

Statistical bulletin

# Deaths related to drug poisoning in England and Wales: 2017 registrations

Deaths related to drug poisoning in England and Wales from 1993 onwards, by cause of death, sex, age and substances involved in the death.



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# 1 . Main points

- There were 3,756 deaths relating to drug poisoning in England and Wales in 2017, a rate of 66.1 deaths per 1 million population, and similar to levels seen in 2016.
- Two-thirds of drug-related deaths were related to drug misuse, accounting for 43.7 deaths per 1 million in 2017.
- Males' mortality rate decreased from 91.4 deaths per 1 million population in 2016 to 89.6 in 2017, while the female rate increased for the eighth consecutive year to 42.9 deaths per 1 million population; neither changes were significant.
- The North East had a significantly higher rate of deaths relating to drug-misuse than all other English regions; London had a significantly lower rate.
- Deaths involving cocaine and fentanyl continued to rise while deaths related to new psychoactive substances halved in 2017.

## 2 . Things you need to know about this release

Figures are presented for deaths related to drug poisoning (involving controlled and/or non-controlled drugs) and drug misuse in England and Wales from 1993 onwards. The definition of a drug poisoning death is based on the [International Classification of Diseases \(ICD\)](#) code assigned as the underlying cause of death. The definition of a drug misuse death is one where either the underlying cause is drug abuse or drug dependence, or the underlying cause is drug poisoning and any of the substances controlled under the [Misuse of Drugs Act 1971](#) are involved. More details of the definitions and ICD codes can be found in the [Quality and Methodology Information report](#).

Drug poisoning deaths involve a broad spectrum of substances, including controlled and non-controlled drugs, prescription medicines (either prescribed to the individual or obtained by other means) and over-the-counter medications. As well as deaths from drug abuse and dependence, figures include accidents and suicides involving drug poisonings as well as complications of drug abuse (such as deep vein thrombosis or septicemia from intravenous drug use). They do not include other adverse effects of drugs (for example, anaphylactic shock), or accidents caused by an individual being under the influence of drugs. More than half of all drug poisoning deaths involve more than one drug and sometimes also alcohol, and it is often not possible to tell which substance was primarily responsible for the death.

The figures presented show deaths registered each year, rather than deaths occurring each year. Almost all drug-related deaths are certified by a coroner. Due to the length of time it can take for an inquest to be completed, around half of drug-related deaths registered in 2017 will have occurred in earlier years, and many deaths that occurred in 2017 will not yet be included in the figures. See the "Impact of registration delays on drug-related deaths" section for more information.

At England and Wales level, general trends in drug-related deaths are broadly equal, whether the data are analysed by year of occurrence or year of registration. Registration delays can have more influence on figures for smaller geographical areas such as regions and local authorities, so these should be treated with caution. Extra information is provided in the commentary where differences in the trends do exist. See the [mortality metadata \(PDF, 2.4MB\)](#) for more information on registration delays.

## 3 . Statisticians quote

"The figures published today show that the level of drug poisoning deaths in 2017 remained stable.

"However, despite deaths from most opiates declining or remaining steady, deaths from fentanyl continued to rise, as did cocaine deaths, which increased for the sixth consecutive year."

"Our new [in-depth study](#) of coroners' records report shows that there are common characteristics of drug-related deaths.

"These findings combined can be used to develop initiatives and policies that are targeted to support those at greatest risk of drug addiction."

Ellie Osborn, Health Analysis Statistician, Office for National Statistics

## **4 . Drug poisoning deaths in 2017 remained stable**

There were 3,756 deaths relating to drug poisoning in 2017, a rate of 66.1 deaths per 1 million population. These were the highest figures since the beginning of the time series, although deaths in 2016 were at a similar level with 65.8 deaths per 1 million population (3,744 deaths).

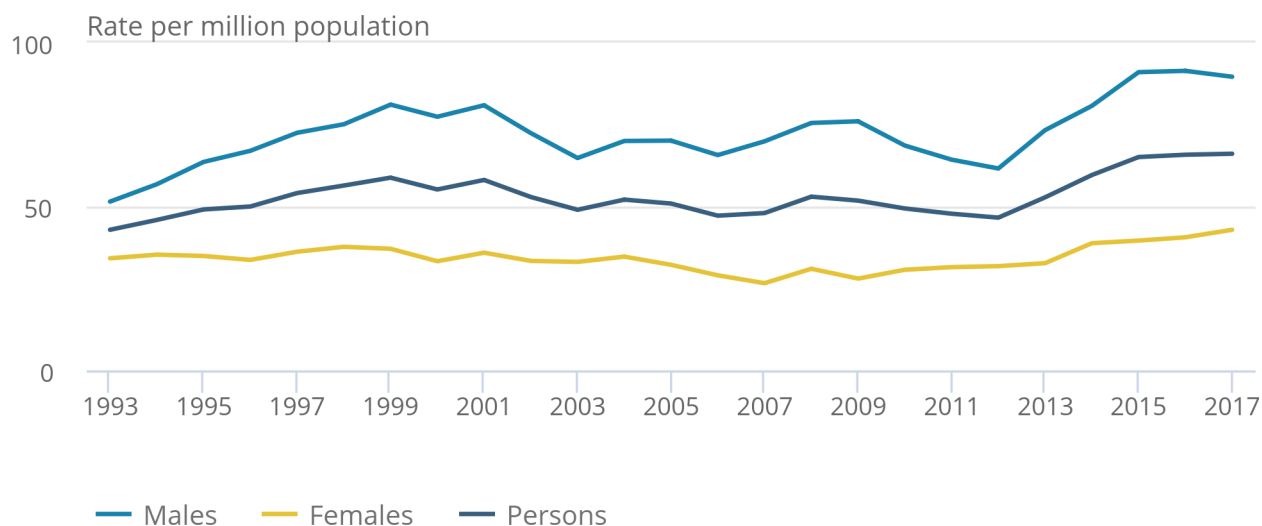
Between 2012 and 2015, drug-related deaths rose by a statistically significant amount each year, driven mostly by heroin deaths (visit our [previous publications](#) for more information). Rates have only increased slightly since 2015 and stayed broadly stable, which is shown in Figure 1.

**Figure 1: Age-standardised mortality rates for deaths related to drug poisoning, by sex, registered between 1993 to 2017**

England and Wales

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England and Wales



Source: Office for National Statistics

Notes:

1. Age-standardised mortality rates per 1 million population, standardised to the 2013 European Standard Population.
2. Cause of death was defined using the International Classification of Diseases, Ninth Revision (ICD-9) for the years 1993 to 2000 and Tenth Revision (ICD-10) from 2001 onwards. More details can be found in the Quality and Methodology Information.
3. Figures are for deaths registered, rather than deaths occurring in each calendar year.
4. Figures for England and Wales include deaths of non-residents.

Around two-thirds of drug-related deaths in 2017 were male (2,521 deaths compared with 1,235 female deaths). The male age-standardised rate decreased from 91.4 deaths per 1 million population in 2016 to 89.6 in 2017, the first decrease since 2012. In contrast, the female age-standardised rate increased for the eighth consecutive year, although the changes for both males and females between 2016 and 2017 were not statistically significant.

## 5 . Rate of deaths relating to drug misuse in males falls for the first time since 2012

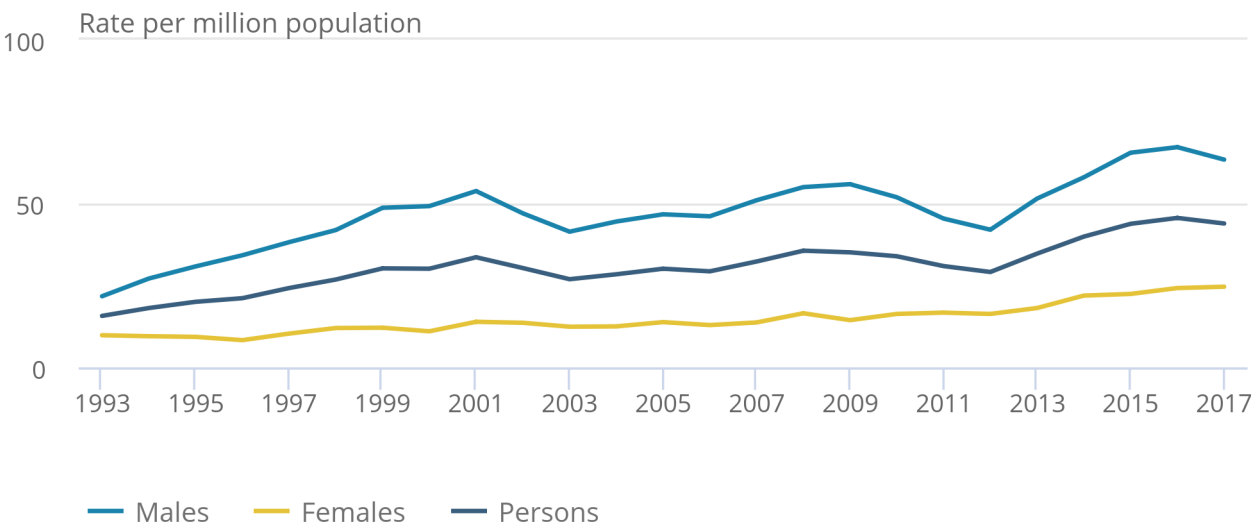
As with previous years, most drug poisoning deaths in 2017 were from drug misuse, which accounted for 2,503 deaths out of 3,756, or 67%. The rate of death relating to drug misuse in 2017 was 43.9 deaths per 1 million population; although this was lower than the rate of 45.6 found in 2016, the difference is not statistically significant.

**Figure 2: Age-standardised mortality rates for deaths related to drug misuse, by sex, registered between 1993 to 2017**

England and Wales

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England and Wales



Source: Office for National Statistics

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The number of male deaths relating to drug misuse was 1,794, or 71% of all male drug poisonings, which was higher than the proportion of female drug misuse deaths (57%, or 709 deaths). The rate in males decreased from 67.2 deaths per 1 million population in 2016 to 63.4 in 2017. In contrast, the rate of drug misuse deaths in females rose slightly to 24.6 deaths per 1 million population in 2017 from 24.2 in 2016. Neither the change in male nor the change in female drug misuse deaths was statistically significant.

The highest rate of deaths relating to drug misuse continued to be in people aged 40 to 49 years, with 103.3 deaths per 1 million population, decreasing from 108.2 deaths in 2016. Rates for those aged 50 to 69 years and those aged 70 years and over increased in 2017 to 42.2 deaths and 12.5 deaths per 1 million population, respectively, although these increases were not significantly significant.

## **6 . North East had the highest rate of drug misuse deaths**

Rates of drug misuse in England were highest in three northern regions: North East, North West and Yorkshire and The Humber, with 83.2, 64.7 and 54.5 deaths per 1 million population, respectively. The rate in the North East was statistically significantly higher than each of the other regions of England. London had the lowest rate of deaths, which saw a statistically significant reduction from 32.3 deaths per 1 million population in 2016 to 24.6 in 2017. The rate in London in 2017 was significantly lower than each of the other regions of England.

Both England and Wales saw a reduction from the rate in 2016 to 42.7 and 64.5 deaths per 1 million population, respectively. Neither of these decreases were significant.

### **Figure 3: Age-standardised mortality rate for deaths related to drug misuse, by country and region, registered in 2017**

#### **Notes:**

1. Age-standardised mortality rates per 1 million population, standardised to the 2013 European Standard Population.
2. Cause of death was defined using the International Classification of Diseases, Ninth Revision (ICD-9) for the years 1993 to 2000 and Tenth Revision (ICD-10) from 2001 onwards. More details can be found in the Quality and Methodology Information.
3. Figures are for deaths registered, rather than deaths occurring in each calendar year.
4. Deaths of persons usually resident in each country and region, based on boundaries as of May 2018.

More data by region, including overall drug poisoning rates, can be found in the accompanying dataset [Deaths related to drug poisoning, England and Wales, table 6](#). Smaller geographies can be found in the [Drug-related deaths by local authority, England and Wales dataset](#).

## **7 . Majority of drug-related deaths are from accidental poisoning**

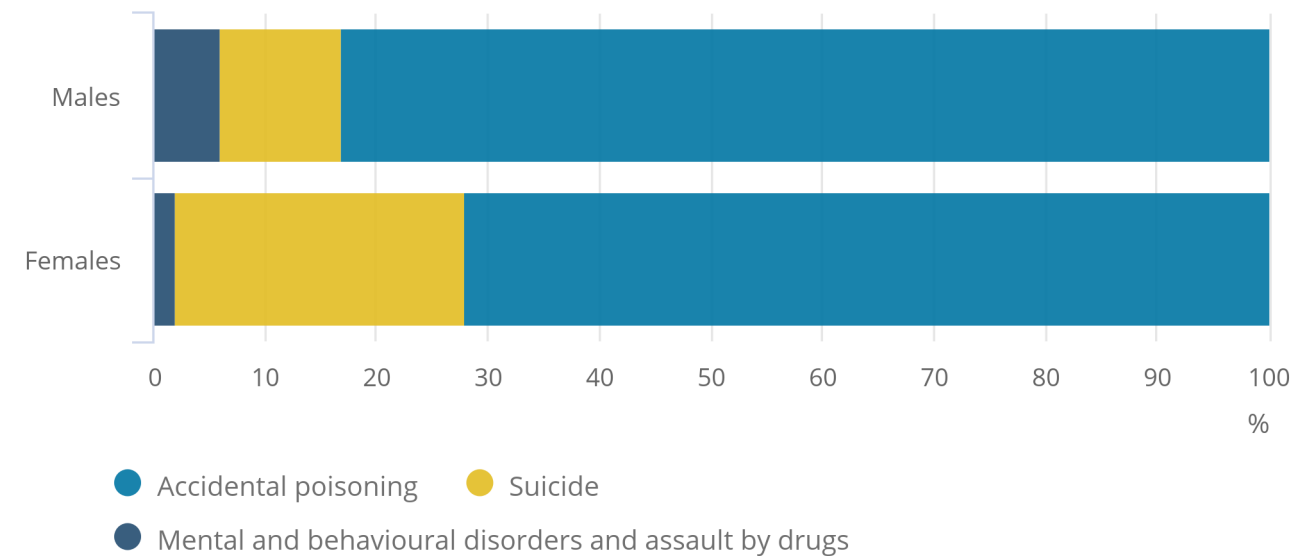
The majority of deaths from drug poisoning or misuse in 2017 involved accidental poisoning, rather than mental and behavioural disorders, suicide (intentional poisoning or death from undetermined intent) or assault. In England and Wales, 74% of all drug poisonings (79% for males and 65% for females) and 80% of drug misuse deaths (83% for males and 72% for females) were attributed to this category.

Figure 4: Percentage of drug misuse deaths, by underlying cause and sex, deaths registered in 2017

England and Wales

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England and Wales



Source: Office for National Statistics

Notes:

1. Cause of death was defined using the International Classification of Diseases, Ninth Revision (ICD-9) for the years 1993 to 2000 and Tenth Revision (ICD-10) from 2001 onwards. More details can be found in the Quality and Methodology Information.
2. There are very few deaths from assault by drugs, so for presentation purposes, these have been combined with mental and behavioural disorders due to drug use.
3. Figures are for deaths registered, rather than deaths occurring in each calendar year.
4. Deaths of persons usually resident in each country and region, based on boundaries as of May 2018.

The proportion of drug-related deaths that were suicides was 34% for females, which is double the proportion for males, at 17%. Similar results can be found in drug misuse, where 26% of female deaths were intentional self-poisoning or undetermined intent, compared with 11% for males. The [Suicides in the UK](#) bulletin also shows that women have a higher proportion of drug-related suicides compared with males.

Data on deaths relating to drug poisoning and misuse by age, sex and cause can be found in the accompanying dataset, [Deaths related to drug poisoning, England and Wales, table 1](#).

## 8 . Deaths from selected substances

This section covers the latest trends in deaths from selected drugs, focusing on 2017; for longer time series and more breakdowns by substance, please see the [data tables](#) with this publication.

### **Number of deaths involving heroin and morphine decreased for the first time since 2012**

In 2017, there were 1,164 deaths involving heroin and morphine, a decline of 4% (45 deaths) and the first decline since 2012. The National Crime Agency (2018) reports that heroin purity levels have remained stable between 2016 and 2017.

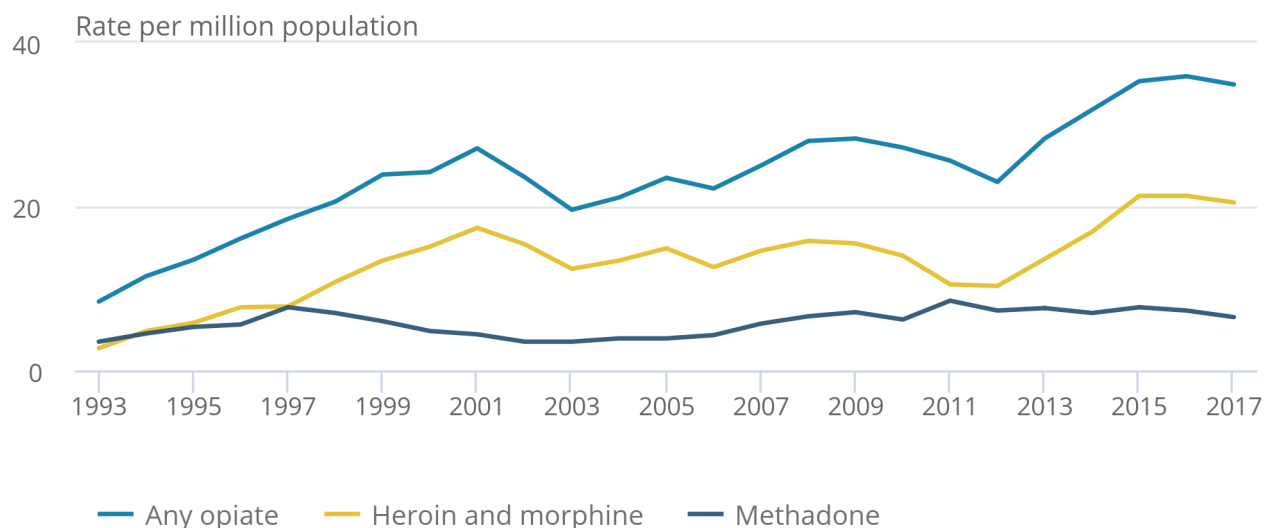


**Figure 5: Age-standardised mortality rates for deaths by all opiates, heroin and morphine, and methadone, registered 1993 to 2017**

England and Wales

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England and Wales



Source: Office for National Statistics

**Notes:**

1. Age-standardised mortality rates per 1 million population, standardised to the 2013 European Standard Population.
2. Cause of death was defined using the International Classification of Diseases, Ninth Revision (ICD-9) for the years 1993 to 2000 and Tenth Revision (ICD-10) from 2001 onwards. More details can be found in the Quality and Methodology Information.
3. Figures are for deaths registered, rather than deaths occurring in each calendar year.
4. Figures for England and Wales include deaths of non-residents.

Deaths involving heroin and morphine had increased from 579 deaths in 2012 to 1,209 deaths in 2016; the increase between 2012 to 2015 followed the “heroin drought”, which occurred in 2010 to 2011. This was subsequently followed by increased purity of heroin, thought to be one factor in increased overdoses. See the [Deaths related to drug poisoning in England and Wales: 2015 registrations](#) bulletin for more information on the heroin drought and the effect it had on trends in heroin purity.

Figure 6 shows the trend in deaths between 1993 and 2017, where a specific substance was mentioned on the death certificate, with or without a combination of other drugs and alcohol.

## Figure 6: Age-standardised mortality rates for selected substances, deaths registered between 1993 to 2017

### England and Wales

#### Notes:

1. Age-standardised mortality rates per 1 million population, standardised to the 2013 European Standard Population.
2. Rates are not calculated when the number of deaths is fewer than ten.
3. Codeine is not from compound formulation such as co-codamol; paracetamol includes compounds and dextropropoxyphene mentioned without paracetamol (as dextropropoxyphene is very rarely ingested except in combination with paracetamol).
4. Cause of death was defined using the International Classification of Diseases, Ninth Revision (ICD-9) for the years 1993 to 2000 and Tenth Revision (ICD-10) from 2001 onwards. More details can be found in the Quality and Methodology Information.
5. Figures are for deaths registered, rather than deaths occurring in each calendar year.
6. Figures for England and Wales include deaths of non-residents.

### Deaths from fentanyl continued to rise in 2017

Despite deaths from most opiates declining or remaining steady, fentanyl deaths have increased by 29%, rising from 58 deaths in 2016 to 75 deaths in 2017. Fentanyl and its analogues have been found mixed with heroin, causing accidental overdose in users. Using evidence from similar patterns in the US and Canada, the [National Crime Agency](#) reason that the addition of fentanyls to heroin is possibly due to their cheaper cost and higher potency. [Public Health England issued a warning to heroin users and health officials](#) regarding the contamination of heroin with potent synthetic opiates such as fentanyl. Carfentanyl, a synthetic opiate much more potent than fentanyl, was first seen mentioned in death certificates in 2017 and accounted for 27 deaths, that is, 87% of the 31 deaths related to fentanyl analogues in 2017.

Codeine deaths increased from 131 in 2016 to 156 in 2017, an increase of nearly 20%. However, most other opiate-related deaths have decreased, with buprenorphine, methadone and oxycodone recording fewer deaths in 2017 than in 2016. Tramadol deaths have remained stable, with 184 and 185 deaths in 2016 and 2017, respectively.

### Deaths from new psychoactive substances (NPS) halve in 2017

There were 61 deaths from new psychoactive substances (NPS, or so-called "legal highs") in 2017, which equates to an age-standardised rate of 1.0 death per 1 million population. This is a statistically significant decrease from the 123 deaths in 2016 (2.1 per 1 million). The government introduced the [Psychoactive Substances Act](#) in 2016, which established a blanket ban on the importation, production or supply of most psychoactive substances not already covered by the law.

## Cocaine deaths rise for the sixth consecutive year

There were 432 deaths related to cocaine in 2017, compared with 371 deaths in 2016. The age-standardised rate in 2017 was 7.5 deaths per 1 million population, which is the highest rate recorded since the start of the time series. It is not possible to distinguish the form of cocaine (such as, powder cocaine or crack cocaine) in relation to these deaths. Deaths mentioning cocaine show a rising trend since 2011, in which they have increased from 1.9 deaths per 1 million population.

Cocaine is the second most commonly used drug, according to the Crime Survey for England and Wales, after cannabis, although the survey only covers cocaine, amphetamine and ecstasy among class A drugs. The recent [European Drug Report](#) noted that rising production of cocaine in its origin countries and higher drug purity have been felt in Europe. Further, the report identified England and Wales as the highest users of cocaine in Europe (based on recent use among young adults).

The National Crime Agency (2018) reports that crack cocaine purity has continued to rise for the fifth year and that purity at user level is at an all-time high, with little variance between wholesale and user level.

## Antidepressants and antipsychotics deaths increase

The numbers of deaths in 2017 from antipsychotics saw an increase of just over 5% from 2016, as did deaths from antidepressants, which equates to rates of 2.1 and 8.6 deaths per 1 million population, respectively. The majority of antidepressant drugs were from the tricyclic family, including amitriptyline and dothiepin. Deaths from selective serotonin reuptake inhibitors (SSRIs) increased slightly.

The number of deaths relating to zopiclone and zolpidem saw an increase in 2017 to 126 deaths from 94 deaths in 2016. Pregabalin deaths have seen a large increase for four consecutive years, from four deaths at its first appearance in the time series in 2009 to 136 deaths in 2017.

## 9 . Delays in registering deaths increased in England and Wales

In England and Wales, most drug-related deaths are certified by a coroner following an inquest and cannot be registered until the inquest is completed. This can take months or even years and we are not notified of the death until it is registered. In line with other mortality statistics, drug-related death figures are based on deaths registered in a particular year, rather than those occurring each year. This allows more timely publications, but can make trends difficult to interpret, especially for smaller geographical areas.

For all-cause deaths registered in 2017 in England and Wales, 5% occurred prior to 2017. The percentage is much higher when looking at deaths relating to drug poisonings: 50% occurred prior to 2017. Similarly, for drug misuse, 50% of all deaths registered in 2017 occurred in preceding years, a slight increase on 2016 registrations, where 47% of all misuse deaths occurred in the preceding years.

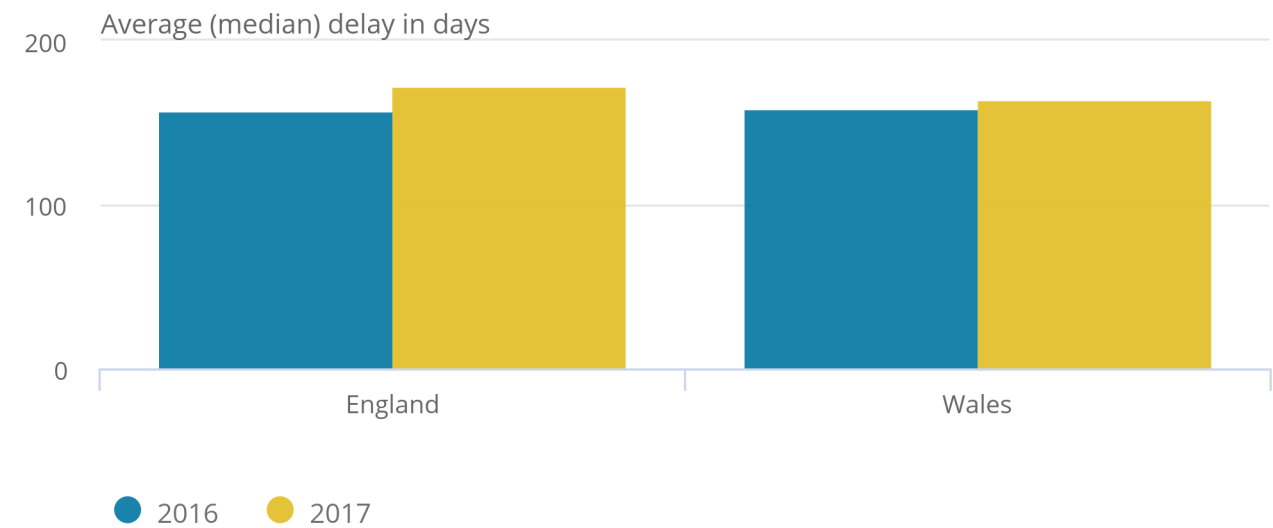
When calculating the average delay between occurrence and registration, the median is used rather than the mean average, as the median is not affected by rare cases where it takes many years for the death to be registered. In 2017, the median registration delay for England was 172 days for all drug poisonings. This was 10 days more than in 2016. For Wales, the delay also increased by 10 days from 157 days in 2016 to 167 days in 2017. For drug misuse deaths, the median delay in England rose by 14 days to 172 days in 2017, whereas Wales increased by 5.5 days to 165 days.

**Figure 7: Average registration delay for deaths relating to drug misuse, by country, deaths registered in 2016 and 2017**

England and Wales

Figure 7: Average registration delay for deaths relating to drug misuse, by country, deaths registered in 2016 and 2017

England and Wales



Source: Office for National Statistics

Notes:

1. The registration delay is calculated as the difference between the date each death occurred and the date it was registered, measured in days. The average delay is represented using the median.
2. Cause of death was defined using the International Classification of Diseases, Ninth Revision (ICD-9) for the years 1993 to 2000 and Tenth Revision (ICD-10) from 2001 onwards. More details can be found in the Quality and Methodology Information.
3. Figures are for deaths registered, rather than deaths occurring in each calendar year.
4. Deaths of persons usually resident in each country and region, based on boundaries as of May 2018.

Information about the longer time series of registration delays for drug-related deaths can be found in Section 9 of [last year's bulletin](#). A breakdown by local authority can be found in the datasets.

## 10 . Drug-related deaths in other countries

Figures on drug-related deaths in Scotland are available from the [National Records of Scotland](#). The latest figures available show that there were 934 deaths related to drug poisoning registered in 2017, which was 66 (8%) more than in 2016. Additional data on Scottish drug-related deaths are available from the [Information Services Division of NHS Scotland](#).

The latest figures from the Northern Ireland Statistics and Research Agency show that there were 126 deaths related to drug poisoning in 2016, a decrease of 13% from 2015.

Statistics for Europe are available from the [European Monitoring Centre for Drugs and Drug Addiction \(EMCDDA\)](#). The drug-induced deaths rate (for those aged 15 to 64 years) for the EU, Turkey and Norway was 20.3 deaths per 1 million population, less than one-third of the rate in England and Wales. Figures for other countries (which in turn influence the European rate) may not be comparable with those presented for England and Wales, due to differences in data collection methods and in the death registration system.

## 11 . Links to related ONS information

All the data used to compile the tables and charts in this bulletin can be downloaded in Excel format. Data on all drug-related deaths (including controlled and non-controlled drug poisonings) are also available in the same Excel file. An additional Excel file containing drug-related deaths by selected substances mentioned on the death certificate, without other drugs, and with or without alcohol is available. Finally, a third Excel document containing statistics on drug-related deaths by local authority can also be downloaded.

Special extracts and tabulations of drug-related deaths data for England and Wales are available to order (subject to legal frameworks, disclosure control, resources and the [ONS charging policy](#), where appropriate). User requested data will be also published. Enquiries should be made to the Mortality Analysis Team via email at [mortality@ons.gov.uk](mailto:mortality@ons.gov.uk) or by telephone on +44 (0)1633 651830.

We publish a wide range of mortality statistics, the most detailed of these being the [Deaths registered in England and Wales series](#), which contains a detailed breakdown of the deaths by sex, age-group and underlying cause of death, as well as other mortality statistics.

We also release statistics on trends in alcohol-specific deaths in the UK. This includes deaths from chronic conditions associated with long-term alcohol abuse like liver cirrhosis, as well as acute alcohol poisoning.

Local area mortality data by sex, age and underlying cause of death can be downloaded from the [Nomis](#) website.

## 12 . Quality and methodology

The [Deaths related to drug poisoning in England and Wales Quality and Methodology Information](#) report contains important information on:

- the strengths and limitations of the data and how it compares with related data
- uses and users of the data
- how the output was created
- the quality of the output including the accuracy of the data

