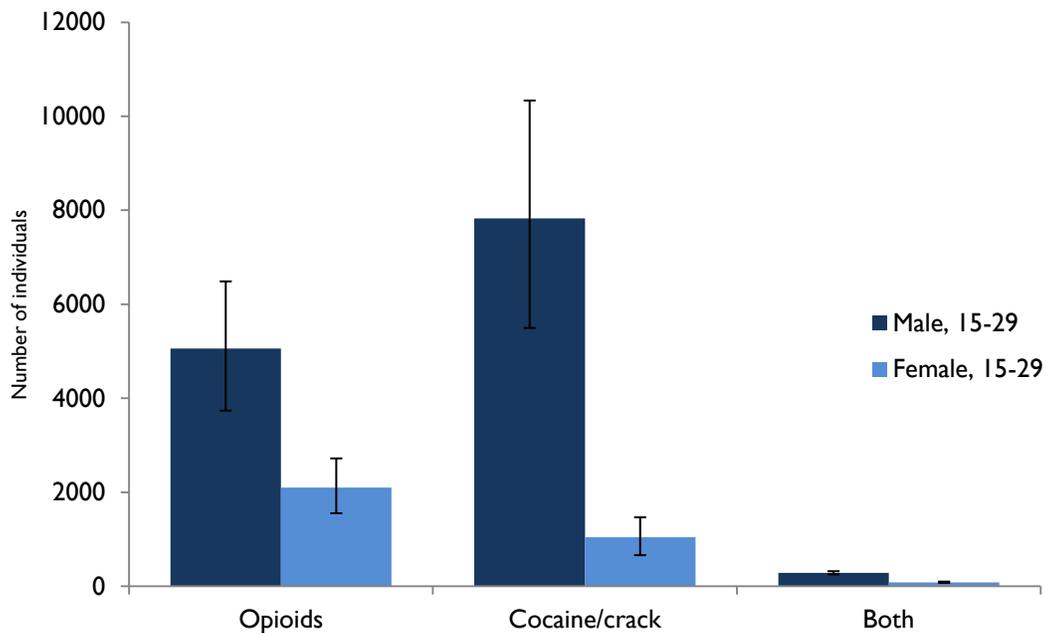
Of the 577 admissions for poisonings with named illicit drugs (any position) amongst children and young people:

- 0-14 year olds accounted for 21 admissions, 3.6 per cent of admissions. Of these admissions, 8 related to cannabinoids with the remaining admissions for 'Other Stimulants' and 'Multiple drug' use
- 15-19 year olds accounted for 162 admissions, 28.6 per cent of admissions. Cannabinoids accounted for 35.6 per cent, 74 admissions. Other drug admissions included 'Multiple drug' use, 'Other Stimulants' and opioids
- 20-24 year olds accounted for the remaining 394 or 68.3 per cent of admissions in 2013-14. 208 admissions for Cannabinoids, with the remaining drug admissions for 'Multiple drug' use, opioids and Cocaine

Across all age bands within the 0-24 year old age group, opioids, cannabinoids and multiple drug use accounted for 450 of the 577 admissions: 78 per cent. Those aged 20-24 years olds accounted for a substantial majority of admissions in which opioids or multiple drug use was mentioned, with 98 admissions for multiple drug use (69.5 per cent of all multiple drug use admissions) and 88 opioid related admissions (87.1 per cent of all opioid admissions).

5.2.5 Prevalence of Problem Drug Use, young people aged 15-29

Problem drug use (PDU) has been defined by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) as ‘injecting drug use or long duration or regular use of opioids, cocaine and/or amphetamines’.¹⁹ In Wales, PDU estimates have been produced for the period 2009-10 and published in 2014 utilising new analytical methods (see Appendix 7). In Wales, PDU estimates focus on problem opioid and cocaine /crack use to optimise comparability with other UK countries. As indicated in Chart 17, problem drug use prevalence varies by gender and primary drug type. Overall, amongst young people, higher prevalence rates are observed for problematic stimulant use (cocaine hydrochloride (powder) and crack) than for problematic primary opioid use (n=8875 and n=7154 respectively). However, amongst this age group, there are estimated to be higher numbers of female problematic opioid users than problematic cocaine/ crack users. This may be due to increased contact with substance misuse treatment services at an earlier stage amongst females than males.



Source: Substance Misuse Programme, Health Protection, Public Health Wales, 2014

Chart 17: Problematic drug use prevalence estimates amongst young people and adults aged up to 29 years by gender and primary drug type, Welsh residents 2009-10

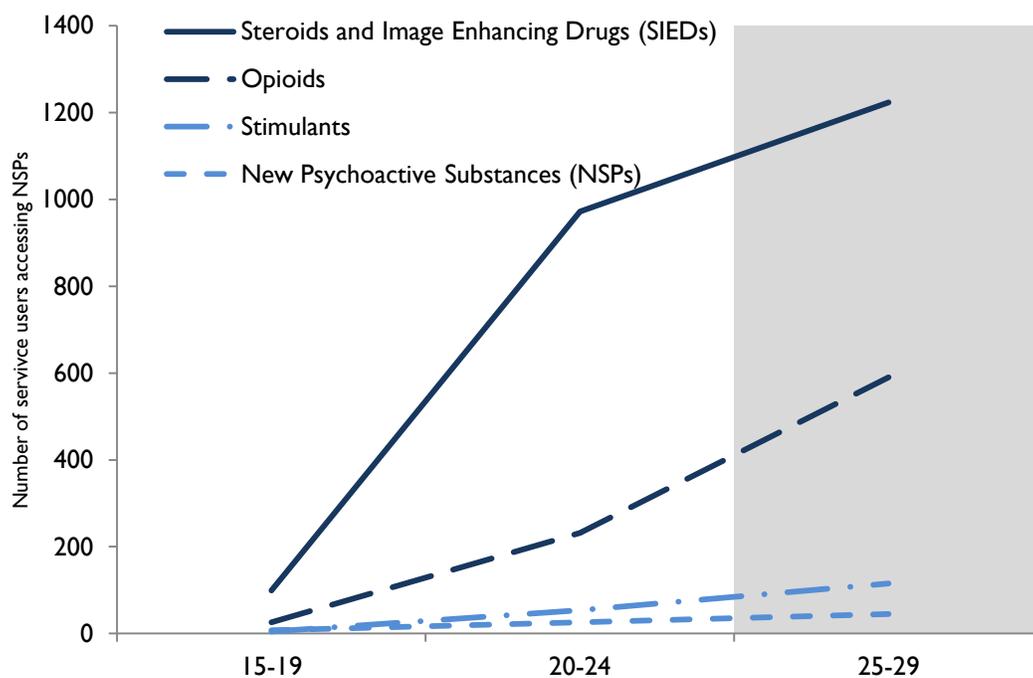
¹⁹ This definition specifically includes regular or long-term use of prescribed opioids such as methadone but does not include their rare or irregular use nor the use of ecstasy or cannabis. Further information is available at: [EMCDDA | Methods and definitions](#)

Problematic drug use varies by geographic area and a more complete table of prevalence estimates by gender, age and geographic area of residence, as well as details of the techniques of prevalence estimation, may be found in Appendix 7.

Future annual PDU estimates will be published by Public Health Wales utilising more contemporary data. Future PDU estimates will include amphetamine and amphetamine-like substances.

5.2.6 Young people who inject drugs (aged up to 24 years) who are accessing Needle and Syringe Programmes

The Harm Reduction Database (HRD) records activity and demographic data on people who inject drugs (PWID) and access statutory and voluntary Needle and Syringe Programmes (NSPs) across Wales (see section 6.4 for further details on the HRD). Chart 18 shows the number of individuals accessing NSPs in Wales by age band and reported primary substance use. In 2013-14, the HRD recorded 1,422 service users aged under 25, of which 75 per cent (n=1,071) reported primarily using steroids and image enhancing drugs (SIEDs). Of the remaining, 18 per cent (n=258) were primary opioid injectors, 4 per cent were primary stimulant injectors, and just over 2 per cent reported primary NPS injecting.



Source: Harm Reduction Database, 2014

Chart 18: Number of young people (aged up to 24 years) who inject drugs accessing NSP services by age band in Wales, 2013-14

5.2.7 Risk behaviours amongst young people who inject drugs (aged up to 24)

In relation to the risks associated with injecting drug use, the practice of sharing injecting equipment, both direct (the sharing of needles and syringes) and indirect (the sharing of other injecting-related equipment including spoons/cookers, filters, water), have a clear impact on rates of injecting-related infections. Of particular concern are blood borne viral infections, including hepatitis B, hepatitis C and HIV.

5.2.7.1 Direct and indirect sharing

Evidence on direct and indirect sharing and blood borne virus (BBV) testing and prevalence is gathered by the Unlinked Anonymous Monitoring (UAM) Survey of People Who Inject Drugs (PWID), an annual survey of PWID accessing specialist drug services in England, Wales and Northern Ireland, co-ordinated by Public Health England²⁰. Sharing of injecting equipment is also recorded on the Harm Reduction Database (HRD) which records transactions in statutory and voluntary Needle and Syringe Projects (NSPs) across Wales (see section 5.5 for further details on the HRD).

According to the 2013 data from the UAM survey, 16 per cent (265 of 1,622) of PWID reported direct sharing of injecting equipment and 39 per cent (641 of 1,636) reported direct or indirect sharing in the previous four weeks. However, the rates of sharing amongst younger PWID were higher, with 31 per cent (38 of 120) under 25 year olds reporting direct sharing and 54 per cent (65 of 121 respondents) under 25 years reporting direct or indirect sharing.¹⁹

Data from the HRD on self-reported direct and/or indirect sharing of injecting equipment amongst those aged under 25 years indicated rates of 2.4 per cent and 1 per cent respectively. These rates are clearly lower than those reported to the UAM across England, Wales and Northern Ireland, however, this may be related to the levels of primary SIEDs injecting amongst this age group, lower risk injecting practices and/or poor data quality. Further investigation is required to establish more accurately the differences in datasets.

5.2.7.2 Blood borne viruses: referrals for testing

Of the 935 individuals recorded on the HRD as having been referred for blood borne virus testing, 140 (15 per cent) were under 25. Since 15.6 per cent of NSP service users were under 25, this suggests that NSP service users under 25 are being referred for blood borne virus testing at a rate similar to that found across the whole population of NSP service users. The HRD does not record how many tests actually took place, nor what the results of any tests were.

5.2.7.3 Hepatitis B: referrals for vaccination

The HRD records that of 980 individuals referred to receive a hepatitis B vaccination, 181 were under 25 (18.5 per cent of the total). This suggests that NSP service users under 25 are being referred for hepatitis B vaccination at a slightly higher rate than service users of other ages. However, the HRD does not record how many vaccinations actually took place.

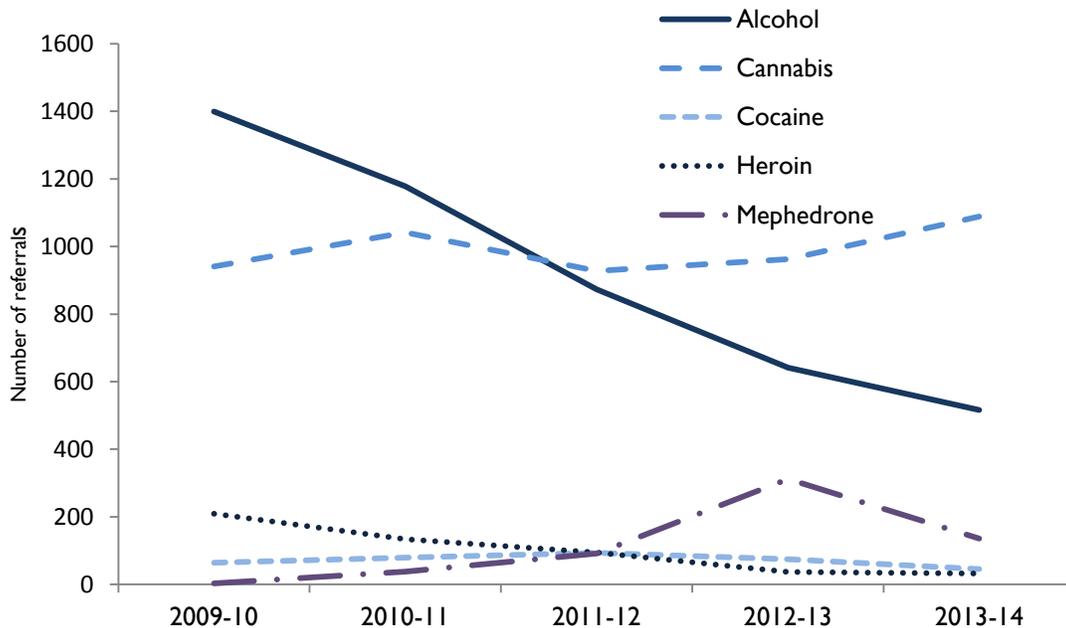
Further details of risk behaviour and blood borne virus testing and prevalence across the whole population can be found in section 8.

²⁰ Further information and data from the Unlinked Anonymous Monitoring Survey is available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/326897/UAM_Survey_of_PWID_data_tables_2014.pdf

5.2.8 Referrals to substance misuse treatment services amongst young people aged under 20 years

Referrals to treatment for substance misuse are recorded on the Welsh National Database for Substance Misuse (WNDSM), which uses ten year age bands. Chart 19 therefore presents data on referrals for those aged under 20 years. The number of referrals to substance misuse treatment services for alcohol misuse by young people continued the steady decline observed in previous years, with 516 referrals in 2013-14, a fall of 125 referrals from 2012-13. Over the last five year period (2009-10 to 2013-14) alcohol referrals amongst young people have decrease by 63.1 per cent (from 1,399 to 516 referrals). Consistent with hospital admissions data, referrals for problem cannabis and synthetic cannabinoid use have increased with a total of 1,089 referrals in 2013-14, an increase of 15.7 per cent from 2009-10.

Referrals for problematic mephedrone (M-CAT) use rose sharply from 3 referrals in 2009-10 to 312 in 2012-13, but have since decreased to 136 referrals in 2013-14. Referrals for primary heroin use amongst young people have fallen in by 84.6 per cent from 209 in 2009-10 to 32 in 2013-14.



Source: Welsh National Database for Substance Misuse, 2014

Chart 19: Referrals to substance misuse treatment services by named selected substances (>25 recorded referrals) amongst young people aged 0-19 years in Wales 2009-10 to 2013-14

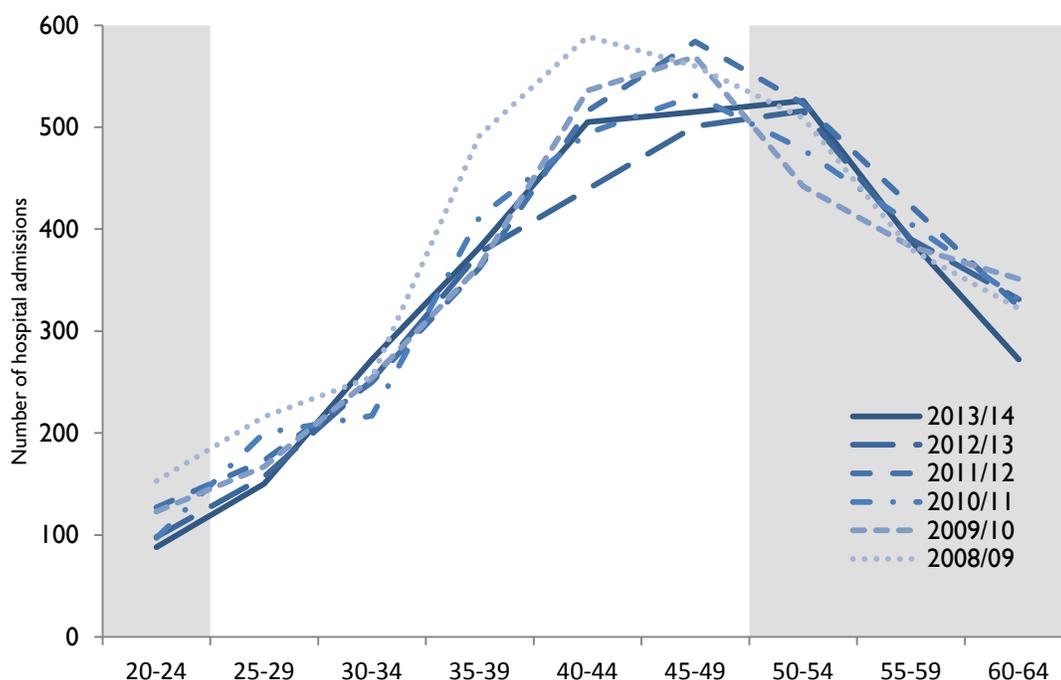
6 Working age adults (aged 25 to 49)

The health implications of alcohol consumption vary by age, gender and geographic area of residence and are described here in relation to hospital admissions for alcohol specific admissions and alcohol related deaths.

6.1 Hospital admissions for alcohol specific conditions

6.1.1 Hospital admissions by age

In 2013-14, the number of admissions for alcohol specific conditions (primary position) amongst 25-49 year olds rose in every 5-year age band except for 25-29, where the number of admissions fell by 4.5 per cent on the previous year. The 40-44 age band saw the biggest rise in admission numbers, with a 15 per cent increase on 2012-13 admissions. However, compared with 2008-09, the number of admissions has fallen in every 5-year age band except for 30-34 years representing a reduction in admissions of 14.3 per cent amongst 40-44 year olds, 22.4 per cent amongst 35-39 year olds and 30.6 per cent amongst 25-29 year olds over the six year period. Chart 20 shows the admissions for alcohol specific conditions in the primary position for working age adults by year from 2008-09 to 2013-14. The total number of admissions amongst this age group has decreased by 10.8 per cent over the period 2008-09 to 2013-14 (3476 and 3,099 admissions respectively)

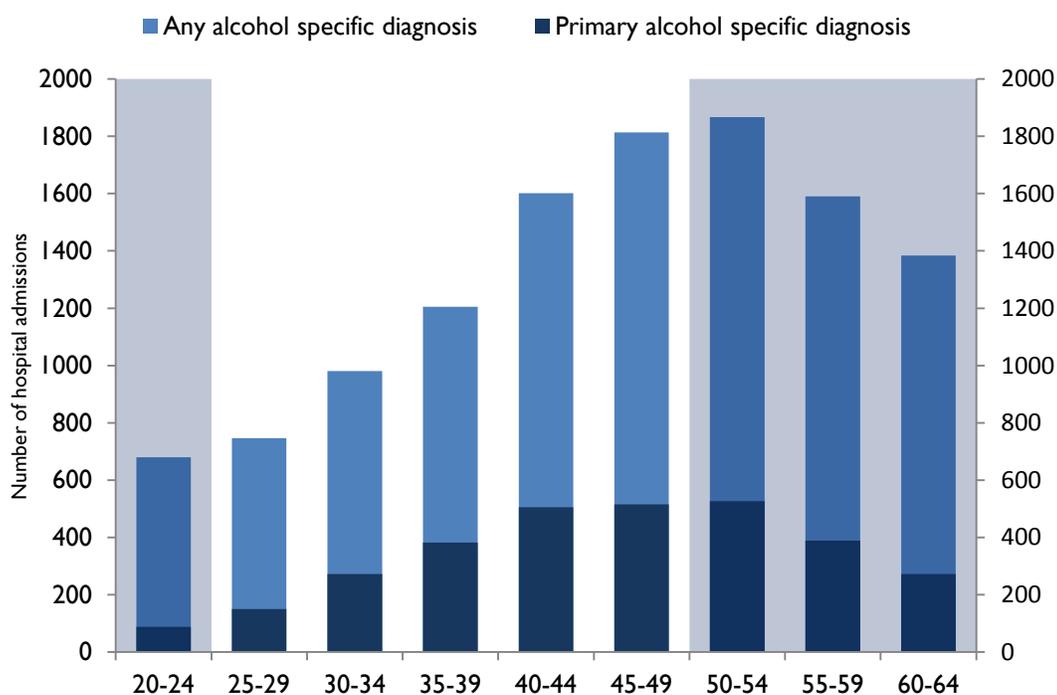


Source: Patient Episode Database for Wales (PEDW), 2014

Chart 20: Hospital admissions for alcohol specific diagnoses (primary position) in Welsh residents aged 25-49 years, 2008-09 to 2013-14

6.1.2 Hospital admissions in the 'primary' and 'any' positions

The number of alcohol specific admissions in any position increases with age in working age adults, from 746 amongst 25-29 year olds to 1,814 amongst 45-49 year olds in 2013-14. Admissions in the primary position also rise amongst working age adults as age increases, from 150 admissions amongst 25-29 year olds to 515 amongst 45-49 year olds, although the rise is less marked than for admissions with a diagnosis in any position. The proportion of admissions in which alcohol is the primary diagnosis increases from 20.1 per cent amongst 25-29 year olds to 31.1 per cent amongst 35-39 year olds before declining amongst older working age adults, with 28.4 per cent of all adults in the 45-49 year age band being admitted with a primary alcohol specific diagnosis. Chart 21 shows total admissions for alcohol specific conditions in the primary position and in any position. In 2013-14, there were a total of 3,099 admission for primary alcohol specific diagnosis and 11,869 admissions for alcohol specific diagnosis in any position.



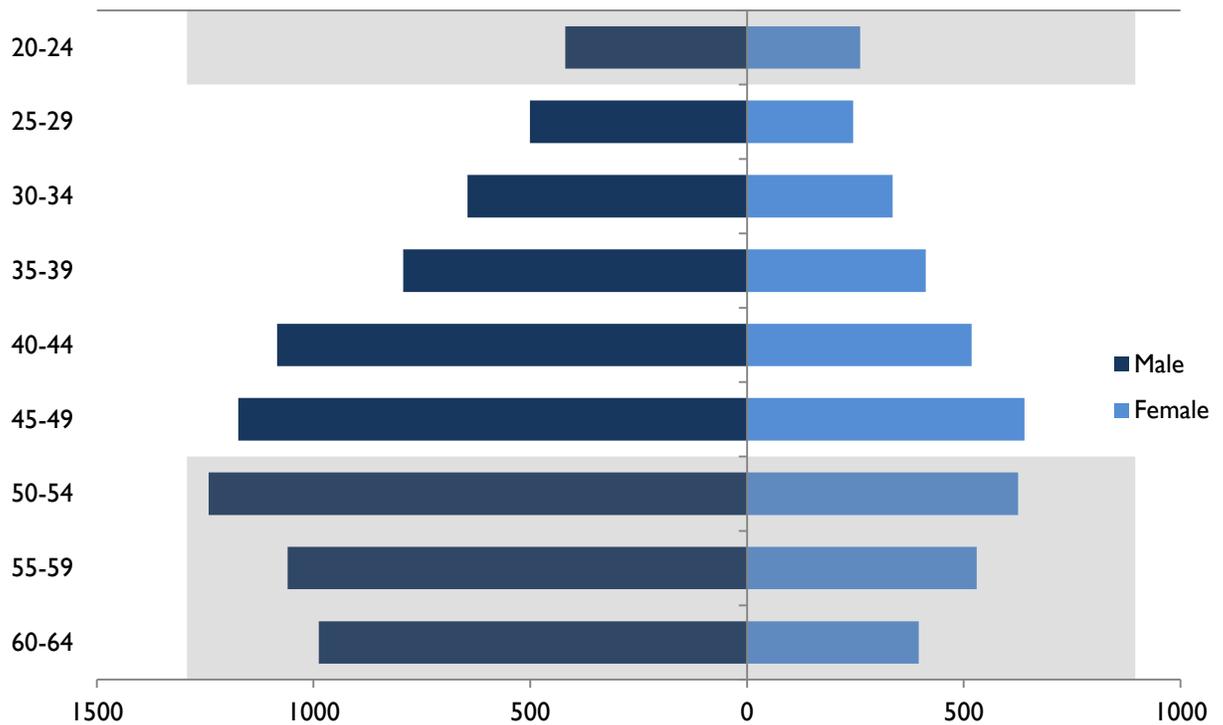
Source: Patient Episode Database for Wales, 2014

Chart 21: Hospital admissions for alcohol specific conditions (primary and any position) in adults aged 25-49 years, by age band, Wales 2013-14

6.1.3 Hospital admissions for alcohol specific admissions (any position) by gender

The number of alcohol specific admissions in any position is shown by age band and gender for working age adults is shown in Chart 22. The rise observed in total alcohol specific admissions amongst working age adults, as age band increases, is consistent for both men

and women, with 501 admissions in the 25-29 age band rising to 1,174 in the 45-49 age band for males and 245 admissions (25-29 years) to 640 admissions (45-49 years) in females. Males account for approximately twice the number of admissions than females in all age bands within this age group.

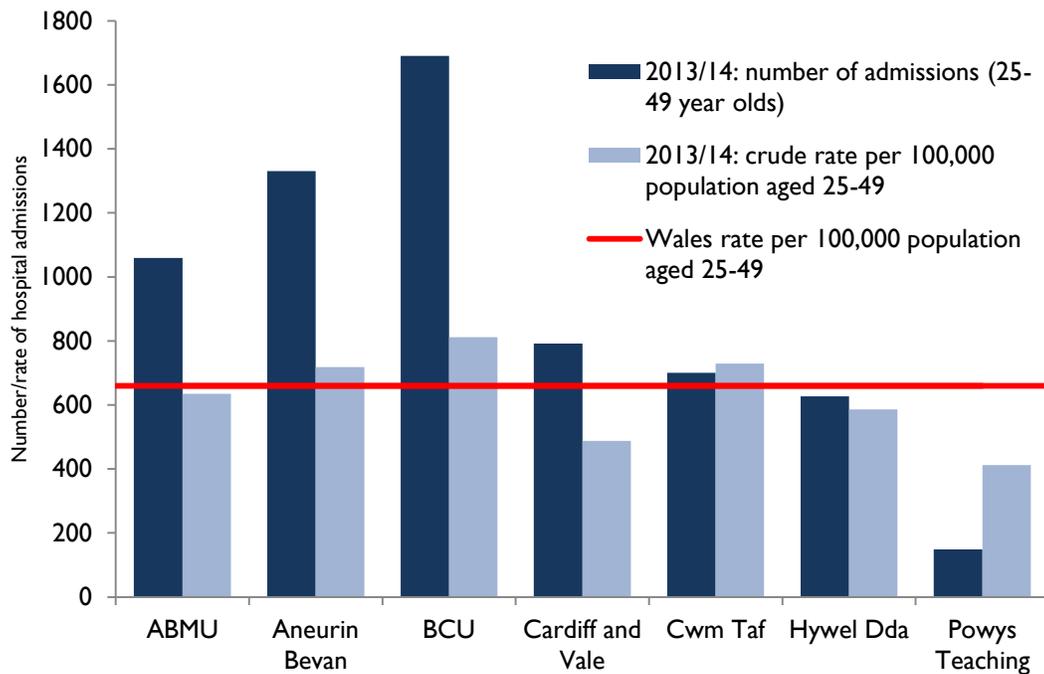


Source: Patient Episode Database for Wales (PEDW), 2014

Chart 22: Alcohol specific diagnoses (any position) by age band and gender, Wales, 2013-14

6.1.4 Hospital admissions for alcohol specific admissions (any position) by geographic area of residence

For working age adults, BCU health board recorded the highest number of admissions, 1,690 admissions, with an alcohol specific diagnosis in any position in 2013-14 and Powys Teaching recorded the lowest number at 149 admissions. Even when age-specific rates amongst the working age population are calculated, BCU remains the Health Board with the highest rate of admissions with 812 admissions per 100,000 in the 25-49 population and Powys Teaching the lowest with 412 per 100,000 in this population age group. The Welsh average was 660 admissions per 100,000 population in this age group as indicated in Chart 23.



Source: Patient Episode Database for Wales, 2014 , Office for National Statistics, 2014

Chart 23: Number and age-standardised rates of hospital admissions for alcohol specific diagnoses (any position) amongst 25-49 year olds, by Welsh Health Board, 2013-14

Compared with 2012-13, the number of admissions with alcohol specific diagnoses (any position) rose by 1.6 per cent across Wales. Table 1 shows the number and percentage change in admissions by Health Board area of residence.

Table 1 – Number and percentage change in hospital admissions for alcohol specific conditions (any position) amongst 25-49 year olds by Health Board area of residence in Wales in 2012-13 and 2013-14

	2012/13	2013/14	Percentage (%) change in hospital admissions
ABMU	1007	1059	5.2%
Aneurin Bevan	1366	1331	-2.6%
BCU	1498	1690	12.8%
Cardiff and Vale	894	792	-11.4%
Cwm Taf	708	700	-1.1%
Hywel Dda	603	627	4.0%
Powys Teaching	173	149	-13.9%
TOTAL	6249	6348	1.6%

6.1.5 Psychiatric hospital admissions for alcohol specific admissions (any position)

Over the period 2008-09 to 2013-14, amongst the 25-49 year age group, admissions to psychiatric hospitals with alcohol specific diagnoses (any position) have fallen by 23 per cent for males, from 411 to 318 admissions and by 39 per cent amongst females, from 225 to 138 admissions as shown in Chart 24. The only group of patients where consistent admission numbers have been observed is amongst females with a diagnosis of alcohol specific conditions in the primary position. This rate has remained relatively stable from 2009-10 to present with 84 admission in 2013-14.

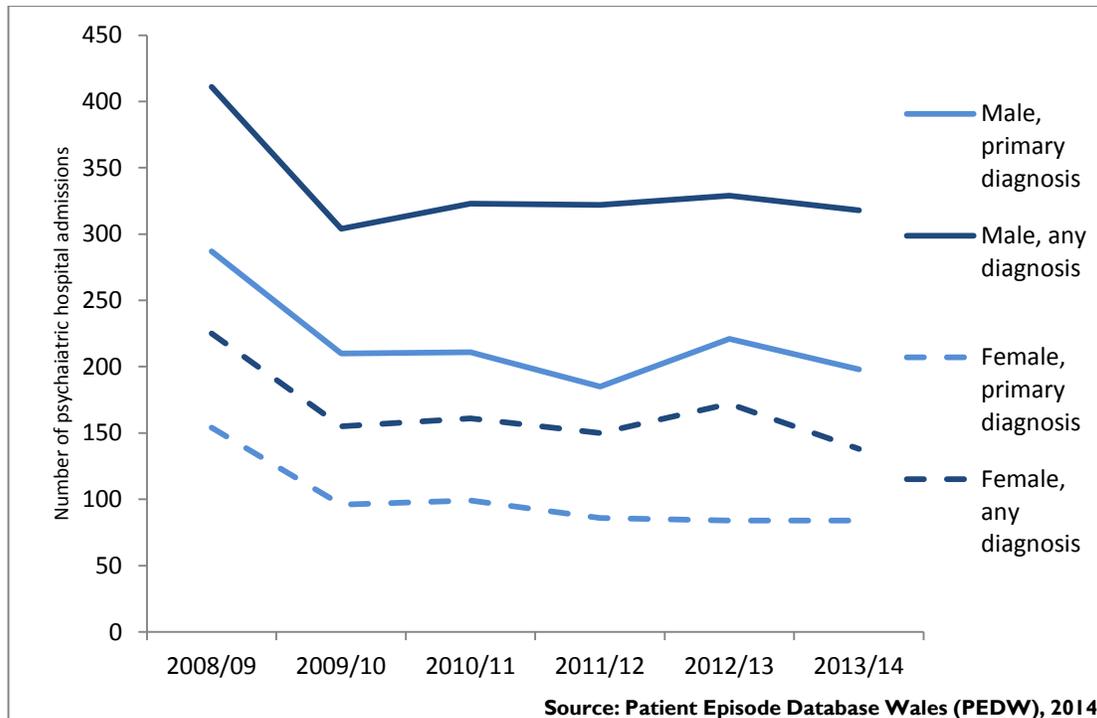
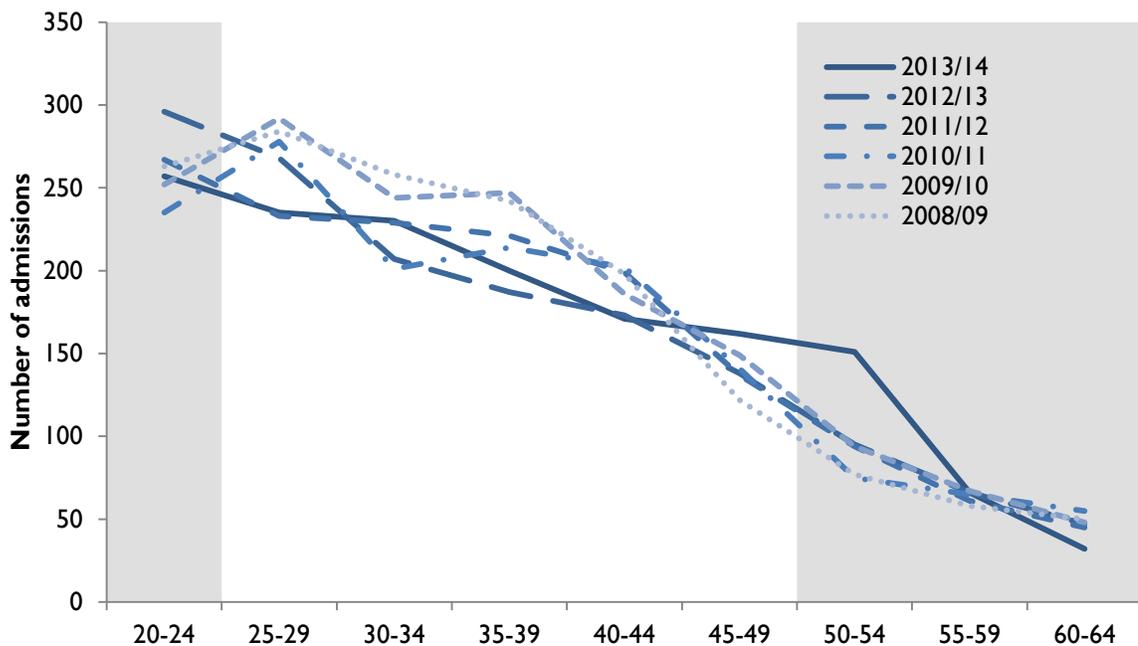


Chart 24: Psychiatric hospital admissions, alcohol specific diagnoses (primary and 'any' position) amongst 25-49 year age group by gender, 2008-09 to 2013-14

6.2 Hospital admissions for poisoning with named illicit drugs in working aged adults (25-49 years)²¹

6.2.1 Hospital admission for poisoning with named illicit drugs by year

Unlike the trend in admissions for alcohol specific conditions, admissions with poisoning by named illicit drugs decrease by age band amongst 25-49 year olds as indicated in Chart 25. In 2013-14, there were 998 admissions for poisoning by named illicit drugs in the primary position, a rise of 2.6 per cent on the previous year. However, there is considerable variation in numbers of admissions between age bands year-on-year. The largest rise in the last year was seen in the 45-49 age band, with an increase in admissions of 17.4 per cent, from 138 to 162 admissions which was higher than admissions recorded in any of the previous five years and represents an increase of 32.8 per cent from 2008/09 data. By contrast, admissions in the 25-29 year age band fell by 12.3 per cent in admissions compared with 2012-13 and by 17.3 per cent compared with 2008-09. This may be due to the aging cohort of primary heroin / opioid users in Wales, and across the UK, with fewer young people initiating problematic opioid use and the existing population moving into their late 30's and 40's following a lengthy opioid using career.



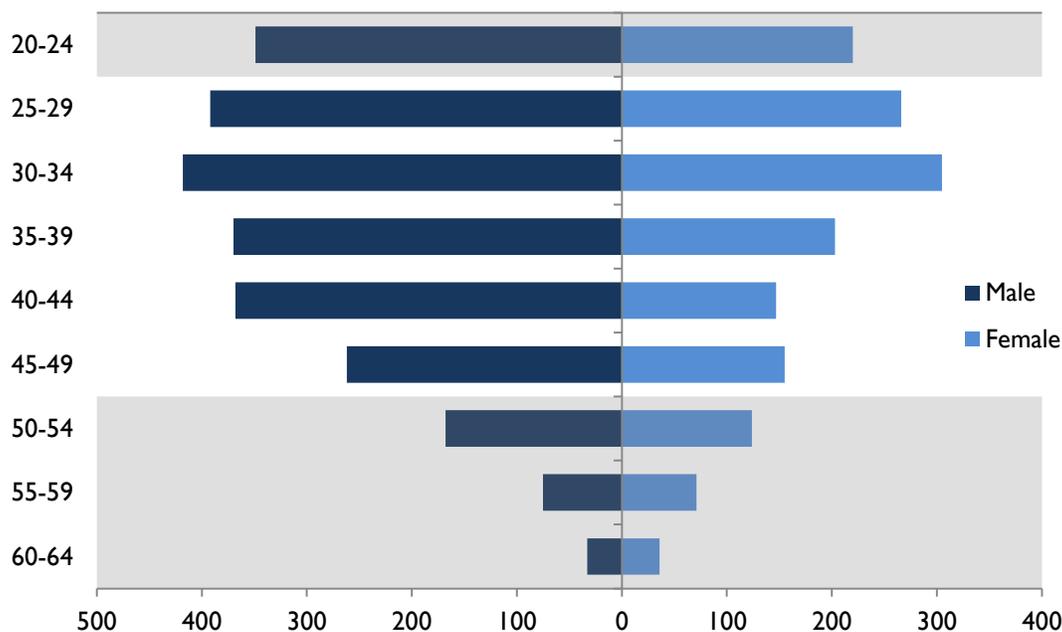
Source: Patient Episode Database for Wales, 2014

Chart 25: Hospital admissions for poisoning with illicit drugs (primary position) by age band, 2008-09 to 2013-14

²¹ See appendix 3 for full description of definition and ICD-10 codes

6.2.2 Hospital admission for poisoning with named illicit drugs by age band and gender 2013-14

There were 2,886 admissions with diagnosis of poisoning with named illicit drugs in any position in 2013-14, of which 62.7 per cent were in Males. For both genders, admissions were most frequently recorded in the 30-34 age group, with 418 male and 305 female admissions. The ratio of male to female admissions varies by age band with between 1.4-1.8:1, with the exception of the 40-44 year age band where the ratio rises to 2.5:1 male to female admissions. This results from a decrease in female admissions in this age group rather than an increase in male admissions as indicated in Chart 26.



Source: Patient Episode Database for Wales, 2014

Chart 26: Hospital admissions for poisoning with named illicit drugs (any diagnosis) by age band and gender, 2013-14

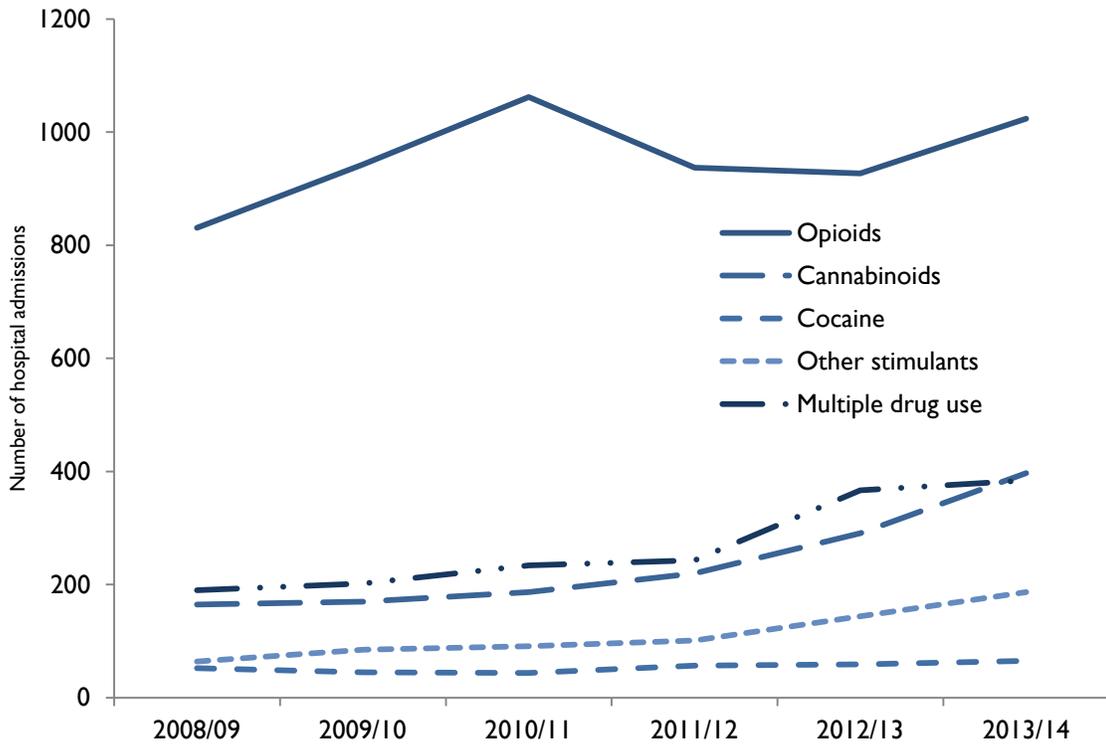
6.2.3 Hospital admission for poisoning with named illicit drugs (any position) by drug type

As in previous years, the illicit drug type most commonly resulting in admission (in any position) was opioids. There were 1,024 admissions in which opioids were named in any position, a rise of 10.5 per cent on the previous year, representing 35.5 per cent of admissions, as shown in Chart 27. Increases in hospital admissions were also recorded for:

- Cannabinoids - 397 admissions recorded in 2013-14, a rise of 36.4 per cent from 2012-13 and since 2008-09 an increase of 140.6 per cent in admissions

- 'Multiple drug use' – 384 admissions, an increase of 4.6 per cent from 2012-13 but an increase of 102 per cent since 2008-09
- 'Other stimulants' - 187 admissions, an increase of 29.9 per cent
- Hallucinogens - 28 admissions – an increase of 10 admissions from the previous year

Admissions for sedatives/hypnotics was the only category of illicit drugs recording a decrease to 36 admissions, a fall of 26.5 per cent on the previous year.

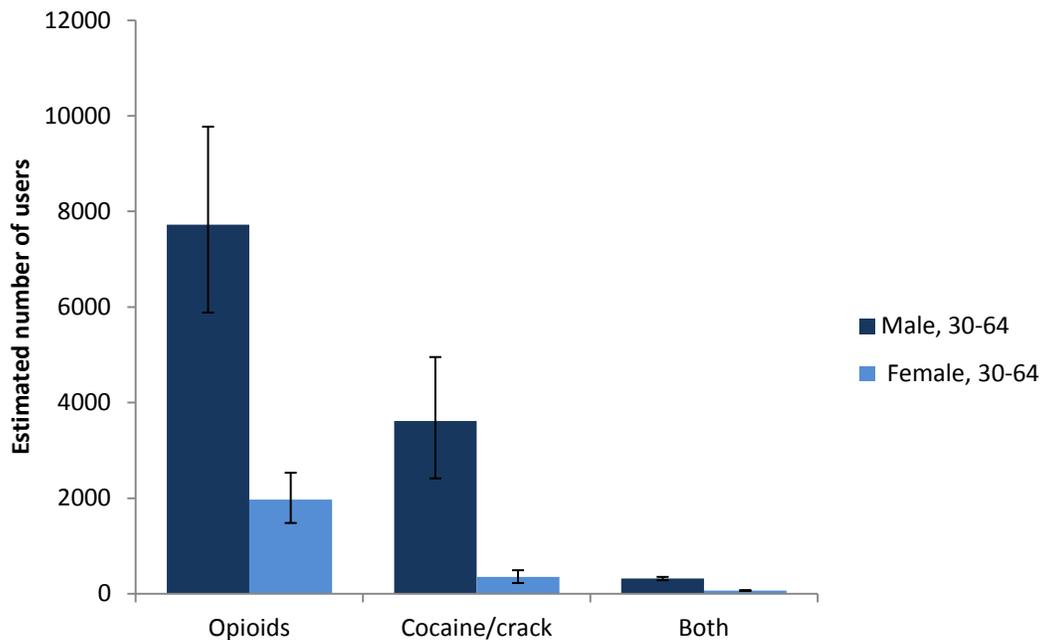


Source: Patient Episode Database for Wales (PEDW), 2014

Chart 27: Hospital admissions for mental and behavioural disorders due to named illicit drugs (any position) amongst 25-49 year olds by named illicit drug group, 2008-09 to 2013-14

6.3 Prevalence of Problem Drug Use

Amongst this age group primary opioid users represent the most prevalent problematic drug group, as indicated in Chart 28, with an estimated total of around 9700 individuals with a ratio of around 4:1 male to female. There are estimated to be a further 4000 primary stimulant (cocaine/crack) problematic drug users. The proportion of male to female within this population is estimated at around 10:1 at this age group. The number of those with problematic use of both opioids and stimulants (cocaine / crack) is estimated at around 400 people with the 30-64 year age group. It should be noted that the confidence intervals signify the range of the prevalence estimate.



Source: Substance Misuse Programme, Health Protection, Public Health Wales, 2014

Chart 28: Estimated prevalence of problematic drug use of opioids, stimulants (cocaine / crack) and stimulant/opioid poly-drug use, 30-64 year olds by gender, 2009-10

Problematic drug use varies by geographic area and a more complete table of prevalence estimates by gender, age and geographic area of residence, as well as details of the techniques of prevalence estimation, may be found in Appendix 7.

Future annual PDU estimates will be published by Public Health Wales utilising more contemporary data. Future PDU estimates will include amphetamine and amphetamine-like substances.

6.4 Individuals accessing Needle and Syringe Programmes

In 2010 Public Health Wales, supported by Welsh Government, introduced the Harm Reduction Database (HRD) in all statutory and voluntary sector Needle and Syringe Programmes (NSPs; previously referred to as Needle Exchanges) across Wales. Details of how data is gathered through the HRD and the most recent HRD reports are available online²². **It is important to note that this data report on only the primary drug injected by each individual service user – the majority of injecting and problematic drug use involved use of more than one substance and frequently more than one class of substances e.g. opioid, stimulant and increasingly NPS use.** In addition, pharmacy based activity and secondary distribution of injecting equipment may result in changes to the numbers of people who inject drugs and the primary drug used. This is of particular relevance to Hywel Dda and Powys Teaching Health Boards, where the very small numbers recorded are most likely to reflect current data gathering processes rather than the underlying population.

There were 7,268 individuals aged between 25 and 49 years, accessing statutory and voluntary NSPs in Wales in 2013-14 for whom a primary substance of use was recorded. The data shows that opioids and steroid and image enhancing drugs (SIEDs) were the most frequently declared primary substance of use, accounting for 3,270 individuals (45 per cent) and 3,205 (44.1 per cent) respectively. However, as shown in Chart 29, differences exist in the age profile of users of these substances.

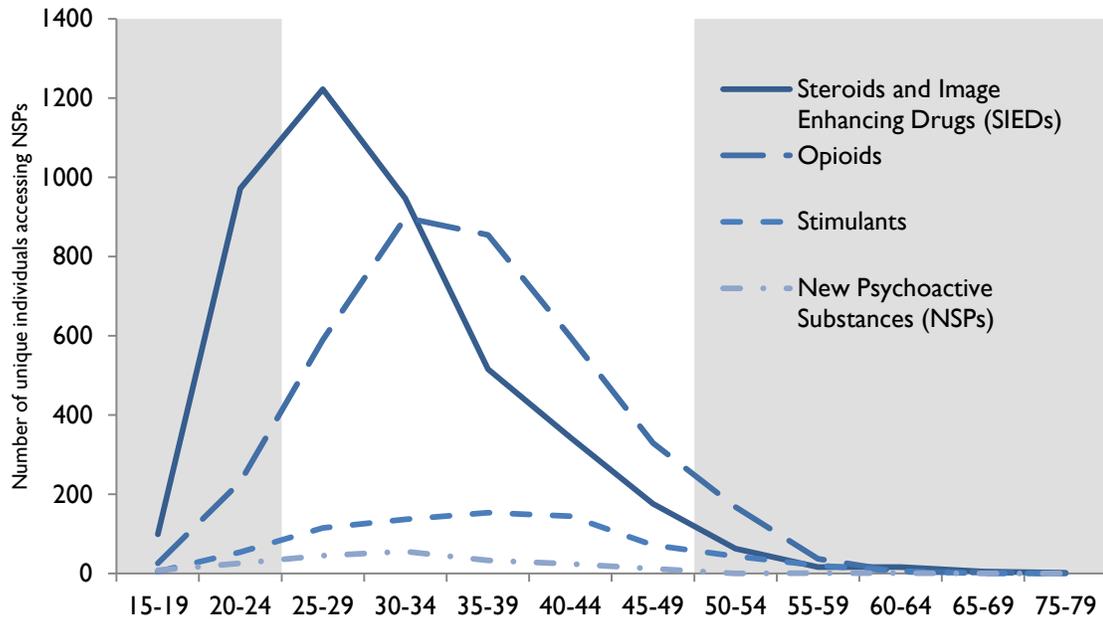
Within the 25-29 year age band, the 1,223 primary SIEDs service users accounted for 62 per cent of the total within this age band. There were a further 590 primary opioid service users, 115 primary stimulant and 45 primary new psychoactive drug (NPS) service users.

Amongst the 30-34 year age band, SIEDs use was again, but only marginally at 46.5 per cent, the most frequently reported substance with 947 SIEDs users regularly accessing services. Primary opioid service users accounted for 44.1 per cent (898 service users) with the remaining 9.5 per cent accounted for by primary stimulant users and NPS service users.

For all age bands from 35-39 years and older, primary opioid use is most prevalent, SIEDs use decreases and primary stimulant and NPS use remains relatively stable. In the age band 45-49, primary opioid use accounted for 56 per cent of NSP service users within this age group in 2013-14.

²² See the link below:

<http://www.wales.nhs.uk/sitesplus/888/documentmap?search=true&metatype=&filetype=&libraryid=31416&keywords=&go=Find>



Source: Harm Reduction Database (HRD), 2014

Chart 29: Number of individuals accessing Needle and Syringe Programmes (statutory and voluntary sector services) in Wales by age band and primary substance type, 2013-14

There was considerable variation in the number of 25-49 year olds accessing NSPs in different Health Boards. ABMU recorded the greatest number of service users aged 25-49 with a total of 2,360 unique service users, followed by Cardiff and Vale with 2,037. Excluding Hywel Dda and Powys Teaching Health Boards, where fewer than 100 individuals were recorded as accessing NSPs in 2013-14, SIEDs were the most frequently reported primary substance of use in three Health Boards: ABMU (48.3 per cent of all service users), Aneurin Bevan (52.7 per cent) and Cwm Taf (61.8 per cent). Opioids were most frequently reported in Cardiff and Vale (59 per cent of all service users) and BCU (59.3 per cent). Numbers of individuals accessing NSPs by Health Board and primary substance of use is shown in Chart 30.

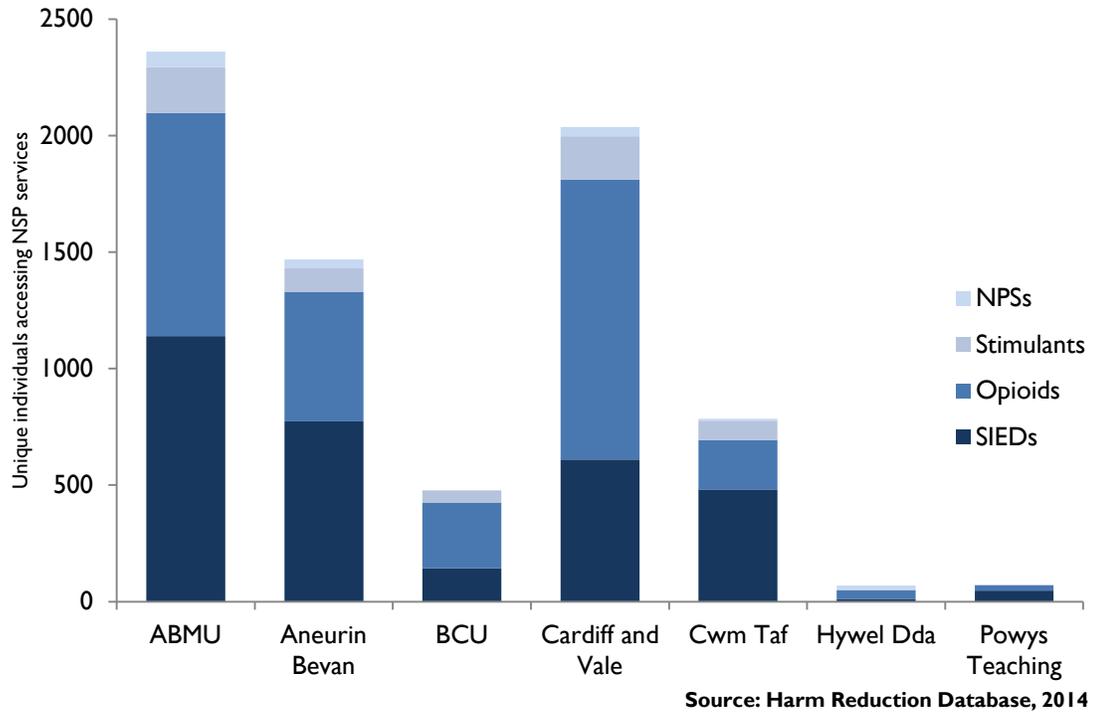


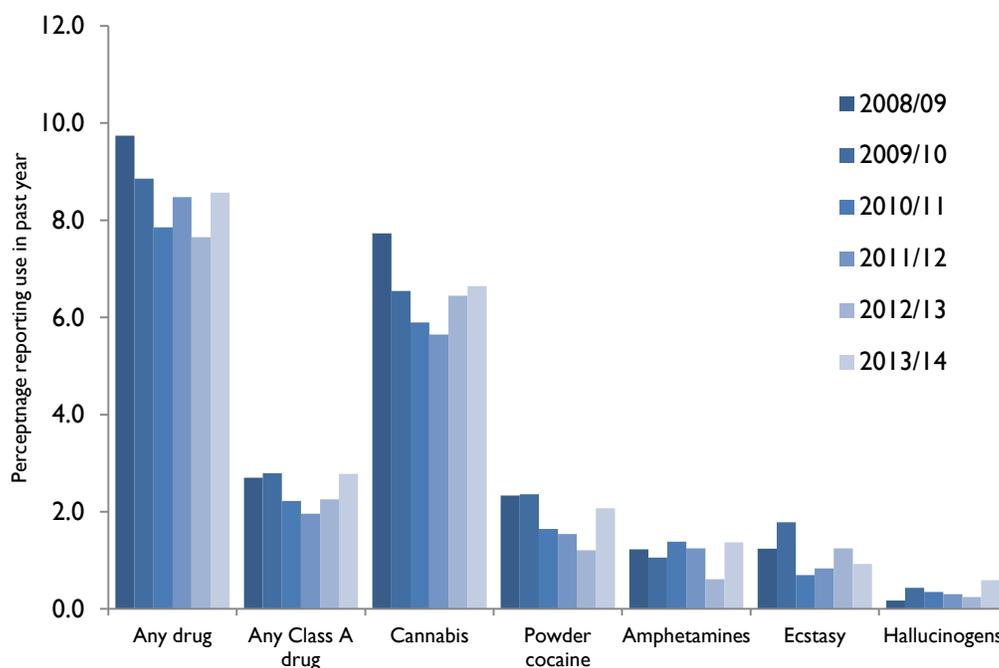
Chart 30: Number of unique individuals aged 25-49 years accessing Needle and Syringe Programmes (statutory and voluntary sector) by Health Board and primary substance of use, 2013-14

6.5 Self-reported use of illicit drugs in the past year by adults aged 16-59 years

According to the Crime Survey for England and Wales 2013-14²³, 8.6 per cent of adults in Wales aged between 16-59 years reported using any illicit drug within the past year, a rise of one percentage point on the previous year. Reported 'Any Class A' drug use increased by half a percentage point to 2.8 per cent, which, if extrapolated across the 16-59 year old population of Wales, relates to around 48,600 individuals. Reported use also increased in relation to most drugs specified in the survey, including:

- Cannabis (6.6 per cent, up 0.2 percentage points)
- Amphetamines (1.4 per cent, up 0.8 percentage points)
- Cocaine (2.1 per cent, up 0.9 percentage points).

Ecstasy was the one drug specified in the survey to show a fall in the percentage reporting use, with 0.9 per cent reporting use in the past year, a fall of 0.3 percentage points. The percentages reporting use of selected specified drugs and drug categories from 2008-09 to 2013-14 are shown in Chart 31.



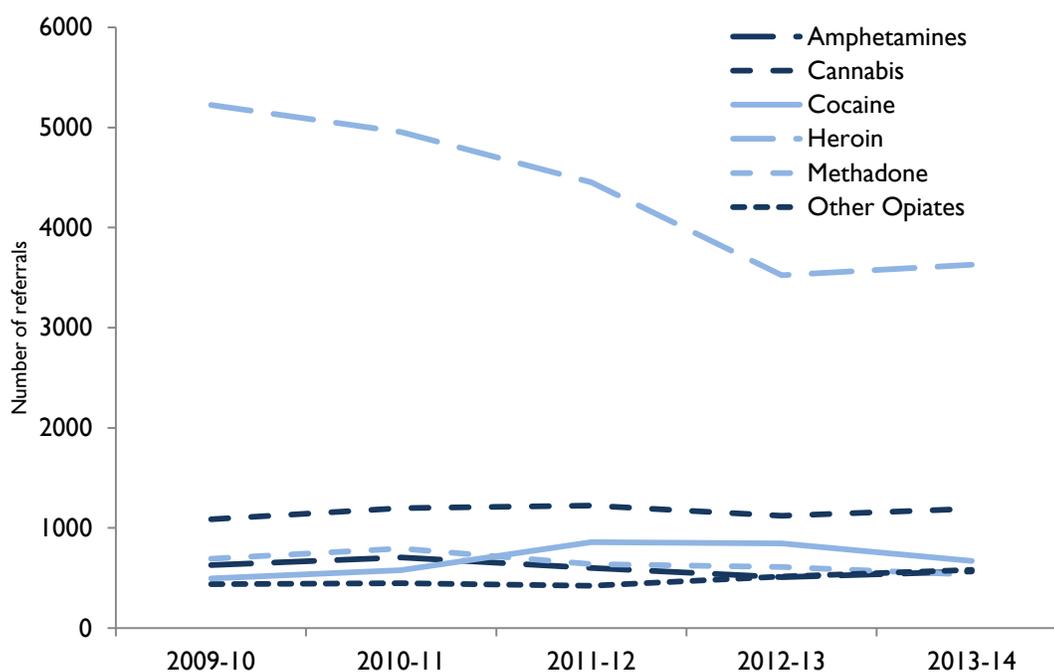
Source: Crime Survey for England and Wales, 2014

Chart 31: Percentage of individuals reporting use of illicit drugs in the past year, 16-59 year olds, Wales, 2008-09 to 2013-14

²³ Further information on the Crime Survey for England and Wales, along with access to the data outlined within this document is available at: [Crime in England and Wales, Year Ending March 2014 - ONS](http://www.ons.gov.uk/england-and-wales/crime-survey)

6.6 Referrals to substance misuse treatment services²⁴ in Wales amongst working age adults (20-49 years old)

Over the five year period from 2009-10 to 2013-14, the overall number of referrals per annum has declined by 9.2 per cent, from 20,205 to 18,342 referrals. The proportion of referrals for alcohol misuse has remained relatively stable at around 51 per cent of annual referrals to substance misuse services in Wales. Chart 32 indicates the number of referrals by named illicit drug in the 20-49 year old population and shows the decrease in the number of referrals for primary heroin use over time, dropping by 30.6 per cent, from 5226 referrals in 2009-10 to 3629 in 2013-14.



Source: Welsh National Database for Substance Misuse, 2014

Chart 32: Referrals to drug treatment, named substances with >500 recorded referrals, excluding alcohol working age adults aged 20-49

²⁴ Further detailed information on referral, assessment and treatment data for 2013-14 and previous years is available at: [Welsh Government | Substance misuse](#)

7 Older people (aged 50 years and above)

7.1 Hospital admissions for alcohol specific conditions

7.1.1 Hospital admissions by age band 2008-09 to 2013-14

Overall The number of admissions for alcohol specific conditions in the primary position amongst people over 50 years showed almost no change between 2012-13 and 2013-14 with 1661 admissions in 2013-14 representing a rise of 12 admissions (0.7 per cent) compared with the previous year. This reflects a longer term stability in terms of alcohol specific admissions amongst this age group over time, with less than 5 per cent change year on year in any given year across the period 2008-09 to 2013-14.

This stability in the number of admissions is also reflected within five-year age bands. The only noteworthy age related changes observed are a fall in the number of admissions amongst 60-64 year olds from 322 in 2008-09 to 272 in 2013-14 (a fall of 15.5 per cent) and a rise in admissions amongst 65-70 year olds from 167 to 288 (74.4 per cent) over the same time period, as indicated in Chart 33.

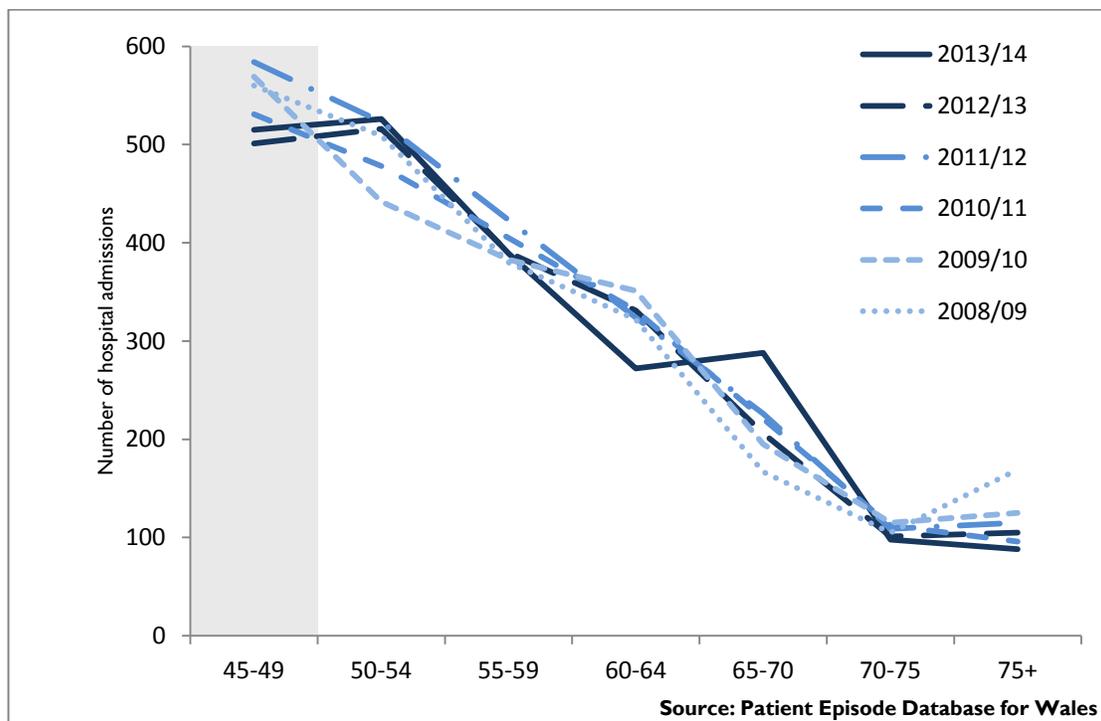
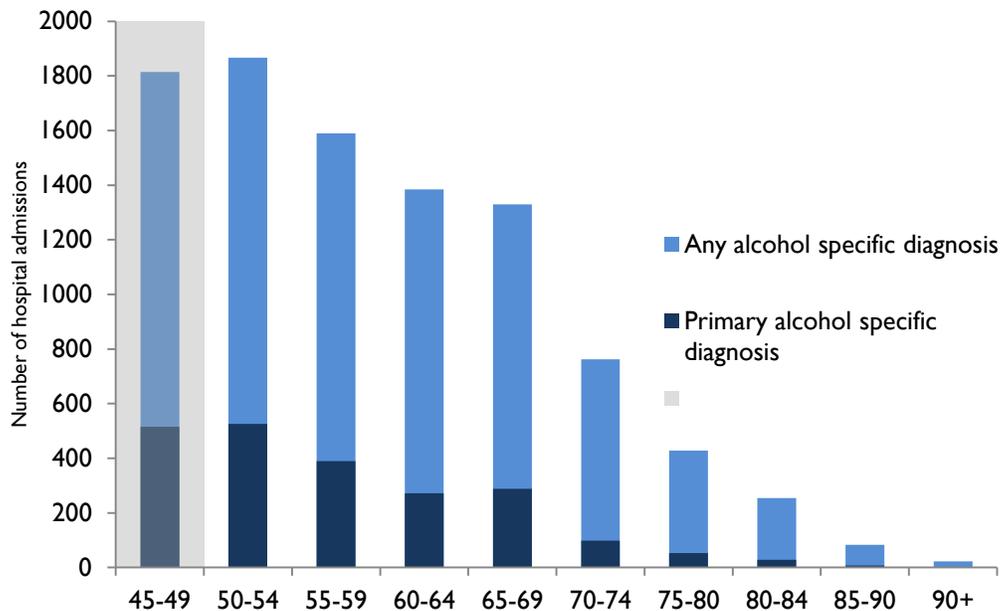


Chart 33: Hospital admissions for alcohol specific conditions (primary diagnosis) in adults aged 50 years and above, 2008/09 to 2013/14

7.1.2 Hospital admissions for alcohol specific conditions in primary and any position, by age band 2013-14

As with all other age groups, diagnoses in the primary position represent only a small proportion of admissions for alcohol specific conditions. Chart 34 shows the proportion of admissions in which alcohol specific diagnoses were mentioned in the primary position as a proportion of admissions in which alcohol specific diagnoses were mentioned in any position.

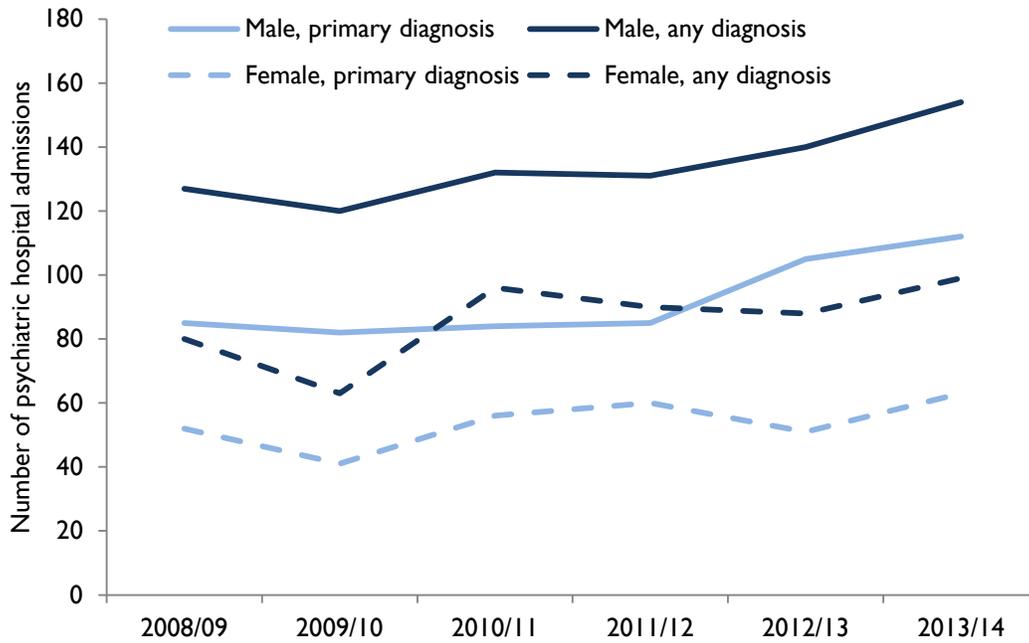


Source: Patient Episode Database for Wales, 2014

Chart 34: Hospital admissions for alcohol specific conditions (primary and any position) in adults aged 50+ years, by age band, Wales 2013-14

7.1.3 Psychiatric hospital admissions for alcohol specific conditions by age and gender 2008-09 to 2013-14

Whilst general hospital admissions have remained relatively stable, admissions to psychiatric hospitals for alcohol specific diagnoses amongst those over 50 years have risen for men and women across the period 2008-09 to 2013-14. As shown in Chart 35, admissions for men with alcohol specific diagnoses, in both primary and any position, have increased year on year, with a rise of 31.8 per cent for primary diagnosis (from 87 to 112 admissions) and by 21.2 per cent for 'any' diagnosis (from 127 to 154 admissions) over the six year period. Amongst females trends over time are more difficult to identify, although the number of admissions has risen overall from 52 to 63 admissions for primary diagnosis and by 23.8 per cent for 'any' diagnosis, from 80 to 99 admissions in 2008-09 and 2013-14 respectively.



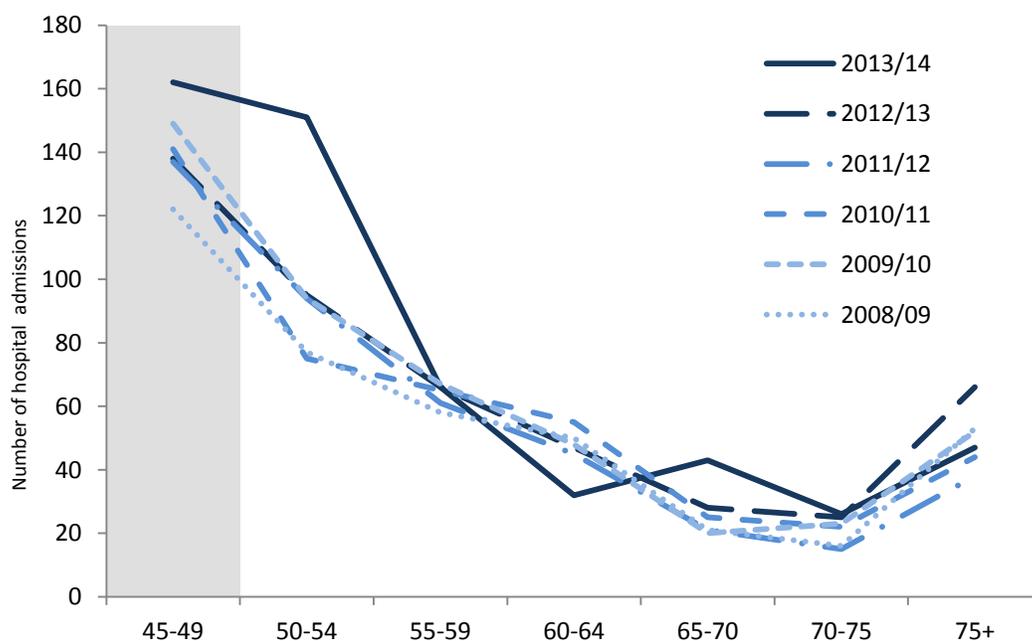
Source: Patient Episode Database for Wales, 2014

Chart 35: Psychiatric hospital admissions, alcohol specific diagnoses, individuals aged 50+, primary and any position, by gender, 2008-09 to 2013-14

7.2 Hospital admissions for poisoning by named illicit drugs

In contrast with the stability in the numbers of alcohol specific admissions in Chart 35, there has been considerable variation between years in the number of admissions for poisoning by named illicit drugs amongst those aged over 50 years. The total number of 365 admissions in 2013-14 represented a rise of 11.6 per cent compared with 2012-13 and an overall rise of 32.7 per cent compared with 2008-09 data. Chart 36, shows admissions for poisoning by named illicit drugs by year and 5-year age band for those aged 50 years and older, and illustrates the fact that age-related patterns of admissions amongst the over 50s in 2013-14 showed considerable differences with previous years, particularly amongst 50-54 year olds, with an increase from 95 admissions in 2012-13 to 151 admissions in 2013-14; an increase of 58.9 per cent.

There was also an increase in admissions amongst 65-70 year olds, to 43 admissions compared with 60-64 year olds (32 admissions) in 2013-14. The number of admissions for poisonings with named illicit drugs may be subject to further analysis to assess the degree to which intentionality and accidental poisoning play a part in the variations in admissions observed in 2013-14.

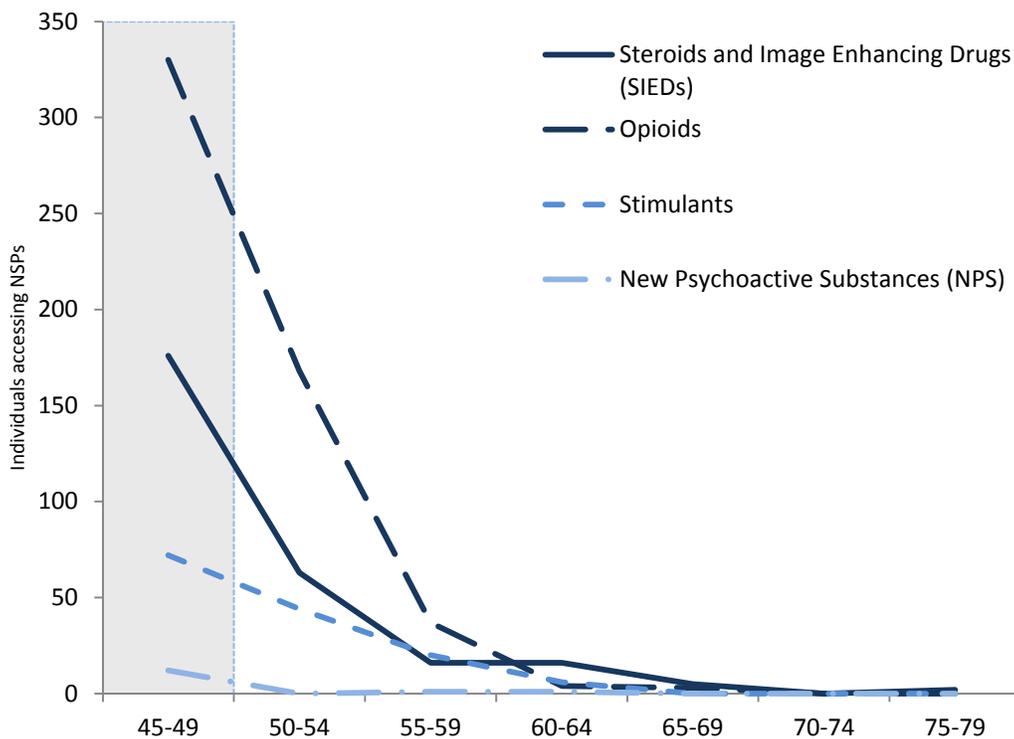


Source: Patient Episode Database for Wales

Chart 36: General hospital admissions for poisoning with illicit drugs, by age band, Wales, 2013-14

7.3 Older people accessing Needle and Syringe Programmes

Analysis of the harm reduction database (HRD, see above) shows that 386 individuals aged over 50 years accessed statutory and voluntary needle and syringe programmes (NSPs) in 2013-14. Opioid users accounted for 212 (54.9 per cent) of these service users, with a further 28.5 per cent primary SIEDs users, primary stimulant users accounted for 14.5 per cent and the final 1.4 per cent were primary NPS users. Use of NSP services to access sterile injecting equipment decreased dramatically in the 55-59 year age group with only 27 individuals aged 60-64 years accessing services regularly.

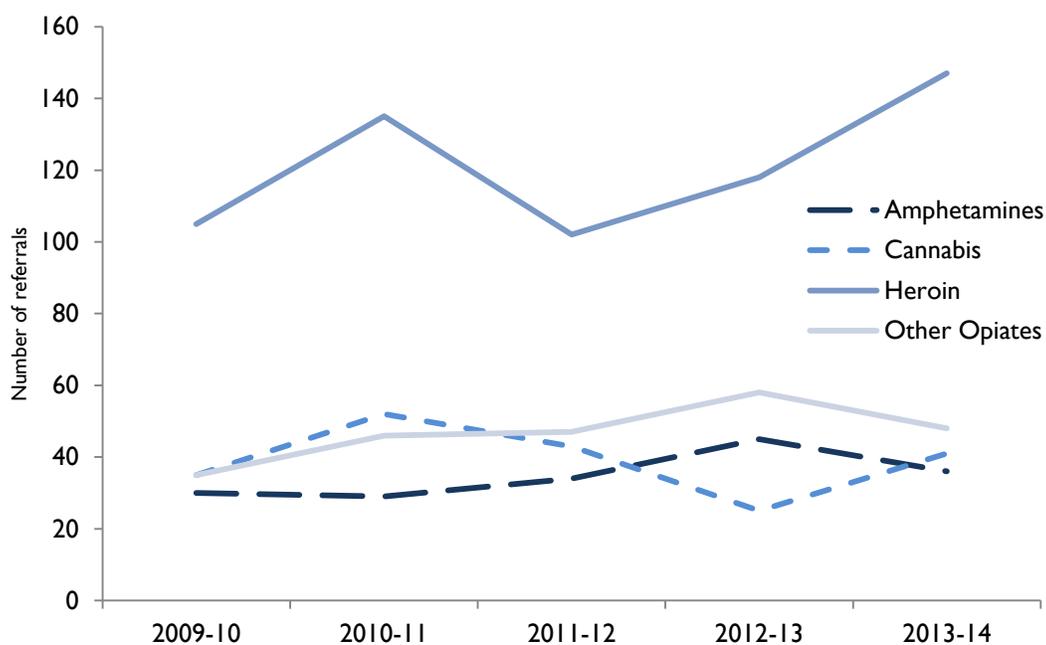


Source: Harm Reduction Database, 2014

Chart 37: Number of individuals accessing NSPs in Wales, 45+ (50+ highlighted), by age band, Wales, 2013-14

7.4 Referrals to substance misuse treatment services in older people (aged 50 years and above)

The older age group, those aged 50 year and above) is the only age group in which referrals to substance misuse treatment services is increasing. This has important implications for service delivery and tailored treatment. Overall, referrals for any alcohol or drug misuse in this age group have increased by 15.8 per cent over the five year period 2009-10 to 2013-14. Primary alcohol misuse accounted for 3,610 referrals to substance misuse treatment services in those aged 50 years and above in 2013-14, representing 86.1 per cent of all referrals within this age group and an increase of 10.6 per cent on 2012-13 referrals. Of the remaining 13.9 per cent, Heroin was the most commonly reported illicit drug used by over 50s referred to treatment services, with 147 referrals, 3.5 per cent, in 2013-14, as shown in Chart 38. This compared with 118 referrals for heroin use in 2012-13, representing a rise of 24.6 per cent. Fewer than 50 referrals for individuals over 50 were recorded for every other substance.



Source: Welsh National Database for Substance Misuse, 2014

Chart 38: Referrals to drug treatment, named substances with >25 recorded referrals, older adults aged 50+

8 Injecting drug use: risk behaviours and blood borne viruses

The risks associated with sharing injecting equipment and the sources of data on those risks, principally the Unlinked Anonymous Monitoring (UAM) survey and the Harm Reduction Database (HRD) for Wales, are described in section 4.x.x.x.

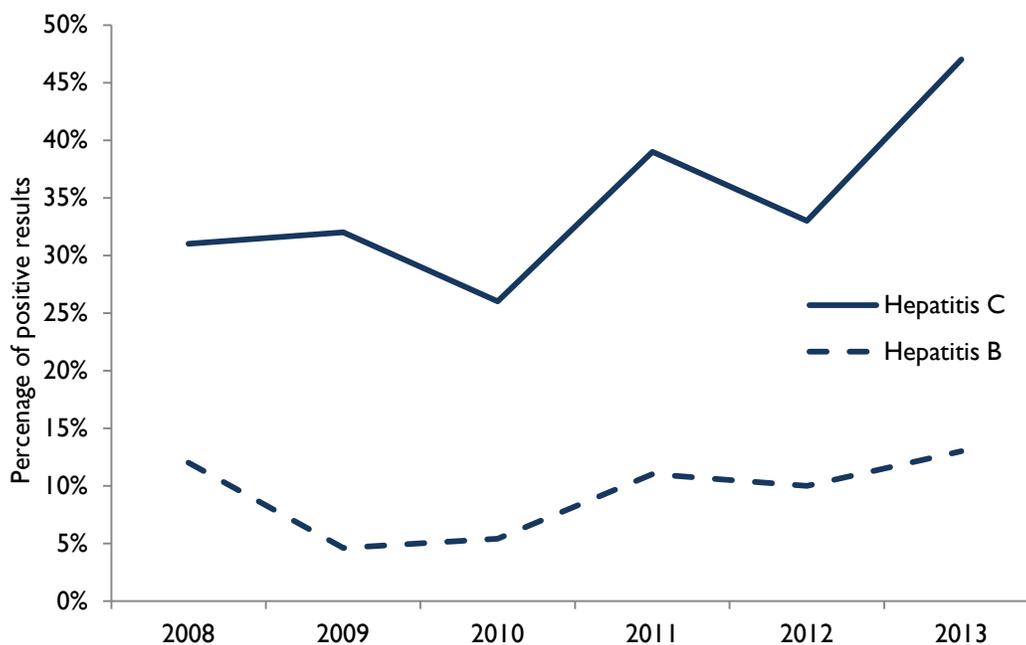
8.1 Direct and indirect sharing

According to the latest figures from the UAM Survey²⁵ for England, Wales and Northern Ireland, in 2013, 265 of 1,622 PWID completing the survey (16 per cent) reported direct sharing of equipment and 641 of 1,636 respondents (39 per cent) reported direct or indirect sharing. By comparison, the HRD recorded data on self-reported direct sharing of injecting equipment for 3,185 NSP service users and indirect sharing for 3,229 NSP in 2013-14. Of those service users, 65 (2 per cent) reported direct sharing and 120 (3.8 per cent) reported indirect sharing in the past year.

8.2 Prevalence of BBVs amongst people who inject drugs in Wales and uptake of hepatitis B vaccination

The UAM reports that of 201 dry blood spot (DBS) samples provided by people who inject drugs in Wales in 2013, 0.5 per cent were positive for HIV, 13 per cent were positive for hepatitis B and 47 per cent were positive for hepatitis C. Only 38 per cent of those who tested positive for hepatitis C were previously aware of their infection compared with 42 per cent in 2012. This compares to 1.2 per cent (HIV), 17 per cent (hepatitis B) and 50 per cent (hepatitis C) for respondents from England. Chart 39 shows the percentage of respondents to the UAM providing samples that were positive for hepatitis B and hepatitis C between 2008 and 2013. Of the 195 Welsh respondents to the UAM who reported their hepatitis B vaccination status, 144 (74 per cent) reported having at least one dose of vaccination against hepatitis B.

²⁵ Further information and data from the Unlinked Anonymous Monitoring Survey is available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/326897/UAM_Survey_of_PWID_data_tables_2014.pdf



Source: Unlinked Anonymous Monitoring Survey, 2014

Chart 39: Prevalence of hepatitis B and C amongst people who inject drugs supplying oral fluids (2008-10) or dry blood spot samples (2011-13), Wales, 2008-13

Injecting drug use is the single greatest risk factor for infection with hepatitis C. Public Health Wales manages an enhanced surveillance programme which receives anonymous dried blood spot samples from drug services around Wales to gather data on hepatitis C amongst people who inject drugs. In 2013 this service received 947 samples of which 929 were tested for hepatitis C and 702 were tested for hepatitis B. The enhanced surveillance programme reports that 124 of 619 samples from individuals who indicated injecting drug use on their forms tested positive for hepatitis C (20 per cent), compared with 3 samples from the 255 individuals who reported never injecting (1.2 per cent). Of the 461 samples from individuals reporting injecting drug use tested for hepatitis B, 9 (2 per cent) were positive for hepatitis B; none of the samples from the 193 individuals who reported never injecting were positive for hepatitis B.

8.3 Prevalence of HIV infection amongst people who inject drugs

In 2013, there were 1661 HIV patients attending treatment services across Wales, an increase of 8.2 per cent on the previous year. Of the total in 2013, 1.4 per cent, 24 patients reported injecting drug use as the primary risk factor for HIV infection. Rates of transmission of HIV due to injecting drug use have remained low due to provision of sterile injecting equipment. The increases in patient numbers in 2013 were due to those reporting sexual transmission between men with an increase of 9.3 per cent on the previous year, up

to 906 patients, and an increase of 6.5 per cent, to 642 patients, with sex between men and women as the risk factor, as shown in Chart 40.

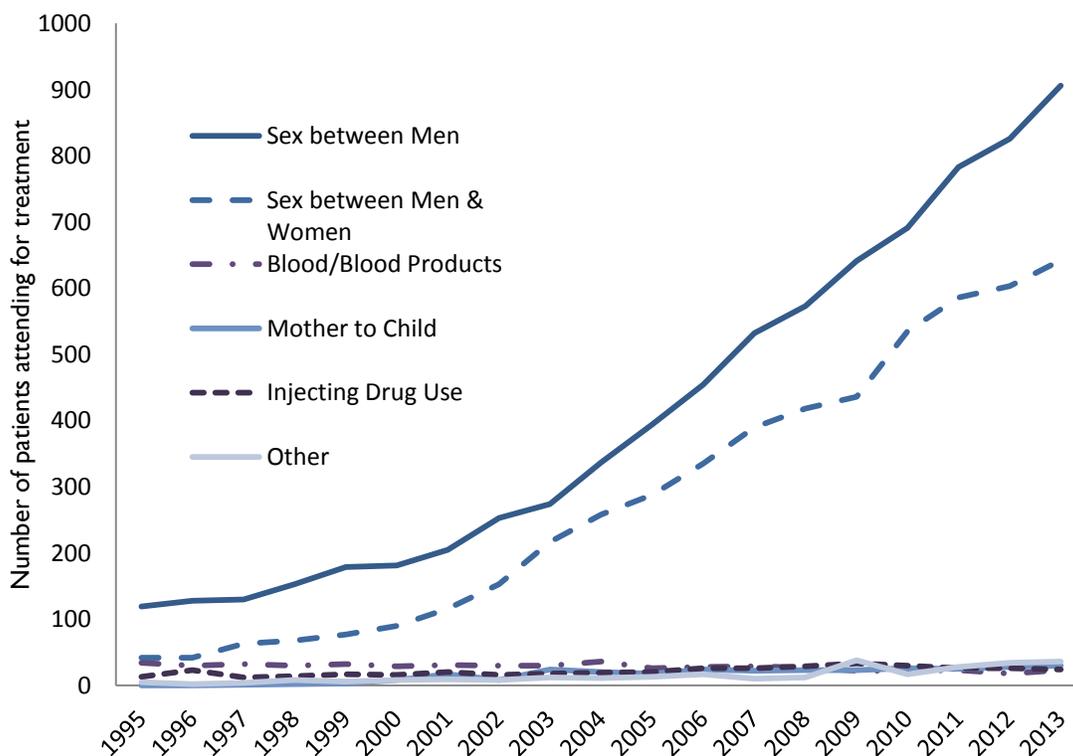


Chart 40: HIV infected patients attending for treatment in Wales by route of transmission 1995-2013 (aggregate numbers)

8.3 Injecting site infection

The UAM reports that in Wales, 29 per cent (41 of the 143 respondents who completed the relevant question) reported symptoms of infection at injecting sites, consistent with English rates at 28 per cent of respondents.

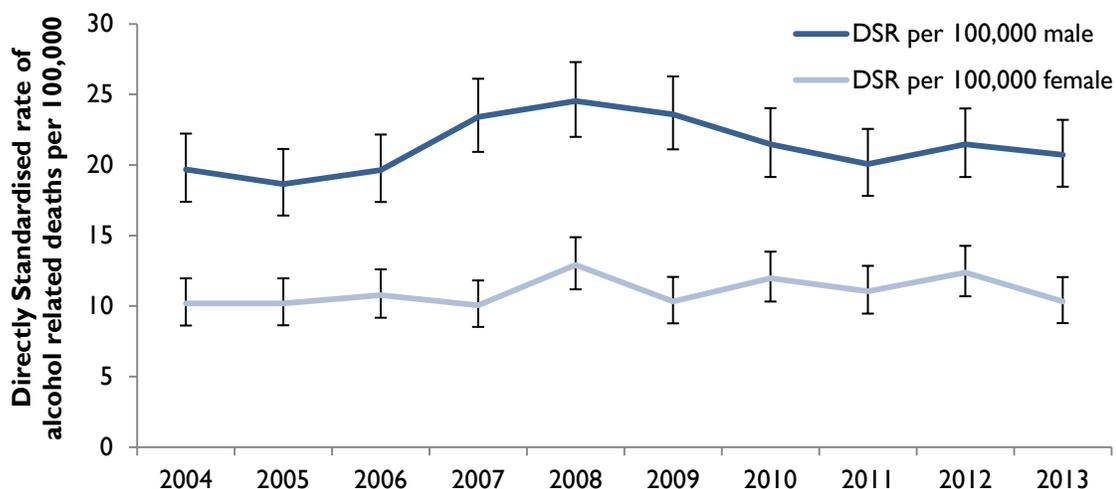
9 Deaths related to substance misuse

9.1 Alcohol related deaths

There were 467 alcohol related deaths registered in Wales in 2013²⁶ compared to 504 in 2012, a decrease of 7.3 per cent. This reduction was almost entirely due to a fall in the number of alcohol related deaths amongst women, with the number of deaths decreasing from 193 in 2012 to 161 in 2013 (16.6 per cent). Amongst men, there were 306 alcohol related deaths in 2013, a reduction of 5 (1.6 per cent) compared with 2012.

In the last year in Wales, rates of alcohol related deaths amongst females have returned to rates comparable with those recorded for 2009 at 10.3 per 100,000 population. Rates of alcohol related deaths amongst males are overall twice those recorded for females, with a rate of 20.7 per 100,000 population in 2013, as shown in Chart 41. This would support the patterns observed and rates recorded for alcohol consumption and hospital admissions for alcohol specific conditions.

Chart 41 shows the directly standardised rate²⁷ of alcohol related deaths for men and women in Wales over the past 10 years.



Source: Office for National Statistics, 2014

Chart 41: Directly standardised rate of alcohol related deaths with confidence intervals by gender and year, Wales, 2004-13

²⁶ 'Alcohol related deaths' are those deaths for which the death record indicates that an alcohol specific condition was the underlying cause of death. See Appendix 2 for a detailed explanation of alcohol related deaths

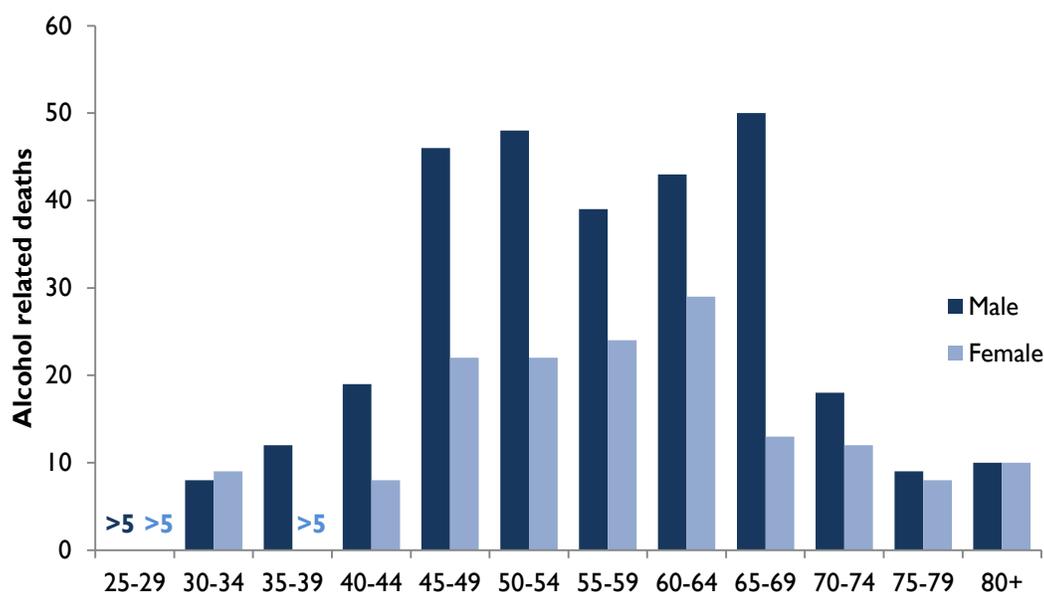
²⁷ For further details about rates and their meanings, see footnote 7 above and Appendices 5 and 6.

9.1.1 Alcohol deaths by age and gender

26.7 per cent of female (43 deaths) and 29 per cent (89 deaths) of male alcohol related deaths occurred in those aged under 50 years.

The highest number of alcohol deaths occurred in the 60-64 year age band with 72 deaths recorded: 43 male and 29 female deaths.

In 2013, the age band with the highest number of alcohol related deaths overall was the 60-64 year olds, with 72 deaths, followed by 50-54 (70 deaths) and 45-49 (68 deaths). Amongst women the 60-64 age band was the most frequently recorded (29 deaths) whilst men were most likely to fall within the 65-69 band (50 deaths) as shown in Chart 42.



Source: Office for National Statistics, 2014

Chart 42: Alcohol related deaths by age band and gender, Wales, 2013

The age profile in 2013 showed a number of changes compared to 2012. Whilst the proportion alcohol related deaths in working age adults (25-49 years old) fell slightly in 2013 (132 deaths, 28.3 per cent of all alcohol related deaths) compared with 2012 (151 deaths, 30 per cent), the proportion of those in middle age (50-64 years old) was higher in 2013 (205 deaths, 43.9 per cent) compared with 2012 (195 deaths, 38.7 per cent). The number of adults aged over 65 registered as dying from alcohol related causes fell from 157 deaths (31.2 per cent of all deaths) in 2012 to 130 deaths (27.8 per cent) in 2013.

Again, the change in this age profile is largely accounted for by women. Whilst deaths amongst women in middle age (50-65 years old) increased slightly from 70 to 75 between 2012 and 2013, they accounted for a much greater proportion of deaths (46.6 per cent in 2013 compared with 36.3 per cent in 2012) due to reductions in the number of deaths amongst working age women (from 63 deaths in 2012 to 43 deaths in 2013, a fall of 31.7 per

cent) and women older than 65 (from 60 deaths in 2012 to 43 deaths in 2013, a fall of 28.3 per cent).

9.1.2 Alcohol deaths by gender and Health Board area of residence

There was considerable variation between Health Boards in the directly standardised rates of alcohol related deaths. Chart 43 shows directly standardised rates per 100,000 by Health Board and gender; Table I shows the numbers and rates and change compared with 2012.



Chart 43: Directly standardised rates, per 100,000 population, of alcohol related deaths by Health Board and gender, 2013

As indicated in Chart 43, the highest rates, above the Welsh average, of alcohol related deaths in Males were reported in Cardiff and Vale, Hywel Dda and ABMU health board areas and for females, Aneurin Bevan, BCU and Cwm Taf health boards, showing no clear pattern across Wales. Overall the highest rates of alcohol related deaths were Cwm Taf health board followed by BCU.

Table 1: Directly standardised rates per 100,000 population of alcohol related deaths by Health Board, 2013

	Number of deaths, 2013		Directly standardised rate of deaths			
	Male	Female	DSR (males)	Change on 2012 DSR	DSR (females)	Change on 2012 DSR
Wales	306	161	20.5	-1.0	10.3	-2.1
ABMU	54	27	21.4	-5.0	10.2	-2.2
Aneurin Bevan	58	32	20.7	0.7	11.0	-0.5
BCU	70	41	20.5	1.1	11.6	-2.8
Cardiff and Vale	47	15	23.7	-1.9	7.2	-7.2
Cwm Taf	27	21	18.9	-12.6	14.5	-0.3
Hywel Dda	44	17	22.3	6.8	8.0	-0.8
Powys Teaching	6	8	7.9	0.6	10.1	3.0

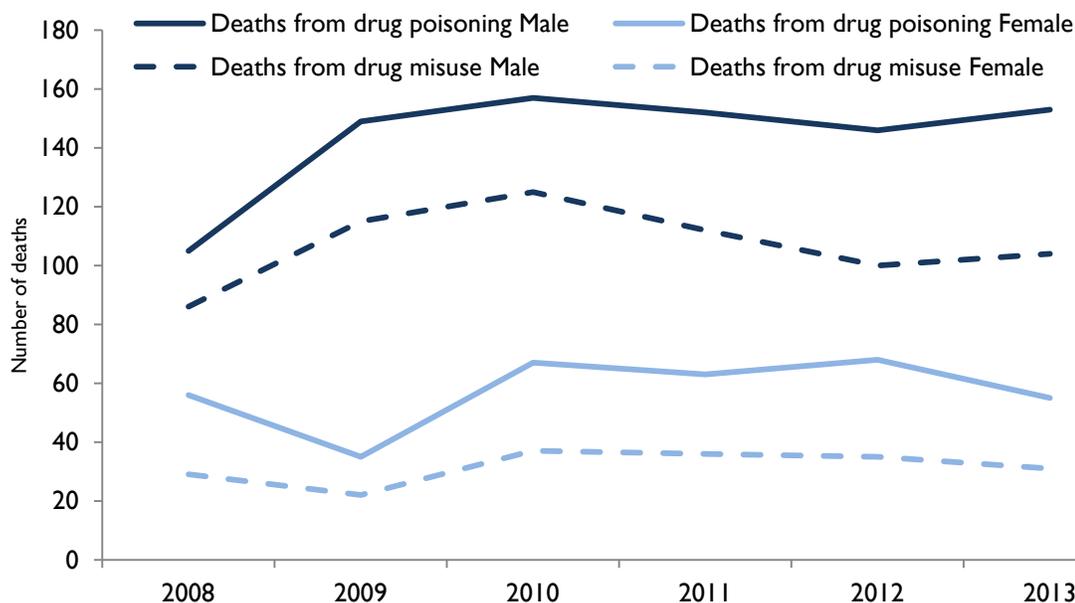
Compared with the previous year, the fall in rate amongst women in Cardiff and Vale was particularly marked, with alcohol related deaths amongst females in that Health Board at less than half the rate in 2013 than in 2012. Whilst the reduction in rate of alcohol related deaths amongst women was relatively evenly spread between Health Boards, with reductions in every area except Powys Teaching, changes in rates amongst men followed no clear geographical pattern. The rate rose in four Health Boards, with Hywel Dda showing the largest rise, but fell in three areas, with Cwm Taf recording a substantial decline of 12.6 alcohol related deaths per 100,000 men compared with 2012.

9.2 Drug related deaths

The Office for National Statistics reports two main measures. 'Deaths related to drug poisoning' includes all deaths in which the underlying cause references an ICD-10 related to both legal and illegal drugs (not including alcohol and tobacco), whilst 'Deaths related to drug misuse' is the subset of drug poisoning deaths involving illicit drugs. A more detailed description of these measures is provided in Appendix 4.

9.2.1 Deaths by drug poisoning and drug misuse deaths by gender

In 2013, there were 135 deaths from drug misuse recorded in Wales, the same number as were recorded in 2012²⁸. There was little change in the number of drug misuse deaths by gender, with male deaths rising from 100 in 2012 to 104 in 2013 and the comparable figure for females falling from 35 to 31. There was a small reduction in the total number of deaths from drug poisoning, from 214 in 2012 to 208 in 2013. As with drug misuse deaths, there was a small rise in deaths amongst men, from 146 in 2012 to 153 in 2013 (4.8 per cent) but a proportionately greater fall in deaths amongst women, from 68 in 2012 to 55 in 2013 (19.1 per cent). Chart 44 shows the number of deaths classified as being from drug poisoning and those described as being from drug misuse since 2008 by gender.



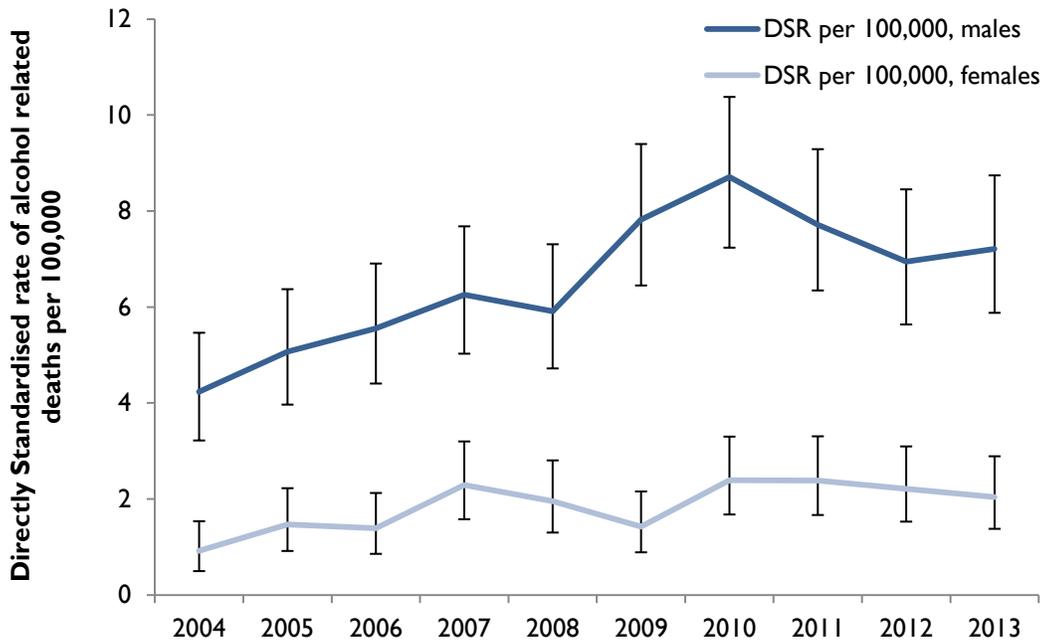
Source: Office for National Statistics, 2014

Chart 44: Deaths from drug poisoning and drug misuse by gender, Wales, 2008-13

²⁸ Note that figures for deaths from drug misuse in previous years are revised annually to include deaths involving drugs that were not previously, but are currently, controlled by the Misuse of Drugs Act (1971). Therefore the figures for deaths from drug misuse in previous Profiles may not be identical to figures presented in this report.

9.2.2 Rates of drug misuse deaths per 100,000 population by gender

As described in section 9.1 above, recorded deaths can be compared effectively between genders and years by comparing the observed rates of death with the rates that would be expected in a standard population with a given number of individuals in each age band. Directly standardised rates of deaths from drug misuse are shown by gender in Chart 45.



Source: Office for National Statistics, 2014

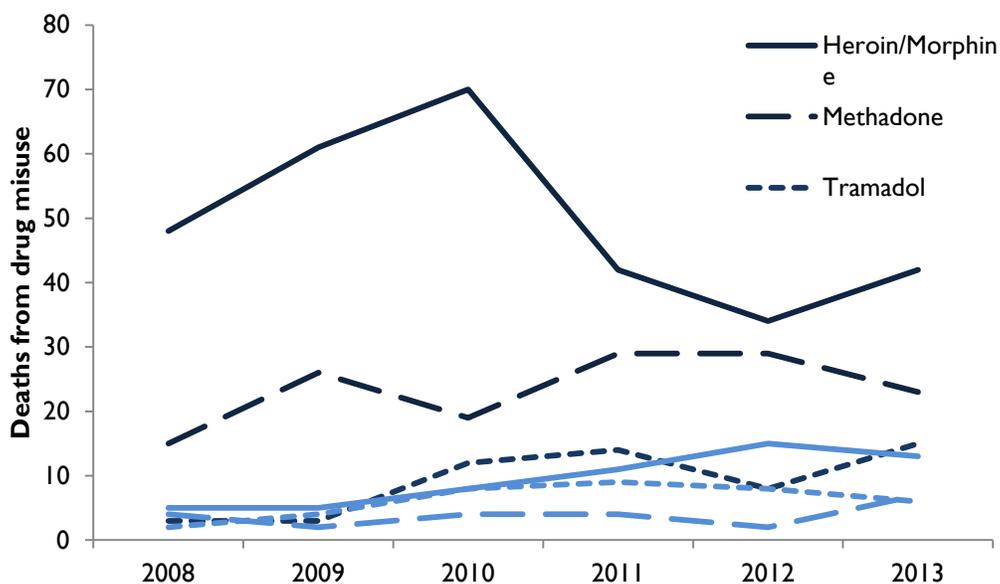
Chart 45: Directly standardised rate of deaths from drug misuse with confidence intervals²⁹ by gender and year, Wales, 2004-13

There were 31 deaths in females from drug misuse in 2013, 23 per cent of all drug misuse deaths, compared with 25.9 per cent in 2012. Females have made up between 22 and 26 per cent of all deaths from drug misuse for every year since 2008 except for 2009 when they accounted for 16.1 per cent of all drug misuse deaths.

9.2.3 Drug misuse deaths by named illicit drug in the primary position

As described in detail in Appendix 4, deaths from drug misuse can be categorised by substances noted on the death record. Chart 46 shows the number of deaths in which specific illicit substances were mentioned (or mentioned in the primary position where more than one substance was mentioned).

²⁹ See Appendix 5 for definition and description of Confidence Intervals



Source: Office for National Statistics, 2014

Chart 46: Deaths from drug misuse by substance mentioned in primary position on death record, all substances with >5 mentions in 2013, Wales, 2008-13

As in the previous five years, heroin/morphine accounted for the highest number of drug misuse deaths. In 2013, there were 42 deaths from heroin/morphine, compared with 34 in 2012, a rise of 23.5 per cent. Whilst this represents a rise, it should be noted that this rise was proportionally less than the rise in deaths across the whole of England and Wales where heroin/morphine was the only drug mentioned (the most comparable figure to those presented in Chart 46), which increased by 39 per cent between 2012 and 2013³⁰. Of the 42 deaths in which heroin/morphine was mentioned in the primary position in Wales in 2013, 6 (14.3 per cent) were amongst females.

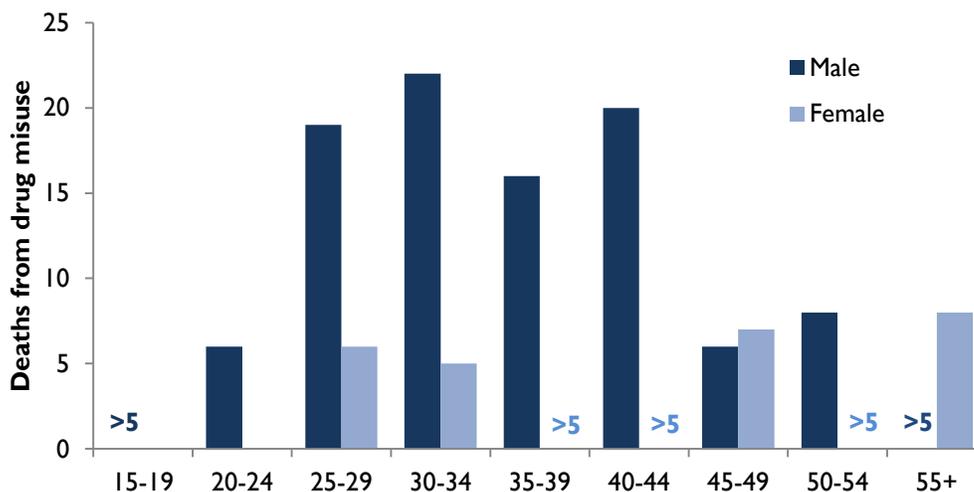
The other substances for which there were more than 5 mentions on death records of drug misuse deaths in Wales in 2013 showed changes with the previous year. There were fewer deaths from methadone (23 deaths in 2013, compared with 29 deaths in 2012), 'opiate' (13 deaths in 2013, from 15 in 2012) and diazepam (6 deaths in 2013, from 8 in 2012). However, codeine related deaths rose from 2 to 7 between 2012 and 2013 whilst those involving Tramadol increased from 8 to 15.

9.2.4 Drug misuse deaths by age and gender

As already noted, the overall number of deaths from drug misuse in Wales did not change between 2012 and 2013; the age profile of these deaths also remained relatively stable between the two years within most age bands, with less than 5 deaths in the 15-19 age band in both 2012 and 2013 and comparable numbers of deaths in every age band from 30-34 and

³⁰ Office for National Statistics (2014) Deaths related to drug poisoning, England and Wales, 2013

older. However, in the 20-20 age band the number of deaths decreased from 12 to 6 whilst in the 25-29 age band, deaths increased by two-thirds, from 15 to 25 as shown in Chart 47.

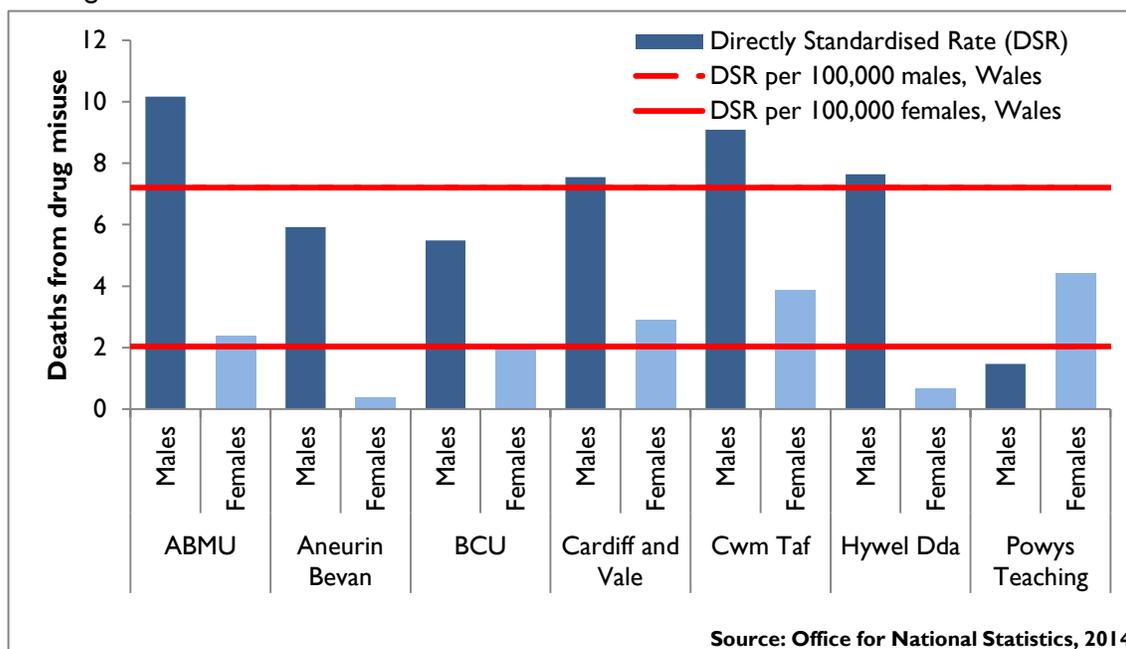


Source: Office for National Statistics, 2014

Chart 47: Deaths from drug misuse by age band and gender, Wales, 2013

9.2.5 Rates of drug misuse deaths by gender and health board area of residence

There are considerable differences between the rates of drug misuse deaths recorded in different health boards, although given the small numbers involved, care should be taken in drawing conclusions from this data.



Source: Office for National Statistics, 2014

Chart 48: Directly standardised rates per 100,000 population of deaths from drug misuse by Health Board and gender, 2013

ABMU and Cwm Taf had the highest directly standardised rates of drug misuse deaths amongst males; amongst females the highest rates were seen in ABMU and Powys Teaching. Rates amongst males increased in four Health Boards and fell in three; amongst females there were increases in three Health Boards and falls in four. Chart 48 shows directly standardised rates of deaths per 100,000 by gender and Health Board; Table 2 includes these figures and changes between 2012 and 2013.

Table 2: Directly standardised rates per 100,000 population of deaths from drug misuse by Health Board, 2013

	Number of deaths, 2013	Directly standardised rate of deaths			
		DSR (males)	Change on 2012 DSR	DSR (females)	Change on 2012 DSR
Wales	135	7.21	0.27	2.04	-0.18
ABMU	32	10.16	-1.65	2.40	-0.81
Aneurin Bevan	17	5.92	0.31	0.37	-1.74
BCU	24	5.49	1.81	2.05	0.30
Cardiff and Vale	26	7.55	-0.34	2.89	1.56
Cwm Taf	19	9.09	-3.34	3.87	0.56
Hywel Dda	13	7.64	3.50	0.67	-0.33
Powys Teaching	<5	1.48	1.48	4.41	-0.74

Information from a range of sources in the UK including Wales indicates that some users of new psychoactive substances (NPS³¹, often inaccurately referred to as 'legal highs') may be at risk of a number of serious adverse effects on health. The Office for National Statistics has published a list of those substances mentioned on death records which it classifies as NPS; these are listed in Appendix 4.

In 2013, there were two deaths from drug misuse in which an NPS was listed in the primary position on the death record and a further three deaths in which an NPS was listed in

³¹ The term "new psychoactive substances" has been legally defined by the European Union as a new narcotic or psychotropic drug, in pure form or in preparation, that is not scheduled under the Single Convention on Narcotic Drugs of 1961 or the Convention on Psychotropic Substances of 1971, but which may pose a public health threat comparable to that posed by substances listed in those conventions. (Council of the European Union decision 2005/387/JHA)

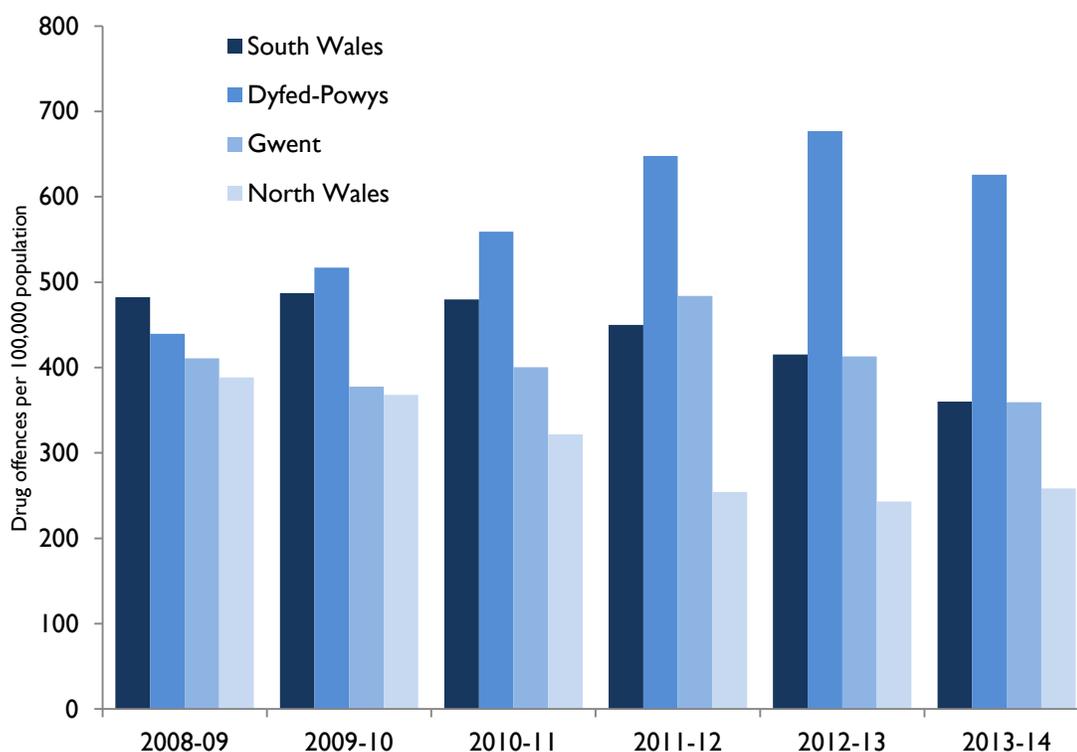
another, secondary position. In all cases, the drug listed was mephedrone. In 2012 there were also two deaths from drug misuse in which an NPS was listed in the primary position on the death record: one involving 4-methylamphetamine and one involving BZP. There was one further death from drug misuse in which an NPS was noted in a secondary position on the death record in 2012, in this case involving TFMPP.

Using the five deaths in 2013 in which an NPS was noted anywhere on the death record as the basis for calculation, the crude rate of deaths from NPS in Wales in 2013 was 1.6 per million population. There were 60 deaths from drug misuse across all of England and Wales in which an NPS was noted anywhere on the death record³², equating to a crude rate of 1.1 deaths per million population. However, given the low numbers involved, care should be taken in interpreting these figures.

³² Office for National Statistics (2014) Deaths related to drug poisoning, England and Wales, 2013. <http://www.ons.gov.uk/ons/rel/subnational-health3/deaths-related-to-drug-poisoning/england-and-wales---2013/stb---deaths-related-to-drug-poisoning-in-england-and-wales--2013.html>

10 Police recorded drugs offences and purity of drugs seized by the police: all ages

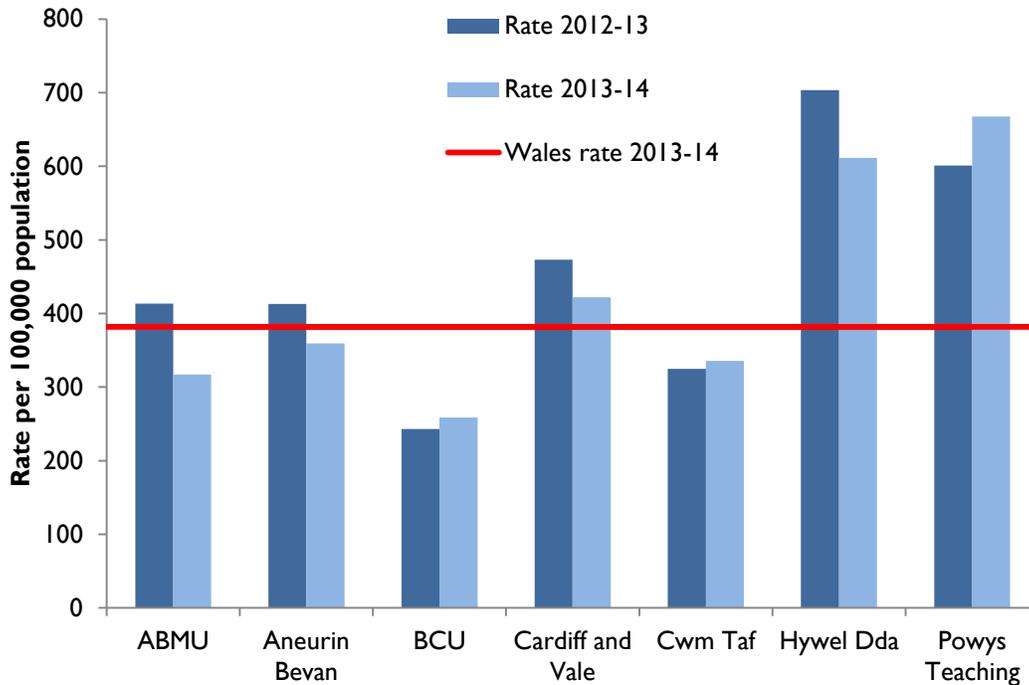
Overall, police forces in Wales recorded 11,766 drug offences in 2013-14, a fall of 1,150 (8.9 per cent) compared with the previous year. South Wales Police and Gwent Police recorded 691 and 306 fewer offences respectively; these falls in numbers represented a similar reduction in the proportion of recorded drug offences compared with the previous year, with a 12.9 per cent reduction in South Wales and a 12.8 per cent reduction in Gwent. Dyfed-Powys Police recorded 263 fewer drugs offences in 2013-14 compared with 2012-13 (a 7.5 per cent fall) whilst North Wales Police was the only force recording an increased number of drug offences in 2013-14 compared with the previous year, with an increase of 110 (6.6 per cent). Chart 49 shows the number of drug offences recorded in Wales between 2008-09 and 2013-14 by police force.



Source: Office for National Statistics, 2014

Chart 49: Police recorded drugs offences by year and police force, rate per 100,000 population, 2008-2014

Although the geographical areas covered by Health Boards and Police Forces are not co-terminous, police recorded drug offences data also allows numbers of recorded offences to be analysed by Health Board area. Chart 50 presents an analysis of this data using the crude rate of recorded drug offences per 100,000 population to make comparisons between areas and with the rate across all Wales.



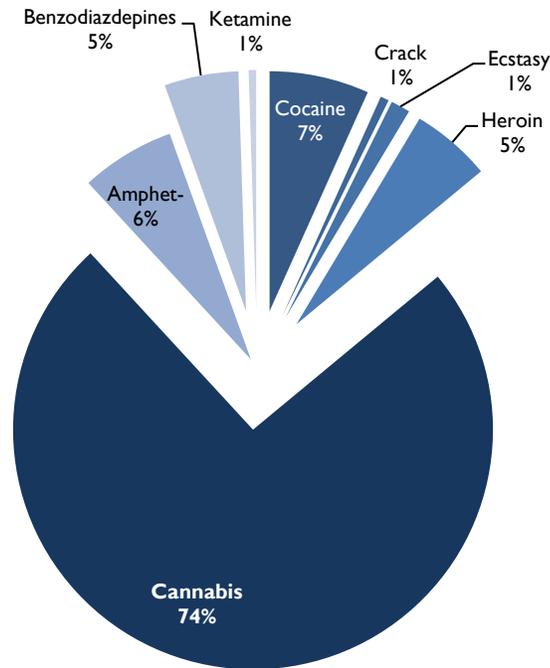
Source: Office for National Statistics, 2014

Chart 50: Police recorded drugs offences, rate per 100,000 population, by Welsh Health Board, 2012-13 and 2013-14

Chart 50 shows that, despite an increase in the number of drug offences recorded by North Wales Police, the BCU Health Board area continues to have the lowest rate of drug offences recorded within any health board area, with 258.5 recorded offences per 100,000 population. The Powys health board area had the highest rate of recorded drug offences with 667.6 per 100,000: approximately 2.6 times the rate in the BCU health board area. The rate per 100,000 across all Wales was 381.7; this rate was lower than the 420.2 drug offences recorded per 100,000 population in Wales in 2012-13.

The profile of drugs seized by police forces in Wales is shown in Chart 51. There has been little variation in the relative proportions of drugs seized, with cannabis remaining the most frequently seized substance (accounting for 74 per cent of all seizures in 2013-14 compared with 75 per cent in 2012-13) followed by cocaine (7 per cent in 2013-14 compared with 6 per cent in 2012-13) and amphetamines (6 per cent in 2013-14, 7 per cent in 2012-13).

Compared with the UK as a whole, cannabis (79 per cent of all UK seizures) makes up a smaller proportion of all seizures in Wales, whilst amphetamines (3 per cent of all UK seizures) account for a greater proportion of seizures in Wales compared with the UK as a whole. The proportion of all seizures accounted for by other drugs is comparable to the proportion in Wales for cocaine powder (8 per cent of all UK seizures, 7 per cent of seizures in Wales) and heroin (5 per cent of all seizures in both the UK and Wales).



Source: Home Office, 2013

Chart 51: Profile of drugs seized by police forces in Wales, 2012-13

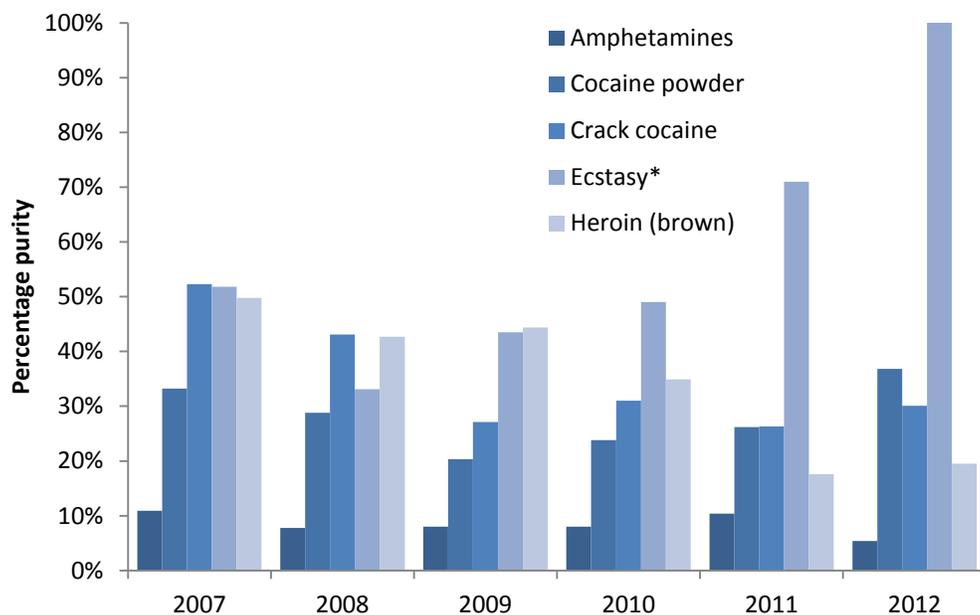
The purity of a drug describes the degree to which a quantity of the drug has remained free from other substances that may be added to increase the quantity and therefore resale value. The purity of a drug may be affected through the addition of adulterants (drugs that mimic or enhance the effects of a given drug; e.g. caffeine often found in amphetamine) or dilutants (mainly sugars such as glucose added to bulk the quantity)³³.

In previous Profiles of Substance Misuse in Wales reports³⁴, data on drug purity in the UK has been provided from Home Office sources based on the police Forensic Science Service (FSS). The FSS has now been closed down and purity levels are now reported by the Serious Organised Crime Agency (SOCA) using alternative agencies to provide forensic information on drug purity and reporting findings through UK Focal Point, which provides data on drug trends to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). Therefore the figures reported in this Profile may not be comparable to figures previously reported.

³³ Drugscope: How pure are street drugs? <http://www.drugscope.org.uk/resources/faqs/faqpages/how-pure-are-street-drugs.htm> [Accessed 6 October 2014]

³⁴ Previous profile reports are available at: [Welsh Government | Substance misuse statistics](#)

As shown in Chart 52, there has been a substantial rise in the purity of ecstasy tablets tested and a noticeable, if less dramatic increase in the purity of cocaine powder. The purity of heroin remains low relative to reports pre-2010.



Source: UK Focal Point, 2013

**Note that the reported purity of ecstasy is calculated using mg per MDMA base per tablet and may therefore show purity of over 100*

Chart 52: Purity of drugs seized by the police, selected drugs, 2007-12

Appendix I: Hospital admissions related to alcohol, definitions

When a person is admitted to hospital, the condition which led to their admission is recorded by medical staff, alongside further, secondary conditions which affect treatment and any external factors which relate to the admission. These records are coded to a standard framework called the International Statistical Classification of Diseases and Related Health Problems, now in its tenth edition and therefore known as the 'ICD-10'. Full descriptions of the conditions associated with every ICD-10 code are available from the World Health Organisation at <http://apps.who.int/classifications/icd10/browse/2010/en>.

Within this report data and discussion concerning to two definitions of hospital admissions related to alcohol are presented and two measures are described within each definition.

'**Alcohol specific conditions**' are commonly defined as those conditions, such as alcoholic liver disease, which are 100 per cent attributable to the use of alcohol. Two alcohol specific admissions measures are described in this report. '*Admissions in primary position*' includes all admissions for which an alcohol specific ICD-10 code was recorded as the primary condition which led to admission. '*Admissions in any position*' includes all admission for which an alcohol specific ICD-10 code was recorded in any position, primary or secondary.

However, alcohol also plays a role in a wider range of '**alcohol attributable conditions**'. For example, it is estimated that alcohol plays a causative role in 25-33 per cent of cardiac arrhythmias, with the proportion varying by gender and age³⁵. Some external cause codes also have an alcohol-attributable fraction: for example 27 per cent of assaults are estimated to be alcohol-related³⁵. Alcohol attributable fractions, describing the causative contribution accounted for by alcohol across the population have been calculated for a range of conditions³⁶ and the Public Health Wales Observatory has used these fractions to produce figures for alcohol attributable admissions which are presented in this report. 'Alcohol attributable conditions' includes all 'alcohol specific conditions', since these are by definition 100 per cent caused by alcohol. There are two alcohol attributable admissions measures described in this report. The 'narrow measure' includes all admissions where the primary diagnosis is of an alcohol attributable condition OR the primary diagnosis is of a condition not attributable to alcohol but one or more secondary diagnoses is for an alcohol attributable external condition. The 'broad measure' includes all admissions where a diagnosis in any position is alcohol attributable.

³⁵ Perkins, C and Hennessey, M (2014) Understanding alcohol-related hospital admissions. Chief Knowledge Officer, Public Health Matters blog, Public Health England.
<https://publichealthmatters.blog.gov.uk/2014/01/15/understanding-alcohol-related-hospital-admissions/>
Viewed 8 Sept 2014

³⁶ Jones, L and Bellis, M (2013) Updating England-specific alcohol attributable fractions, Centre for Public Health, Liverpool John Moores University

The most recent ICD-10 codes for alcohol specific and alcohol attributable conditions were published in 2013³⁶ and are set out in Table 3. Note that updated codes in the 2013 edition of the Alcohol Attributable Fractions added seven codes to the alcohol specific set of codes set out in the previous (2008) edition which was used for previous versions of this report. These codes, noted in Table 3, together accounted for 250 admissions with an alcohol specific diagnosis in any position in 2013-14, 1.6 per cent of the total.

Table 3: ICD-10 codes for alcohol specific and alcohol attributable conditions, as defined by the Alcohol Attributable Fractions (2013)

Condition	Code
<i>Alcohol specific conditions (100 per cent caused by alcohol)</i>	
Alcohol-induced pseudo-Cushing's syndrome	E24.4
Mental and behavioural disorders due to use of alcohol	F10
Degeneration of nervous system due to alcohol	G31.2
Alcoholic polyneuropathy	G62.1
Alcoholic myopathy	G72.1
Alcoholic cardiomyopathy	I42.6
Alcoholic gastritis	K29.2
Alcoholic liver disease	K70
Alcohol-induced acute pancreatitis*	K85.2
Alcohol-induced chronic pancreatitis	K86.0
Foetal alcohol syndrome (dysmorphic)*	Q86.0
Excess alcohol blood levels*	R78.0
Ethanol poisoning	T51.0
Methanol poisoning	T51.1
Toxic effect of alcohol, unspecified	T51.9
Accidental poisoning by and exposure to alcohol	X45
Intentional self-poisoning by and exposure to alcohol*	X65
Poisoning by and exposure to alcohol, undetermined intent*	Y15
Evidence of alcohol involvement determined by blood alcohol level*	Y90
Evidence of alcohol involvement determined by level of intoxication*	Y91

*Codes added to list of alcohol specific conditions in 2013	
Partially alcohol attributable conditions	
Chronic conditions	
Infectious and parasitic diseases	
Tuberculosis	A15-A19
Malignant neoplasm	
Malignant neoplasm of lip, oral cavity and pharynx	C00-C14
Malignant neoplasm of oesophagus	C15
Malignant neoplasm of colorectal	C18-C20, C21
Malignant neoplasm of liver and intrahepatic bile ducts	C22
Malignant neoplasm of larynx	C32
Malignant neoplasm of breast	C50
Diseases of the nervous system	
Epilepsy and Status epilepticus	G40-G41
Cardiovascular disease	
Hypertensive diseases	I10-I15
Ischaemic heart disease	I20-I25
Cardiac arrhythmias	I47-I48
Haemorrhagic stroke	I60-I62, I69.0-I69.2
Ischaemic stroke	I63-I66, I69.3-I69.4
Oesophageal varices	I85
Respiratory infections	
Pneumonia	J10.0, J11.0, J12-J15, J18
Digestive disease	
Unspecified liver disease	K73, K74
Cholelithiasis (gall stones)	K80
Acute and chronic pancreatitis	K85, K86.1
Pregnancy and childbirth	
Spontaneous abortion	O03

Low birth weight	P05-P07
Acute conditions	
Unintentional injuries	
Road/pedestrian traffic accidents	*
Poisoning	X40-X49
Fall injuries	W00-W19
Fire injuries	X00-X09
Drowning	W65-W74
Other unintentional injuries	*
Intentional injuries	
Intentional self-harm	X60-X84, Y87.0
Event of undetermined intent	Y10-Y34, Y87.2
Assault	X85-Y09, Y87.1
*All 'V' codes are considered alcohol attributable and are divided between 'Road/pedestrian traffic accidents' and 'Other unintentional injuries'. See Jones and Bellis (2013) Alcohol attributable fractions for detailed breakdown	

Of particular interest in analysis of morbidity and mortality arising from drug and alcohol use are the ICD-10 codes related to 'Mental and behavioural disorders due to psychoactive drug use', coded F10-F19. Each three figure code (F10, F11, etc.) relates to a specific substance or class of substances. An additional, fourth figure may be added to provide further detail concerning the condition from which an individual may be suffering.

The fourth character details are summarised in Table 4:

Table 4: Details of conditions denoted by the fourth character of ICD-10 codes beginning with 'F'

.0 Acute intoxication
A condition that follows the administration of a psychoactive substance resulting in disturbances in level of consciousness, cognition, perception, affect or behaviour, or other psycho-physiological functions and responses. The disturbances are directly related to the acute pharmacological effects of the substance and resolve with time, with complete recovery, except where tissue damage or other complications have arisen. Complications may include trauma, inhalation of vomitus, delirium, coma, convulsions, and other medical complications. The nature of these complications depends on the pharmacological class of substance and mode of administration.
Acute drunkenness in alcoholism

	<p>"Bad trips" (drugs) Drunkenness NOS Pathological intoxication Trance and possession disorders in psychoactive substance intoxication</p> <p>Excludes: intoxication meaning poisoning</p>
.1	<p>Harmful use</p> <p>A pattern of psychoactive substance use that is causing damage to health. The damage may be physical (as in cases of hepatitis from the self-administration of injected psychoactive substances) or mental (e.g. episodes of depressive disorder secondary to heavy consumption of alcohol).</p> <p>Psychoactive substance abuse</p>
.2	<p>Dependence syndrome</p> <p>A cluster of behavioural, cognitive, and physiological phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state.</p> <p>The dependence syndrome may be present for a specific psychoactive substance (e.g. tobacco, alcohol, or diazepam), for a class of substances (e.g. opioid drugs), or for a wider range of pharmacologically different psychoactive substances.</p> <p>Chronic alcoholism Dipsomania Drug addiction</p>
.3	<p>Withdrawal state</p> <p>A group of symptoms of variable clustering and severity occurring on absolute or relative withdrawal of a psychoactive substance after persistent use of that substance. The onset and course of the withdrawal state are time-limited and are related to the type of psychoactive substance and dose being used immediately before cessation or reduction of use. The withdrawal state may be complicated by convulsions.</p>
.4	<p>Withdrawal state with delirium</p> <p>A condition where the withdrawal state as defined in the common fourth character .3 is complicated by delirium as defined in F05.-. Convulsions may also occur. When organic factors are also considered to play a role in the etiology, the condition should be classified to F05.8.</p> <p>Delirium tremens (alcohol-induced)</p>
.5	<p>Psychotic disorder</p>

	<p>A cluster of psychotic phenomena that occur during or following psychoactive substance use but that are not explained on the basis of acute intoxication alone and do not form part of a withdrawal state. The disorder is characterized by hallucinations (typically auditory, but often in more than one sensory modality), perceptual distortions, delusions (often of a paranoid or persecutory nature), psychomotor disturbances (excitement or stupor), and an abnormal affect, which may range from intense fear to ecstasy. The sensorium is usually clear but some degree of clouding of consciousness, though not severe confusion, may be present.</p> <p>Alcoholic:</p> <ul style="list-style-type: none"> · hallucinosis · jealousy · paranoia · psychosis NOS <p>Excludes: alcohol- or other psychoactive substance-induced residual and late-onset psychotic disorder (F10-F19 with common fourth character .7)</p>
.6	<p>Amnesic syndrome</p> <p>A syndrome associated with chronic prominent impairment of recent and remote memory. Immediate recall is usually preserved and recent memory is characteristically more disturbed than remote memory. Disturbances of time sense and ordering of events are usually evident, as are difficulties in learning new material. Confabulation may be marked but is not invariably present. Other cognitive functions are usually relatively well preserved and amnesic defects are out of proportion to other disturbances.</p> <p>Amnesic disorder, alcohol- or drug-induced Korsakov's psychosis or syndrome, alcohol- or other psychoactive substance-induced or unspecified</p> <p>Excludes: nonalcoholic Korsakov's psychosis or syndrome (F04)</p>
.7	<p>Residual and late-onset psychotic disorder</p> <p>A disorder in which alcohol- or psychoactive substance-induced changes of cognition, affect, personality, or behaviour persist beyond the period during which a direct psychoactive substance-related effect might reasonably be assumed to be operating. Onset of the disorder should be directly related to the use of the psychoactive substance. Cases in which initial onset of the state occurs later than episode(s) of such substance use should be coded here only where clear and strong evidence is available to attribute the state to the residual effect of the psychoactive substance. Flashbacks may be distinguished from psychotic state partly by their episodic nature, frequently of very short duration, and by their duplication of previous alcohol- or other psychoactive substance-related experiences.</p> <p>Alcoholic dementia NOS Chronic alcoholic brain syndrome</p>

	<p>Dementia and other milder forms of persisting impairment of cognitive functions</p> <p>Flashbacks</p> <p>Late-onset psychoactive substance-induced psychotic disorder</p> <p>Posthallucinogen perception disorder</p> <p>Residual:</p> <ul style="list-style-type: none"> · affective disorder · disorder of personality and behaviour <p>Excludes: alcohol- or psychoactive substance-induced:</p> <ul style="list-style-type: none"> · Korsakov's syndrome (F10-F19 with common fourth character .6) · psychotic state (F10-F19 with common fourth character .5)
.8	Other mental and behavioural disorders
.9	Unspecified mental and behavioural disorder

Appendix 2: Alcohol related deaths, definitions

The figures for alcohol related deaths presented in this report are taken from data gathered by the Office for National Statistics (ONS). As described in the ONS Statistical Bulletin on alcohol related deaths for 2012³⁷, and the ONS statement on quality and methodology in mortality statistics³⁸ the ONS definition of ‘alcohol related deaths’ only includes those cases where the ‘underlying cause’ (i.e. the cause which was identified by the attending doctor as having initiated the sequence of events that led to death) is regarded as being most directly due to alcohol consumption. The ICD-10 codes (see Appendix 1) for these causes are shown in Table 5 below.

‘Alcohol related deaths’ by this definition do not, therefore, include other diseases where alcohol has been shown to have some causal relationship, such as cancers of the mouth, oesophagus and liver. The definition includes all deaths from chronic liver disease and cirrhosis (excluding biliary cirrhosis), even when alcohol is not specifically mentioned on the death certificate. Apart from deaths due to poisoning with alcohol (accidental, intentional or undetermined), this definition excludes any other external causes of death, such as road traffic and other accidents.

The definition of alcohol related deaths used in this report is consistent with that used in previous reports.

Table 5: alcohol-related deaths, ICD-10 codes used by the ONS

Condition	Code
Mental and behavioural disorders due to use of alcohol	F10
Degeneration of nervous system due to alcohol	G31.2
Alcoholic polyneuropathy	G62.1
Alcoholic cardiomyopathy	I42.6
Alcoholic gastritis	K29.2
Alcoholic liver disease	K70
Chronic hepatitis, not elsewhere classified	K73
Fibrosis and cirrhosis of liver	K74 (excluding K74.3- K74.5: Biliary cirrhosis)
Alcohol induced chronic pancreatitis	K86.0

³⁷ Office for National Statistics (2014) Alcohol-related deaths in the United Kingdom, registered in 2012. London, The Stationery Office. http://www.ons.gov.uk/ons/dcp171778_353201.pdf

³⁸ Office for National Statistics (2014) Mortality statistics in England and Wales, quality and methodology information. Newport, The Stationery Office.

Accidental poisoning by and exposure to alcohol	X45
Intentional self-poisoning by and exposure to alcohol	X65
Poisoning by and exposure to alcohol, undetermined intent	Y15

Appendix 3: Hospital admissions for poisoning by illicit drugs, definitions

For details of definitions of ‘primary’ or ‘any’ diagnosis, and of clinical coding as it relates to hospital admissions see Appendix 1. The ICD-10 codes used to define drug related hospital admissions in this report are shown in Table 6. Note that codes related to external causes (found in Chapter 20 of the ICD-10, e.g. X60-64, Intentional self-poisoning by drugs, medicaments and biological substances) are coded in secondary positions only for hospital admissions and therefore are not included in this report where admissions in the primary position only are described.

The definitions of hospital admissions for poisoning by illicit drugs are consistent with those used in previous reports.

Table 6: ICD-10 codes used to define hospital admissions for poisoning by illicit drugs in the primary position

Condition	Code
Mental and behavioural disorders due to use of opioids	F11
Mental and behavioural disorders due to use of cannabinoids	F12
Mental & behavioural disorders due use sedatives/hypnotics	F13
Mental and behavioural disorders due to use of cocaine	F14
Men & behav dis due use oth stims inc caffeine	F15
Mental and behavioural disorders due to use of hallucinogens	F16
Mental & behavioural disorders due use volatile solvents	F18
Mental & behav'l disorders due multiple/psychoact drug use	F19
Poisoning by narcotics and psychodysleptics [hallucinogens]	T40
Poisoning by Benzodiazepines	T42.4
Poisoning by psychostimulants with abuse potential	T43.6

Appendix 4: Drug related deaths, definitions

The figures for drug related deaths presented in this report are taken from data gathered by the Office for National Statistics (ONS). For details of how mortality data are gathered by the ONS see Appendix 2. The ONS reports two measures of drug related death. ‘Deaths related to drug poisoning’ includes all deaths in which the underlying cause references an ICD-10 related to both legal and illegal drugs (not including alcohol and tobacco). ‘Deaths related to drug misuse’ is the subset of drug poisoning deaths which includes all deaths in which ICD-10 codes F11-F16 and F18-19 (i.e. those codes which specifically refer to illicit drugs) and the remaining deaths coded as drug poisoning where an illicit drug was mentioned on the death record³⁹. The ICD-10 codes used by the ONS to define drug related deaths are shown in Table 7.

‘Illicit drugs’ are defined in terms of the 1971 Misuse of Drugs Act, which may be amended by the Home Secretary to add or remove drugs. For the 2013 figures for deaths from drug misuse, the ONS used a list of ‘illicit drugs’ that contained 20 newly controlled drugs compared to the previous year⁴⁰. The ONS also recalculated the figures for deaths from drug misuse for previous years. This new methodology changed the number of deaths in Wales that are considered to be caused by drug misuse. For example, for 2012 the number of deaths rose from 131 using the old methodology to 135. Therefore figures presented in this report may differ from figures presented in previous reports. A list of substances added to the definition of ‘illicit drugs’ for the ONS report on drug related deaths in 2013 is given in Table 8.

Table 7: ICD-10 codes used by the ONS to define ‘drug related deaths’.

Condition	Code
Mental and behavioural disorders due to drug use (excluding alcohol and tobacco)	F11–F16, F18–F19
Accidental poisoning by drugs, medicaments and biological substances	X40–X44
Intentional self-poisoning by drugs, medicaments and biological substances	X60–X64
Assault by drugs, medicaments and biological substances	X85
Poisoning by drugs, medicaments and biological substances, undetermined intent	Y10–Y14

³⁹ Office for National Statistics (2014) Deaths Related to Drug Poisoning in England and Wales, 2013. London, The Stationery Office

⁴⁰ Office for National Statistics (2014) Deaths related to drug poisoning in England and Wales. Quality and methodology information. Newport, The Stationery Office

Table 8: Substances added to the list of ‘illicit drugs’ by the ONS, 2014

1-(benzofuran-5-yl)-N-methylpropan-2-amine
1-(Benzofuran-5-yl)-propan-2-amine
1-(Benzofuran-6-yl)-propan-2-amine
2-(1H-Indol-5-yl)-1-methylethylamine
2-diphenylmethylpyrrolidine
4-Methoxymethcathinone
APB
Khat
Lisdexamphetamine
Tapentadol
Tramadol
Zaleplon
Zopiclone
Fluoromethamphetamine
MDDA
Cannabinoid
Demoxepam
Phenobarbital
Remifentanyl
Zolpidem

As described above, the term “new psychoactive substances” has been legally defined by the European Union as a new narcotic or psychotropic drug, in pure form or in preparation, that is not scheduled under the Single Convention on Narcotic Drugs of 1961 or the Convention on Psychotropic Substances of 1971, but which may pose a public health threat comparable to that posed by substances listed in those conventions. (Council of the

European Union decision 2005/387/JHA). In 2013⁴¹, the Office for National Statistics published a list of substances mentioned on death certificates in England and Wales. These substances are listed in Table 9.

Table 9: Substance listed by the Office for National Statistics as ‘new psychoactive substances’

1-(Benzofuran-6-yl)-propan-2-amine
2-(1H-Indol-5-yl)-1-methylethylamine
4-Fluoroephedrine
4-Fluoromethcathinone
4-Methylamphetamine
4-Methylethcathinone
Alpha-methyltryptamine
BZP
Cathinone
Desoxypipradrol
Fluoromethcathinone
GHB
Khat
Legal high
Mephedrone
Methiopropamine
Methoxetamine
Methylenedioxypropylone
Methylone
Synthetic cannabinoid

⁴¹ Office for National Statistics (2013) Deaths involving new psychoactive substances, 2012.
<http://www.ons.gov.uk/ons/search/index.html?newquery=new+psychoactive>

TFMPP

Appendix 5: Confidence intervals

The following description and definition of Confidence Intervals as they are used in public health is taken from the Association of Public Health Observatories Technical Briefing 3:

Confidence intervals

A confidence interval is a range of values that is used to quantify the imprecision in the estimate of a particular value. Specifically it quantifies the imprecision that results from random variation in the estimation of the value; it does not include imprecision resulting from systematic error (bias).

In many studies the source of this random variation is sampling. Even in the best designed studies there will be random differences between the particular sample group selected and the overall target population of inference.

Any measurement taken from the sample group therefore provides an imprecise estimate of the true population value. In public health many indicators are based on what can be considered to be complete data sets and not samples, e.g. mortality rates based on death registers. In these instances the imprecision arises not as a result of sampling variation but of 'natural' variation. The indicator is considered to be the outcome of a stochastic process, i.e. one which can be influenced by the random occurrences that are inherent in the world around us. In such instances the value actually observed is only one of the set that could occur under the same circumstances. Generally in public health, it is the underlying circumstances or process that is of interest and the actual value observed gives only an imprecise estimate of this 'underlying risk'.

The width of the confidence interval depends on three things:

1. The sample size from which the estimate is derived (or population size if derived from a complete data set). Larger samples give more precise estimates with smaller confidence intervals.
2. The degree of variability in the phenomenon being measured. Fortunately, observed phenomena often are known, or assumed, to follow certain probability distributions, such as the Poisson or Binomial. This allows us to express the amount of variability mathematically, and build it into the confidence interval formulae.
3. The required level of confidence - this is an arbitrary value set by the analyst giving the desired probability that the interval includes the true value. In medicine and public health the conventional practice is to use 95 per cent confidence but it is not uncommon to see alternatives. Within the APHO community 99.8 per cent confidence intervals are increasingly being used alongside 95 per cent intervals to reflect the control limits used in Statistical Process Control approaches. Increasing the level of confidence results in wider limits.

For a given level of confidence, the wider the confidence interval, the greater the uncertainty in the estimate.

Appendix 6: Calculating population rates of hospital admission, mortality and other public health indicators

The following description and definition of how population rates are calculated and used in public health has been adapted from the Association of Public Health Observatories Technical Briefing 3, which can be accessed here: www.apho.org.uk/resource/view.aspx?RID=48457

The most basic measure used in public health is a count of events such as deaths or admissions to hospital. However, to properly investigate the distribution of disease and risk factors and to make comparisons between different populations, the population at risk in which the count was observed must also be taken into consideration. Dividing the count of events by the population at risk and multiplying by given number (for example, 100,000) gives a 'crude rate' of these events within a population that can be compared between areas which may have very different population sizes. In particular, disease and mortality rates may vary widely by age. Such variation complicates any comparisons made between two populations that have different age structures. For example, consider two areas A and B with equal-sized populations and identical crude all-age death rates. At first glance they appear to have a similar mortality experience.

Suppose, however, that area A has a younger age structure than area B. Given that mortality rates increase with age, one would expect the older population in area B to experience more deaths. The fact that the two have identical rates means that the younger population in area A must have a relatively worse mortality experience.

The most comprehensive way of comparing the disease experience of two populations is to present and compare their age-specific rates. However, when the number of populations being compared increases, the volume of data that needs to be considered quickly becomes unmanageable. What is needed is a single, easily interpreted, summary figure for each population that is adjusted to take into account its age structure. Such summary figures are calculated using age standardisation methods.

One method of calculating a summary figure is 'direct standardisation'. The age-specific rates of the subject population are applied to the age structure of the standard population. This gives the overall rate that would have occurred in the subject population if it had the standard age-profile.

The European Standard Population (ESP) is often used for direct standardisation. This is a hypothetical population structure which does not change and is the same for both genders. This report uses the 2013 ESP, published by Eurostat. Detailed information and guidance on the 2013 ESP has been published by the UK's Office for National Statistics and can be found here: <http://www.ons.gov.uk/ons/guide-method/user-guidance/health-and-life-events/revised-european-standard-population-2013--2013-esp-/index.html>.

Appendix 7: Problem drug use: definitions and estimations of prevalence

'Problem drug use' (PDU) is an indicator reported by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) on the basis of national reports. The definition of PDU used for the estimates presented in this report is 'injecting drug use or long duration / regular use of opioids, cocaine and/or amphetamines'⁴². This definition specifically includes regular or long-term use of prescribed opioids such as methadone but does not include their rare or irregular use nor the use of other drugs, such as ecstasy or cannabis⁴².

Estimating the prevalence of PDU presents considerable challenges, since a substantial proportion of those engaging in what is a heavily socially stigmatised activity may not be known to any services and therefore there may be no record of their use available. To address these issues a number of statistical techniques have been developed. The figures described in this report were derived from a study using the 'capture-recapture' method, a well-established approach that has been used to generate previous PDU estimates for Wales and the UK. Capture-recapture methods involve modelling interactions between datasets containing the substance misuse population that is 'visible' to health, treatment or criminal justice services to generate statistical estimates for the 'hidden' population who are not in contact with any service. The source datasets used were records of police arrests, engagement with drug intervention programmes managed by probation services and referrals to substance misuse treatment.

The traditional statistical method to estimate how many drug users have not been 'captured' on any database is via the use of loglinear analyses, a technique which typically fits a series of different models to the data. The model deemed optimal via some criteria is used to obtain a 'maximum likelihood' estimate of 'uncaptured' drug users.

Whilst this approach is still used by many researchers, there is current debate within the field of drug misuse estimation over the possibility that recently developed Bayesian techniques for population estimation, which calculate an estimate of the uncaptured drug users using an average across all models, and thus formally accounting for model uncertainty within the population estimate⁴³. The figures presented in this report are those derived from applying Bayesian techniques to the data. It should be noted that these estimates are substantially higher than estimates previously reported using loglinear techniques.

Table 8 presents figures derived from a Bayesian analysis of capture recapture data gathered in 2009-10.

⁴² EMCDDA (2010), Statistical bulletin 2010: Problem drug use indicator – overview. Lisbon, EMCDDA <http://www.emcdda.europa.eu/www/advancedsearch.cfm>

⁴³ King R, Bird SM, Overstall A, Hay G, Hutchinson SJ. Injecting drug users in Scotland, 2006: Listing, number, demography, and opiate-related death-rates. *Addict Res Theory* 2013; 21(3):235-246

Table 10: Prevalence of Problem Drug Use (PDU) derived from an analysis of capture recapture data, 2009-10, with confidence intervals, by gender, age and substance use (C/C=cocaine and/or crack cocaine use; Both=opioid and cocaine/crack cocaine use)

Region	Total	Female, 15-29			Male, 15-29			Female, 30-64			Male, 30-64		
		Opioid	C/C	Both	Opioid	C/C	Both	Opioid	C/C	Both	Opioid	C/C	Both
BCU	3886	200	134	11	511	1073	43	292	39	12	1124	371	74
	(2989, 4789)	(137, 275)	(63, 221)	(9, 13)	(372, 666)	(687, 1505)	(37, 50)	(218, 385)	(19, 63)	(11, 15)	(888, 1354)	(213, 537)	(68, 82)
Hywel Dda	1641	104	56	6	232	417	32	111	42	4	333	283	20
	(1194, 2478)	(78, 143)	(20, 103)	(5, 10)	(182, 329)	224, 691)	(27, 40)	(78, 163)	(17, 74)	(3,6)	(265, 470)	(144, 480)	16, 26)
Powys	709	27	41	2	76	268	4	20	7	1	164	90	9
	(224, 1427)	(16, 47)	(4, 108)	(2, 4)	(28, 152)	(45, 619)	(3, 8)	(10, 41)	(1, 21)	(1, 2)	(65, 316)	(11, 217)	(7,14)
ABMU	11155	925	320	21	2097	2327	63	733	115	9	3015	1469	60
	(5869, 16811)	(507, 1412)	(107, 583)	(13, 31)	(1131, 3122)	(935, 3925)	(43, 87)	(402, 1124)	(35, 211)	(5, 15)	(1650, 4482)	(573, 2506)	(40, 82)
Cwm Taf	2537	267	49	5	432	448	14	285	14	2	827	171	23
	(1485, 5170)	(147, 518)	(11, 115)	(4, 9)	(242, 852)	(180, 1006)	(9, 23)	(153, 564)	(4, 29)	(1, 6)	(480, 1663)	(61, 397)	(16, 36)
Cardiff & Vale	6399	336	186	24	1195	1791	69	318	80	22	1495	804	79
	(3505, 9937)	(196, 510)	(65, 341)	(20, 30)	(638, 1852)	(771, 3051)	(56, 85)	(188, 482)	-32,143	(19, 27)	(859, 2245)	(322, 1415)	(67, 95)
Aneurin Bevan	4117	238	259	13	513	1506	57	213	55	15	765	430	52
	(2488, 6405)	(128, 394)	(74, 515)	(10, 19)	(308, 820)	(704, 2561)	(50, 67)	(115, 361)	(14, 115)	(13, 18)	(507, 1150)	(174, 768)	(46, 60)
Total	30443	2097	1046	83	5057	7829	283	1972	352	66	7722	3619	318
	(23172, 38809)	(1551, 2718)	(659, 1464)	(69, 97)	(3735, 6485)	(5494, 10334)	(250, 318)	(1480, 2531)	(224, 492)	(57, 76)	(5882, 9771)	(2413, 4952)	(283, 352)

