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GO OVERDOSE PREVENTION

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The year 2013 may prove to have been a turning point in drug-related deaths in the UK, as national naloxone programmes in Scotland and Wales appeared to be denting high death rates, while England's steady decline in deaths decisively reversed, perhaps a sign of the feared impacts of funding stringencies and a turning away from harm reduction as a guiding principle of addiction policy. In each case only time and further study will tell. However, the longer term picture remains clear: despite recent good news, the death rate in Scotland is in a UK context dramatically excessive, perhaps partly because that country engages just a quarter of its problem drug users in treatment, less than half the coverage achieved in England.

Assessing deaths trends across years and between countries is complicated by differing definitions and systems for recognising, registering and collating deaths. A **further complication** is that deaths *registered* in the focal year (in this case, 2013) did not necessarily *occur* in that year. The registration delay across England and Wales is substantial, meaning half the deaths registered in 2013 actually happened in previous years, and also that many 2013 deaths will not have been counted because not yet registered. That delay has been increasing over the years and varies between areas. For Scotland the corresponding delay is very short, meaning the UK total is an amalgam of deaths in Scotland and in England/Wales from differing time periods, and that comparisons between Scotland and the rest of the UK do not compare deaths during the same periods.

Resurgence in heroin deaths in England

Across the UK drug misuse deaths (as reported to the European Union's drug misuse centre) totalled 2,561 in 2013. These deaths are defined as those where the underlying cause is registered as drug abuse or drug dependence, and/or drug poisoning deaths involving substances controlled under the Misuse of Drugs Act.

The wider 'drug poisoning' definition reported for England and Wales also includes deaths due to misuse of volatile substances ('glue sniffing') and poisonings involving drugs *not* controlled under the Misuse of Drugs Act. In England and Wales these deaths totalled 2,955 in 2013, of which 1,957 were drug misuse deaths, including 765 which involved heroin/morphine.

All these figures were fairly substantial upturns after downward trends from 2008, driven largely by the resurgence in **heroin-related** deaths in England [▶ chart right](#). Another way to look at the figures is as rates of deaths per million of the population of the country, or of the same-age population. On this yardstick too, overall ([▶ chart below](#)) and in each age group, mortality rates from drug misuse in England and Wales increased in 2013, a consistency which the Office for National Statistics **feared** signalled an upturn after the declines of the previous two years. Taking the longer view, in England and in Wales mortality rates from drug misuse are well above those of the early 1990s and have been for many years.

Commenting on the figures, Public Health England **highlighted** the need for naloxone, a drug that can reverse the effects of heroin, to be made more widely available to services and users. Lack of a national programme in England has been contrasted with the nationwide efforts in Scotland and Wales [▶ below](#). Also contributing to the rise in deaths in 2013 might be an increased uptake of regular heroin use in the preceding years; after years of falling figures, 2013/4 **saw a slight increase** in the number of problem opiate users in England entering treatment, perhaps the aftermath a revival in heroin use.

Underlying these trends in England and Wales **may have been** a relaxing in the heroin shortage which in 2011 **seemed** to have resulted in fewer deaths involving heroin while drug users turned instead to methadone, deaths involving which rose from 355 to 486. In 2012 methadone-related deaths fell to 414 and at 429, in 2013 remained at about the same level. If the heroin shortage tipped the balance from heroin to methadone deaths, its partial reversal may have tipped the balance back the other way.

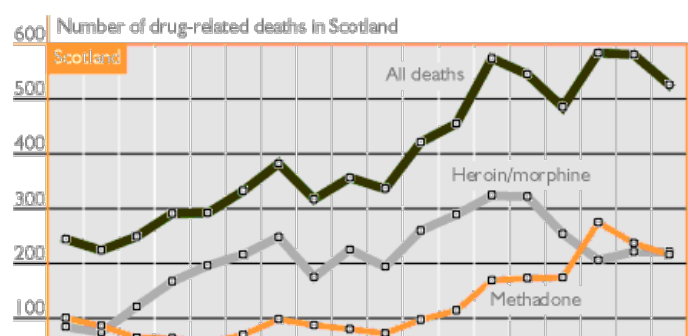
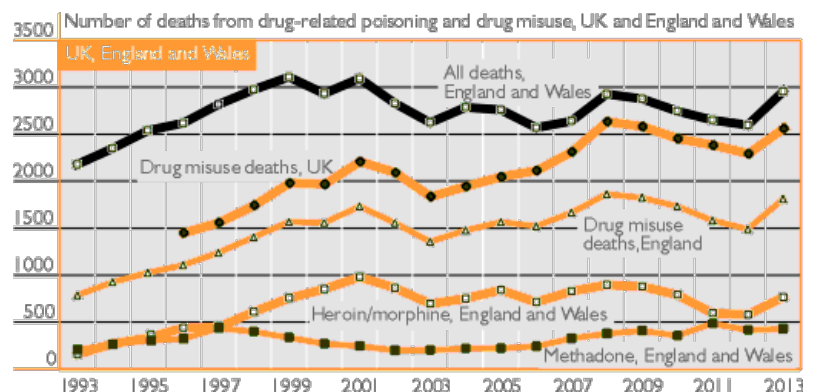
However, establishing whether recent policy and drug market changes are responsible for 2013's figures requires a study taking account of alternative explanations, and corroboration by later figures to assess whether 2013 was a blip or the start of a trend. The role of the heroin 'drought' and of its partial easing **has been contested** by Release, the national drug law charity whose helpline provides an ear close to the ground of drug use trends. Instead Release speculated that the upturn in deaths registered in 2013 could be due to service restrictions in response to funding curbs and the increased grip of a 'recovery' agenda which promotes detoxification and treatment exit at the expense of stabilisation on substitute drugs.

In England and Wales one clear long-term trend is an aging of the population dying from drug misuse, mirroring an aging of the **population in treatment**. Peaking at 75% in 1999, the proportion of the deceased who were under 40 at the time of their death has fallen to under half in each of the last three years, ending at 48% in 2013. The same has been happening in Scotland [▶ below](#).

Scotland: deaths diminishing but still excessive

Of the UK nations, drug-related deaths and concern over these deaths are at their height in Scotland, where the definition of a drug-related death equates to a drug misuse death in England and Wales. On this basis, the total of 526 **deaths registered in 2013** was decisively down on the previous year's 581 and before that 584, opposite to the recent trend in drug misuse deaths in England. However, the latest Scottish total remains historically high, equalled or exceeded only four times since 1996, when deaths totalled 244. Nevertheless, for the statisticians it bolstered the impression that the long-term upward trend is levelling off.

As in England and Wales, for Scotland too the heroin shortage **seemed** an explanation for **trends in 2011**, when registered



heroin/morphine deaths had plummeted to 206 from over 320 in 2008 and 2009, while methadone-related deaths increased by 58% to 275, provoking a flurry of media concern over safety procedures and reliance on the drug for the treatment of heroin addiction. Since then the methadone tally has fallen, down to 216 in 2013, still historically high, but a downturn not marred by a compensating increase in heroin-related deaths.

Also as in England and Wales, notably the deceased tended to be older at death than in previous years. At 28 years in 1996, the median age at death had increased to 40 years in 2013, [in line with](#) the aging of the total population of problem drug users in Scotland.

A [more detailed analysis](#) of a subset of deaths occurring in 2012 (whether registered that year or not) reported that 56% of cases [were known](#) to have been in contact with drug treatment services in the six months before they died, and 47% at the time of their deaths. For Scotland's [National Forum on Drug Related Deaths](#), in respect of drug users already in treatment, the figures [left](#) "considerable potential to reduce the number of drug-related deaths by undertaking targeted harm reduction measures". For those not in treatment, the same body [saw the figures](#) as indicating that front-line generic medical services have a role to play in identifying and reducing risks for out-of-treatment drug users, and that investment is still needed to get more into specialist treatment and improve treatment quality and variety [▶ more below](#).

In 2012 almost three in five of the deceased had lived in the most deprived neighbourhoods in Scotland. Compared to previous years, increased age at death seemed to bring with it an increase to 85% in the proportion suffering medical conditions in the past six months.

Even with the recent downturn, historically and in the latest figures, Scotland's rate of deaths per million of the population is far above that of either England or Wales. Equating Scotland's 'drug-related' deaths with 'drug misuse' deaths in England and Wales, its drug misuse death rate has for several years been about twice that in Wales and three times that in England ([▶ chart right](#)), which emerges best from the comparison despite recent criticism of its lack of action on naloxone [▶ below](#).

It is possible instead to estimate what the rate in Scotland would have been had that country used English and Welsh criteria for what counts as a drug-poisoning death. Using these criteria, [there were](#) 685 deaths in 2013, [about](#) 130 per million of the population, compared to [about](#) 51 in England and 71 in Wales.

Part of the reason for the discrepancy in death rates may be that relatively few problem drug users in Scotland are under the protective umbrella of treatment. In 2012/13, of an [estimated](#) 59,500 problem drug (opioids and/or benzodiazepines) users in the country, 15,000 [were in treatment](#) during the year – about a quarter [▶ chart right](#). Though defined differently (opiates and/or crack), in 2011/12 the corresponding figures for England were 293,879 and 164,671 – 56% of all problem drug users engaged in treatment, twice the coverage achieved in Scotland. For opiates with or without crack, the [proportion](#) was even higher – 62%.

National naloxone programmes are part of the answer

Naloxone, a drug which rapidly reverses the effects of opiate-type drugs, including the respiratory depression which causes overdose, became the main new hope for curbing the death rate after in 2005 UK law was amended to permit emergency administration by any member of the public. The drugs naloxone reverses are not the sole cause of overdose deaths – benzodiazepines and alcohol have a big role – but in [England and Wales in 2013](#), 56% of all drug poisoning deaths involved an opiate-type drug.

In May 2013 the naloxone 'kit' [Prenoxad](#) became approved in the UK for use in opioid overdose emergencies by non-medical personnel. The kit includes a pre-filled syringe, product instructions, and relevant first aid guidelines. This approval is seen as an important step to widening availability. It means GPs can prescribe kits to suitably trained drug users and with their permission to their associates and families. Patient group directions can also enable doctors to authorise pharmacists and nurses to supply the kits to drug users at risk. This development still leaves the prescription-only restrictions which in 2012 the UK's Advisory Council on the Misuse of Drugs [wanted reviewed](#), after concluding that wider provision of naloxone could result in a reduction in drug-related deaths in the UK.

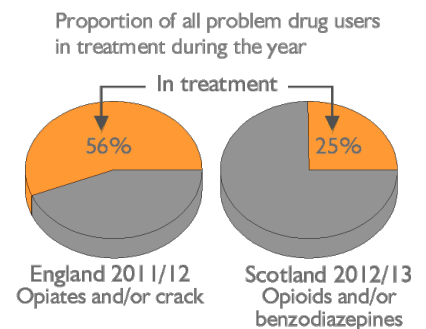
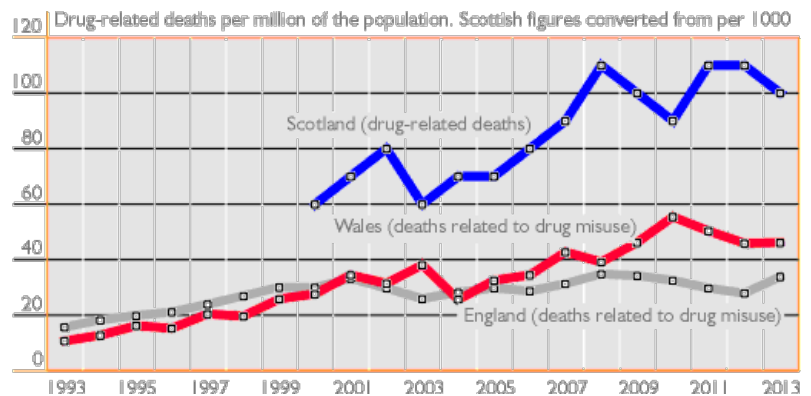
Unlike England, Scotland's programme [is aided](#) by allowing emergency-use naloxone to be provided to services without prescription, enabling drug treatment and homeless hostel staff to have the drug ready for use. In England such a provision is unlikely to happen before October 2015, a plan which might be derailed by the May 2015 election.

Though more might be done in other UK nations, England has felt the brunt of criticism for not grabbing the opportunity offered by naloxone to reduce the death rate. Unlike other UK nations, in the name of localism England has so far not established a centrally driven national programme, a point made in a [parliamentary question](#) backed by 21 MPs tabled at the end of October 2014. Some local administrations are attempting to make naloxone available to all at-risk individuals, but from one such area [came criticism](#) that "coverage across England remains sparse". Towards the end of 2014, the relative inaction in England and the recent increase in deaths there [prompted the formation](#) of the Naloxone Action Group "to push the agenda".

England can however take credit for the first large-scale UK [follow-up study](#) of naloxone-based overdose prevention training. Helping legitimate investment in naloxone, it found that such programmes can successfully be delivered to drug users in treatment, resulting in substantially improved knowledge and competence. Though relatively few times, naloxone was used to save lives even within the study's short three-month follow-up period.

Launched in 2011, Scotland's national naloxone programme [has been gathering pace](#), distributing 5,395 'take home' naloxone kits in 2013/14 compared to 3,132 the year before and 2,743 in 2011/12. Reasons given for repeat supplies of kits to the same person indicated that in 2013/14 kits issued outside prison had been used 423 times, up from 212 times the year before and 132 in the first year of the programme.

Another 1,077 kits were issued to drug users leaving prison, up from 746 the year before and 715 in the first year. The proportion of deaths occurring within four weeks of release from prison – an extremely high-risk period for former opiate users – had been identified as a key indicator of the success of the naloxone programme. By 2012 and again in 2013, this proportion was significantly lower than the pre-programme average – [evidence for](#) Scotland's health statisticians that "the national naloxone distribution programme within prisons may be contributing to the reduction in the number of opioid-related deaths". Bolstering confidence in this account, no such decrease was seen after discharge from hospitals, not a target for the national programme.



Wales's national naloxone programme began in 2011 after [an evaluation](#) of demonstration schemes. These [involved](#) a single one to two hour training session during which drug users (and in a few cases their friends and family) were trained to recognise the signs of overdose and how to respond with first aid and by administering naloxone, after which they were given a naloxone kit. The programme [has been associated](#) with a decrease in drug overdose deaths in Wales, where drug misuse deaths [fell by 17%](#) from 162 in 2010 to 135 in both 2012 and 2013. Whether the programme was the cause is unclear. From 2010 to 2012 the same figure fell by 14% in England in the absence of a national naloxone programme, but then rose steeply in 2013 to exceed the 2010 total, while Wales sustained its reduction.

Beyond naloxone

Naloxone is however far from a total solution. Experts convened by the World Health Organization [judged](#) the "risk-benefit profile to be strongly in favour of naloxone distribution, due to its clear potential for saving lives and apparent low risk of significant adverse effects", and strongly recommended naloxone provision and associated training for people likely to witness an [opioid](#) overdose. However, they also cautioned that this "does not address the underlying causes of opioid overdose"; further reducing the number of deaths would also entail monitoring and curbing inappropriate opioid prescribing and over-the-counter sales, and extending treatment for opioid dependence. Wider initiatives of this kind were among those recommended by Public Health England in its [guidelines](#) on preventing drug-related deaths and by the US authorities in their [Opioid overdose toolkit](#).

One of the limitations of naloxone is that for treatment services and especially those with a recovery orientation, catering for the likelihood that their patients will not recover but relapse to life-threatening opiate use [may be](#) a hard pill to swallow; swallowing it by training clients and families to prepare for relapse may seem to counter-therapeutically undermine the optimism at the heart of the recovery movement. Similarly, for patients looking forward to a new life where they have escaped drugs and drugtaking circles, learning a lifesaving technique predicated on continued contact with (largely) injecting drug use(rs) may seem undermining and irrelevant.

For more on the promise and limitations of naloxone see [this analysis](#) of a British training study. Further guidance is available in the appendices to [a study](#) conducted by the English National Treatment Agency for Substance Misuse. In 2008 staff from one of the English NHS trusts which piloted naloxone training for families and carers produced a UK-focused [practical guide](#) to naloxone prescribing, training and use. The Scottish Drugs Forum runs a [web site](#) offering naloxone-related resources, advice, guidance, information and news. Under the banner of the Open Society Foundation, an international collaboration has [come together](#) to offer advice and practical assistance on starting a take-home naloxone programme. [Guidance](#) on overdose prevention in general with an emphasis on the role of naloxone has been produced by the Eurasian Harm Reduction Network. In the USA the Chicago Recovery Alliance has produced a freely available [training video](#). The manufacturers of the naloxone preparation Prenoxad also [offer advice](#) on its use.

Is methadone part of the solution or part of the problem?

Across the UK there is concern that methadone – prescribed partly in order to save lives at risk from untreated heroin addiction – is itself implicated in many deaths, and that despite recent downturns, over the longer term these have markedly increased.

In [Scotland in 2012](#), of the 344 drug-related deaths of people *not* in substitute prescribing programmes, just over a third (34%) nevertheless had methadone in their bodies at the time of death. Of the 210 deaths in which methadone was not just present but considered a contributory factor, nearly half (49%) involved people not known to have been in methadone treatment at the time. Both proportions were down on the year before, but still indicative of the leakage of methadone on to the illicit market and the dangers posed by this leakage, implying that supervised consumption regimens have not been able entirely to contain methadone just to the patients.

In England in 2012, 865 drug misuse deaths (compared to 1,492 registered that year) had been reported by coroners to a national surveillance programme. With this enriched data source, the [programme found](#) that just a third of the 231 deaths in which methadone was implicated were known to have involved patients being prescribed the drug, meaning that up to two thirds involved people who had obtained methadone illegally.

Though leakage still happens, in both England and Scotland the advent of supervised consumption [has made](#) methadone services much safer, the death rate per million doses plummeting during the period when supervision became the norm. While much depends on how it is implemented, internationally and in Britain, being in opiate substitute treatment using methadone or buprenorphine [has been associated](#) with a substantially reduced risk of death. Nobody has credibly worked out the balance sheet of deaths contributed to versus prevented by methadone treatment (difficult to do since it is impossible to count deaths which have *not* happened), but the World Health Organization [was convinced enough](#) of methadone's public health credentials to place it on the international list of essential medicines.

The many contributors to overdoses and possible strategies to prevent them were reviewed by Findings in a [two-part series](#) which remains the most thorough analysis of the literature. Run this [hot topic search](#) for these and other reviews and studies with important messages about causes and solutions.

Thanks for their comments on this entry in draft to John Corkery of the University of Hertfordshire in England. Commentators bear no responsibility for the text including the interpretations and any remaining errors.

Last revised 05 January 2015. First uploaded 01 July 2010

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