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Introduction

Accidental overdose is a common cause of death among users of heroin, morphine and similar drugs, which are referred to as opioids. Naloxone is a drug which reverses the effects of a potentially fatal overdose with these drugs. Administration of naloxone provides time for emergency services to arrive and for further treatment to be given. Following suitable training, ‘take home’ naloxone kits (hereafter referred to as ‘THN’ or ‘kits’) are issued to people at risk of opioid overdose, their friends and family and service workers in order to help prevent overdose deaths.

Since 1997, statistics published by National Records of Scotland (NRS) have shown a long-term upward trend in the number of Drug-Related Deaths (DRDs) in Scotland. Following a series of annual increases from 2014 onwards there were 1,187 DRDs registered in 2018. Opioids have been implicated in 88% of DRDs registered since 2000, including 86% (1,021) of those registered in 2018 (NRS, 2019). The National Drug-Related Deaths Database (NDRDD) was set up to help understand the nature and circumstances of DRDs and the people vulnerable to them. NDRDD findings from DRDs in 2016 showed that 56% of DRDs occurred when others were present at the scene of overdose. In addition, 77% of individuals had been in drug treatment, in prison or police custody or discharged from hospital in the six months prior to death (Barnsdale et al, 2018). Other research has shown that the risk of accidental overdose is substantially increased after release from prison (Bird & Hutchinson, 2003) or discharge from hospital (Merrall et al, 2010), in part because users may lose their tolerance of opioids during periods when illicit drug use is reduced.

The overall aim of Scotland’s National Naloxone Programme is to prevent fatal opioid overdoses. In the five years from April 2011 to March 2016, the National Naloxone Programme co-ordinated distribution of THN kits from community outlets (usually specialist drug treatment services) and prisons. During this period, NHS Boards1 were responsible for local delivery of the programme and the cost of THN kits was reimbursed by the Scottish Government. While the Scottish Government continues to fund some aspects of the National Naloxone Programme, from 2016/17 NHS Boards assumed direct responsibility for funding THN supplies. Following this change and revisions to the regulatory framework, some NHS Boards have also started to dispense THN via community prescription.

In February 2019, Nyxoid, an intranasal naloxone product was licensed for lay administration (UK Government, 2019), in addition to Prenoxad (which is administered via intramuscular injection). The availability of Nyxoid means that those preferring to carry an intranasal product can now be supplied with naloxone that is safe, effective and suited to their needs. This product was first supplied in Scotland in April 2019, so data are not available for the time period covered by this report. Similarly, recent changes to supply including the pilot study of THN supply by Scottish Ambulance Service (SDF, 2020) and regulatory changes to allow the provision of THN by community-based non-drug treatment services during the COVID-19 pandemic are not described in detail in this publication as they occurred after the time period

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1 NHS Western Isles did not participate in the programme until 2017/18.
covered by this report. See Appendix 1 for further information on the background and development of the National Naloxone Programme.

Since the beginning of the National Naloxone Programme, the Scottish Government has commissioned Public Health Scotland (PHS) to report on THN kit distribution using monitoring data supplied by NHS Boards. This report presents information on the number of THN kits issued from 2011/12 to 2018/19. Data are presented separately for kits issued from community outlets, kits issued in prisons at the point of prisoner release and kits dispensed via community prescription. The accompanying data tables have been redesigned for this release of these statistics and now incorporate drop-down boxes to select source and financial year of supply.

Due to issues with information governance and restrictions associated with the COVID-19 pandemic, it was not possible to collect prison release data in a timely fashion for this publication. Therefore, Section 5 of this report, describing the number and percentage of opioid-related deaths that occurred within four or twelve weeks of prison release or hospital discharge has not been updated since the 27 November 2018 publication (which reported on performance in relation to deaths registered in 2017). Performance of the National Naloxone Programme in relation to deaths registered in 2018 will be included within the next release of these statistics. PHS continue to monitor THN supply as part of the National Naloxone Programme and plan to report upon 2019/20 data in spring 2021.
Main Points

- A total of 12,135 take-home naloxone kits were issued in Scotland in 2018/19, an increase of 42% from the previous year (8,555). A total of 58,377 take-home naloxone kits were supplied in Scotland between 2011/12 and 2018/19.

- In 2018/19, there were 10,609 take-home naloxone kits issued from community outlets, 844 kits issued in prisons upon release and 682 kits dispensed via community prescription.

- In 2018/19, repeat supplies accounted for 5,742 take-home naloxone kits distributed from community outlets and prisons. Of these, 1,543 (27%) were made because the previous kit was reported as having been used to treat an opioid overdose.

- In 2018/19, it is estimated that 2,778 take-home naloxone kits were issued as a first supply to an individual at risk of opioid overdose. Cumulatively, 25,935 at risk individuals are estimated to have been issued with a first supply of take-home naloxone between 2011/12 and 2018/19.

- At the end of 2018/19, the ‘reach’ of take-home naloxone (based on the number of at risk individuals supplied with kits between 2011/12 and 2018/19) was estimated to be 453 kits per 1,000 ‘problem drug users’. 
Results and Commentary

1. Take-home naloxone (THN) supply from community outlets

1.1: Introduction

This section presents information on the number of ‘take home’ naloxone (THN) kits issued from community outlets (usually specialist drug treatment services) through the National Naloxone Programme in Scotland. This includes breakdowns for time period, NHS Board, numbers of first and repeat supplies and reasons for repeat supply. Age and sex breakdowns are provided for individuals at risk of opioid overdose who were supplied with THN (where the person consented to the sharing of their personal data). The most recent available data are for 2018/19. Data from previous years are included for comparison.

1.2: Number of kits issued from community outlets

In Scotland in 2018/19, there were 10,609 THN kits issued from community outlets. This was an increase of 3,524 kits (50%) compared with 2017/18. A total of 49,292 THN kits have been issued from community outlets over the eight years from 2011/12 to 2018/19 (Table 1).

Information from the National Drug-Related Deaths Database (Barnsdale et al, 2018) shows that, between 2009 and 2016, drug-related deaths (DRDs) were most commonly observed in May. For most years since 2011/12, the supply of THN kits from community outlets peaked between November and December (Table 2 and Figure 1.1). The exception to this was 2013/14, when the number of THN kits supplied peaked in March. The number of kits supplied in each quarter by financial year and NHS Board are shown in Table 1.

Figure 1.1: Number of THN kits supplied from community outlets, by month and financial year (Scotland; 2011/12 to 2018/19)
Table 1 and Figure 1.2 show the number of THN kits issued from community outlets in each NHS Board from 2011/12 to 2018/19 (and the cumulative total over the eight years). In 2018/19, NHS Greater Glasgow & Clyde supplied the largest number of kits (3,166), followed by NHS Tayside (1,558), NHS Lothian (1,443), and NHS Grampian (1,285). Large percentage increases were seen in:

- **NHS Highlands**: An increase of 272% from 2017/18 (75) to 2018/19 (279). This was mainly because a larger number of intramuscular naloxone kits were supplied in 2018/19 than in previous years. Prior to 2018/19, most of the supplies made by NHS Highland were of an unlicensed intranasal naloxone kit, which was not counted in the figures.\(^2\)

- **NHS Tayside**: An increase of 97% from 2017/18 (790) to 2018/19 (1,558). This was driven by increases in supplies to persons at risk and service workers. The NHS Board naloxone lead thought this increase was associated with local third sector services commencing naloxone supply.

- **NHS Greater Glasgow and Clyde**: An increase of 71% from 2017/18 (1,852) to 2018/19 (3,166). This was driven by increases in spare supplies and repeat supplies to persons at risk, and increasing numbers of first supplies to family/friends.

Figure 1.2: Number of THN kits supplied from community outlets, by NHS Board\(^1,2\) and financial year (Scotland; 2018/19)

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1. NHS Western Isles did not participate in the programme until 2017/18.
2. Intranasal naloxone kits distributed by NHS Highland are not included. For more information, see Table 1.

\(^2\) The number of unlicensed intranasal kits in NHS Highland in 2017/18 was 166 compared to 52 in 2018/19.
THN kits may be issued as a first, repeat or spare supply. In 2018/19, of the 10,609 kits issued from community outlets, 35% (3,662) were reported as a first supply, 52% (5,524) as a repeat supply, 13% (1,371) as a spare supply and <1% (52) as unknown. Comparable figures for 2017/18 were 39%, 55%, 5% and 1% respectively (Table 3 and Figure 1.3).

The percentage of THN kits issued as first supplies has decreased over time (84% in 2011/12 to 35% in 2018/19), a pattern that would be expected as a new initiative is rolled out. While the percentage of first supplies has decreased consistently over time, there was a large increase in the number of first supplies in 2018/19 (3,662) compared to 2017/18 (2,748). In particular:

- First supplies to persons at risk in NHS Tayside increased from 259 kits in 2017/18 to 414 kits in 2018/19. This was attributed to the provision of THN by third sector drug services which were not prescribing Opioid Substitution Therapies (OST), potentially reaching a wider group of people at risk of opioid overdose who may not have been in treatment for drug use. Increases in first supplies to service workers in NHS Tayside from 32 kits in 2017/18 to 186 in 2018/19 were also attributed to the involvement of these third sector organisations.
- There were also increases in first supplies to family/friends in NHS Greater Glasgow & Clyde (from 349 kits in 2017/18 to 573 in 2018/19).

Since the beginning of the programme, it was anticipated that there would be an increasing demand for repeat supplies as THN kit supply and usage increased. The percentage of kits distributed as a repeat supply from community outlets increased each year from 13% in 2011/12 to 55% in 2017/18, before decreasing to 52% in 2018/19. In spite of repeat supplies decreasing as a percentage of all supplies between 2017/18 and 2018/19, the number of repeat supplies from community outlets continued to rise in 2018/19, increasing from 3,898 in 2017/18 to 5,524 in 2018/19. Increases in repeat supplies to persons at risk were seen in both NHS Tayside (from 479 in 2017/18 to 887 in 2018/19) and NHS Greater Glasgow & Clyde (from 563 in 2017/18 to 903 in 2018/19).

The provision of spare supplies has grown slowly over time, from 1% of supplies in 2012/13, to 7% in 2015/16 and 2016/17, before a small decrease to 5% in 2017/18. In 2018/19, a large increase in spare supplies was observed, when they accounted for 13% of community supplies. The main factor in this change appears to have been a large increase in the number of spare supplies in NHS Greater Glasgow & Clyde (96 kits in 2017/18 compared to 869 kits in 2018/19), resulting from an NHS Board-wide initiative to encourage the provision of spare kits.

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3 Spare supply of take-home naloxone kits was first recorded in 2012/13.
4 Whilst the naloxone dataset includes a number of data items that may aid the calculation of the number of ‘individuals’ who were supplied kits, due to gaps in data and/or variations in how data are recorded between records (e.g. recording of slightly different initials, postcode sector information and/or date of birth) it is not possible to conclusively identify the number of individuals involved.
Table 4 and Figure 1.4 show the reasons for repeat supply of naloxone (based on self-reporting) from community outlets between 2011/12 and 2018/19, including breakdowns by recipient type.

In 2018/19, of the 5,521 THN kits noted as a repeat supply, the following responses were most common:

- 31% (1,713) were reported as due to ‘previous kit lost’;
- 25% (1,379) ‘kit used on another’;
- 19% (1,073) ‘unknown’ reason for repeat supply;
- 17% (954) ‘previous kit expired’ (i.e. the pharmaceutical product (naloxone) had expired);
- 4% (240) ‘previous kit damaged’; and,
- 2% (133) ‘kit used on self’.

In 2018/19, there were 1,512 cases where a community outlet repeat supply was made because the previous kit had been used to treat an opioid overdose. Of these cases, 91% (1,379) were due to the ‘kit used on another’ and 9% (133) were due to ‘kits used on self’, i.e. administered to self.

Throughout the programme, kit loss and use in treating overdoses have been the main reasons for issuing a repeat supply. Since 2013/14 there has been little variation in the percentage of resupplies made for these reasons.

- Since 2013/14, between 30% and 34% of resupplies have been due to the previous kit having been lost.
• Since 2014/15, between 25% and 28% of kits have been resupplied due to previous kits being used in treating overdoses

Figure 1.4: Number of THN kits supplied from community outlets as a repeat supply, by reason for repeat supply and financial year (Scotland; 2011/12 to 2018/19)

The number of repeat supplies due to kit expiry increased from 2013/14 to 2016/17 (THN kits have a maximum expiry date of three years). Compared to 2016/17 (860, 26%), there was a decrease in the number and percentage of re-supplies due to kit expiry in 2017/18 (728, 19%). In 2018/19, while the overall number of re-supplies due to kit expiry rose, this accounted for a smaller percentage of all THN kits supplies (954, 17%).

There were noticeable increases in the provision of repeat supplies in NHS Tayside as a result of a previous kit being used on someone else (from 197 in 2017/18, to 528 in 2018/19). The NHS Board naloxone lead attributed this change to third sector drug treatment services that are not involved in OST prescribing commencing THN supply. It was felt that, under these circumstances, people may have been more willing to ask for resupplies and be more forthcoming about the reasons why.

From 2012/13 to 2016/17, ‘unknown’ reason for re-supply was observed in between 8% and 11% of relevant cases. In 2017/18, there was a substantial increase in the number of repeat supplies where no reason for re-supply was provided (796, 20%). In 2018/19, the reason for re-supply was ‘unknown’ in 19% (1,073) of cases. This was mainly due to data quality issues in four NHS Boards (NHS Ayrshire & Arran, NHS Forth Valley, NHS Grampian and NHS Greater Glasgow & Clyde).
Recipient type
THN kits issued from community outlets may be supplied to:

- the person at risk of opioid overdose;
- to family/friends (with the recorded consent of the person at risk – the named patient); or,
- to a service worker.

Figure 1.5 shows that, of the 10,609 kits issued from community outlets in Scotland in 2018/19, the majority (8,460, 80%) were issued to people at risk of opioid overdose. A further 11% (1,191) were supplied to service workers and 9% (958) to family/friends (with the recorded consent of the person at risk). Table 3 provides a breakdown of community outlet kits supplied by recipient type for each financial year and quarter for Scotland and by NHS Board.

Figure 1.5: Number of THN kits supplied from community outlets, by recipient type and financial year (Scotland; 2011/12 to 2018/19)

1. Five kits in 2011/12 were of unknown recipient type.

The percentage of community outlet THN kits supplied to family/friends was 2% from 2011/12 to 2015/16, but has increased each year since then (9% (958) in 2018/19). General increases in supply to family/friends since 2015/16 are related to the use of powers granted in the 2015 revision to the 2012 Human Medicines Regulations (UK Government, 2015), which allowed injectable naloxone to be supplied directly to people likely to witness an overdose (see Appendix A1.1 for further information). Consequently, community outlet THN supply has been expanded to groups who may encounter an overdose (e.g. staff working with people who use drugs) and via peer support networks within the NHS Board. Increased supply to family/friends has been particularly noteworthy in NHS Greater Glasgow & Clyde (increasing from 7% (83) in 2016/17 to 24% (746) in 2018/19).
1.3: Characteristics of at risk recipients of community outlet kits

In 2018/19, community outlets in Scotland supplied 8,460 kits to people at risk of opioid overdose. In 90% (7,591) of cases, the person consented to the sharing of their personal data for monitoring purposes (Table 5). Information about the person receiving the kit was available only for those who consented to the sharing of their data. (Further information about the dataset is given in Appendix A1.3).

In 2018/19, over two-thirds (5,149, 68%) of THN kits supplied to a person at risk from a community outlet were to males (Table 6). The relative proportion of kits supplied by sex has remained broadly similar since the beginning of the National Naloxone Programme (across all years in the time series combined, 67% of community outlet supplies were made to males). For comparison, in 2015/16, it was estimated that 71% of people with problem drug use in Scotland were male (Public Health Scotland, 2019).

Figure 1.6: Percentage of THN kits supplied to persons at risk from community outlets, by age group of recipient and financial year (Scotland; 2011/12 to 2018/19)

1. Between 0-1% of kits are classed as unknown each year.

Figure 1.6 shows the age distribution of people at risk supplied with a THN kit from a community outlet for years 2011/12 to 2018/19. The main changes over time are:

- In 2018/19, of the kits supplied 45% (3,388) were supplied to individuals aged 35-44 years, an increase since 2011/12 (34%).
- In 2018/19, of the kits supplied 28% (2,151) were supplied to individuals aged 25-34 years, a decrease since 2011/12 (46%).
- The percentage of recipients aged under 25 years decreased from 10% in 2011/12 to 5% in 2015/16 and has remained at this level since (2018/19: 374, 5%); and,
The percentage of recipients aged 45 years and over increased from 9% in 2011/12 to 22% (1,664) in 2018/19.

This trend is in line with evidence about the ageing population of people with a drug problem (PHS 2019, Scottish Drugs Forum, 2017). Table 6 provides Scotland-level breakdowns of community outlet supplies by sex and age for 2011/12 to 2018/19.

1.4: ‘Reach’ of community outlet THN supplies

In addition to monitoring the number of THN kits supplied, it is important to describe the ‘reach’ of the National Naloxone Programme. ‘Reach’ is estimated by quantifying how many individuals at risk of opioid overdose have been supplied with THN. In order to do this, only first supplies (excluding repeat supplies and spare supplies) to people at risk of opioid overdose (excluding supplies made to service workers and family/friends) are counted. Within a specific time period, ‘reach’ effectively corresponds to the number of at risk individuals newly supplied with THN and is therefore lower than the total number of kits distributed during that period. See Appendix A1.6 for further information.

Table 3 shows the number of THN kits issued from community outlets as a first supply to people at risk in each NHS Board from 2011/12 to 2018/19 (and the cumulative total over eight years). In 2018/19, there were 2,285 people at risk who received a first supply of naloxone from a community outlet in Scotland. The number of first supplies increased every year from 2011/12 (1,941) to 2014/15 (3,537), and then decreased annually to 2017/18 (1,953) before the increase observed in 2018/19. This was the highest annual number of community first supplies recorded since 2015/16 (3,114). In 2018/19, NHS Greater Glasgow & Clyde supplied the largest number of community first supplies to people at risk (516), followed by NHS Lothian (428) and NHS Tayside (414).
2. Take-home naloxone (THN) supply in prisons

2.1: Introduction

THN kits are supplied to prisoners, along with their personal belongings, on release from custody. This section presents information on the number of THN kits issued in prisons in Scotland by time period, prison establishment and NHS Board. Data on sex and age are presented for those cases where the person agreed to the sharing of their personal data for monitoring purposes. In addition, data are presented on numbers of first and repeat supplies and reasons for the repeat supply. As with supply from community outlets, the most recent available information is for 2018/19 and figures for previous years have been included for comparison. The data tables present prison data by NHS Board of location throughout. In Table 1 (number of kits distributed by year and quarter) data are also presented by prison establishment.

2.2: Number of kits issued in prisons

In Scotland in 2018/19, there were 844 THN kits issued in prisons, a 27% increase compared with 2017/18 (664). Prison THN supplies peaked in 2013/14 (1,070) and, with the exception of a small increase in 2015/16 (932), had decreased annually until 2017/18. A cumulative total of 6,551 THN kits were issued in prisons in Scotland from 2011/12 to 2018/19 (Table 1).

Statistics on the number of kits supplied in each prison establishment by financial year and quarter are shown in Table 1. THN supply by establishment often varied considerably from year to year. Compared with 2017/18, the number of THN kits supplied in 2018/19 had increased in 10 prisons, decreased in four prisons, and remained unchanged in one prison. HMP Low Moss (115) issued the highest number of kits in 2018/19, followed by HMP Glenochil (114), and HMP Polmont (111).

Supply type

Naloxone kits may be issued as a first, repeat or spare supply. Where a repeat supply was made, this could be following an initial supply from a community outlet, or following supply on release from a previous stay in prison (i.e. issued in a prison). It is not possible, using the current naloxone monitoring dataset, to determine where the previous supply was made.

Of the 844 kits issued in prisons in 2018/19, there were 45% (377) recorded as a first supply, 26% (218) as a repeat supply and 7% (55) as a spare supply. Status was unknown for 23% (194) of kits issued (Table 3 and Figure 2.1). The percentage of prison kits that were repeat supplies increased from 4% in 2011/12 to 26% in 2018/19, but remains lower than for community outlet supplies (52% in 2018/19). As with community supplies, there was a considerable increase in the number of spare kits supplied in prisons in 2018/19 compared with the previous year (rising from 2% of kits in 2017/18) although the numbers were small.

Table 4 provides a breakdown of the reasons for repeat supply of naloxone in prisons from 2011/12 to 2018/19. Of the 218 cases noted as a repeat supply in 2018/19, the most

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5 One exception to this is HMP Castle Huntly (an open prison), which provides training and THN to prisoners at risk who leave the establishment on home leave prior to their liberation.
6 Spare supply of take-home naloxone kits was first recorded in 2012/13.
common reasons for replacement were ‘unknown’ in 45% (98) of cases, ‘previous kit lost’ in 26% (57) of cases, and ‘used on another’ in 14% (30) of cases. In 2018/19, there were 31 cases where a repeat supply was reported as due to use of the previous kit on a person during an opioid overdose. Of these 31 cases, 97% (30) were for the ‘kit used on another’ and 3% (1) for ‘kits used on self’, i.e. administered to self.

**Figure 2.1:** Number of THN kits supplied in prisons, by supply type and financial year (Scotland; 2011/12 to 2018/19)

**Recipient type**
In 2018/19, of the 844 THN kits issued in prisons in Scotland, 89% (751) were supplied to people at risk of opioid overdose (Table 3). In the period from 2011/12 to 2015/16 between 99% and 100% of THN kits issued in prisons were to people at risk of opioid overdose. It then decreased in 2016/17 (96%) and 2017/18 (94%). There was an increase in the percentage of kits provided to family/friends from 1% in 2015/16 to 11% in 2018/19. NHS Board contacts stated that this was a result of some prisons promoting the uptake of naloxone in cases where the prisoner is not a person at risk, but is the family/friend of someone who is at risk. As with community supplies, this increase is associated with the use of powers granted in the 2015 revision to the 2012 Human Medicines Regulations (UK Government 2015), allowing injectable naloxone to be supplied directly to people likely to witness an overdose (see Appendix A1.2 for further information).

**2.3: Characteristics of at risk recipients of kits supplied in prisons**
In 2018/19, there were 751 THN kits issued in prisons in Scotland to people at risk of opioid overdose. In 602 of these cases (80%) the recipient consented to the sharing of their

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7 Kits supplied in prisons are issued on prisoner release (or for home leave, in the case of Castle Huntly open prison), not ‘in prison’, therefore any reference to loss of the previous kit, use of the previous kit on self or on another, kit confiscated etc. would not have occurred ‘in prison’.
personal data for monitoring purposes (Table 5). This was a large decrease compared to 2017/18 (97%), which occurred largely because of data collection issues in some prisons within the NHS Glasgow & Greater Clyde area (specifically, HMP Low Moss and HMP Greenock).

In Scottish prisons, 71% of kits issued to people at risk of opioid overdose in 2018/19 were to males and 29% to females (Table 6 and Figure 2.2). Across the time series, the percentage of prison THN kits supplied to females ranged from 18% (2013/14) to 32% (2011/12). According to the latest Annual Report by Scottish Prison Service (Scottish Prison Service, 2018); females accounted for 5% of the average daily sentenced prison population in Scotland in 2017/18. This suggests a relatively higher uptake of THN among female prisoners compared with male prisoners.8,9

Figure 2.2: Percentage of THN kits supplied to persons at risk in prisons, by gender of recipient and financial year (Scotland; 2011/12 to 2018/19)

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8 The disproportionately high percentage of kits supplied to female prisoners may be partly explained by the high level of engagement with the National Naloxone Programme at Scotland’s only all-female establishment (HMP Cornton Vale). THN distribution from HMP Cornton Vale was lower in 2017/18 and 2018/19 than in previous years. There has been a significant reduction in the population of HMP & YOI Cornton Vale as a result of women being transferred to other establishments to facilitate the phased demolition of the existing establishment and construction of the new Women’s National Facility.

9 For comparison, the percentage of kits supplied to females via community outlets (32% in 2018/19) was broadly representative of the estimated percentage of females (29%) among the population of problem drug users in Scotland (PHS, 2019).
Figure 2.3 and Table 6 describe the age distribution of persons at risk of opioid overdose receiving kits in prisons between 2011/12 and 2018/19. In 2018/19, people aged 25-34 years accounted for 39% (233) of kits supplied in prisons followed by 36% (217) to those aged 35-44 years. The age distribution of people who receive THN on prison release has changed since the beginning of the National Naloxone programme (2011/12):

- The percentage of recipients under 25 has varied over time, but has seen a general decline from 19% in 2011/12 to 13% in 2018/19.
- The percentage of recipients aged 25-34 years was lower in 2018/19, having decreased from 2011/12 (53%) to 2016/17 (40%) and changed little since (2018/19: 39%).
- The percentage of recipients aged 35-44 years was higher in 2018/19, having increased between 2011/12 (23%) to 2016/17 (40%) and decreased slightly in subsequent years (2018/19: 36%).

The overall change reflects a wider ageing trend among both the problem drug use and prison populations (Scottish Drugs Forum, 2017 and Scottish Government, 2019). Compared with prisons, community outlets distributed a smaller percentage of kits (28%) to those aged 25-34 years and a larger percentage (45%) to those aged 35-44 years in 2018/19 (Table 6). Therefore, while the age of individuals receiving THN from both community outlets and prisons increased over time, prison recipients were comparatively younger than community outlet recipients.\(^\text{10}\)

**Figure 2.3: Percentage of THN kits supplied to persons at risk in prisons, by age group of recipient and financial year (Scotland; 2011/12 to 2018/19)**

\(^{10}\) Scottish prison statistics (Scottish Government, 2019) also show that the age profile of prisoners was relatively younger than the general population.
2.4: ‘Reach’ of prison THN supplies

In addition to monitoring the number of THN kits supplied, it is important to describe the ‘reach’ of the National Naloxone Programme in prisons. A general discussion of the rationale and interpretation of this measure can be found in the community section.

In order that they can be counted alongside numbers of community outlet and community prescription supplies for comparison with the estimated at risk populations in each area, prison ‘reach’ figures are described on the basis of the NHS Board in which the prison is located. While most prisons accommodate individuals as close as possible to their area of residence and therefore reflect the population in that area, some establishments are national facilities, accommodating prisoners from across Scotland. Additionally, while all prisons, excepting HMP Cornton Vale, accommodate male prisoners currently only five prisons accommodate female prisoners (HMP Cornton Vale, HMP Edinburgh, HMP Grampian, HMP Greenock, and HMP Polmont). This means that female prisoners may not be accommodated close to their area of residence. Therefore, while prison ‘reach’ effectively describes an aspect of harm reduction activity by an NHS Board, it may introduce potential inaccuracies when comparing with local area estimates of the number of problem drug users. There is zero prison ‘reach’ in areas with no establishments (NHS Borders, NHS Fife, NHS Orkney, NHS Shetland and NHS Western Isles), producing a potential underestimate of the numbers of resident at risk individuals with a THN supply. Prison ‘reach’ in areas with national facilities may lead to an overestimation of the numbers of resident at risk individuals with a THN supply. See Appendix A1.6 for further information about the calculation of ‘reach’.

Table 3 shows the number of THN kits issued by prisons as a first supply to people at risk of opioid overdose in each NHS Board from 2011/12 to 2018/19 (and the cumulative total over the eight years). In 2018/19, prisons issued 323 people with their first THN supply. By NHS Board, the highest number of prison first supplies to people at risk were made in NHS Greater Glasgow & Clyde (160), followed by NHS Lothian (56), and NHS Forth Valley (53).

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11 HMP Inverness also has a Community Integration Unit (CUI) and can hold female prisoners, but does not currently do so.
3. Take-home naloxone (THN) supply via community prescription

3.1: Introduction

Prescribing take-home naloxone (THN) to people at risk of opioid overdose has always been technically possible via a community/hospital prescription. However, the absence of a suitable product for administration by lay persons before 2013, along with central reimbursement of THN costs in the first five years of the National Naloxone Programme, meant that THN was rarely prescribed using this mechanism. Following changes in medicines regulation and government policy (for further information see Appendix A1.2) some NHS Boards have also started to dispense THN via community prescription.

The number of THN kits dispensed via community prescription can be monitored using data from ISD’s Prescribing Information System. The number of prescriptions issued in an area may differ from the number of kits actually dispensed to individuals: prescriptions may not be presented to a pharmacy or multiple kits may be dispensed on the basis of a single prescription. For comparability with other figures presented in this report, data presented are restricted to the recommended THN product for administration by lay persons (Prenoxad-inj-1mg/ml)\(^{12}\). THN kits may be dispensed in community pharmacies via four types of community/hospital prescription\(^{13}\):

- GP10 (GP Standard Prescription Form),
- GP10N (Nurse Prescription Form),
- GP10P (Pharmacy Prescription Form) and
- HBP/HBPA (Hospital Based Prescribers, and Hospital Based Prescribers in Addiction services).

This section presents information on the number of THN kits dispensed via community prescription. This includes breakdowns by quarter, NHS Board and type of prescription. The most recent available information is for 2018/19. Monitoring data from previous years are included for comparison.

3.2: Number of kits dispensed via community prescription

In Scotland in 2018/19, there were 682 THN kits dispensed via community prescription (Table 1). This was a reduction compared to the previous year (2017/18: 806), yet the number remains substantially higher than in 2015/16 (70) and preceding years. In 2018/19, the number of kits dispensed via community prescription was highest in Quarter 3 (259). The

\(^{12}\) While Nyxoid (an intranasal product for lay administration) was licensed for use in February 2019, it was not used in Scotland until April 2019. Therefore, for the period covered by this report, Prenoxad was the only recommended product for administration by lay persons in the community (i.e. containing the correct patient information leaflet and dosage instructions). Technically, while other naloxone products could have been supplied, this was rarely done because relevant instruction leaflets were for medical professional use only. Reflecting this, these data relate to Prenoxad-inj-1mg/ml only. In 2018/19, a total of 72 generic Naloxone Hydrochloride-inj-1mg/ml supplies were excluded from the data.

\(^{13}\) Kits dispensed on the basis of GP10A (Stock Order Form) and CPUS (Community Pharmacy Urgent Supply) forms are not included.
majority (509, 75%) of kits dispensed via community prescription in 2018/19 were supplied in the NHS Greater Glasgow & Clyde area.

A total of 2,534 THN kits have been dispensed via community prescription in Scotland over the six years\(^\text{14}\) from 2013/14 to 2018/19 (Table 1). During this time period, the highest percentage of kits (1,981, 78%) was dispensed in the NHS Greater Glasgow & Clyde area followed by the NHS Lothian area (541, 21%). In 2018/19, the only other NHS Boards to provide kits via community prescription were NHS Grampian (3) and NHS Forth Valley (1).

**Prescription type**

Of the 682 kits dispensed via community prescription in 2018/19, there were 655 (96%) issued on the basis of a medical prescriber prescription (GP10), 24 (4%) on the basis of nurse prescriptions (GP10N), 2 (<1%) by supplementary/independent pharmacist prescriptions (GP10P), and 1 (<1%) by hospital-based prescriptions (HBP). Unlike 2016/17 and 2017/18, no prescriptions were issued from hospital-based drug treatment prescriptions (HBPA) (Table 7).

Between 2013/14 and 2018/19, the majority of community pharmacy kits (2,213, 87%), were dispensed on the basis of a medical prescriber prescription, followed by hospital-based drug treatment prescriptions (197, 8%), nurse prescriptions (66, 3%), and supplementary/independent pharmacist prescriptions (57, 2%).

3.3: ‘Reach’ of THN dispensing via community prescription

One of the purposes of dispensing THN via community prescription is to expand the ‘reach’ of THN provision, it is therefore important to describe the contribution of these supplies to the ‘reach’ of the National Naloxone Programme. A general discussion of the rationale and interpretation of this measure can be found in the community section.

Due to information on recipient type and supply type\(^\text{15}\) not being available, for THN dispensed via community prescription, it is assumed that the percentage of first supplies to people at risk of opioid overdose would be approximately the same as that for community outlets (Section 1). Community prescribing ‘reach’ is calculated by multiplying the observed number of prescriptions in each financial year by a factor based on the percentage of first supplies to people at risk of opioid overdose from community outlets in the preceding three-year period. Other kits supplied on the basis of community prescriptions are assumed to be re-supplies to people at risk of opioid overdose or supplies to family members etc. See Appendix A1.6 for further information.

\(^\text{14}\) THN supplies issued via community prescription started in April 2013.

\(^\text{15}\) Data on THN dispensing via community prescription were collated from PHS’s Prescribing Information System. This system includes the recipient’s Community Health Index (CHI) which can be used to calculate the number of individuals to whom prescriptions are dispensed. However, due to the high number of THN prescriptions which did not include a valid CHI, it was not possible to perform person-level analysis for community prescription data to determine if individuals had previously been supplied with naloxone. Unlike community and prison data collected in ISD’s agreed national dataset for National Naloxone Programme monitoring, prescribing records do not indicate recipient type (person at risk, friends/family, service worker).
Using this method of calculating reach, Table 3 shows the estimated number of THN kits issued as a first supply to people at risk via community prescription in each NHS Board area from 2013/14 to 2018/19 (and the cumulative total over that period). Of the estimated 170 first supplies to people at risk of opioid overdose dispensed in 2018/19, there were 125 (74%) in the NHS Greater Glasgow & Clyde area and 44 (26%) in the NHS Lothian area.
4. Combined take-home naloxone (THN) supply from community outlets, in prisons and via community prescription

4.1: Introduction

This section describes the combined number of kits distributed from community outlets and in prisons from 2011/12 to 2018/19 and dispensed via community prescription from 2013/14 to 2018/19. Estimates of the total number of kits and ‘reach’ per 1,000 adults with problem drug use (PDUs) in each NHS Board are also presented.

4.2: Number of kits supplied (all sources)

The National Naloxone Programme issued a total of 58,377 kits over the eight years from 2011/12 to 2018/19 (Figure 4.1 and Table 1). The majority of those kits (49,292, 84%) were supplied from community outlets.

A total of 12,135 kits were issued in Scotland in 2018/19 (a 42% increase compared with 2017/18 (8,555)). This was the highest annual total of THN kits supplied since the start of the National Naloxone Programme, largely driven by an increase in community supplies (see Section 1). Of the kits supplied in 2018/19, there were 10,609 (87%) supplied from community outlets, 844 (7%) supplied in prisons, and 682 (6%) dispensed via community prescription. In 2017/18, there were 8,555 kits supplied, of which 7,085 (83%) kits were supplied from community outlets, 664 (8%) were supplied in prisons, and 806 (9%) were dispensed via community prescription.

Figure 4.1: Cumulative number of THN kits supplied, by source and financial year (Scotland; 2011/12 to 2018/19)
Supply and recipient type

Figure 4.2 and Table 3 show the number of community outlet and prison kits issued in Scotland from 2011/12 to 2018/19 according to whether these were a first or repeat supply (supply type and recipient type is not available for kits dispensed via community prescription).

In 2018/19, repeat supplies accounted for 5,742 (50%) THN kits distributed from community outlets and prisons (5,524 community supplies and 218 prison supplies). The percentage of community outlet and prison THN kits distributed as a repeat supply increased each year from 11% in 2011/12 to 53% in 2017/18 and remained at a similar level (50%) in 2018/19. This was accompanied by a decrease in the percentage of first supplies from 86% (2,963) in 2011/12 to 35% (4,039) in 2018/19, a pattern that would be expected as a new initiative is rolled out. There was a notable increase in the number and percentage of spare supplies between 2017/18 (391, 5%) and 2018/19 (1,426, 12%).

Figure 4.2: Number of THN kits supplied from community outlets and prisons combined, by supply type and financial year (Scotland; 2011/12 to 2018/19)

Table 4 provides a breakdown of the reasons for repeat supply of naloxone from community outlets and prisons from 2011/12 to 2018/19. In 2018/19, there were 1,543 kits (27% of repeat supplies) issued due to the previous kit being used to reverse an opioid overdose. Over the period 2011/12 to 2018/19, the number of community outlet or prison repeat supplies made following use of the previous kit to reverse an opioid overdose was 5,700 (27% of repeat supplies).

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16 Includes resupplies due to use of previous kit on self or another person.
Other information on the characteristics of combined community outlet and prison supplies\(^{17}\) (2011/12 to 2018/19) is available in the data tables:

- Table 5 shows the number of at risk recipients who consented to share their personal information.
- Table 6 shows the sex and age characteristics of at risk individuals receiving THN.

### 4.3: Kit expiry

The National Naloxone Programme has been operational for eight years (starting in April 2011). However, as THN kits have an expiry date from production of three years, supplies distributed at the start of the programme will have now passed their expiry date. In addition, THN kits may be retained in the supply chain for varying periods before being received by NHS Boards for onward supply. Taking this into account, along with advice from an expert short life working group, it was estimated that THN kits will have an average of two years before date of expiry at the time of supply. In order to comply with licensing laws, NHS Boards are obliged to offer replacements for medicines which have passed their expiry date. The following analysis provides an indication of the numbers of THN kits potentially in circulation which are unexpired. See Appendix A1.5 for further information.

Figure 4.3 takes account of expiry dates in relation to THN kits distributed to all recipients, showing the cumulative number of kits supplied since the beginning of the National Naloxone Programme and the cumulative total of THN kits supplied less than two years ago. Between 2016/17 Quarter 1 and 2017/18 Quarter 4, the total number of THN kits supplied less than two years ago ranged between 16,200 and 16,800 (Table 8). Since then the number of THN kits supplied less than two years ago has risen to 20,690 in 2018/19 Quarter 4, reflecting the large increase in the number of kits supplied in 2018/19 compared to 2017/18.

\(^{17}\) THN kits dispensed via community prescription are not included as this type of information is not available for these supplies.
Figure 4.3: Cumulative number of THN kits and number of THN kits supplied less than two years ago to all recipients (all supply types combined), by financial year (Scotland; 2011/12 to 2018/19)

Figure 4.4 takes account of expiry dates in relation to THN kits distributed to people at risk of opioid overdose. Again, between 2016/17 Quarter 3 and 2017/18 Quarter 4, the total number of THN kits supplied less than two years ago was approximately the same, ranging between approximately 14,000 and 14,650 (Table 8). Since then the total number of THN kits supplied less than two years ago has risen to 16,771. Again, this is a reflection of the large increase in kits supplied in 2018/19 compared to 2017/18.
4.4: ‘Reach’ of THN supplies (all sources)

As one of the purposes of dispensing THN is to expand the ‘reach’ of THN provision, it is important to describe the contribution of these supplies to the ‘reach’ of the National Naloxone Programme. A general discussion of the rationale and interpretation of this measure can be found in the community section.

Previous sections of this report have described the number of first supplies to people at risk of opioid overdose via specific supply routes. By combining these data and comparing with the estimated number of problem drug users, the overall ‘reach’ of THN supply among the population at risk of an opioid overdose can be estimated. Due to a) the allocation of prison THN supplies to the NHS Board where the prison is located and b) the assumption that the percentage of first supplies to people at risk of opioid overdose dispensed via community prescription is similar to the percentage observed in community outlet supplies\(^\text{18}\), some uncertainty is associated with these estimates. However, an estimate of numbers of at risk individuals supplied with THN provides a better means of assessing ‘reach’ among the target

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\(^{18}\) This assumption, agreed with an expert short life working group, differs from the assumption used in the 2016/17 report, that all THN kits supplied on the basis of a community prescription were first supplies to people at risk of opioid overdose.
population (problem drug users) than the overall number of THN kits distributed. See Appendix A1.6 for further information.

Figure 4.5 shows the estimated cumulative number of THN kits issued as a first supply to people at risk of opioid overdose from community outlets, prisons and dispensed via community prescription from 2011/12 to 2018/19. Table 3 provides a breakdown of these data by NHS Board.

**Figure 4.5: Cumulative number of THN kits distributed as first supply to people at risk, by source, financial year (Scotland; 2011/12 to 2018/19)**

An estimated total of 25,935 individuals at risk of opioid overdose were supplied with THN over the eight years from 2011/12 to 2018/19. Due to the exclusion of repeat and spare supplies and kits supplied to family/friends and service workers, this is lower than the combined total number of kits supplied (Figure 4.1 and Table 1). Seventy-nine per cent (20,585) of estimated first supplies to at risk individuals were from community outlets.

The cumulative ‘reach’ of the National Naloxone Programme among people at risk of opioid overdose has increased consistently over time. However, annual estimated numbers of first supplies to this group have varied, increasing from 2,624 in 2011/12 to 4,338 in 2013/14, decreasing to 2,502 THN kits in 2017/18 and then increasing to 2,778 in 2018/19.

Figure 4.6 compares both the total number of THN kits supplied and the estimated total number of first supplies to people at risk of opioid overdose with the estimated number of problem drug users. Both measures are presented as cumulative figures over time per 1,000 problem drug users.
Cumulatively, a total of 58,377 kits (equivalent to 1,019 kits per 1,000 problem drug users aged 15-64) were supplied by the National Naloxone Programme up to the end of 2018/19 (Table 9). In 2018/19, there were 12,135 THN kits issued from community outlets, in prisons and dispensed via community prescription. Comparing with the most recent estimate of the number of problem drug users in Scotland (57,300) (Public Health Scotland, 2019), this was equivalent to an annual rate of 212 kits per 1,000 PDUs (the highest rate observed since the beginning of the National Naloxone Programme).

By the end of 2018/19, an estimated cumulative total of 25,935 kits (equivalent to 453 kits per 1,000 problem drug users) had been issued/dispensed as a first supply to people at risk (Table 9).

19 The Needle Exchange Surveillance Initiative (NESI) found that 61% of 2017/18 respondents had been supplied with THN in the previous year. However, NESI includes only injecting drug users, potentially a high overdose risk group with higher rates of THN provision than non-injecting opioid users. This report estimated that THN supply among problem drug users was lower (453 kits per 1,000 problem drug users, or 45%, since the start of the programme). This was based on comparison with a wider group of problem drug users (including non-injecting opioid users and benzodiazepine users). It is not possible to determine whether individuals were injecting or non-injecting opioid users on the basis of the naloxone monitoring dataset.
National Naloxone Programme (2011/12: 44 kits per 1,000), before a slight increase in 2018/19.

As supply and ‘reach’ increase over time it would be expected that the number of people supplied with naloxone for the first time would decrease (as the number of people at risk who have not already been supplied would be lower). Decreases in annual estimated ‘reach’ observed from 2013/14 to 2017/18 are likely to reflect this. The small increase in annual estimated ‘reach’ in 2018/19 suggests that (as described in relation to NHS Tayside (Section 1)) new supply mechanisms have been effective at identifying individuals at risk of opioid overdose who had not previously been reached by the programme. Taken together, this suggests most kits distributed via established supply routes are made to people who already have THN and, in order to increase ‘reach’ to individuals at risk, further diversification in supply may be beneficial.

Figure 4.7: Cumulative number of THN kits and first supplies to people at risk of opioid overdose (all supply types combined) per 1,000 Problem Drug Users (PDUs) aged 15-64, by NHS Board1,2 (Scotland; 2011/12 to 2018/19)

1. PDU – Problem Drug Users.
2. NHS Western Isles did not participate in the programme until 2017/18.
3. Intranasal naloxone kits distributed by NHS Highland are not included.

Figure 4.7 shows the cumulative total number of THN kits and estimated number of first supplies to people at risk issued from community outlets, in prisons and dispensed via community prescription from 2011/12 to 2018/19 as a rate per 1,000 estimated PDUs in each NHS Board.
NHS Borders issued the highest total number of kits compared to estimated numbers of problem drug users (2,361 per 1,000 PDU) followed by NHS Forth Valley (1,582). NHS Western Isles (which did not participate in the programme until 2017/18) issued the lowest number of kits per 1,000 PDU (360), followed by NHS Lanarkshire (580).

NHS Forth Valley issued the highest estimated number of THN kits as a first supply to people at risk (754 per 1,000 PDU) followed by NHS Borders (698). The high ‘reach’ rate in NHS Forth Valley may partly be associated with the presence of three prisons within the NHS Board area. NHS Western Isles had issued the lowest number of kits as first supply to people at risk (120 per 1,000 PDU), followed by NHS Orkney (233).

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20 Problem drug use estimates are taken from estimates for 2009/10, 2012/13 and 2015/16. Previous publications used figures for 2012/13 only. See revisions sections in Appendix 2 for further details.
5. Comparison of take-home naloxone (THN) distribution with opioid-related deaths –figures last updated 27 November 2018

Note that the following section has not been updated for this publication (See Introduction). It is expected that revised figures will be included in the next release of these statistics for 2019/20 data. For all data tables referred to in this section please refer to the 2017/18 publication.

5.1: Introduction

In addition to monitoring the supply of take-home naloxone (THN) kits in Scotland, the National Naloxone Advisory Group (NNAG) had agreed that the number and percentage of opioid-related deaths that occurred shortly after prison release or after hospital discharge would be used as measures of the impact of the National Naloxone Programme.

Changes since the implementation of the National Naloxone Programme are estimated by comparing the following time periods:

- **Pre-implementation or ‘baseline’**: the percentage of opioid-related deaths that occurred within four weeks of prison release or hospital discharge during the period 2006 to 2010\(^{21}\).
- **Post-implementation**: the percentage of opioid-related deaths that occurred within four weeks of prison release or hospital discharge in each year from 2011 to 2017.

Annual data are broken down by age and gender. The tables accompanying this report include comparable data on opioid-related deaths within 12 weeks of prison release and within 12 weeks of hospital discharge. These additional tables are included in this publication based on a NNAG recommendation that patterns of deaths within this longer timeframe should also be monitored to assess the timing of mortality risk throughout the 12-week period. Details of how these data are collected are included at Appendix A1.6 of the 2017/18 publication.

While differences in the percentage of post-prison or post-hospital deaths between the baseline (pre-implementation) and post-implementation periods are described below, attributing any changes to the National Naloxone Programme is complex, in part because this type of ‘before and after’ comparison is not able to take account of secular trends. The comparison also assumes that the total number of opioid users at risk of death and the number of opioid users at risk of death during the four-week period following prison release or hospital discharge either do not change over time, or else show the same changes.

5.2: Opioid-related deaths post-prison release

This indicator is defined as:

- **Numerator**: the number of drug-related deaths (including suicides) reported by National Records of Scotland (NRS) that were opioid-related\(^{22}\) and occurred within the first four weeks following release from prison custody.

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\(^{21}\) As per the definition used by National Records of Scotland (NRS), this is based on year of registration of death. In Scotland this is, for the most part, year of death because all deaths must be registered within eight days of death having been ascertained.

\(^{22}\) That is, where one or more of heroin, morphine, methadone or buprenorphine was implicated in, or potentially contributed to death.
• **Denominator**: the number of opioid-related deaths (defined as for the numerator).

The baseline for this indicator is the percentage of opioid-related deaths that occurred within the first four weeks following release from prison custody during the period 2006-10 (based on year of registration of death\(^1\)).

**Results**

In 2017, there were 934 drug-related deaths, of which 709 were opioid-related. The number of opioid-related deaths rose by 9% from 2016 (650). In 2017, the number of opioid-related deaths within four weeks of prison release was 31 (an increase of eight compared to 2016 (23)). The percentage of opioid-related deaths that occurred within four weeks of prison release was 4.4% (compared to 3.5% in 2016).

Opioid-related deaths within four weeks of prison release are shown in Table 5.1 and Figure 5.1, along with the total number of opioid-related deaths. The number of opioid-related deaths during the baseline period 2006 to 2010 was 1,970 (an average annual number of 394), of which 193 (an average of 39 per year) occurred within four weeks of prison release. The average percentage of opioid-related deaths that occurred within four weeks of prison release during the baseline period 2006 to 2010 was 9.8%.

**Figure 5.1: Number of opioid-related deaths and percentage within four weeks of prison release, by calendar year (Scotland; 2006 to 2010 (baseline) & 2011 to 2017\(^1\))**

1. White bars indicate percentages in post-implementation period which are significantly below the baseline value from the pre-implementation period (red line).
Apart from in 2013 (383), the annual number of opioid-related deaths (indicated by the blue line in Figure 5.1) in each year since the implementation of the National Naloxone Programme in 2011 has been higher than the average annual number of opioid-related deaths for the baseline period (394). However, since the implementation of the National Naloxone Programme, the annual number of opioid-related deaths within four weeks of prison release has been lower than the comparable average annual number in the baseline period (39). Therefore, since 2012, the annual percentage of opioid-related deaths within four weeks of prison release has been substantially lower than the annual percentage observed during the baseline period (the 2017 percentage (4.4%) was less than half of that observed during the baseline period (9.8%)). It should be noted that these percentages are based on relatively small numbers (for example, 23 deaths in 2016 and 31 deaths in 2017) and should therefore be treated with caution. In Figure 5.1, the white bars indicate years in which the percentage figures were statistically significantly lower than the average percentage during the baseline period.

Table 5.2 provides comparable information for opioid-related deaths within 12 weeks of prison release. During the baseline period, 73% (193/265) of all opioid-related deaths within 12 weeks of prison release occurred in the first four weeks after release. This percentage decreased after implementation of the National Naloxone Programme, ranging between 48% and 55% from 2012 onwards (53% (31/58) in 2017). Recent reductions in the number and percentage of deaths within four weeks of prison release may indicate that the risk of opioid-related death during this period has decreased (potentially due to THN supply at prison release). However, this also means that the numbers of deaths observed within the four-week timeframe are small and falling, relative to deaths observed within the 12-week period.

5.3: Opioid-related deaths post-hospital discharge

An additional indicator based on the percentage of opioid-related deaths within four weeks of hospital discharge (general acute/psychiatric) has been included in the naloxone monitoring report since 2013. The National Naloxone Programme did not oversee distribution of THN kits from general acute or psychiatric hospitals and PHS did not receive separate monitoring data for hospital provision of THN kits. Use of THN for overdoses occurring after hospital discharge may therefore be largely dependent on kits supplied from community outlets, prisons and dispensed on the basis of community prescriptions.

This indicator is defined as:

- **Numerator**: the number of drug-related deaths (including suicides) reported by National Records of Scotland (NRS) that were opioid-related and occurred within the first four weeks following discharge from general acute/psychiatric hospital.
- **Denominator**: the number of opioid-related deaths (defined as for the numerator).

The baseline for this indicator is the percentage of opioid-related deaths that occurred within the first four weeks following discharge from general acute/psychiatric hospital during the period 2006-10 (based on year of registration).
Results
Opioid-related deaths within four weeks of hospital discharge are shown in Table 5.3 and Figure 5.2. The percentage of opioid-related deaths within four weeks of hospital discharge has fluctuated around the baseline since implementation of the National Naloxone Programme in 2011. There was no year where the percentage was significantly different from the baseline. The total number of opioid-related deaths during the baseline period 2006 to 2010 was 1,970 (an average annual number of 394), of which 191 (an average of 38 per year) were within four weeks of hospital discharge. As a result the percentage observed during the baseline period 2006 to 2010 was 9.7%. In 2017, the number of opioid-related deaths was 709, of which 78 were within four weeks of hospital discharge, resulting in a percentage of 11.0% of deaths that occurred within four weeks of hospital discharge.

Figure 5.2: Number of opioid-related deaths and percentage within four weeks of hospital discharge, by calendar year (Scotland; 2006 to 2010 (baseline) & 2011 to 2017)

Table 5.4 provides comparable information for the period within 12 weeks of hospital discharge. In 2017, 52% (78/151) of opioid-related deaths within 12 weeks of hospital discharge occurred within the first four weeks. While the percentage has varied over time (from 41% to 56%), the 2017 percentage was the same as the percentage observed during the baseline period (191/367, 52%).
It is noteworthy that the relative decrease in early deaths among one vulnerable population (ex-prisoners) has not been accompanied by a similar fall in early deaths among another vulnerable population (those discharged from hospital). Both of course are relative to rising overall numbers of opioid-related deaths. Given these differences, it would be worthwhile exploring the reasons for the different findings for hospitals and prisons.
Glossary

ADP  Alcohol and Drug Partnership. Multi-agency partnership formed to take strategic responsibility to address problems caused by substance use in each locality. This responsibility is devolved from the Scottish Government and includes commissioning evidence-based, person-centred and recovery-focused services, improving quality within these services based on outcomes for service users and developing policies to intervene early and prevent the development of problems with substance use.

DRD  Drug-Related Death

Intramuscular  An intramuscular injection is a technique used to deliver a medication deep into the muscles. This allows the medication to be absorbed into the bloodstream quickly. Until February 2019, the only naloxone product licensed for lay use (Prenoxad) was administered by intramuscular injection.

Intranasal  Intranasal is a route of administration in which a medication is delivered via the nose. Two types of intranasal naloxone kits have been distributed. NHS Highland distributed Prenoxad kits with a nasal atomiser as part of a pilot scheme outwith the National Naloxone Programme (these figures are excluded from this series of reports). In February 2019, the intranasal product Nyxoid was licensed for use as part of the National Naloxone Programme.

ISD  Information Services Division of NHS National Services Scotland, now part of Public Health Scotland (PHS).

NNAG  National Naloxone Advisory Group. The body responsible for oversight of the National Naloxone Programme during its first five years of operation (2011/12 to 2015/16).

NNP  National Naloxone Programme

NRS  National Records of Scotland

Opioids  Drugs similar to heroin or morphine. Opioids include opiates (drugs derived from opium, including morphine and heroin (diamorphine)) and semi-synthetic and synthetic drugs such as hydrocodone, oxycodone and fentanyl. Opioids are most often used medically to relieve pain. The side effects of opioids may include itchiness, sedation, nausea, respiratory depression, constipation, and euphoria. The euphoria attracts recreational use, and frequent, escalating recreational use of opioids typically results in addiction. Tolerance and dependence will develop with continuous use, requiring increasing doses and leading to a
withdrawal syndrome upon abrupt discontinuation. Accidental overdose or concurrent use with other depressant drugs commonly results in death from respiratory depression. Due to their association with addiction and fatal overdose, most opioid drugs are controlled substances.

PADS Partnership for Action on Drugs in Scotland. An expert group (with sub groups) responsible for advising the Scottish Government in relation to drug misuse. The PADS Harms subgroup was responsible for oversight of the National Naloxone Programme from 2016 to 2019.

PHS Public Health Scotland. Set up in April 2020 merging Information Services Division (ISD), Health Protection Scotland and Health Scotland into one organisation.

SPS Scottish Prison Service

THN Take Home Naloxone
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Further Information

Further information and data for this publication are available from the publication page on our website.

For more information on drug and alcohol misuse see the drug and alcohol section of our website.

The Scottish Public Health Observatory (ScotPHO) provides information on various aspects of drug misuse in Scotland: ScotPHO drug misuse section.

The next release of this publication will be in spring 2021.

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Appendices

Appendix 1 – Background information

A1.1: Policy context

Since 1997, there has been a long-term upward trend in the number of Drug-Related Deaths (DRDs) in Scotland. National Records of Scotland (NRS) reported that there were 574 DRDs in Scotland in 2008 (NRS, 2019). Against this context, Scotland’s national drugs strategy The Road to Recovery: A New Approach to Tackling Scotland’s Drug Problem was launched in May 2008 and included specific actions required to address DRDs in Scotland.

A National Drug-Related Deaths Database (NDRDD) was set up to aid understanding of the nature of, and circumstances surrounding DRDs and the individuals vulnerable to them. To date, Public Health Scotland have published seven NDRDD reports (for calendar years 2009 to 2016), establishing that the majority of DRDs were among males, living in the most deprived areas, and aged 25 to 44 years (the average age increased from 34 in 2009 to 41 in 2016). Someone else was present at the scene of death in 56% of DRDs in 2016, thus offering an important window of opportunity for someone to intervene and potentially save a life.

Findings from the NDRDD for 2016 deaths show that 77% of individuals were in drug treatment, in prison or police custody or discharged from hospital in the six months prior to their death, demonstrating that in the majority of cases there may have been an opportunity to engage with and support those vulnerable to a DRD. Such descriptions of the characteristics of individuals at risk of overdose and periods of high overdose risk have helped inform training for practitioners, service users and family/friends in how to identify and respond to overdose situations, with the goal of reversing the upward trend in DRDs.

Following the recommendations from two independent expert forums and the successful outcomes of local take-home naloxone pilots in Scotland, the Scottish Government supported the rollout of the National Naloxone Programme in Scotland from November 2010.

In addition to supporting the rollout of the National Naloxone Programme, between 2010 and 2016, Scottish Government funding was made available to support the continued delivery of the programme by Alcohol and Drug Partnerships and NHS Boards. Support to the programme included:

- Specific support to the Scottish Prison Service (where medical services are now provided by NHS Boards), in recognition of the increased risk of overdose following release from prison custody.
- A national naloxone training resource and information materials to support the development of local take-home naloxone programmes.
- A national coordinator and peer trainer based at the Scottish Drugs Forum.
- Reimbursement of THN kit costs.
- Independent and robust monitoring led by ISD Scotland (Now part of Public Health Scotland (PHS)).
The National Naloxone Programme (NNP) was overseen by the National Naloxone Advisory Group (NNAG), a multi-disciplinary group including stakeholders from Scottish Government, NHS Boards, Scottish Prison Service, Information Services Division (ISD) of NHS National Services Scotland, voluntary sector organisations and academia. Oversight of the National Naloxone Programme passed to the Partnership for Action on Drugs in Scotland (PADS) Harms Group from March 2016 to March 2019. The programme is now overseen by a Working Group comprising stakeholders from PHS, Scottish Government, NHS Boards and voluntary sector organisations and continues to be supported by Scottish Government.

The Scottish Government’s new drug and alcohol treatment strategy Rights, Respect and Recovery, launched in November 2018, made a commitment (R5) to ‘Improve access to key interventions which will reduce harm, specifically focusing on those who inject drugs.’

Following a series of annual increases, the number of DRDs in Scotland reached 1,187 in 2018 (the highest figure yet recorded) (NRS, 2019). As a response to the rising number of drug deaths the Scottish Government established the Drugs Death Taskforce in July 2019. In January 2020 they published ‘Evidence-Based Strategies for Preventing Drug-Related Deaths in Scotland’ which suggested that naloxone distribution should be a key strategy in national and local responses to reduce drug-related deaths. Since 2019, there have been a number of developments in naloxone supply, which are described below.

**A1.2: Legal framework and supply routes**

Naloxone is a drug which reverses the effects of a potentially fatal overdose with opioid drugs such as heroin or morphine. Administration of naloxone provides time for emergency services to arrive and for treatment to be given. Under the National Naloxone Programme, naloxone was provided to those at risk of opioid overdose once they had undergone training. This training was also available to family, friends and service workers.

In its first five years of operation (from April 2011 to March 2016), the National Naloxone Programme co-ordinated distribution of THN kits in two settings - community outlets (usually specialist drug treatment services) and prisons:

- **During April 2011, Greater Glasgow & Clyde and Highland NHS Boards started THN distribution and piloted the data collection processes for the community-based element of the National Naloxone Programme. Rollout of the programme and associated data collection continued throughout Scotland from April 2011. By January 2012, 13 of 14 NHS Boards in Scotland participated in the National Naloxone Programme. NHS Western Isles started distributing Naloxone in 2017/18.**

- **The supply of THN in prisons was introduced incrementally from February 2011 and by June 2011 all Scottish prisons were participating in the programme. From 1 November 2011, responsibility for prisoner health care transferred from the Scottish Prison Service (SPS) to the NHS. Although this report refers throughout to ‘THN kits provided in prisons’, it should be noted that kits are provided by NHS staff in prisons to prisoners on liberation.**

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23 One exception to this is HMP Castle Huntly (an open prison), which provides training and THN to prisoners at risk who leave the establishment on home leave prior to their liberation.
In late 2015, THN supply via a third route (dispensing in a community pharmacy via prescription) increased in some NHS Boards following two key changes in the regulatory and policy frameworks:

- From 1 October 2015, changes to the 2012 Human Medicines Regulations came into force, allowing injectable naloxone to be supplied by lawful drug treatment services (defined as specialist secondary services, primary care addiction services, needle exchanges and community pharmacies). These amendments aimed to make THN more widely available by allowing direct THN supply to family members or carers for administration in the event of opioid overdose.
- From 1 April 2016, central reimbursement of the cost of THN kits ceased and NHS Boards assumed responsibility for the funding of THN supplies to opioid users at risk of accidental overdose.

The practical effects of these changes were to a) remove constraints on THN supply to those not at risk of opioid overdose and b) to facilitate NHS Board level diversification of THN supply routes. Data from PHS’s Prescribing Information System are included in this report in order to count the number of THN kits dispensed via community prescription.

Until 2019, the only naloxone product licensed for lay use and therefore distributed as part of the National Naloxone Programme was administered by intramuscular injection (Prenoxad). In February 2019, Nyxoid, an intranasal naloxone product was licensed for lay administration (UK Government 2019). The availability of Nyxoid means that those preferring to carry an intranasal product can now be supplied with naloxone that is safe, effective and suited to their needs. It is anticipated that the availability of this product may help to reduce the number of unlicensed intranasal kits supplied by NHS Highland and encourage naloxone carriage among police, fire and rescue and prison officers in Scotland. This product was first supplied in Scotland in April 2019. Although not available for the time period covered by this report, data on Nyxoid supply will feature in the 2019/20 report.

A pilot for THN supply by the Scottish Ambulance Service (SAS) was undertaken between February 2020 and June 2020. This initially operated from the Springburn centre/control room that centres on emergency call outs in the NHS Greater Glasgow & Clyde area and parts of NHS Lanarkshire. This pilot was reviewed in June 2020 and it was decided to continue operating the pilot while refining data collection protocols with a view to rolling it out nationwide. SAS supply figures for 2019/20 will be included in the next publication.

A further pilot study of THN carriage and administration by police officers is being developed by Police Scotland in collaboration with the Drug Deaths Taskforce. Preparatory work for this pilot has been put on hold due to the COVID-19 pandemic but is likely to resume in late 2020. It is not currently thought that Police Scotland will supply THN as part of this pilot, so the potential for inclusion of relevant data in future reports is not yet known.

In response to the COVID-19 pandemic, on 27 April 2020 the Lord Advocate allowed the supply of THN to be expanded to non-drug treatment services (COPFS 2020). The first supplies via non-drug treatment services in Scotland were made in the first quarter of financial year 2020/21. Although not available for the time period covered by this report, data on non-drug treatment service supplies will feature in the 2020/21 report.
A1.3: National Naloxone Programme supply monitoring – dataset items

The data items in the agreed national dataset for monitoring of the National Naloxone Programme are detailed below. Questions one to six apply to all kit supplies from community outlets or in prisons. Question seven asks if consent has been given to the sharing of the individual’s personal data. If yes, then questions eight to 13 (forename and surname (initials only are submitted to PHS), date of birth, age, postcode sector of residence and gender) should be completed. Questions 14 applies only to the supply of kits by prisons.

Data were submitted quarterly to PHS (six-monthly during 2012/13) via secure data transfer, from the Naloxone Lead in each NHS Board and a Lead Officer in each prison establishment. Data were supplied in the form of a completed Excel spreadsheet, for secure storage and analysis at PHS.

<table>
<thead>
<tr>
<th>Data item</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. ADP of Supply</td>
<td><strong>Definition:</strong> This is the location of the service provider. <strong>Purpose:</strong> This data item will be used to monitor returns for each service participating in the National Naloxone Programme.</td>
</tr>
<tr>
<td>1b. Prison Name (applicable to supply of kits in prisons)</td>
<td><strong>Definition:</strong> This is the name of the prison where the naloxone is issued. <strong>Purpose:</strong> This data item will be used to monitor returns for each prison participating in the National Naloxone Programme.</td>
</tr>
<tr>
<td>2. Date of Issue</td>
<td><strong>Definition:</strong> This is the date on which the kit was issued and should be entered in the format DD/MM/YYYY. <strong>Purpose:</strong> This data item will be used to monitor the distribution of kits throughout the year. The dates of issue, together with other data items will also be used to quality assure the data. For example, date of issue, name and date of birth will help identify possible duplicate entries.</td>
</tr>
<tr>
<td>3. Naloxone is provided to:</td>
<td><strong>Definition:</strong> This records whether the kit is provided to the person at risk, family members, friends, partners, etc. or a service worker. The drop down list gives the options:</td>
</tr>
<tr>
<td></td>
<td>• Person at risk</td>
</tr>
<tr>
<td></td>
<td>• Family/Friend</td>
</tr>
<tr>
<td>Data item</td>
<td>Notes</td>
</tr>
<tr>
<td>-----------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td>• Service Worker</td>
</tr>
</tbody>
</table>

**Purpose:**

This data item will be used to monitor the ‘reach’ of THN distribution (how many individuals at risk have access to a kit) and the total numbers of individuals receiving THN in addition to those persons at risk.

---

4. Naloxone is provided as:

**Definition:**

This records whether the kit is the person’s first supply or if they have previously been provided with a supply of naloxone. The drop down list gives the options:

- First Supply
- Repeat Supply
- Spare Supply
- Not Known

**Purpose:**

This data item will be used to monitor the ‘reach’ of THN distribution (how many first supplies made to individuals at risk), the total numbers of individuals receiving THN in addition to those persons at risk (including spare supplies) and the frequency of THN re-supply due to use, damage etc.

*Please note this is from the person’s perspective.*

---

5. Last naloxone supply:

**Definition:**

This records what happened to the last supply that was provided. The drop down list contains the options:

- Used on Self
- Used on Other
- Lost Kit
- Confiscated
- Expired
- Damaged Kit
- Not Applicable – First Supply
- Not Applicable – Spare Supply
- Not Known

**Purpose:**

This data item will assist in evidencing reasons for re-supply (e.g. how many kits were used on those at risk of opioid overdose).
### Data item | Notes
--- | ---
**Please note that this is from the person’s perspective.** |  

#### 6. Naloxone Type

**Definition**
Records the type of Naloxone that is being distributed.

- **Prenoxad** – Intramuscular product that has been available since beginning of National Naloxone Programme (April 2011).
- **Nyxoid** – A new intranasal product that has been available for distribution since February 2019.
- **Intranasal (Other)** – Intranasal naloxone that was distributed as part of a local pilot within NHS Highland.

**Purpose:**
It allows for the recording of kits that are considered to be part of the NNP (Prenoxad and Nyxoid) separately from those that are part of the NHS highland pilot Scheme.

It will also allow the monitoring of uptake of the new Nyxoid product as it is rolled out.

#### 7. Consent to Data Recording

**Definition:**
A Yes/No field indicating whether consent to share their personal data has been given.

**Questions 7 to 13 apply to persons at risk only. No personal data is collected for friends/family or service workers.**

#### 8. Forename

**Definition:**
The forename of the person at risk. 1st letter of forename to be recorded.

**Purpose:**
For PHS internal use only. To evidence the number of individuals at risk who had been supplied with THN.

#### 9. Surname

**Definition:**
The surname of the person at risk. 1st and 4th letters of person’s surname to be recorded.

**Purpose:**
For PHS internal use only. To evidence the number of individuals at risk who had been supplied with THN.
<table>
<thead>
<tr>
<th>Data item</th>
<th>Notes</th>
</tr>
</thead>
</table>
| **10. Date of Birth**         | **Definition:** This is the date of birth of the person at risk and should be entered in the format DD/MM/YYYY.  
**Purpose:** This data item will be used to determine the age profile of individuals at risk receiving THN. |
| **11. Age**                   | **Definition:** The age in years of the person at risk.  
**Purpose:** In the absence of a date of birth (e.g. client refuses to supply their DOB), then age alone can be recorded in order to determine the age profile as in Q10. |
| **12. Postcode of Residence** | **Definition:** The partial postcode of the person at risk’s usual private residence.  
**Purpose:** This data item will be used to assess geographic coverage of THN as well as determine areas with increasing use. |
| **13. Gender**                | **Definition:** This records the person at risk’s gender. The drop down list contains the options:  
- Not Known  
- Male  
- Female  
- Transgender  
- Not Specified  
**Purpose:** This data item will be used to assess the gender profile of those at risk receiving THN. |
14. Prison Release Date (if applicable)

**Definition**
This is the date the person at risk is due for release from prison and should be entered in the format DD/MM/YYYY.

**Purpose:**
This will assist in evidencing the impact of THN on prisoners who are vulnerable to overdose within 4 weeks and 12 weeks following liberation.

*It is recognised that the four-week period following prison release is a crucial period for former prisoners with regard to risk of death from overdose.*

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**A1.4: Prescribing Information System data on THN supply via community prescription**

Community prescription data are supplied quarterly by the PHS Prescribing Team. Data on number of kits (Quantity) and number of prescriptions (Items) dispensed by financial year and quarter for all NHS Boards dispensing THN kits via community prescription are received by prescribable item name (Prenoxad- inj – 1mg/ml, Nyxoid – spray- 1.8mg/0.1ml and Naloxone Hydrochloride - inj - 1mg/ml) and prescription type:

- GP10 (GP Standard Prescription Form);
- GP10N (Nurse Prescription Form);
- GP10P (Pharmacy Prescription Form);
- HBP (Hospital Based Prescriber Form) and;
- HBPA (Hospital Based Prescriber in Addiction services Form).

While only Prenoxad-inj-1mg/ml data are reported, the number of prescriptions for Naloxone Hydrochloride-inj-1mg/ml are also monitored in order to identify inappropriate prescribing (as Prenoxad is the only THN product for administration by lay persons, all relevant prescriptions should specify this as the item to be dispensed).

**A1.5: Calculation of kit expiry**

The National Naloxone Programme has been operational for eight years (supply commenced in April 2011). However, as the pharmaceutical product supplied by the National Naloxone Programme has an expiry date from production of three years, supplies distributed at the start of the National Naloxone Programme will have now passed their expiry date. In addition, THN kits may be retained in the supply chain for varying periods and therefore there may be a reduction in the three-year lifespan period when supplies are received by NHS Boards for onward supply. Taking this into account, along with advice from an expert short life working group, it was estimated that THN kits will have an average of two years remaining before date of expiry at the time of supply. In order to comply with licensing laws, NHS Boards are obliged to offer replacements for medicines which have passed their expiry date.
This report includes, an analysis of a) the number of THN kits supplied less than two years ago and b) the number of THN kits supplied less than two years ago to people at risk of opioid overdose (i.e. the at risk population). Taking account of the duration of the National Naloxone Programme, this analysis estimates the numbers of THN kits in circulation which are unexpired.

In the analysis of kit expiry for both supplies to all recipients and to people at risk of opioid overdose, the following assumption was made:

- Prison data from 2011/12 Quarter 1 (213 THN kits) were submitted as an aggregate return by SPS and did not include information on date of supply. In order to include these data in the analysis, an assumed supply date of 1 April 2011 was used as the basis of calculating the kit expiry date.

In the analysis of kit expiry for supplies to people at risk of opioid overdose, the following assumptions were made:

- Prison data from 2011/12 Quarter 1 were submitted as an aggregate return by SPS and did not include information on supply type or recipient type. However, as this was the first quarter of National Naloxone Programme operation, it is assumed that all were first supplies to people at risk of opioid overdose and are therefore included in the analysis.

- Community prescribing data does not include information on recipient type. In order to include these kits in the analysis, it was assumed that the percentage of community prescribing THN kits supplied to people at risk of opioid overdose was the same as the percentage observed among community outlet supplies. Community prescribing supplies to people at risk of opioid overdose was calculated by multiplying the observed number of THN kits dispensed in each financial year by a factor based on the percentage of community outlets supplies to people at risk of opioid overdose in the preceding 2-year period. For example:

<table>
<thead>
<tr>
<th>Financial Year that factor is applied to</th>
<th>Percentage of kits supplied to persons at risk in community supplies, two year average</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013/14</td>
<td>88.5</td>
</tr>
<tr>
<td>2014/15</td>
<td>89.3</td>
</tr>
<tr>
<td>2015/16</td>
<td>88.1</td>
</tr>
<tr>
<td>2016/17</td>
<td>86.3</td>
</tr>
<tr>
<td>2017/18</td>
<td>83.0</td>
</tr>
<tr>
<td>2018/19</td>
<td>80.2</td>
</tr>
</tbody>
</table>

A1.6: Calculation of THN ‘reach’

Calculation of the ‘reach’ of the National Naloxone Programme is based on the number of first supplies made to people at risk of opioid overdose. The data items necessary to make these exclusions are available in the agreed national dataset for National Naloxone Programme monitoring of THN supplies from community outlets and prisons (see Appendix).
A1.3. However, some assumptions made during the calculation of community outlet and prison ‘reach’ require further elaboration. Also, as information on recipient type and supply type is not available for community prescriptions, an alternative method for estimating ‘reach’ was used for this supply route. This approach is explained below, detailing relevant assumptions.

Please note it is not possible to combine analysis of kit expiry with the ‘reach’ analysis described below. As community outlet and prison THN supply data is not person identifiable, ‘reach’ analysis is based on the numbers of kits supplied to people at risk of overdose where supply type was indicated as ‘first’. As first supplies have decreased in number and prevalence over the course of the National Naloxone Programme, exclusion of kits supplied more than two years ago would entail the exclusion of the majority of first supplies to people at risk, resulting in a substantial underestimation of the proportion of the at risk population supplied with THN.

**Community Outlet and Prison ‘reach’**

For both community outlet and prison supplies, ‘reach’ is based on the count of the number of THN kits issued as a first supply (excluding repeat supplies and spare supplies) to people at risk of opioid overdose (excluding supplies to service workers and family/friends). This functions as a proxy estimate of the number of at risk individuals supplied with THN and, as such, is a more suitable figure to compare with the estimated number of problem drug users than the total number of THN kits distributed (used in reports prior to 2017/18 and included in this report for comparison). By eliminating counts of repeat/spare supplies, and focusing on supplies to people at risk of opioid overdose (i.e. the target population for this intervention, who are most likely to witness an opioid overdose), this approach adds value by more robustly quantifying how many problem drug users have the opportunity, training and equipment to intervene and potentially save a life.

Whilst the naloxone dataset includes some demographic data that may aid the calculation of the number of ‘individuals’ who were supplied kits, due to gaps in data (not all people consent to sharing details) and/or variations in data recording (e.g. recording of slightly different initials, postcode sector information and/or date of birth) it is not possible to use these to conclusively identify the number of individuals involved. Instead, the details recorded on recipient type and supply type are used to determine the number of at risk individuals supplied.

In relation to ‘first supply’, it is assumed that individuals report accurately about previous THN supply and that that information is accurately recorded and submitted to PHS. This means that all records of first supplies are considered to be separate individuals. It is also assumed that individuals will seek or be offered a repeat supply when their initial supply is used, lost etc and that they continue to be exposed to the risk of opioid overdose (i.e. they do not die, they continued to use opioids) after initial supply was made.

In relation to the selection of at risk individuals, first supplies made to service workers are not included as it is assumed these staff would only witness opioid overdoses during their working hours and distributions to such staff could not be meaningfully compared with estimated numbers of problem drug users. Community outlet supplies to friends/family are...
not counted because these are generally supplied in addition to an existing first supply to, and with the consent of, a specific individual at risk. There may be a small number of cases in which an individual at risk provides consent for friends/family members to receive a supply, but chooses not to accept a THN supply themselves, but it is not possible to identify these cases using the monitoring information supplied to PHS. Prisons supplied very few THN kits to persons other than those at risk of opioid overdose (192 supplies from 2011/12 to 2018/19).

Prison data from 2011/12 Quarter 1 were submitted as an aggregate return by SPS and did not include information on supply type or recipient type. However, as this was the first quarter of National Naloxone Programme operation, it is assumed that all were first supplies to people at risk of opioid overdose and are therefore included in the analysis of ‘reach’.

As discussed in Section 2, prison ‘reach’ estimates are based on the NHS Board where the prison was located in order that they can be counted alongside numbers of community outlet and community prescription supplies and compared with the estimated at risk populations in each area. While most prisons accommodate individuals as close as possible to their area of residence and therefore reflect the population resident in that area, some are national facilities, accommodating prisoners from across Scotland. There is zero prison ‘reach’ in areas with no establishments (NHS Borders, NHS Fife, NHS Orkney, NHS Shetland and NHS Western Isles), producing a potential underestimate of the numbers of resident at risk individuals with a THN supply (upon release, individuals may transport a prison THN supply to their area of residence). However, due to supply to non-residents, prison ‘reach’ in NHS Boards with national facilities may overestimate the numbers of resident at risk individuals with a THN supply.

Community prescription ‘reach’

For dispensing via community prescription, ‘reach’ is based on the count of the number of THN prescriptions fulfilled, rather than the number of kits dispensed (a single prescription may specify multiple kits to be dispensed, but would reflect one individual).

Information on recipient type and supply type are not available from PHS’s Prescribing Information System. Prescribing data includes the recipient’s Community Health Index (CHI) number which could be used to calculate the number of individuals to whom prescriptions were dispensed by excluding multiple prescriptions to the same individual. However, due to the high number of THN prescriptions which did not include a valid CHI, it was not possible to perform person-level analysis for these data. Community prescription ‘reach’ estimates may be revised if person-level analysis is facilitated by future improvements in CHI capture. However, prescribing data do not indicate recipient type (person at risk, friends/family, service worker) and, due to the limited potential for linking community prescription CHIs to the personal identifiers collected in the national dataset, this is not considered a feasible future refinement.

Discussions with relevant NHS Board leads about the use of this supply route identified a need to modify an assumption made in reports prior to 2016/17, namely that all community prescriptions related to first supplies to persons at risk of opioid overdose. It is now assumed that the percentage of first supplies to people at risk of opioid overdose would be approximately the same as that for community outlet supplies (Section 1). Community
prescribing ‘reach’ is calculated by multiplying the observed number of prescriptions in each financial year by a factor based on the percentage of first supplies to people at risk of opioid overdose from community outlets in the preceding 3-year period. For example:

Table A1.2: Percentage of kits supplied as first supplies to persons at risk from community supplies, as applied to kits dispensed by community pharmacies

<table>
<thead>
<tr>
<th>Financial Year that factor is applied to</th>
<th>Percentage of kits supplied as first supplies to persons at risk in community supplies, three year average</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013/14</td>
<td>67.2</td>
</tr>
<tr>
<td>2014/15</td>
<td>60.9</td>
</tr>
<tr>
<td>2015/16</td>
<td>52.9</td>
</tr>
<tr>
<td>2016/17</td>
<td>43.2</td>
</tr>
<tr>
<td>2017/18</td>
<td>34.5</td>
</tr>
<tr>
<td>2018/19</td>
<td>26.3</td>
</tr>
</tbody>
</table>

Other kits supplied on the basis of community prescriptions are assumed to be re-supplies to people at risk of opioid overdose or supplies to family members etc. It is assumed that all prescriptions were submitted to a pharmacy.

Comparison with estimated numbers of Problem Drug Users

‘Reach’ of THN supplies among the target population is expressed as a rate per 1,000 estimated Problem Drug Users (PDUs). National and NHS Board estimates of the size of the problem drug use population based on 2009/10, 2012/13, and 2015/16 data, were published by PHS and have been used in reach estimates. These estimates are based on a definition of problem drug use as ‘the problematic use of opiates (including illicit and prescribed methadone use) and/or the illicit use of benzodiazepines’. Single-substance prevalence estimates (i.e. opioids only) are not published and therefore, a small number of individuals using only benzodiazepines are included in problem drug use estimates, leading to a potential overestimation of the size of the target population. However, the numbers of such individuals are thought to be small and problem drug use estimates remain the best comparator for estimating ‘reach’.
A1.7: References


# Appendix 2 – Publication Metadata

<table>
<thead>
<tr>
<th>Metadata Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Publication title</strong></td>
<td>National Naloxone Programme Scotland – Monitoring Report 2018/19</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Data are presented on the supply of naloxone ‘take home’ kits in Scotland. Data are presented separately for kits issued from community outlets, in prisons, and dispensed via community prescription, as well as combined totals. Information presented includes the number of kits issued each month, the number of kits issued in each NHS Board/prison establishment, who the kits have been issued to and whether the kit was issued as a first or a repeat supply (and reasons for repeat supply).</td>
</tr>
<tr>
<td><strong>Theme</strong></td>
<td>Lifestyles and Behaviours</td>
</tr>
<tr>
<td><strong>Topic</strong></td>
<td>Substance Use</td>
</tr>
<tr>
<td><strong>Format</strong></td>
<td>PDF report and <a href="#">Excel tables</a></td>
</tr>
<tr>
<td><strong>Data source(s)</strong></td>
<td>Community outlet and prison data are provided by services (community and prisons) to naloxone leads in NHS Boards and submitted to PHS’s Naloxone Monitoring database. Data on dispensing via community prescription is part of PHS’s Prescribing Information System and are provided by the PHS Prescribing Team.</td>
</tr>
</tbody>
</table>
| **Date that data are acquired** | Community outlets and Prisons: May 2020  
Community prescription: June 2020 |
| **Release date**        | 11 August 2020                                                                                                                                                                                              |
| **Frequency**           | Annual                                                                                                                                                                                                       |
| **Timeframe of data and timeliness** | The timeframe for this publication is the financial year 2018/19 (data for 2011/12 to 2017/18 are also shown). Note that some figures may have changed from previous years due to the late submission of data from NHS Boards. |
| **Continuity of data**  | This is the eighth annual publication of these data. Data are presented in an Excel Workbook, but in a different format to previous years. No data from previous publications was removed but additional breakdowns were provided. These include.  
- Monthly breakdown by NHS Board for community and prison supplies.  
- Full breakdowns by year, quarter, and NHS Board for recipient type and supply type for community and prison supplies. |
| **Revisions statement** | Future versions of this publication may show revised figures due to the late submission of data from NHS Boards.  
Section 5 (Comparison of take-home naloxone (THN) distribution with opioid-related deaths) has not been updated for this publication. It is expected that revised figures will be included in the next release of these statistics for 2019/20 data. |
| **Revisions relevant to this publication** | The following revisions were made to the analysis for 2018’19: |
- NHS Forth Valley reported that they had a large number of outstanding cases dating back to 2016/17. While late submission of data is not unusual, users of these data may notice a particular increase in the number of cases for NHS Forth Valley. These amount to
  - 2016/17 – 45 kits
  - 2017/18 – 79 kits

- Previous reports used one estimate of the prevalence of Problem Drug Users (PDU) from 2012/13. To more accurately reflect the changing size of the drug using population in Scotland separate figures were used for different years:
  - 2009/10 – used for 2011/12
  - 2012/13 – used for 2012/13 to 2014/15
  - 2015/16 – used for 2015/16 onwards

  As the Scotland-level problem drug user estimates for 2009/10 and 2015/16 were lower than those for 2012/13, estimated supply rates per 1,000 PDUs have increased compared to previous years. Differences over time in local problem drug user estimates at NHS Board level, will produce similar changes in local rates.

- In previous reports, age calculations were based on the ‘age (if no dob variable)’ (from question number 11). If this variable was absent then the date of birth variable was used instead to calculate age.
  As date of birth is considered the more accurate data item, in this publication it was used to calculate age. Only when no date of birth was supplied was ‘age (if no dob variable)’ used. This has led to 106 records over the time series being reassigned age groups.

- Prison data from 2011/12 Quarter 1 (213 THN kits) were submitted as an aggregate return by SPS and did not include information on supply type. Depending on the analysis, previous publication treated these as either:
  - All kits as first supplies to persons at risk
  - Unknown in terms of supply or
  - A certain percentage of kits as being first supplies to persons at risk, based on the percentage of the number of first supplies to persons at risk in 2012/13 (99.7%).

  In the interests of consistency between different analyses all kits are now treated first supplies to persons at risk.

<table>
<thead>
<tr>
<th>Concepts and definitions</th>
<th>See A1 – Background information.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relevance and key uses of the statistics</strong></td>
<td>The analyses presented in this report provide evidence of the number of ‘take home’ naloxone kits supplied by the National Naloxone Programme in Scotland, reasons for supply and the characteristics of recipients. Additionally, data on the number of first supplies to individuals at risk of opioid overdose provides information on the ‘reach’ of THN supply among the at risk population.</td>
</tr>
</tbody>
</table>
Accuracy | The naloxone lead in each NHS Board was given the opportunity to check their 2018/19 supply figures prior to publication.

Completeness | Community outlets and Prisons: supply data were provided by the naloxone lead in each NHS Board. Not excepting the possibility of late data submission, following validation by NHS Board leads, information was assumed to be complete.

Community prescription: supply data were provided by the PHS Prescribing Team. As this information is derived from a payment processing system, it is assumed to be a complete record of dispensed medicines. Any inaccuracies in reporting are likely to arise from the specific forms and products included within the definition (see Appendix A1.4), which was agreed in collaboration with expert pharmacists.

Due to issues with data protection and restrictions associated with the COVID-19 pandemic, it was not possible to collect prison release data in a timely fashion for this publication.

Comparability | No comparable published data outwith Scotland.

Accessibility | It is the policy of PHS Scotland to make its web sites and products accessible according to published guidelines.

Coherence and clarity | The report is available as a PDF file.

Value type and unit of measurement | Counts, numbers and percentages. Rates per 1,000 people aged 15-64 with problem drug use.

Disclosure | The ISD protocol on Statistical Disclosure Protocol is followed.

Official Statistics designation | Official Statistics

UK Statistics Authority Assessment | N/A

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Help email | phs.drugsteam@nhs.net

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Appendix 3 – Early access details

Pre-Release Access

Under terms of the "Pre-Release Access to Official Statistics (Scotland) Order 2008", PHS is obliged to publish information on those receiving Pre-Release Access ("Pre-Release Access" refers to statistics in their final form prior to publication). The standard maximum Pre-Release Access is five working days. Shown below are details of those receiving standard Pre-Release Access.

Standard Pre-Release Access:
Scottish Government Health Department
NHS Board Chief Executives
NHS Board Communication leads

Early Access for Management Information

These statistics will also have been made available to those who needed access to ‘management information’, ie as part of the delivery of health and care:

Early Access for Quality Assurance

These statistics will also have been made available to those who needed access to help quality assure the publication:
NHS Board Naloxone leads
Appendix 4 – PHS and Official Statistics

About Public Health Scotland (PHS)

PHS is a knowledge-based and intelligence driven organisation with a critical reliance on data and information to enable it to be an independent voice for the public’s health, leading collaboratively and effectively across the Scottish public health system, accountable at local and national levels, and providing leadership and focus for achieving better health and wellbeing outcomes for the population. Our statistics comply with the Code of Practice for Statistics in terms of trustworthiness, high quality and public value. This also means that we keep data secure at all stages, through collection, processing, analysis and output production, and adhere to the ‘five safes’.