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Evaluation of the Take Home Naloxone Demonstration Project

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Views expressed in this report are those of the researcher and not necessarily those of the Welsh Assembly Government

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Contents

1.Introduction

The THN evaluation report

1.1 The Take Home Naloxone (THN) demonstration project was launched in selected areas across Wales in September 2009. The project was to run in the first instance for just over a year to determine the feasibility of expanding the scheme nationwide. In order to assist this decision, the scheme was to be independently evaluated. This report provides the results of this evaluation.

The THN demonstration project

1.2 The THN demonstration project involves providing drug users and their family and friends with training in the administration of naloxone, as well as instruction on first aid and procedures following the discovery of an overdose event. THN kits are issued to opiate users who complete the training.

Naloxone is an opioid antagonist which blocks the actions of opioid medicines such as morphine, diamorphine, codeine, pethidine, dextropropoxyphene and methadone and has been used for a long time in the emergency treatment of opioid overdose (Maxwell et al. 2006). It counteracts the depressive respiratory effects of opioids and can bring an overdose patient back to consciousness in minutes following its administration.

1.3 The key aim of the demonstration project is to reduce drug-related deaths in Wales. In addition, the project aims to:

- Promote harm reduction by disseminating overdose information
- Improve health and social care for drug users and their carers
- Assist the Regional Confidential Review Panels in monitoring overdose incidents
- Enhance service provision for service users
- Provide communication about the risks of drugs [1]

[1] Welsh Assembly Government (2009) Guidance and Training Protocol for the Development of the Introduction of Take Home Naloxone. Cardiff: Welsh Assembly Government.

1.4 The demonstration project was launched initially in four community-based locations: Newport, Cardiff, Swansea, and North Wales. These locations were chosen as they were known from data compiled by the Regional Confidential Review Panels on Drug-Related Deaths in Wales to have the highest number of drug-related deaths. At an early point, it was decided to widen the coverage from a single site in North Wales to a total of six sites, organised through a single contact source (see Table 1.1). In the following months, the locations were expanded further to cover four prison-based locations including: HMP Parc, HMP Cardiff, HMP Swansea, and HMP Prescoed. A fifth community-based site was included in the summer of 2010 in Gwent (in addition to Newport) and, towards the end of 2010, a sixth site was added based in Carmarthenshire.

1.5 One of the main elements of the THN project is the training session, whereby drug users and those close to them are given guidance and advice on the procedures for dealing with a drug overdose. The session lasts about an hour and during that time information is provided using various methods of presentation including: a classroom talk (sometimes using visual aids such as PowerPoint presentations and flip charts), a DVD on the risks of overdose, a demonstration on how to inject naloxone using oranges, and a demonstration on cardiopulmonary resuscitation (CPR) by a paramedic or other trained staff.

Table 1.1 Demonstration Sites

Site	Demonstration site location
Gwent	Caerphilly
Newport	Newport
Cardiff	Cardiff
Swansea	Swansea
North Wales	Wrexham
	Anglesey
	Flintshire
	Denbighshire
	Gwynedd
	Conwy
HMP Parc	Bridgend
HMP Cardiff	Cardiff
HMP Swansea	Swansea
HMP Prescoed	Pontypool

Note: The sixth community site in Carmarthenshire was added too late to be included in the evaluation and has not been added to the table

The THN project evaluation

1.6 The establishment of the THN demonstration project included the requirement that the project should be evaluated prior to wider dissemination across Wales. The main specifications for the evaluation were:

- To conduct a process evaluation of the project during its first year
- To conduct an outcome evaluation of the scheme during its first year
- To make recommendations for more effective implementation
- To make recommendations on the collection of data relevant to outcome measures.

The evaluation team was invited to attend the national working group meeting at the outset and from then on the two groups worked closely together. The evaluation team made suggestions concerning the data collection instruments to be used in the project and the team leaders and the national co-ordinator provided data to be fed back into the evaluation. The evaluation thus became integrated into the development of the project.

Background to the project

1.7 Schemes similar to the THN project have been conducted around the world for several decades and a modest literature has been built up on the subject. Naloxone has been available over-the-counter in Italy to drug users since the 1980s (Baca and Grant 2005) and has been used to counteract opioid overdose in the United States for the last two decades.

Naloxone has been made available by several different means including through pharmacies, drug agencies, paramedics, health centres and mobile van outreach services. As a result, the more common generic name for THN type projects is ‘distributed naloxone’.

1.8 One reason for the current interest in distributed naloxone in the UK was the change in legal status of naloxone in June 2005. The change in law permitted

any member of the public to administer naloxone legally in an emergency situation. The use of naloxone as part of a package of overdose prevention has been endorsed in 'Drug Misuse and Dependence: UK Guidelines on Clinical Management'. Specifically, it states: "It is permissible to prescribe take home naloxone to named patients and is established practice in some parts of the UK." (section 6.3.3.).

Since the change in legislation, several clinical services in the UK have begun to provide clients at risk of opiate overdose with a take home supply of naloxone (Strang et al. 2008). These schemes typically involve training drug users, friends and family members, in first aid, recognition of overdose symptoms, emergency procedures, and administration of naloxone. On completion of the training, opiate users are issued with a THN kit. While naloxone can be administered in a variety of ways including intravenously and intra-nasally, the majority of programmes train users to administer the drug intramuscularly. The risks of misuse (e.g. through malicious administration to induce withdrawal symptoms) have been reported in the literature as low (Ashworth and Kidd 2001).

The policy context

1.9 The THN demonstration project grew out of the Welsh Assembly Government's new strategy for tackling substance misuse "Working Together to Reduce Harm". In this document, there is a stated commitment to take actions which focus on reducing the number of drug-related deaths and near-fatal drug poisonings. One of the key actions contained in the strategy's three-year implementation plan is the development of guidance and protocols to introduce naloxone. Specifically, under the heading of 'Harm Reduction' the implementation version of the strategy states (at 2.7) an aim to: develop a protocol and guidance to introduce the use of naloxone 2009-10 (Welsh Assembly Government, 2008a).

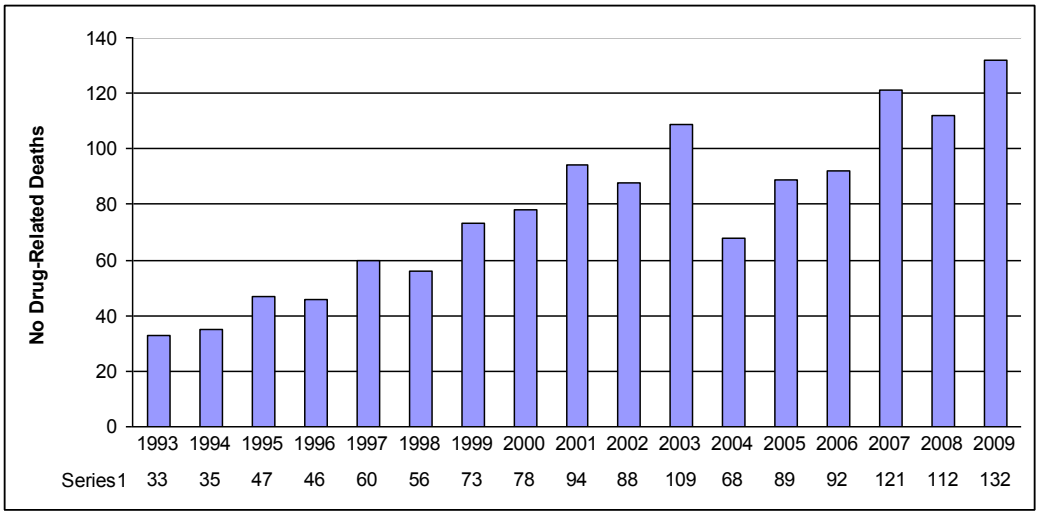
The research context

1.10 The two main research contexts of importance for the evaluation are (1) what is known about drug-related deaths in Wales, and (2) what is known more widely about the effectiveness of distributed naloxone schemes. These two topics will be discussed below.

Drug-related deaths

The main source of data on drug-related deaths is the Office of National Statistics (ONS). The ONS data show that the number of drug-related deaths in Wales has steadily increased over the last two decades from a low of 33 in 1993 to a high of 132 in 2009 (see Figure 1.1). This trend in part reflects changes in patterns of drug use generally over this period, especially trends in the consumption of opioid drugs. The change that has sparked perhaps the most concern is that between 2008 and 2009 the number of deaths increased from 112 to 132; a 17.9% increase. It should be noted, however, that, while alarming, this change is more or less in keeping with the long-term trends.

Figure 1.1 Number of deaths related to drug misuse, Wales, 1993-2009



Source: Data downloaded from ONS website, November, 2010
ONS database of deaths related to drug poisoning is extracted from the national deaths database for England and Wales. Deaths are included if the underlying cause of death is regarded as resulting from drug-related poisoning, according to the current National Statistics definition (Christopherson, Rooney and Kelly, 1998).

Comparing the data with the same data for England shows a similar long-term trend, with the same drop around 2003 and 2004. The main difference of relevance is that from 2008 to 2009 the number of drug-related deaths in

England decreased from 1800 to 1731, which represents a 3.9% reduction (see Appendix, Figure A1.1).

The ONS data show that drug-related deaths are most commonly associated with males rather than females. In 2009, 85% of decedents were males compared with 15% female. The most striking observation is that, over the last three years, the number of deaths involving males has increased and the number of deaths involving females has decreased (see Appendix 1, Figure A1.2).

1.11 Previous evaluations of distributed naloxone schemes

The early discussions with the funding body revealed an interest in providing a review of existing evaluation studies. Hence, this topic is discussed in some detail.

The first thing to mention is that the number of good quality studies on the effectiveness on THN and similar distribution programmes is limited. There is much more research on the clinical effectiveness of the medical use of naloxone. Our own search of the Medline database generated 79 ‘hits’ for publications with ‘naloxone’ and ‘overdose’ in the title. Seventy-six of these were clinical trials or clinical case studies. Much less attention has been paid in the evaluation literature to distributed naloxone. A search of the Cochrane database for reviews on distributed naloxone came up with zero hits.

The evaluative research is also limited in terms of its research quality. Much of the literature available is characterised by the absence of control groups, small sample sizes, and poor follow-up rates. Many publications on the topic of THN have been general discussions on the topic, or observations of programmes, rather than outcome evaluations. However, there have been some good quality studies which have used at least pre-test and post-test measures and provide information on both inputs and outcomes. The following brief summary of the literature comprises a rapid search and analysis of pre-post test evaluations of distributed naloxone programmes.

1.12 The search method comprised searching Illumina and Medline databases for evaluations or reviews of evaluations. These were then obtained and further studies were located by 'snowballing' from the references of these start-up publications. This approach was more a rapid evidence assessment than a systematic review. Nevertheless, as the snowballing procedure continued, it was clear that saturation was occurring in that fewer new potential studies were appearing.

The initially selected studies were obtained and read and accepted or rejected on the grounds of simple selection criteria. The main criterion was whether it was a pre-post test outcome evaluation of a distributed naloxone programme. The studies also had to be in the English language and had to be accessible to us through university databases. Applying these criteria resulted in 10 evaluations of acceptable relevance and quality. A summary of the 10 evaluations is shown in Table A1.1. In addition, there were four studies that did not meet our selection criteria but nevertheless provided useful descriptions of the outcome of programmes. These are shown in Table A1.2. Six of the ten pre-post studies were based on programmes operating in the United States. Two were based in England and two in Scotland. We found no pre-post test evaluations of programmes in the rest of Europe. This might have been as a result of our rapid search methods. However, it might also have been a result of restricting our search criteria to pre- and post-test outcome evaluations. While there are many descriptive studies of naloxone programmes, we found far fewer good- quality evaluations.

All of the studies showed favourable outcome findings. The main outcome findings presented were: (1) changes in knowledge and behaviour following training, (2) the number of kits administered (although these are technically outputs rather than outcomes), (3) the number of kits used, and (4) the number of lives saved as a proportion of the number of kits used. Other outcomes mentioned less often were: (1) retention of knowledge over time, (2) whether there were any adverse effects of administering naloxone, and (3) other types of life-saving actions taken at the time of an event.

1.13 While these results are encouraging, they all suffer to some degree of methodological weakness. The best studies that we found reached only level 2 on the Maryland Scientific Methods Scale (pre-test post-test with no controls) (Farrington et al., 2006). There were no randomised controlled trials (RCT). This is likely to change shortly with the start of the Medical Research Council funded NALoxone InVEstigation Pilot Randomised Controlled Trial (N-ALIVE). This will be based on two prison systems drawing on over 5,000 eligible prisoners. The treatment groups will be provided with training and naloxone and the control groups will be offered training alone.

It is also possible to conduct rigorous pre-post, quasi-experimental designs. The main problem is to deal with threats to validity, which can be done by obtaining qualitative data to identify mechanisms which might support the quantitative findings or by observing rival causes of the changes observed. The studies conducted to date tend not to tackle issues relating to validity.

Probably the best study to date is the one conducted by Strang et al. (2008). This was a prospective study with a 3 month follow-up period based on a reasonably large number of cases. The study found that knowledge improved and naloxone was used. The finding that all patients who were injected with naloxone survived, whereas one of the patients who was not given naloxone died, is suggestive that lives were saved. However, far greater sample sizes would be needed to provide proper evidence of this.

The evidence relating to the medical use of naloxone and the distributed use through community and other outlets is encouraging. There is already sufficient evidence in favour of its use to continue developing and implementing methods for wider dissemination of naloxone. Nevertheless, to measure properly its effectiveness, more good-quality evaluations need to be conducted.

Structure of the report

1.14 The next chapter (Chapter 2) presents the results of the outcome evaluation and discusses the impact of the programme on users' knowledge and skills and drug-related deaths. The following chapter (Chapter 3) covers the process evaluation and considers the nature of the programme that was implemented. The final chapter (Chapter 4) provides a summary of the main findings of the evaluation, a summary of the main issues raised, and a list of our recommendations. The research methods used in the evaluation are summarised in Appendix 2 'Research Methods'.

2. Results: Outcome Evaluation

Introduction

2.1 This chapter provides the results of the evaluation relating to programme outcomes. The main outcomes investigated were: (1) learning and other outcomes from the training sessions, (2) practical application of naloxone in overdose events, (3) practical application of other harm-reduction actions in overdose events, and (4) effect of naloxone in reducing the number of fatal overdoses. The research designs used to achieve this are discussed in the appendices (see Appendix 2: Research Methods).

(1) Effect of THN training on knowledge and skills

2.2 One of the aims of the outcome evaluation was to determine whether there were any positive impacts on drug users from the THN training. The main method for achieving this was to distribute a questionnaire before and after training and to compare changes in knowledge and skills. The questionnaire covered 9 topic areas and each topic area was addressed using between 4 and 10 questions (see Table A2.1). The first 7 topic areas were investigated by asking respondents to tick whether they thought the statement in the question was correct or incorrect. The last two questions asked about their confidence and willingness to carry out selected procedures. The results of the comparison are described below for all sites combined followed by an analysis of variations across sites.

All sites combined

2.3 Table 2.1 presents the results for the first question group on opiate overdose risk factor recognition, comprising six questions. The pre-training results show some variation in the percentage of correctly recognised risk factors. 'Cut with contaminants' was identified correctly as <u>not</u> being a risk factor by 15% of the respondents. Conversely, 'injecting drugs' was identified correctly as a risk factor by 95% of the respondents. The post-training results show that the

percentage of correctly identified factors increased in relation to all questions. The largest increase (measured as a relative percentage change[2]) was in the recognition that 'cut with contaminants' was not a risk factor (a 91% increase in correct answers) and 'not currently in treatment' was a risk factor (a 46% increase in correct answers). All changes bar one were statistically significant.

Table 2.1 Changes in the percentage of correctly identified opiate overdose risk factors before and after training

Risk	Pre-Training	n	Post Training	n	Relative percentage change	Signif. McNemar P-value
Cut with contaminants	15.0%	421	28.7%	435	91.3%	p<.001
User is not currently in treatment	50.8%	423	74%	438	45.7%	p<.001
Tolerance decreases	87.2%	446	95.7%	468	9.7%	p<.001
Used with other substances	93.1%	450	97.4%	468	4.6%	p<.001
Aged under 20	77.9%	407	80.6%	408	3.5%	ns
Injected	95.4%	439	98.3%	463	3.0%	p<.01

Note: 'correctly identified' includes identifying a true factor as 'correct' or a false factor as 'incorrect'.
ns=not significant. Percentage are based on 'valid' frequencies (i.e. excluding missing values).

Table A2.2 presents the results for the second question group on the usual signs of opiate overdose. The lowest percentage of correct response in the pre-training survey was in relation to 'fitting' which was correctly identified as not a usual sign of opiate overdose by just over a third of respondents. The highest percentage of correct answers was in relation to 'loss of consciousness' which was correctly identified as a usual sign of opiate overdose by 98% of respondents. The percentage of correctly identified signs of overdose increased for each question. The largest relative percentage increase was in the correct recognition of 'fitting' as not being a sign of opiate overdose (a 52% increase in correct answers).

Table A2.3 summarises the results for the question on appropriate methods for dealing with signs of opiate overdose. The most common incorrectly identified factors in the pre-training survey were: 'walk person around the room' and 'slap or shake the person' (just under half of respondents thought this was an appropriate method). The most common correctly identified

[2] The relative percentage change is the difference between the post training and pre training percentages divided by the pre-training percentage. It represents the percentage increase or decrease in the pre training percentage.

factors were: ‘call an ambulance’, ‘place person in recovery position’ and ‘stay until ambulance arrives’ (acknowledged as an appropriate method among almost all respondents). The percentage of correct responses increased across all questions in the post training survey, with the largest increases noted for those questions most commonly incorrectly identified in the pre-training survey. Nevertheless, it is perhaps notable that one-quarter of the respondents continued to think that ‘slapping the person’ was an appropriate method in the post-training survey.

The remaining tables show similar responses in that in each case the responses improved in the post-training survey. The details of these responses are shown in the appendices in Tables A2.4 to A2.9

In order to obtain an overview of responses for each of the question groups, it is necessary to combine the responses into a single percentage. An overall percentage of correctly recognised items was calculated by counting the number of correct answers across all the questions in the group. The results of this are shown in Table A2.10. In the pre-training survey, the group with the lowest proportion of correct answers was ‘overdose risk factors’, with an average of 70% correct answers. The highest proportion of correct answers was obtained for the group ‘willingness to carry out selected procedures’ with a score of 91% of correct answers.

The difference in response to ‘willingness to carry out selected procedures’, (the highest percentage of positive responses), and ‘confidence to carry out selected procedures’ (the fifth highest percentage) is worth noting. It would appear that the willingness to conduct procedures pre training was not always matched by their confidence in carrying them out. However, confidence in ability to carry out procedures increased by the second largest relative percentage change, with over 90% of respondents stating that they were ‘very confident’ in carrying out the task.

The largest relative percentage increase from pre-training to post-training was in relation to knowledge of ‘recommended sites for administration of naloxone’

(moving from three-quarters correct responses to nearly all correct). The smallest relative percentage change was 'willingness to carry out selected procedures' which increased across all sites by just 4.5%. It should be noted that one reason why the relative percentage change in this item was low was that the percentage of correct responses in the pre-training survey was high (over 90% correct).

Variations by site

2.4 The previous section has looked at the training results in relation to all sites combined. However, it is possible that there are differences among the sites in the effectiveness of their training methods in improving knowledge or behaviour.

In order to investigate this, the findings were broken down by location covering five community sites and two prison sites: Cardiff and the Vale, Newport, Gwent, Swansea, North Wales, HMP Cardiff, and HMP Parc. Completed questionnaires were also provided by HMP Prescoed but they were too few in number (n=3) to conduct an analysis. No completed questionnaires were obtained from HMP Swansea (see Appendices, Tables A2.11 to A2.17).

The first question to ask is whether pre-training knowledge among trainees varies across locations. In order to test this, the position in the range of each site was compared (see Table A2.18). HMP Cardiff had the highest percentage of correct answers per group in eight of the nine question groups. Gwent had the lowest percentage of correct answers in three items ('signs of overdose', 'uses of naloxone' and 'sites for administration) and North Wales were lowest on two items ('appropriate method for responding to an overdose' and 'willingness to carry out appropriate procedures'). The variation in pre-training knowledge is summarised in Table 2.2 below.

Table 2.2 Variation in range of correctly identified responses in the pre-training survey across sites

Criteria	Low	High	Range
Overdose risk factors	66.9%	72.3%	5.4%
Signs of overdose	72.5%	84.8%	12.3%
Method responding	82.2%	88.3%	6.1%
Uses for naloxone	86.1%	99.0%	12.9%
Method administering	76.0%	96.2%	20.2%
Time naloxone effective	69.0%	77.2%	8.2%
Sites for administering	62.3%	92.9%	30.6%
Confidence procedures	69.2%	82.8%	13.6%
Willingness procedures	88.4%	97.1%	8.7%

The largest ranges across locations in pre-training scores (i.e. large differences across sites) occurred in relation to 'sites for administering naloxone' (percentage point range=30.6%) and 'method of administering naloxone' (percentage point range=20.2%). The smallest ranges in pre-training scores (i.e. small differences across sites) were in relation to 'overdose risks factors' and 'appropriate methods for responding' (5.4% and 6.1% respectively).

The next question to ask is whether there are any differences in the relative percentage change (RPC) in correctly identified answers across sites. The relative percentage change for all question groups across all sites is shown in Table 2.3.

Table 2.3 Relative percentage change in the percentage of correctly identified responses pre and post training by research site

Group name	Cardiff	Newport	Gwent	Swansea	North Wales	HMP Cardiff	HMP Parc
Overdose risk factors	6.6%	13.5%	14.1%	17.7%	15.4%	7.6%	22.3%
Usual signs of opiate overdose	11.8%	15.8%	15.9%	11.3%	13.7%	2.1%	17.0%
Appropriate methods	4.6%	14.9%	18.8%	14.3%	17.3%	6.1%	12.8%
Uses for naloxone	10.6%	4.5%	10.8%	5.2%	11.4%	1.0%	5.7%
Method for administering naloxone	6.6%	21.4%	8.2%	23.1%	23.2%	4.0%	13.8%
Time over which naloxone is effective	1.2%	21.2%	23.3%	4.3%	35.4%	12.0%	25.0%
Recommended sites for administering naloxone	20.6%	28.7%	41.4%	19.0%	22.9%	3.7%	31.4%
Confidence in carrying out selected procedures	11.0%	18.4%	21.3%	26.6%	27.4%	10.6%	16.9%
Willingness to carry out selected procedures	4.1%	8.5%	5.5%	5.0%	9.7%	-4.3%	3.2%

The change scores can be summarised both across locations and across question types. Summarising the results across locations shows that the highest mean RPC scores were shown for North Wales and Gwent (see Table 2.4). North Wales showed the largest mean relative percentage change. This was followed by Gwent and HMP Parc which both showed high relative percentage changes in learning outcomes.

Table 2.4 Mean RPC across all sites

	Mean RPC
North Wales	19.6
Gwent	17.7
HMP Parc	16.5
Newport	16.3
Swansea	14.1
Cardiff	8.6
HMP Cardiff	4.8

Note: RPC=relative percentage change.

Summarising the results across question groups showed that the greatest improvements occurred in relation to recommended sites for administering naloxone and confidence in ability to administer naloxone (Table 2.5).

Table 2.5 Mean RPC across question groups

	Mean RPC
Recommended sites	24.0
Confidence	18.9
Time effective	17.5
Method for administering	14.3
Overdose risk factors	13.9
Appropriate methods	12.7
Usual signs of opiate overdose	12.5
Uses for naloxone	7.0
Willingness	4.5

Note: RPC=relative percentage change.

Correlating outcomes and inputs

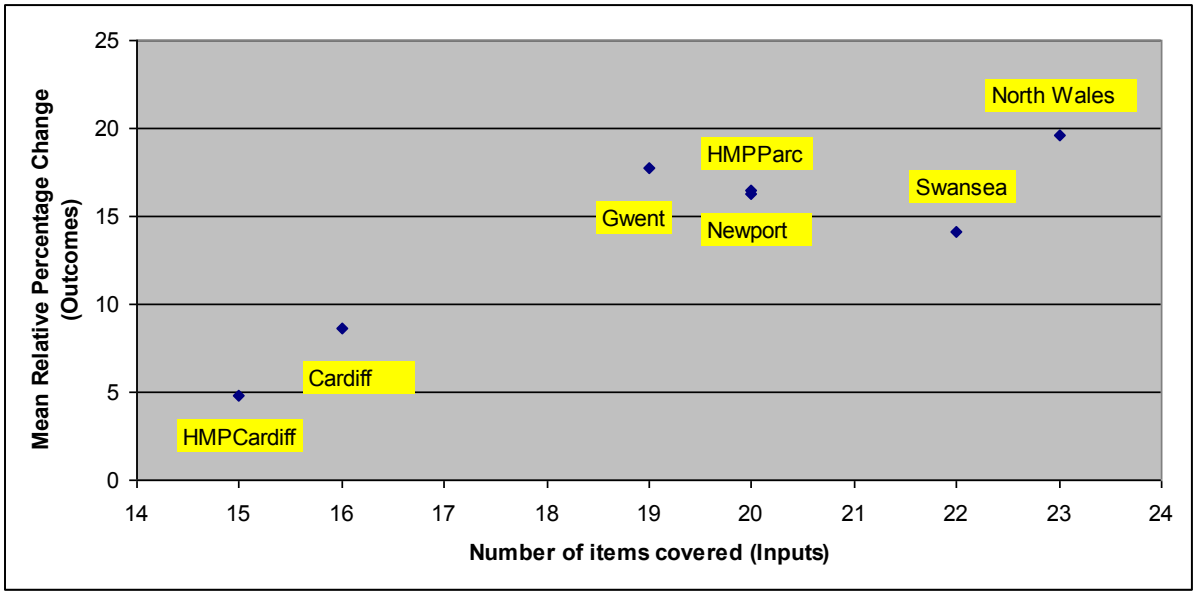
2.5 The programme inputs will be discussed in detail in the next chapter covering the process evaluation. However, it is relevant at this point to consider whether there is any difference among sites that had the largest relative percentage changes in learning outcomes in terms of the type of programme that had been implemented. It is feasible that the 'best' outcomes were associated with the 'best' programmes.

The method used for measuring the training session in terms of programme inputs was to count the number of elements covered in each session. There are other ways of doing this, but this method lent itself more easily to quantitative analysis. In total, we identified 29 elements of the session which might be covered by the training staff (explained in more detail in the next chapter).

In order to investigate whether there is a correlation between the amount of the input (number of programme elements) and the amount of the outcome (the mean relative percentage change in correct responses) we presented the

position of each site on two dimensions (inputs and outcomes) on a scatter graph (see Figure 2.1). We also conducted a paired 't' test to determine if the differences between the inputs and outputs across sites were statistically significant.

Figure 2.1 Scatter graph of number of items covered in the training session and mean relative percentage change in learning outcomes



Notes: Paired samples 't' test: t=4.449; p<.004.

The chart shows that there was a positive correlation between the number of programme elements covered and the outcomes in terms of increased learning and skills. The greatest changes were observed among the North Wales sites which also included the greatest number of programme elements in terms of inputs. The smallest changes were in HMP Cardiff which also had the smallest number of programme elements.

This does not mean that the number of programme elements caused the learning outcomes. It is possible, that the number of programme elements represented a marker for a wider range of positive features of the programme design and implementation. Nevertheless, the findings show that there is a correlation between one particular measure of the programme implemented and one particular measure of the outcomes obtained.

Variations by trainee characteristics

2.6 It is possible that outcome of naloxone training will be affected by personal and demographic factors relating to the trainee. The effect of the training in relation to one of the question groups ('the usual signs of overdose') was compared by gender and age. This question was chosen as it was important in ensuring effective action to reduce drug-related deaths. The results are shown in Tables A2.19 and A2.20.

Table A2.19 shows that female trainees recorded higher relative percentage scores on 5 of the 8 comparisons and male trainees recorded higher change scores than female trainees on 3 of the 8 comparisons. Two of the 4 highest changes occurred among female trainees and 2 occurred among male trainees. Table A2.20 shows the results when controlling for age. The table shows younger trainees had higher relative percentage scores on 4 of the 8 comparisons with one comparison tied. The first, second and third highest relative percentage changes were recorded among younger trainees.

Overall, there is no clear gender or age difference in training outcomes based on this comparison.

Other harm-reduction outcomes

2.7 A final potential outcome of the THN training is the harm-reduction benefits that might occur from bringing users into contact with treatment agencies. At the outset of the contact the user completes what is known as a 'data collection form' which summarises features of his or her background. One of the questions is whether the users is currently in treatment. The results showed that almost one-third (29%) of users recruited for training who responded were not currently in contact with any treatment agency. While data were not collected on whether these users subsequently entered treatment following the training, it is possible that at least some of these new recruits would maintain contact with the agency.

2.8 A second relevant additional feature of the THN data collection procedure is that users were asked if they had ever had a hepatitis B or C blood test. Those who said that they had not were asked if they would like a test. In total, just under 20% of respondents said that they had never had a hepatitis B or C test and over half of these (52%) said that they would like a test. A similar procedure was adopted in relation to HIV whereby all trainees were asked if they had ever had an HIV test. Those who had not were asked if they would like one. The results showed that just over 20% had never had an HIV test and just under half of these (48%) said that they would like one.

Evaluation of the training by trainees

Quantitative assessment

2.9 All trainees were asked at the end of the questionnaire if they had learned anything new from the training session. Of the 455 who answered the question, the majority (97%) indicated that they had. More than two-thirds of trainees felt that they had learned 'a lot' while just over one-quarter (28%) felt that they had learned a little. Only three per cent of trainees felt that they had learned nothing from the session.

Trainees were also asked if they had benefited in other ways from attending the training session. Of the 394 trainees who answered the question, the majority (94%) said that they had benefited from the training. Nearly three-quarters (72%) felt that they had benefited 'a lot' and 22 per cent felt they had benefited 'a little'. Only six per cent of trainees felt that they had not benefited in other ways from the session.

Finally, trainees were asked if there was anything about the sessions that they thought could be improved or changed. The question was answered by 244 trainees. Sixteen per cent said that there were things about the training session that could be changed. The remaining 84% did not think there was anything that should be changed.

It is possible that there is variation across sites in the perceived benefits of the training. Tables A2.21 to A2.23 show the percentage of trainees in each location who thought they had learned or benefited from the programme as well as the percentage who thought that the programme should be improved or changed in some way.

The first question concerns whether the trainees had learned anything new. The results show that around 70% to 74% of trainees in the community sites say that they had learned a lot, compared with around 59% to 67% of trainees in the prisons. The highest percentage of trainees saying that they had learned a lot was Gwent and North Wales and the lowest level was in HMP Parc.

The second question concerns the extent to which the trainees felt that they had benefited from the training. As before, the community sites received the highest percentage scores, although a similar proportion of trainees in HMP Parc said that they had benefited a lot.

The third question concerns whether the trainees had thought that the training sessions could be improved or changed (see Appendix 1, Table A2.23). The vast majority of trainees from all sites said that they did not think that the programmes needed to be changed. However, the percentage of trainees not requesting a change was higher in some sites (e.g. Gwent and HMP Parc) than in other sites (e.g. North Wales and Cardiff). The previously noted associated between type of location (community or prison) did not hold up on this comparison.

There are at least three possible explanations for the difference among sites. The first is that the difference is not statistically significant and might have occurred by natural sampling variations. The second is that the trainees are different across the sites in terms of their knowledge and expectations. The third is that the quality of the programme varies across sites.

Qualitative assessment

2.10 Table A2.24 provides examples of statements made by trainees about how they have benefited from the training. The analysis of the response shows that the majority of trainees felt that they had learned a lot and benefited from the training. The main themes identified in the comments fall under the headings: (a) learning skills, (b) improving knowledge, and (c) gaining confidence to take action, and (d) other outcomes.

(a) Learning skills

Learned how to administer naloxone

The key aim of the training was to teach users and those close to them how to administer naloxone in the event of an overdose.

I now know how to administer naloxone from attending the training…

I've learnt how to give somebody naloxone and to spot overdosing.

Learnt about what naloxone is, how it is administered, how it is used, what the signs of overdose are.

Learned how to give CPR

In addition to teaching users and their associates about how to administer naloxone, the training also aimed to teach basic life-saving techniques, including CPR. It is noteworthy that many of the trainees who already had some knowledge about overdose events and how to respond to them said that they had learned something new.

I have learned that you have to do 30 compressions to 2 breaths instead of 15 compressions. I would feel a lot more confident …

I learned a lot of new things about resuscitation and first aid that I never knew before, so I can do something if the worst happens.

Yes I have, I have done resuscitation before but this was a good refresher course and a few things have changed.

Learned how to put someone in the recovery position

Linked with training on the correct CPR procedure was training on how to put someone in the recovery position either during resuscitation or while waiting for an ambulance to arrive.

I benefited a lot. I know how to do the recovery position and to carry out the naloxone and what to look for.

I have learnt the proper way to put someone in the recovery position and how to give mouth to mouth resuscitation.

(b) Improved knowledge

Improving general knowledge about overdose events was another aim of the training programme. The responses of the trainees were generally positive and indicated that they now had greater knowledge on how to identify when someone was overdosing.

Gaining knowledge about overdose

The main gains in knowledge came from the advice given about how to identify correctly an overdose event.

Before the course I did not know anything about overdoses.

I am now more aware of the signs of an overdose.

I now know what to look for when someone is overdosing and know what to do when some one goes over.

Dispelling myths about overdose

One of the main aims of the course was to dispel some of the commonly held myths about signs of overdose and how to respond to them.

Didn't know cold water was a bad thing.

Learnt about myths on how to help reverse overdose…

Learned a lot about overdose truth behind overdose myths.

(c) Gaining confidence to take action

Finally, users' comments drew attention to the confidence that they now had to take action and to put their knowledge into practice.

Before the course, I would really not be arsed helping someone who OD'd, but now, yes, I'm more confident.

Less fear will help so much when placed in the position of dealing with an overdose. Could make the difference between life and death.

(d) Other outcomes

Trainees also made several other points about the benefits of the training sessions. Some of these comments pointed to the wider harm-reduction benefits of naloxone training, including revaluating the way in which heroin is used and the harms relating to it.

Yes I have learn a lot from the training which has as made me think more about self harm and the way I will use heroin again.

It has shocked me to get help and to help others.

I feel that I have learned to understand and sympathise more with people who have suffered an overdose etc.

Section summary

2.11 The results show that THN training was associated with improvements in knowledge and skills across a wide range of measures. The improvements occurred at the level of individual questions, groups of questions, across sites, and across user types.

One of the key questions is whether there were any important differences across sites. Such variations might be associated with differences in programme input which might provide useful lessons in taking the programme forward. A comparison on inputs and outcomes showed the site with the smallest input measure scores (HMP Cardiff) showed the smallest relative percentage change and the site with the highest input measure score (North Wales) had the largest relative percentage change.

(2) Overdose events: demonstration sites

2.12 This section examines the practical application of naloxone in overdose events as an evaluation outcome. Information on overdose events in the areas of the demonstration sites was collected from the completed replenishment forms and from information provided by the national co-ordinator. The information available is unlikely to include all overdose events, as many of the trainees were not in contact with the treatment agencies and might not have returned to replenish their kits. Nevertheless, the information available comprises real overdose events in which naloxone was used.

Quantitative analysis

In total, we obtained information from 28 completed replenishment forms relating to naloxone administered. We obtained a further 12 forms relating to naloxone lost, stolen or mislaid which have been excluded from the analysis.

The low numbers is in part as a result of fairly small numbers of kits being used and in part because users do not necessarily request a replenishment. It is also possible that some of the replenishment forms were either not completed or not sent to us.

Table 2.6 provides information contained on the replenishment form about the circumstances of the naloxone use.

Table 2.6 Circumstances of the reported use of naloxone in an overdose event

Question	Answer	n (Total n=28)
Who received the naloxone?	Friend/relative	21
	Unknown person	5
Where injected?	Buttocks	8
	Deltoid/Bicep	6
	Thigh	8
Was recovery position used?	Yes	21
	No	5
Was CPR used?	Yes	10
	No	15
Was an ambulance called?	Yes	23
	No	4
Did the patient refuse assistance?	Yes	7
	No	15
Did the police attend?	Yes	15
	No	8
What drugs had been consumed?	Heroin	13
	Heroin plus others	15
Where was the person?	Friend's dwelling	6
	Other dwelling	11
	Public Place	11
Did the person survive?	Yes	21
	No	1

Source: Replenishment forms
Notes: Totals do not always add to n=28 due to missing values.

The table shows that in most cases naloxone were administered to a friend or relative. It can also be seen that other life-saving actions were taken alongside the administration of naloxone, as recommended in the training sessions. In most cases the recovery position was used and in 40% of cases CPR was used. In all bar 4 cases an ambulance was called. The most important finding on the table was that in 21 out of 22 responses in which information was provided the victim survived.

Qualitative analysis

2.13 Narratives of the overdose event was provided for 19 of the 28 replenishment forms relating to naloxone administration (see Appendix 1, Table A2.25). The narratives provide detailed summaries leading up to the administration of naloxone as well as related and subsequent actions taken. The following case study provides a fairly comprehensive example.

> BK received training whilst in Eastwood Park on two occasions and was given a naloxone kit on day of release. On the day I used my kit I was with my then partner (CH) and we had used heroin IV together about 90 minutes before we went together to the solicitors. Whilst I was in the solicitors CH went into the back room on his own and when I went into find him he was on the floor and his lips had turned blue, he was also breathing very slowly and shallowly. I called the solicitor immediately and he called the ambulance. I put CH into the recovery position as I was unable to rouse him by shaking him or calling his name. I then took out my kit and prepared the naloxone which I had no trouble in using. I then injected CH in the thigh through his jeans. After about three minutes CH began to come round and the ambulance crew arrived and asked me to leave the room whilst they took over. CH was taken to hospital where he survived. I found the training prepared me well for this situation and I don't feel that I need any extra training. I would use my naloxone kit again.

One of the most important elements of the events described was that the person who overdosed was in the company of others at the time. It is obviously critical to the survival of someone experiencing a potentially fatal overdose that they are found. Once they are found it is then critical that the right actions are taken to ensure their survival.

All of the cases covered by the replenishment forms met the first condition that they were found by someone (usually as a result of being in their company at the time). All of the cases also covered the second condition in that the right actions were taken in that naloxone was administered.

> J remembered that he was carrying his naloxone kit with him and so he immediately opened up his canister and drew up the naloxone with the syringe provided. He then injected ... with the naloxone into the muscle in ...'s right thigh as he had been shown in training.

It is also worth noting that the person administering the naloxone often took other life-saving actions (some of which were learnt during training) that might also have contributed to the patient's survival.

He then placed J on the floor in the recovery position and administered the naloxone that he had on him. She did not respond to this and he ascertained that she was no longer breathing and so with the help of the operator's instructions and the knowledge provided to him from the training he was able to carry out basic resuscitation until the paramedics arrived to take over from him.

The evidence indicates that naloxone can be administered successfully in overdose situations. Despite the heavily charged nature of the situation, users were able to respond effectively.

When JG looked closer she realised his lips were blue and he seemed to have stopped breathing. Asked for assistance to get him on floor and then got the naloxone kit and prepared it which was fairly easy considering the panic situation.

(3) Overdose events: comparison site

2.14 The aim of including a comparison sites in the evaluation was to find out what happened at overdose events when naloxone was not present. In order to find this out, a screening questionnaire was devised for staff to administer at the time of meeting all clients of the agency attending over a one-month experimental period. The screening questionnaire asked whether the client had experienced or witnessed an overdose event in the last six months. Those that had were asked a series of questions from a second questionnaire. They were then asked to provide the details of each overdose, plus a narrative of what happened. Over the period of the research a total of 39 overdose events were reported. The quantitative details of the event are summarised in Table 2.7.

Quantitative analysis

The table shows that one-third of the overdose events involved the respondent overdosing. In other words, one-third of the clients sampled overdosed at least once in the previous six months. The table also shows that

in about 40% of cases the recovery position was used and in over half of cases CPR was used. All bar one of the overdose victims survived.

While the number of cases involved in both the THN overdose cases studies and the comparison site case studies is too low to make a proper comparison, it is nevertheless, tempting to look for differences. The main superficial differences are:

- The proportion of cases in which the respondent was the overdose victim was higher in the comparison site
- The proportion of cases in which CPR was used was higher in the comparison site
- The proportion of cases in which an ambulance was called was lower in the comparison site
- The proportion of cases in which the police attended was lower in the comparison site
- The proportion of cases in which heroin alone had been used was higher in the comparison site
- The proportion of cases in which the user was at home was higher in the comparison site
- The number of cases in which the victim did not survive was the same among both groups (1 in each)

These comparisons are for descriptive purposes only and might not depict any meaningful differences between the groups.

Table 2.7
Circumstances of overdose event when naloxone was not used [1]

Question	Answer	n (Total n=39)
Who overdosed?	Myself	12
	Other person	24
Was recovery position used?	Yes	15
	No	21
Was CPR used?	Yes	19
	No	16
Was an ambulance called?	Yes	22
	No	14
Did the patient refuse assistance?	Yes	6
	No	29
Did the police attend?	Yes	12
	No	24
What drugs had been consumed?	Heroin	18
	Methadone	2
	Heroin plus others	12
Where was the person?	At home	12
	Friend's dwelling	5
	Partner's dwelling	1
	Relative's dwelling	2
	Other dwelling	8
	Public place outside	3
	Public place inside	3
Did the person survive?	Yes	35
	No	1

Source: Comparison site questionnaire. Some missing cases.
(1) For completeness, the whole sample has been included in the table including one case who had just been released from prison and had some naloxone on him. In this case, naloxone was used.

Qualitative analysis

2.15 The qualitative summaries of the overdose events provide an insight into the nature of what happened. (see Appendix 1, Table 2.27)

One question that can be investigated is why the person overdosed in the first place. In many cases, no explanation was given. Users described what appeared to be a normal event in which heroin was consumed that later resulted in an unexpected overdose.

I injected myself with heroin, blanked out...

Started to inject, didn't finish hit. Woke up on the ward in hospital.

I was with my boyfriend, we injected heroin and I overdosed.

Others explained that they had been abstinent and this might have caused the overdose

Injected heroin after abstinence.

I had just come out of custody. I began using straight away.

Another explanation was the use of a higher-than-usual dose or using heroin in combination with other drugs.

After scoring heroin, we went back to a friend's house where in all the excitement after scoring the man in question used a little more than he would usually and it resulted in him overdosing.

I had been drinking all day and used 6 bags of heroin. I drank my last glass of cider and went to sleep. I woke up and my friend had been giving me mouth to mouth and CPR.

A more disturbing reason was what appeared to be a deliberate overdose.

I had a row with my boyfriend and he left and I drank 6 x 85 ml of methadone and took all of my thyroxin.

I took a deliberate overdose. I used IV one gram of heroin. I took 200 mg of diazepam. I had a bust up with my parents...

Another question concerns the use of resuscitation techniques. There were several examples of friends or other persons present using the correct procedures, some cases when the witness did not have the knowledge or confidence to take action, and many other cases in which apparently wrong techniques were used.

In many cases, users families or friends took correct action at the time of the overdose event.

...when I came around my Dad had done CPR. An ambulance was present...

I had to phone an ambulance. ... An ambulance came and took him to hospital.

He phoned the ambulance and tried to do CPR.

Others were unwilling to take actions on the grounds of not knowing what to do or lacking in confidence to take action.

I would've done CPR if needed but I was confused about how many reps to count.

There were many other examples of cases in which non-recommended methods of resuscitation were used. A selection of some of the methods used, are shown below.

Took her to the bathroom and doused her with cold water until she came around.

Picked him up and helped him up over the sink and splashed water over him. He was sick.

So I acted quickly and walked him about and after approximately 20 minutes his colour came back and he was back with us.

...helped bring him round by putting cold water over him and slapping him, walking him until he was semi conscious

These examples are contrary to the recommended procedures taught in the THN training sessions. Actions such as these are usually regarded as part of the myths of overdose treatment. However, the respondents claimed that in most cases these actions brought the victim around.

How is it possible that non-recommended methods regarded as myths resulted in resuscitation? In order to solve this problem, we asked the paramedic during the 'key informants' interviews how these comments might be explained. His answer identified two scenarios: one in which the patient was unconscious but recoverable without medical intervention and the other in which the patient was in a normally non-recoverable situation (without medical intervention). His comments are summarised below:

In the case of a potentially recoverable overdose:

"As soon as your airway is occluded and, you know, snoring is a good example of that … and they snore horrendously, they go a horrible colour, and that shows that their airway is occluded. Well if you move their airway into a position where they can breathe better, actually their colour might improve."

In the case of a potentially non-recoverable overdose:

"It's going to get worse and ... regardless of them getting them up and walking them round, the drug is in there .... if they increase their metabolism it's going to increase the effect of the drug and therefore deepen the … symptoms and the level of unconsciousness. So it might actually precipitate death rather than improving it."

In other words, any actions that clear the patient's airways (including walking them around) when they are still in a potentially recoverable state might assist in their recovery by clearing their airways. Actions such as walking the person around when they are in a potentially non-recoverable (without medical intervention) state might actually make matters worse and even precipitate death.

Hence, naloxone would have the power to reverse the overdose in both scenarios whereas walking the patient around might reverse the overdose in the first scenario but could be potentially fatal in the second scenario.

(4) Number of drug-related deaths

2.16 While it was recognised by the funding body that the evaluation would not be able to determine changes in the number of drug-related deaths that might be attributed to the THN project, they were nevertheless interested in monitoring trends in drug-related deaths over time and the circumstances of these events.

The details of trends in drug-related deaths in Wales have been provided already in the 'Background' section of the report under the heading of 'Research context'. The ONS database of deaths related to drug poisoning showed that there were 132 recorded drug-related deaths in Wales in 2009. At the time of writing this report, there were no national level or collated data available on the number of drug-related deaths in Wales in 2010. In other

words, there are no official drug-related death data covering the period of the evaluation.

Some data have been collected on drug-related deaths by the Regional Confidential Review Panels on Drug Related Deaths in Wales and are presented in their periodic Review Briefings. As the reviews look at only a proportion of cases each year, the annual number of drug-related deaths reviewed has not been reported in this document. However, some of the information on the characteristics of the victims compiled by one of these panels (the South Wales Panel) is summarised below. This panel was selected on the grounds that it included areas with the highest rates of drug-related deaths in Wales.

At the time of writing, the most recent report from the South Wales Panel covered the period from the beginning of 2010 to October 2010. Within the briefing is a summary of the cases reviewed to date across the whole of Wales. This showed that:

- Males accounted for the majority (89%) of drug-related deaths
- The largest percentage of deaths (61%) occurred in the person's own home
- Half (50%) of those who died were currently living with their family
- The majority of victims (89%) were in receipt of benefits

However, as these percentages are based on a non-random sample of all cases, they need to be treated with caution.

As mentioned above, the Regional Confidential Review Panels on Drug Related Deaths investigate the details of a sample of all drug-related deaths in Wales each year. These case summaries provide a useful overview of the conditions relating to drug-related deaths, which in many cases comprises death from heroin overdose. In order to provide an insight into the circumstances relating to drug-related deaths, a selection of some of the cases included in the most recent

report from the South Wales Panel for 2010 are included in the appendixes (see Table A2.28).

These case studies provide detailed information about each incident. Apart from full details of the deceased, the reports provide information on the circumstances of the death. The following is an example of the qualitative information provided.

> The deceased was released from prison 6 days before he self poisoned on heroin. At 8 am on the day he died, he spoke to his mother informing her of his intentions of going into town later that morning. He was in good spirit. His mother left home at 10 am but on her return at 12 noon she found the deceased slumped on his bed with evidence of drug use nearby. She attempted CPR and called an ambulance but he was pronounced dead at scene.
>
> One or two observations stand out.

The first is that several of the case studies report multiple substance misuse at the time of the death. In most cases, the death was associated with a combination of heroin and alcohol use (both strong respiratory depressants).

> Deceased had been out drinking with friends on the previous day and returned home at around 9 pm where he was intoxicated. He went to bed shortly afterwards with two bottles of water. His mother checked him at 11:15 pm when he was snoring. She then went to bed, but when he had not woken up the following day at around 12:30 pm she found him unresponsive in bed. Ambulance attended but paramedics pronounced life extinct. Medication in room included asthma and flu antibiotics.

The second observation is that almost none of the circumstances of the deaths described involved the administration of naloxone. On the one occasion when it was used (Case 3), recovery was effected, although, following a second overdose, recovery was not made.

> On the proceeding day the deceased suffered a near fatal poisoning of heroin at a friend's house. Ambulance paramedics attended at the scene and administered naloxone effecting recovery. He refused further treatment or hospital admission. At 9 pm on the following evening the deceased returned to the same address and again injected himself with heroin and collapsed shortly afterwards. Ambulance paramedics attended but on this occasion could not resuscitate him and he was pronounced dead at the scene. 2 persons arrested on suspicion of supply.

Conclusion

2.17 The aim of the chapter was to summarise the results of the evaluation relating to the main programme outcomes: (1) learning and other outcomes from the training sessions, (2) practical application of naloxone in overdose events, (3) practical application of other harm-reduction actions in overdose events, and (4) effect of naloxone in reducing the number of fatal overdoses.

Learning and other outcomes

The results showed that knowledge of methods for recognising and responding to an overdose event increased across all measures. So too did perceived confidence in responding to an overdose and willingness to carry out the recommended procedures. There were no clear differences in these outcomes by gender or age of the trainee. In other words, all groups appeared to benefit in terms of enhanced knowledge and confidence.

A comparison of changes in knowledge following the training session across sites showed some important differences. The highest change scores were found for North Wales and Gwent and the lowest were shown for Cardiff and HMP Cardiff. In order to test whether these differences were associated with type of programme input, the relative percentage change scores were correlated with a measure of programme input. This showed that there was a positive correlation between strength of programme input (as measured) and strength of programme outcome.

One additional potential harm reduction outcome of the training sessions was that new recruits were asked whether they had been tested for blood borne viruses that commonly affect IV drug users. All recruits had the opportunity to obtain free hepatitis B and C and HIV tests. Approximately half of those recruits who had not previously been tested requested a test.

Practical application of naloxone in overdose events

The extent to which the knowledge obtained during the training sessions was put into practice during actual overdose events was determined from information provided on the replenishment forms completed when replacement naloxone was sought. These showed that naloxone had been administered in overdose events. In most cases, the respondents claimed that the administration was trouble free and in all bar one case the client survived.

Practical application of other harm-reduction measures

It is important that trainees do not rely on naloxone at the expense of other harm-reduction methods. In order to test for this, we investigated the use of other life-saving measures at the time of the overdose. In most cases, in addition to the use of naloxone, the recovery position was used and in almost half of cases CPR was used. It is also encouraging that in nearly all cases an ambulance was called. A comparison of harm-reduction action taken at overdose events among the naloxone group and a comparison non-naloxone group showed that the naloxone group more frequently used the recovery position and called an ambulance than the comparison group. Conversely, the comparison group was more likely to use CPR which might have been used as an alternative to naloxone as a means of resuscitating the victim. There is some evidence, therefore, that other harm-reduction methods are still being used by the naloxone group and in some cases their use was more prevalent among the naloxone group than the comparison group.

Number of fatal overdoses

It is notoriously difficult to determine whether a single programme can effect an event that occurs across the nation and has multiple causes. It was also not expected that the evaluation would be able to determine such a connection. Nevertheless, we collected information on drug-related deaths from several sources and the analysis of these data is informative if not conclusive.

We were able to compare the survival rates of a small sample of overdose events in which naloxone was used (THN replenishment forms) and a small number of overdose events in which naloxone was not used (comparison group in an area without THN). The comparison showed that there was just one fatality among each group covering roughly the same number of incidents. While the comparison is suggestive of no naloxone effect on outcome, there are many other factors to take into consideration. The first is that they were all witnessed overdose events (someone was with the victim while still alive) which no doubt increased the likelihood of survival in its own right. The second is that it is unknown what proportion of these overdose events were potentially fatal or potentially recoverable without intervention.

We also had information on case studies of drug-related deaths which also could be used as a comparison. The samples are of course fundamentally different in that nearly all of the naloxone group survived and all of the drug-related deaths cases (by definition) died. The difference between the groups however is also illuminating. In nearly all of the incidents of drug-related deaths the deceased was alone at the time of death and in all of the naloxone group overdose incidence someone was with the client at the time of the overdose. As above, it would appear that the presence of a witness who might take effective action seems critical to the outcome.

Final comment

2.18 The current research has shown that naloxone can administered by users and their associates at the first stage of action. It has also shown that victims nearly always survive at this first stage. The research is less clear about whether alternative actions taken at this first stage of discovery of an overdose would be equally life saving. The research is also less clear about whether naloxone administered at this first stage would be effective if there was no second stage support from paramedics and hospital staff.

While there is some doubt about whether alternative actions would be effective, there is little doubt that naloxone (if it can be administered in time) can be effective. There is also evidence from the research that THN training leads to greater harm-reduction knowledge and practices. On balance, the most reasonable conclusion is that THN can be administered effectively by users and associates at an early point in an overdose incident and as a result of doing so can save lives.

3. Process evaluation

Introduction

3.1 The aim of the process evaluation is to determine the nature and quality of the programme implemented. This was done by investigating (1) the implementation of the main elements of the programme, (2) the nature and quality of the training sessions, and (3) participants' views of the programme as a whole.

(1) Project monitoring

3.2 One of the aims of the process evaluation was to monitor data relevant to the implementation of the project. The following tables summarise the progress to date on three elements relevant to project implementation: (1) the number and detail of demonstration sites, (2) the number of clients trained, and (3) the number of kits distributed and used.

Number and details of demonstration sites

The number of sites involved in the THN demonstration project changed slightly over time. The early sites were in Newport, Cardiff, Swansea and one site in North Wales. Over the course of the evaluation, the number of project sites increased as shown in the table below. As the various sites in North Wales were co-ordinated by just one person, the 6 sites are usually combined for administrative purposes as one site referred to as 'North Wales' (see Table 3.1).

Table 3.1 THN demonstration sites

Site	HQ location
Gwent	Caerphilly
Newport	Newport
Cardiff	Cardiff
Swansea	Swansea
North Wales	Wrexham
	Anglesey
	Flintshire
	Denbighshire
	Gwynedd
	Conwy
HMP Parc	Bridgend
HMP Cardiff	Cardiff
HMP Swansea	Swansea
HMP Prescoed	Pontypool

Number of clients trained

Since the launch of the project in September 2009, over 600 clients have been trained in the use of naloxone and basic life support skills, and completed the pre- and post-training questionnaires. The largest number of clients trained was in Newport and North Wales and the lowest number was in HMP Prescoed.

Table 3.2 Number of clients trained by area

Site	n	%
Gwent	43	6.7
Newport	155	24.1
Cardiff	107	16.6
Swansea	80	12.4
North Wales	126	19.6
HMP Cardiff	70	10.9
HMP Parc	33	5.1
HMP Swansea	27	4.2
HMP Prescoed	3	0.5
Total	644	100.0

Number of kits distributed and used

The most recent number of kits distributed was compiled by the national co-ordinator covering the period of the project up to February 2011 (see Table 3.3).

Table 3.3 Number of kits distributed and used (at February 2011)

Site	Kits given out	Kits used	Kits used as a percentage of kits distributed
Gwent	43	3	7%
Newport	155	8	5%
Cardiff	107	12	11%
Swansea	80	19	24%
North Wales	126	4	3%
HMP Parc	70	0	0%
HMP Cardiff	33	0	0%
HMP Swansea	27	2	7%
HMP Prescoed	3	0	0%
Total	644	48	8%

The table is based on the assumption that all persons trained were given a kit. It is possible that on some occasions and for various reasons kits were not provided.

Section summary

The project monitoring data shows that the main implementation aims of the project of establishing the demonstration sites, training clients in the use of naloxone, and distributing naloxone have been achieved.

(2) Observations of training sessions

3.3

One of the main qualitative means of assessing client training was to conduct observations of selected training sessions. At least one training session was observed in each location. The observations were recorded on an observation schedule and included both quantitative and qualitative information. The aim of the observation was to describe the event without necessarily being too judgemental. In other words, the observer mainly described the physical environment, the number of trainers, the number of trainees, the method of

presentation, and the elements of the training package included. However, events that occurred during the session that were known to be of significance to the aims of the project or the potential outcomes of the training session were also recorded. Interruptions, for example, which can be disruptive in a teaching setting, would be recorded in the observation schedule.

The number of observations made and number of trainees observed is shown in Table 3.4. In total, 14 observations were made involving 62 trainees. It should be noted that several other attempts were made to observe sessions which were cancelled due to no clients turning up.

Table 3.4

Site	Location number	Observation location	Number of trainees observed
Gwent	1	Cross Keys	5
Newport	2	Newport	6
Cardiff	3	Cardiff	1
Swansea	4	Swansea	4
North Wales	5	Wrexham	4
	6	Llangefni	6
	7	Amlwch	3
	8	Holywell	5
	9	Rhyl	3
	10	Caernarfon	2
	11	Colwyn Bay	2
HMP Parc	12	Bridgend	17
HMP Cardiff	13	Cardiff	2
HMP Prescoed	14	Pontypool	2
n=	14	14	62

Quantitative analysis

3.4 A quantitative summary of the observed training sessions is presented in Table A3.1. Half were observed in the morning and half in the afternoon. There were usually between one and three trainers present with a fairly equal mix between males and females. There were usually five or fewer trainees per session and only once did the number exceed 10. Interestingly, in the majority of sessions there was at least one other observer. These were usually

potential trainers from the host agency or members of other agencies who just wanted to learn about naloxone.

In order to examine possible variations across sites in terms of the nature and characteristics of the training sessions, the main elements of the training were coded and compared across sites (see Table A3.2). There were 29 elements of the programme coded in total.

The highest mean number of programme elements was recorded in the North Wales sites (mean number=23), followed closely by Swansea (n=22), Newport (n=20) and HMP Parc (n=20). The lowest mean number of elements was recorded in HMP Cardiff (n=15) and Cardiff (n=16). The main variation in the number of programme elements used was in relation to the introductory part of the training session covering items such as introducing participants, explaining the aims of the session, providing an outline of the session, and providing guidance on completing the questionnaire. This varied from all six introductory elements present in nearly all of the North Wales sites to no introductory elements present in HMP Prescoed. There was also variation in the harm-reduction elements of the training (including safe injection, CPR, resuscitation and general first aid) ranging from 3 of 4 possible elements among nearly all of the North Wales sites to none of the elements in HMP Parc and HMP Cardiff.

Qualitative analysis

3.5 While the quantitative analysis is useful in providing a comparative overview of the training sessions, the qualitative data provide more detailed insights into what happened. A summary of some of the qualitative features of the sessions are shown in Appendix 1, Tables A3.3 to A3.16.

The comments made on the problems observed can be categorised into three main groups: technological issues, keeping order issues, and teaching skills issues.

The main technological issues concerned the operation of the DVD player and the difficulty for trainers to operate smoothly when working in an unfamiliar buildings and with equally unfamiliar DVD equipment. These problem extended across other audio visual aids including the problem of showing a DVD to a group on a 17 inch monitor. It is perhaps the lack of confidence with the DVD player that encouraged trainers to run the video until the end without pausing for discussion.

> The DVD was shown on a small (17 inch) TV. I am not sure that all of the prisoners would have been able to see it clearly, but they did all seem to be engaged by it.
>
> At the end (X)... attempted to show the 'Going Over' DVD, but the sound was not working so he was not able to. Nevertheless, he did forward the DVD to the part where the person was put in the recovery position to demonstrate what to do.

A related issue is the problem of some users having difficulty in hearing the trainer. This might in part be a problem of the trainer, but it might also be a problem of the acoustics in the room, which sometimes were not ideal for holding training sessions.

The issues relating to keeping order were much more extensive. A common point mentioned was the problem of people coming and going during the session. Conversely, there was a problem concerning waiting for people before the session could be started. Another order problem concerned disruptions when trainers or trainees were required to leave the session to speak to someone or other people entering the room to speak to someone. Disorder was also identified as being created as a result of the large number of things going on at any time, especially during the practical sessions. Finally, the sessions were sometimes disrupted by a single person who would dominate the discussion and the flow of the session.

> ... kept calm even when everything started to go wrong. Clients arrived late and were disruptive. A real feeling of chaos developed. Workers from ... kept coming into the training room and then leaving. The whole flow was disturbed…(X) was not in a position to do much about this as it was not her territory.

The third theme identified in the observations concerned teaching skills issues. The observers identified various weaknesses in the teaching methods adopted. There were often no personal introductions to the sessions, which meant that users often did not know who else was in the room with them. This was exacerbated on those occasions when perhaps three or more observers might be present. On some occasions, the observers outnumbered the clients. There was sometimes an apparent lack of structure to the session which made it more difficult to follow what was being said. While some degree of flexibility is expected, some of the sessions fell outside the normal range in terms of omitting items that should have been included. More general comments by the researchers noted that the sessions were sometime disjointed and felt rushed.

> The session felt rushed and a little uncomfortable at times. The technological problems were disappointing as the 'Going Over' DVD is entertaining and very informative. ... seemed uncomfortable with my presence ... Overall, his delivery was poor and felt rushed. When we spoke after the session he said that he did not want to tell the client stuff that he already knew (he was essentially tailoring the session to the client's needs).

Other issues that emerged from the sessions

In addition to the above, several other issues emerged in some of the sessions. While they might not occur often, they are nevertheless worth noting when assessing the broader issues involved in implementing the programme. The issues identified are summarised in Table A3.17. A selection of some of these issues and examples of them is shown below.

Other observers

> I spoke with ... after the session and she commented that the sessions are 'over-observed' at the moment. This can disrupt the flow, particularly when they start answering the questions.

Injection training

> During the injection session, one client commented that 'It's teasing giving us these needles'. ... quickly told the group 'I should have said - you don't need to do this if you don't want to.'

One client decided to stick the needle into his arm instead of the orange ... ... felt that two trainers would be useful at this point.

Dominant clients

: ... said that in some sessions the group dynamics can be tricky. As with focus groups, you often get one or two clients who talk too much and others get upset by this

Medical questions

One client asked if a baby drank the parent's methadone, would you give naloxone to the baby? The professionals said they'd weigh up the situation, but they appeared unsure of what to say, i.e. exchanging glances. ... I got the sense that this was a difficult position for the professionals to find themselves in and clearly didn't want to verbalise a definitive answer.

Delays starting

The session was supposed to begin at 10 am but didn't begin until 10.25 as there was a late arrival ... When the client arrived he wanted a cigarette so the clients were allowed to go for a cigarette. When they came back in another client arrived, went to the toilet while the others were completing the pre-training questionnaires.

Stereotyping

... felt that the DVD (Mr Mange) stereotypes drug users. He said that he knew all sorts of heroin users and that many were working and had high-up positions in organisations. 'It's embarrassing - tarring us with the same brush.'

Section summary

Users were generally satisfied with the training sessions and said that they learnt a lot from them. There were also many positive aspects about the sessions recorded by the researchers and these can be read in the text above. However, there were also several problems identified and it is perhaps these that are most useful in deciding on the lessons that have been learnt and the recommendations for change. These include technological issues, keeping order issues, and teaching skills issues, as well as several less frequently mentioned issues that need to addressed and resolved.

(3) Interviews with key participants

3.6 Semi-structured interviews were conducted in person or by telephone with key participants of the project, including all site leaders, police and paramedic representatives and service users.

Interviews with site leaders

The first aim of the interviews with the site leaders was to determine the nature of the model of the THN project that was operating in their area. It is important that the key staff have a shared vision of the project and how it operates. It was also relevant to the evaluation to obtain a summary of the model being used in each site. In order to investigate this, all interviewees were asked to comment on the aims of the project, its management structure, the nature of staff training, the nature of the client training sessions, the method of recruitment and who should be recruited, and the relationship with partners.

The second aim was to determine how well the key informants thought that the programme was implemented. This was investigated by asking the site leaders to comment on how well they thought each of the above elements was operating.

The section below discusses how the key informants described the elements and how they evaluated them in their project area.

Aims

The first element of the model of THN is its perceived aims. All of the key informants were asked what they thought the aims of the project were. A selection of their responses is shown in Tables A3.18 to A3.27.

There is a high degree of consistency in the responses that the primary aim of the scheme is to prevent drug-related deaths. There were also various

secondary aims or mechanisms that were mentioned. The idea of empowering people to take actions in life-threatening situation was mentioned several times, as well as the emphasis on education and teaching skills.

> I think that's got to be the key one obviously, to reduce mortality from drug related deaths. I think there's important education that goes out alongside the naloxone. … it's an overdose prevention package.

Management

The second element of the project is the management structure. All interviewees were asked to describe the way in which the project in their area was managed and whether they thought there was anything that should be changed.

The comments about the management structure were generally positive and most respondents were happy with the system as it is. There was clear support for the idea of having a national lead and a national working group. Respondents appeared to like the idea of having a clear structure and the possibility of interaction between the groups. The main negative comments concerned the flexibility allowed in the design of the project at the area level which was interpreted by one respondent as where you 'just sort of muddle through'. Two respondents also thought that they were playing a role that was not wholly appropriate for them and both hoped that the management structure would be amended in the future to deal with this.

> But, I mean, I suppose there is, there still isn't an area link … We got very little support, to be perfectly honest to start with. Um, and it was, you know, we were told we needed to do this and we all went away, each individual prison went away and did their own thing

Funding

Respondents generally felt that the funding was adequate to cover the costs of the kits and doctors' fees. However, they were less certain about whether the funding was covering all of the costs involved in implementing the project. The main cost not covered was the opportunity cost of staff involved. The point was also made that the funding is likely to be viewed as sufficient

because the programme has been scaled down to match the funds available. The main concern here is that the programme could be better if more funds were forthcoming.

> I've always said this, that, I mean, it's been done on the cheapie-cheap … We were told very clearly at the beginning there's no revenue money. You can't have money for people. You can have money for, you know, as I say materials and equipment and that sort of thing, but not for people.

Training the trainers

The respondents described several methods of training the trainers. Some of them attended special training sessions organised by Danny Morris and NewLink, while others were trained in house by those who attended these sessions. Training was also provided by agency workers who had received naloxone training from their previous employment. There was a suggestion (not wholly clear from the transcript) from one respondent that training was sometimes not needed because substance misuse training was part of staff normal training requirements.

There are two views on the usefulness of the training sessions. One view was that it was very good and helped prepare the recipients for training others. Another view was that it was not very good and suffered from various weaknesses, especially in terms of providing the wrong information.

> The feedback from it wasn't particularly good. … Well, apparently it was a bit, I mean for a start they didn't know the numbers of who was supposed to be turning up for the training. So there was confusion there, because they didn't, they weren't expected … and also they were ill-prepared because they didn't have the kit with them to show how to use it … and there is another problem as well. I think with the, with the video of course it doesn't show the, it shows the … wrong kit … which is a bit of a shame.

Training the clients

The responses in this section were more conditional. Most people thought that the training sessions for clients worked well, but most came up with criticisms of them or ideas for improving them. The main problems identified were restrictions on handling the kits in prisons, the reliance on written materials,

problems with accurate completion of the data collection forms, and the tendency for trainers to try to include every element available to them in the training session. Some of the proposals for change were to allow one-to-one and ad hoc training sessions.

> Yeah. I think you … you need an option of having a one-to-one for some service users that will not access a group for various reasons, so you need that certainly as a back up. ... I know that Inroads did an ad hoc session. It wasn't their … their week of training, but they had a couple of users that were interested and um they booked them in to do an ad hoc session, but I don't think they turned up either.

Recruitment of clients

There appear to be few problems with recruitment in the prison service in that all prisoners are told about the programme as part of their induction package. There are greater problems in obtaining recruitment in the community and agencies have been more proactive in ensuring a good throughput of clients. Methods used include signing up people at initial assessment, as well as the use of advertising in needle exchange programmes, spreading the word through outreach workers, and recruiting directly through other large agencies. Another method is to make naloxone training compulsory for any person on the agency prescribing programme on the grounds that they could all be at risk of overdose.

The respondents generally agreed that there was a problem of low recruitment and most came up with ideas for improving the numbers of clients. These included improving advertising of the scheme and encouraging users to tell their friends about what is being offered. There were also suggestions for expanding the number of training outlets. One suggestion was involving agency nurses in providing a brief training programme and distributing naloxone. Another suggestion was to develop peer-led training. It was also suggested that users might be paid an incentive to attend the training. This was argued on the grounds that the naloxone provided is likely to be used on someone else. This means that the service user is being asked to take on a carer function, which should be compensated.

> Sometimes we'll have weeks and weeks where nobody is booked in, so nobody's being approached or encouraged … that says to me, well, have people lost, you know, professionals lost incentive now? … You just need to keep going … because then the service users eventually, they'll absolutely know, 'oh yeah, the training's going on at Inroads this week' … they know where it is, you know, and when it is, and I think that's really important.

Working with partners

The responses were again divided on this topic with some site leads saying that contact with other agencies was good and some saying that it was not good. Some respondents mentioned lack of contact with the prisons and some of the prison leads said that they had limited contact with the agencies. There were some references to good collaboration with the police and the ambulance services. Overall, it appears that collaboration among agencies is variable.

> I'd like to have much closer liaison with the police … there are ways that we could work in partnership with the police that we miss, like when they raid drug users for instance, we could be there as a back up saying look does somebody want to come into the service or something, that sort of stuff. … really good contact with the ambulance service because they were co-delivering our overdose workshops prior to the naloxone project coming on line … and we attend the patient advisory groups and we deliver training to the ambulance service and we have quite close links with the ambulance services.

Other comments

There were several other issues that were raised during the interview:

- General support for the project

> It's really good that, for once, Wales has been seen as leading the way in terms of rolling this out … although I do think it was rushed in places, I do think that it was really healthy as well that for once we haven't been sat round a table for three years and we come back together and we're still in the same position. … it's felt like something happened and we've moved forward and achieved something.

- The project is dependent on a small number of motivated people
- Thought should be paid to maintaining the momentum of the programme
- Naloxone should be distributed more widely through a greater number of sources

- The project is underfunded and relies on people taking on tasks on top of their existing schedule
- The distribution of needles to drug users is not without problems
- Distributing naloxone to young users without a proper educational context can generate mixed messages

Interviews with representatives of police and paramedics

A representative of the police and paramedics attended all of the national naloxone meetings and provided an advisory role to the group. They were both interviewed in person to discuss their perceptions of the operation of the programme (see Appendices, Tables A3.28 and A3.29).

The main issues raised by the paramedic representative were:

- The ambulance service is generally positive about the widening use of naloxone
- There are some people who are concerned about inappropriate use
- One ampoule of naloxone might not always be enough to reverse an overdose
- It is worth considering whether naloxone could be distributed without training
- The shape of the current kit could be improved to make it more ergonomic

> It would be nice to have, a something which was, you know, a bit more sort of fit for purpose than the kit we've got because we've basically just cobbled together what we, what we could immediately put our hands on, noting that there wasn't a huge amount of money in the system to be able to have a really fancy box for it … I think it would be a flatter box … more shapely, ergonomic …

  - Another kind of delivery system might be considered including nasal sprays, EpiPens or inhalers
  - There is a lack of understanding about recoverable and non-recoverable overdoses
  - The involvement of the police in overdose incidents has always been positive

- There are insufficient funds available to run the project as effectively as it might be

- In the future, the programme might be funded though the Community Safety Partnership

The main issues raised by the police representative were:

- It is not possible to stop police turning up at overdose events if they feel there is a need to do so

> I think that the, the stuff about, erm, police officers turning up to overdose and stuff is, is a really important area, and it's not… it's not a clear cut area. ... And I understand that they are going to turn up, even with protocols in place there's going to be times when it's right for… either for, for, erm, the protection of the ambulance staff, or because of, of some other reasons that the police turn up. I mean the best that we can hope for is to educate them about what naloxone is.

- The police are aware of naloxone and information about it has been placed on their news bulletins (in at least one police service)
- We have now introduced naloxone training as part of the routine first aid training that all police receive
- It would not be possible at the moment to expect the police to administer naloxone

Interviews with service users

3.7 Interviews were conducted with service users from the THN community sites. The aim was to gain an understanding of how the THN project was viewed and experienced by the people it was designed to assist. All interviewees were asked to comment on the THN scheme, the THN kit, and the views of other service users. Details of the interviews are provided in the Appendices in Tables A3.30 to A3.40.

The THN scheme

All of the interviewees commented positively about the scheme. The main benefits reported were that it gave them the tools and confidence to save someone's life. An additional benefit, described by one service user, was the

fact that it encouraged users to be more responsible in their use of heroin and drug cocktails.

> I think it's the most wonderful thing in the whole world .. because people are going to do this thing, whatever, you know ... once you're involved in it you can't just stop one day because you're so ill ... as soon as you've got £10 note in your pocket you'll go and get some more of this stuff. ... The benefits of the scheme are that people, lives can be saved, every day of the week, by not medical people, by people who are stood there when it's happening.

> I've got to be honest, I've got nothing bad to say about it, it's only good things ... it's saving people's lives, isn't it, at the end of the day, it's helping somebody, and if somebody can do that, all the better ... it's just handy to have there in case something does happen to somebody, because it does happen to people, people do overdose in front of people.

The training sessions

One interviewee commented on the size of the groups being trained. It was felt that if there were too many people in the session, the key workers would not be able to concentrate on each individual. One-to-one sessions were described as more comfortable for the trainee. Another interviewee indicated that the sessions could be improved if they were delivered by people who know the reality of the drug-using lifestyle. This interviewee was less positive than the others and seemed genuinely concerned that the project was not working as effectively as it might. When prompted for further details, he struggled to articulate his concerns.

Recruitment

One interviewee indicated that the difficulty in recruiting new clients was down to fear among drug users that naloxone needed to be injected intravenously. He explained that, 'it's bad enough trying to catch, get your own vein, let alone someone else's, especially when they're under the pressure that you're under, you know'. He recommended that the leaflets and publicity material are changed to address this concern. Two interviewees put the lack of attendance down to cost. They both recommended that an incentive (e.g. money or shopping vouchers) be given to encourage attendance. One interviewee went so far as to recommend that drug users be pushed into training by the prospect of having their methadone prescription withheld.

Publicity about the project was an issue raised by two of the interviewees. One felt that there was a lack of knowledge about it, while another felt that knowledge was widespread. One interviewee suggested that recruitment could be improved by offering incentives to service users to attend. He described how a £5 incentive had been used in the Channel project (a substance users' focus group), which resulted in an impressive level of attendance.

Another interviewee claimed that the only way to boost recruitment was to 'push' drug users into training. When probed how this might be done, he suggested that methadone scripts could be made contingent on attendance at THN training. This interviewee also suggested that shortening the training session would be a useful way of attracting new clients. He highlighted the fact that many drug users have injected for many years and did not need to be taught how to inject an orange. Doing so, he explained, was simply 'a waste of their day'.

Views on naloxone

Users' were generally positive about naloxone. One interviewee went so far as to describe it as a 'wonder drug'. Other interviewees commented on its

lifesaving qualities, while others were a little more reticent commenting that they did not know a lot about it. Nevertheless, even these less forthcoming interviewees acknowledged that naloxone was 'a good thing'. Interestingly, one interviewee had some concerns about the value of providing heroin 'smokers' with needles. He recommended that some thought should be given to the development of a soluble tablet form of naloxone.

> So if people have got that on them and know how to use it, if somebody's had an overdose or something, they can use it, they can save somebody's life. ... I think it's a very good idea ... and more people should get to know about it as well.

Using naloxone

Two of the eight interviewees had used their kits. One of them explained that he had supervised the injection of two ampoules of naloxone into a friend who had overdosed on heroin. The need for two ampoules arose after the first ampoule failed to bring the friend around. It was fortuitous that both the interviewee and his associate had THN kits, meaning two doses were available. The interviewee did not call an ambulance. When asked why not, he explained that it was because the naloxone had worked and the person had come 'back to life'. Interestingly, this interviewee had some trouble remembering the name 'naloxone' and referred to it in various different ways (including naltrexone) throughout the interview.

> I've actually had to use it, yeah, ... I've had to use it. I've done one lot and I'm on my second lot now, yeah. Coz I had to use it on a friend who overdosed in me flat. So, I used it. It didn't work, the first lot, but luckily enough I had a lodger staying at mine who had one as well, yeah, so I used two of em and it brought him back around, yeah. So, I saved his life really with it, yeah ... about two, three month ago ...

The other interviewee, described how he and his best friend had been on a night out and were sharing a hotel room. He came into the room and found his friend lying on his back making the sound of a 'death rattle'. After checking his pupils, his immediate response was to call 999. He then opened his naloxone kit and injected it into his friend's arm. His friend came straight out of the overdose and survived. When describing this incident, the interviewee

commented on the difficulty of injecting naloxone into the leg. He explained that if a woman had overdosed on the street he would not 'be undoing her jeans'. He felt that the arm was the most useful injection site. Again, like the previous interviewee, this one also had some trouble remembering the name naloxone. In fact, he referred to it as nalaxone throughout the interview.

The majority of interviewees acknowledged the potential to upset a person by 'spoiling their high', but none of them felt that this would stop them from administering it. One interviewee explained that 'I don't care if I've wrecked their buzz, I've saved your life mate at the end of the day ... I'd use it no matter what'. Interestingly, one interviewee reported that he knew of one user who had asked their partner specifically not to administer naloxone in the event that she overdosed.

One interviewee explained that he was not concerned at all about annoying anyone. He described how it is only one dose that is administered and that this might just be enough to bring them around in time for the ambulance to get there. He had seen reports of users needing four doses before coming round fully. He thought that reluctance to administer THN was misguided.

Carrying kits

Five of the eight interviewees said that they carried their kits all or most of the time. One of them explained 'it's a perfect size, it fits in your pocket. I forget its there to be honest'. Three service users said that they did not carry the kit with them. One said that this was because he was 'not around all that mess' and did not see people overdosing. Another said that he only ever used heroin in his house and therefore left his kit at home. This interviewee reported owning two THN kits as he had lost one and then found it again after having received a replacement. He was keen to keep both kits given his experience of needing to administer two doses to a friend who had overdosed in the past.

Another interviewee who did not routinely carry his kit was troubled by the physical difficulties of actually carrying it. He described it as 'too big and too bulky' and not something that would not fit in your pocket along with your keys and mobile phone. During the course of the telephone interview (this interviewee was on the street at the time) he asked a group of drug users if they were carrying their kits. None of the four who had been to THN training was carrying their kit at that time.

Interviewees were also asked if they agreed or disagreed with the idea that some people were reluctant to carry their THN kits for fear of being stopped and searched by the police. None of them said that they were concerned enough to stop carrying their kits. In fact, most of the interviewees indicated that the police did not have the power to confiscate them so long as they were sealed and the recipients name was on the label.

Actions taken at overdose events

One interviewee commented that he had brought someone 'back to life' twice in the past. He described performing CPR until the ambulance arrived. Another interviewee described how he had seen people go blue and stop breathing. His response was to check their pulse, monitor their breathing and look after them until they started moving and coming around. Three other interviewees described events where they phoned an ambulance. In one of these cases the person was described as being 'comatose' and would not wake when slapped. The response was to call the ambulance immediately. Evidently, some interviewees already had knowledge about how to deal with an overdose prior to attending the THN training.

> We didn't ring an ambulance coz when I injected him with two yeah, he started breathing and snoring, yeah, so we knew he was alive. We left him in the chair because he went white and his lips went purple when he took it, when he took the heroin, so we injected him. It was my mate who actually injected him. I told him where to inject him, yeah, coz I don't use needles. If I'm taking heroin, I smoke it ... So my mate knew better and with me having the training I told him where to put it, yeah, ... in the muscle in the arm.

One interviewee described an overdose event during which an ambulance was called. When the ambulance arrived the paramedics asked the people present what drugs the person had taken. There appeared to be a general reluctance among them to tell the truth. However, eventually it was revealed that the person had taken opiates and the paramedics were able to respond appropriately and administer naloxone.

Interviewees acknowledged that there was concern among service users that if they called an ambulance the police would turn up. The majority of however indicated that this fear would not stop them from calling an ambulance. One interviewee suggested that if people were to report OD victims as being non-responsive rather than having overdosed then the police would be less likely to turn up. Another interviewee said that he had done this in practice.

Conclusion

3.8 The interviews with the site leaders were generally supportive of the structure and implementation of the programme. However, they also raised several issues that might need to be addressed when taking the project forward.

The discussion on management of the programme identified two seemingly opposing viewpoints. On the one hand, the informants were happy with the clarity of the broader management structure, including the high level of interaction between the groups. On the other hand, they were less happy with the lack of clarity over the implementation of the project at grass-roots level. While flexibility was seen as advantage by some it was seen as a disadvantage by others. There was a similar split in responses in relation to funding. At one level (the level of implementing the programme as designed) respondents generally felt that the project was well funded. At another level (at the level of achieving what the project might be capable of achieving) respondents felt that the programme was underfunded.

The discussions on training the clients focussed on the expectations that the training sessions should cover a wide range of methods and issues and the limitations imposed in terms of the kits (especially the problem of needles and the fact that the kits had to remain sealed). There was a general concern about the level of recruitment and several ideas were suggested for improving it. One of the issues that emerged from this discussion was the extent to which the THN programme should be presented as voluntary or compulsory. While recruitment might be improved by making it an integral part of existing programmes and training, it raises the issue of whether then it is to be regarded as a wholly voluntary activity. The discussion on working with partners showed that there was generally good interaction and good will between those linked to the project. However, there appeared to be weaker links between the community-based and prison-based programmes.

The ambulance service representative raised several important issues relating to distributed naloxone that might need to be addressed. He thought that in some cases one ampoule of naloxone might not be enough. While the THN project is based on the idea that users should always call an ambulance, implying that further doses could be provided by the paramedics when they arrive, in practice they sometimes do not. He raised the issue of whether naloxone could be distributed without training or with abbreviated training. He reiterated the view that needles are a problem and questioned whether other delivery methods could be considered. Finally, he raised the issue of recoverable and non-recoverable overdose. While the THN training sessions speak only of a single kind of overdose, it might be of benefit to explain the more complete story. The police representative mentioned that in one force area naloxone training was now part of standard first-aid training for all new recruits. This initiative should perhaps be monitored and (if successful) might be considered by other forces.

The evidence gathered from interviews with service users indicates that the THN scheme has been generally well received by service users. The majority of interviewees acknowledged the benefits of the scheme largely in terms of how it had empowered them to save lives. Few negative comments were

offered, although room for improvement was identified. Several interviewees offered suggestions for boosting recruitment into the project. The use of financial incentives, the ability to gain first-aid qualifications, withholding methadone prescriptions, and revisions to publicity material (e.g. to emphasise that naloxone can be administered intramuscularly) were some of the ideas offered. Most of the interviewees seemed comfortable with the prospect of injecting naloxone. However, providing an alternative method of administration might prove helpful for those users who are less familiar with injecting paraphernalia (e.g. heroin smokers). One interviewee queried whether a tablet preparation that dissolves under the tongue could be developed. This would have the added benefits of shortening the training session and being easier to carry. The majority of interviewees carried their kits with them on a daily basis. While there are arguments for increasing the dose provided in the THN kits, there are also arguments for maintaining the single dose preparation. As one interviewee explained, the single dose gives just enough time for the ambulance to arrive with further doses on board. The single dose also has the benefit of preventing full withdrawal and discomfort in users.

4. Conclusion and recommendations

The specifications for the evaluation requested that the research identified: the impact of the initiative on the lives of service users, lessons learned on effective and cost effective implementation, best practice guidance, and revision of the implementation guidance in light of experience. In the following section we will address these issues under three headings: (1) summary of findings, (2) issues raised relating to the programme, and (3) recommendations.

(1) Summary of findings

The process evaluation

Establishing THN demonstration sites

The process evaluation showed that the main elements of the training sessions were put into place. In total, five community sites were established (Gwent, Newport, Cardiff, Swansea and North Wales) with one further site launched recently (Carmarthenshire). The North Wales site comprised a combination of six sites (Wrexham, Anglesey, Flintshire, Denbighshire, Gwynedd, and Conwy) managed from a single base. In addition, four sites were established in prisons (HMP Parc, HMP Cardiff, HMP Swansea, and HMP Prescoed). Overall, the project sites were implemented as planned.

Establishing training sessions for drug users

The project was also implemented as planned in terms of the objective to train service users and their family and friends in dealing with overdose events, to instruct them on the proper method of administering naloxone and to distribute naloxone among those who had been trained. Over 600 clients were trained in the first year of the project and a similar number of naloxone kits were distributed.

It is not enough, of course, that the programme is simply implemented. It is also important that the programme is implemented well and it is fit for purpose. In order to examine this, several methods were used as a means of obtaining further quantitative and qualitative information on the programme. One of the most direct ways of achieving this was to observe training sessions and record the main features of the sessions in an observation schedule. The summary of the finding showed that most sites had implemented most aspects of the proposed elements of the training package. The main content elements (e.g. signs of overdose, how to deal with an overdose, how to administer naloxone etc.) were all covered in all sites. The main variations occurred in the method of delivery (whether PowerPoint presentations were used and whether a DVD was shown) and in the number of additional elements included in the session (e.g. injecting oranges, CPR, and first aid training). As these elements were to be used at the discretion of the site leaders, this variation is not a problem in terms of programme implementation. In fact, all sites operated as agreed in that they included one or more of a selection of elements available to them.

The outcome evaluation

The main method of determining the effectiveness of the training session was to conduct pre-training and post-training questionnaire surveys. The results indicated that THN training was associated with improvements in knowledge and skills across a wide range of measures. The improvements occurred across all sites and all user types. Nevertheless, some sites showed greater levels of improvement than others. The largest improvements in knowledge were found in North Wales, Gwent and HMP Parc. There was some evidence that some of this variation across sites was related to the nature of the programme implemented. The North Wales sites used the highest mean number of programme elements of all sites and Gwent and HMP Parc were in the top half of number of programme elements used.

Information on the use of THN in overdose events was obtained from the replenishment forms. The evidence from these forms show that users trained in the use of naloxone can administer it effectively in real-life overdose events. However, a comparison across THN sites and a non-THN site showed similar survival rates. One

reason for this similarity might be found in the case studies of drug-related deaths which show the importance of the overdose event being witnessed by someone who might take effective action. In almost all of the deaths summarised in the report the user was alone at the time of death. Hence, these findings suggest that appropriate actions taken at the time of an overdose (regardless of whether naloxone is used or not) can save lives. Nevertheless, the use of naloxone at the time of the overdose is guaranteed to be an appropriate and potentially effective form of action.

(2) Issues raised relating to the programme

The above section has provided a brief summary of the main elements of the programme and the main results of the evaluation. However, as part of the evaluation process problems and issues were investigated. The issues discussed below were most common points raised during the interviews with site leaders and other key spokespersons and the interviews with service users. The problems and issues do not detract from the positive findings described above. However, they can help in identifying any areas in which the programme could be strengthened and any issues that need to be resolved. The following summarises some of the key problems and issues that were raised during the evaluation.

Issues raised by key informants

Management

The comments about the management structure were generally positive and most respondents were happy with the system as it is. There was clear support for the idea of having a national lead and a national working group. Respondents appeared to like the idea of having a clear structure and the possibility of interaction between the groups. The main negative comments concerned the flexibility allowed in the design of the project at the area level which was interpreted by one respondent as where you 'just sort of muddle through'. Two respondents also thought that they were playing a role that was not wholly appropriate for them and both hoped that the management structure would be amended in the future to deal with this.

Funding

Respondents generally felt that the funding was adequate to cover the costs of the kits and doctors' fees. However, they were less certain about whether the funding was covering all of the costs involved in implementing the project. The main cost not covered was the cost of staff involved. The point was also made that the funding is likely to be viewed as sufficient because the programme has been scaled down to match the funds available. The main concern here is that the programme could be better if more funds were forthcoming.

Training trainees

Most people thought that the training sessions for clients worked well. One problem identified were the restrictions on handling the kits in prisons. It was also felt that data collections forms were not always completed correctly. It was also mentioned that there was a tendency for trainers to try to include every element available to them in every training session. Some of the proposals for change were to allow one-to-one and ad hoc training sessions.

Recruitment

There appear to be few problems with recruitment in the prison service in that all prisoners are told about the programme as part of their induction package. There are greater problems in recruiting clients within the community. Methods proposed to improve recruitment were signing up people at initial assessment, the use of advertising in needle exchange programmes, spreading the word through outreach workers, and recruiting directly through other large agencies. One proposal was to make naloxone training compulsory for any person on the agency prescribing programme on the grounds that they could all be at risk of overdose. It was also suggested that advertising of the scheme should be improved and users should be encouraged to tell their friends about what is being offered. There were also suggestions for expanding the number of training outlets. One suggestion was involving agency nurses in providing a brief training programme and distributing naloxone. Another suggestion was to develop peer-led training. It was also

suggested that users might be paid an incentive to attend the training. This was argued on the grounds that the naloxone provided is likely to be used on someone else. This means that the service user is being asked to take on a carer function, which should be compensated.

Working with partners

The responses were again divided on this topic with some site leads saying that contact with other agencies was good and some saying that it was not good. Some respondents mentioned lack of contact with the prisons and some of the prison leads said that they had limited contact with the agencies. There were references to good collaboration with the police and the ambulance services.

Issues raised by service users

Users' views on naloxone

The responses were unanimously positive. One interviewee went so far as to describe it as a 'wonder drug'. Most interviewees thought that naloxone was 'a good thing'. One interviewee commented that people not already on a methadone script were not interested in the scheme. He explained that if they had no interest in sorting out their heroin use they were going to have no interest in THN. This problem was also highlighted by another interviewee who stated that young users just getting into heroin are. '...not bothered, they just want to go out, score and sort themselves out'. Two of the eight interviewees had actually used their kits. When prompted to describe the event, one of the two explained that he had supervised the injection of two ampoules of naloxone into a friend who had overdosed on heroin. The need for two ampoules arose after the first ampoule failed to bring the friend around. The other interviewee who had used his kit, described how he and his best friend had been on a night out and were sharing a hotel room. He came into the room and found his friend lying on his back making the sound of a 'death rattle'. After checking his pupils, his immediate response was to call 999. He then opened his naloxone kit

and injected it into his friend's arm. The majority of interviewees had neither used their kit nor heard of it being used by other service users.

Users' views on the THN scheme

All of the interviewees commented positively about the scheme. The main benefits reported were that it gave them the tools and confidence with which to save someone's life. One interviewee, for example, emphasised that the scheme had given him the confidence to take action in an overdose event. He reported having been in situations in the past where people had died and where he had felt helpless. An additional benefit, described by one service user, was the fact that it encouraged users to be more responsible in their use of heroin and drug cocktails.

THN Training

Several interviewees commented on the quality of the THN training. One particularly liked the fact that the trainers did not look down on him. One suggested that the project focus on older users who are ready to come off drugs. Another interviewee indicated that moving the training sessions to the afternoons would be useful. This would enable heroin users to 'get themselves sorted' in the morning and give them the time to attend training in the afternoon. One interviewee went so far as to recommend that drug users be pushed into training by the prospect of having their methadone prescription withheld. Delivering training in a range of locations was felt to be important way of drawing drug users not currently engaged in treatment into the THN project. One interviewee explained that THN training was now being taken around the hostels in her local area. One interviewee commented on the size of the groups being trained. It was felt that if there were too many people in the session, the key workers were not be able to concentrate on each individual. One-to-one sessions were described as more comfortable for the trainee. Another interviewee indicated that the sessions could be improved if they were delivered by people who know the reality of the drug-using lifestyle.

THN kits

One interviewee recommended that the THN kit should include a double dose of naloxone. This recommendation was based on personal experience of having to supervise the administration of a second dose of naloxone to a friend after the first failed to have the necessary affect. Five of the eight interviewees indicated that they carried their kits all or most of the time. One of these five explained 'it's a perfect size, it fits in your pocket. I forget it's there to be honest'. The remaining three service users said that they did not carry the kit with them. One said that this was because he was 'not around all that mess' and did not see people overdosing. The second said that he only ever used heroin in his house and he therefore left his kit at home. This interviewee reported owning two THN kits. When asked to explain how he had come to possess two kits, he explained that he had lost one and then found it again after having received a replacement. He was keen to keep both kits given his experience of needing to administer two doses to a friend who had overdosed in the past. The third interviewee who did not routinely carry his kit was troubled by the physical difficulties of actually carrying the kit. He described it as 'too big and too bulky'. The majority of users acknowledged that there were concerns about being stopped and searched by the police. But none of them was concerned enough to stop carrying their kits. In fact, most of the interviewees indicated that the police had no power to confiscate their kits so long as they are sealed and their name was on the label. The majority of interviewees acknowledged the potential to upset a person by waking them up and spoiling their high. However, none said that it would stop them from administering it. One interviewee explained that 'I don't care if I've wrecked their buzz, I've saved your life mate, at the end of the day ... I'd use it no matter what'. Interestingly, one interviewee reported that he knew of one user who had asked their partner specifically not to administer naloxone in the event that she overdosed.

THN recruitment

One interviewee indicated that the difficulty in recruiting new clients was down to fear among drug users that naloxone needed to be injected intravenously. He explained that 'it's bad enough trying to catch, get your own vein, let alone someone else's,

especially when they're under the pressure that you're under, you know'. He recommended that the leaflets and publicity material be changed to address this concern. Two interviewees put the lack of attendance down to cost. They both recommended that an incentive (e.g. money or shopping vouchers) be given to encourage attendance. One interviewee suggested that offering first aid qualifications as an add-on element to the training would help to recruit some people. Two interviewees thought that more could be done in terms of publicity. One felt that there was a lack of knowledge about it while the other felt that knowledge was widespread. One interviewee suggested that recruitment could be improved by offering incentives to service users to attend. He described how a £5 incentive had been used in the Channel project (a substance users' focus group) which resulted in an impressive level of attendance. Another interviewee suggested that shortening the training session would be a useful way of attracting new clients.

(3) Recommendations

The recommendations have been split into two groups with the first group identifying the positive features of the project and the things that should remain or stay more or less the same and the second group responding to some of the problems identified in the evaluation along with proposals for change.

The positive features of the programme have been discussed in detail in the main sections of the report and need not be repeated here. However, we would like to note a small number of elements of the project which in our view stand out. Firstly, there is no doubt that naloxone is one of the 'wonder drugs', as one of the users put it, in that it is reliable and highly effective in reversing an opiate overdose with almost no side effects (apart from withdrawal) and almost no possibilities for harm or misuse. Secondly, we were impressed by the dedicated and caring staff who operated at ground level in implementing the programme and by the enthusiasm and energy of the managers who oversaw the schemes. Their work was often conducted in far from ideal conditions, yet their commitment was strong enough to see the project through. To a large extent the qualities of the staff played an important role in the success in implementing the project and in bringing about the gains that have

been described in the report. Thirdly, we were impressed by the resourcefulness and commitment of the service users not only in taking the time to attend the training sessions quite often for the eventual benefit of others, but also in their willingness and skills in administering naloxone in real overdose situations. It is difficult to underplay their importance in taking effective action in situations which are no doubt chaotic and frightening.

> Recommendation 1
> We have no hesitation in recommending that the scheme continues and that the aim to roll out the programme nationwide is pursued. We believe that there is much of merit in the THN demonstration project and the gains that have been made should not be lost.

There are also several issues that have been raised concerning the operation of the programme. We will spend slightly more time in identifying the potential problems with the project and the issues that have been raised by the various people involved in the evaluation. We have already stated that we believe that the project has considerable merit and have recommended its continuation. The problems raised are not, therefore, meant as criticisms of the project, but as features of the programme that might be considered and possibly improved as it moves from a pilot stage to a full national programme. The main issues identified in the previous sections have been grouped together into broad categories. We will summarise briefly the issues raised and our recommendations relation to them.

Management

(Issue 1) There was clear support for the idea of having a national lead and a national working group.

(Issue 1) Respondents appeared to like the idea of having a clear structure and the possibility of interaction between the groups.

(Issue 1 The main negative comments concerned the flexibility allowed in the design of the project at the area level which was interpreted by one respondent as ‘just sort of muddle through’.

It is important to strike a balance between the extent to which the programme is structured in terms of management and procedures and the extent to which it allows flexibility and freedom in the way in which the programme is implemented. The comments above and our own observations suggest that the balance is not quite right at the moment. The problem seems to lie less in the clarity of the structure than in the clarity of the procedures.

> Recommendation 2
> We recommend that stronger guidance is given on the way in which the programme is implemented at ground level. This would be best done through official and detailed programme documentation.

(Issue 2) Thought should be paid to maintaining the momentum of the programme.

(Issue 2) The project is dependent on a small number of motivated people.

(Issue 2) Two respondents thought that they were playing a role that was not wholly appropriate for them and both hoped that the management structure would be amended in the future to deal with this.

The above comments refer to the future of the programme and its management structure. There is clearly some concern about the extent to which the programme can continue on the basis of the personal skills of a small number of individuals. The future of the programme should be sustainable even if these small numbers of highly motivated people move on.

> Recommendation 3
> We recommend that the structures and procedures are put into place to enable full operation of the programme independently of the specific individuals involved. This could be done by providing full programme

documentation specifying procedures, organisational structures, lines of accountability, and so on.

Funding

(Issue 3) Respondents generally felt that the funding was adequate to cover the costs of the kits and doctors' fees.

(Issue 3) However, they were less certain about whether the funding was covering all of the costs involved in implementing the project. The main cost not covered was the opportunity cost of staff involved.

The point made has two sides to it. On the one hand, it is argued that the project is adequately funded to cover expenses incurred from running the programmes. On the other hand, it is argued that the project is not adequately funded to cover all of the hidden fixed and staffing costs which are being met by the agencies. As we understand it, the services provided by the agencies are negotiated, which would mean that moving from one task to another should not incur additional hidden costs. The problem seems to lie in the conceptualisation of funding and the job descriptions of staff. If this is so, then the solution would be to focus on clarifying these items

Recommendation 4
We recommend that the costs of the programme and the responsibilities of key staff are clarified and that this information is conveyed to the people involved. This could be done through more formal programme documentation explaining these issues.

(Issue 4) The point was also made that the funding is likely to be viewed as sufficient because the programme has been scaled down to match the funds available. The main concern here is that the programme could be better if more funds were forthcoming.

The point raised here is that the funding is determining the design of the programme. In other words, the quality and quantity of the programme matches the funds

available. Hence, the point made is that the potential of the programme is not currently being realised. We realise of course that further funds for expansion might not be forthcoming.

> Recommendation 5
> We recommend that funding requests should be realistic in the current climate. However, they should not rule out the prospect of expanding the programme in the future. Additional funds could be used to enhance the programme in various ways, including expanding the coverage of the scheme, expanding recruitment through advertising, and providing compensatory payment to users attending the sessions.

(Issue 5) In the future, the programme might be funded though the Community Safety Partnership,

The suggestion above is to look for more substantial and more sustainable sources of funding. We have no opinion of whether the source of funding proposed is the right one. Nevertheless, the general approach of keeping watch over alternative funding streams clearly has merit.

> Recommendation 6
> We recommend that the sustainability of existing funding sources is monitored, along with the availability of alternative funding streams.

Training sessions

(Issue 6) One interviewee indicated that moving the training sessions to the afternoons would be useful. This would enable heroin users to 'get themselves sorted' in the morning and give them the time to attend training in the afternoon.

(Issue 6) Delivering training in a range of locations was felt to be an important way of drawing drug users not currently engaged in treatment into the THN project. One interviewee explained that THN training was now being taken around the hostels in her local area.

The two issues above are linked in the sense that they both recommend changing the time or location of the training sessions to enhance their appeal. We are aware that many sites have already changed the hours of the sessions to make them more attractive to users and many sites have used multiple locations as the basis for their sessions. These adaptations to the problems faced are likely to be helpful.

> Recommendation 7
> We recommend that agencies devise better ways of matching the dates, times and locations of training sessions to the needs and lifestyles of the users. This would mean avoiding scheduling training sessions early in the morning and in the period just before and after Christmas. It would also mean avoiding locations that are far from the areas of residence or activities of the service users.

(Issue 7) Some of the proposals for change were to allow one-to-one and ad hoc training sessions.

(Issue 7) One interviewee commented on the size of the groups being trained. It was felt that if there were too many people in the session, the key workers were not able to concentrate on each individual.

These comments refer to the size of the training group and the apparent preference of users for small groups and even one-to-one sessions. It is possible that one reason why the groups appear large is the number of observers and other staff that frequently attend these sessions. Our research shows that the number of trainees per session is usually 5 or less. The issue raises another matter about the feasibility of one-to-one sessions. In some sites, the possibility of one-to-one sessions has been proposed by the staff (and in some areas implemented) as a way of better administering the system.

Recommendation 8

We recommend that ad hoc and one-to-one sessions are used more widely. This might help solve the problem of attendance at scheduled training sessions and would help ensure that the scheme does not cover just those users confident enough to attend group sessions.

Recommendation 9

We recommend that the number of observers in a session is limited or they are eliminated from the sessions altogether. There is some evidence from the research that their presence affects the dynamics of the session. Staff training should be conducted through special training sessions for staff and observers only.

(Issue 8) It was also mentioned that there was a tendency for trainers to try to include every element available to them in every training session.

We share this concern that the training sessions in some cases are very long (sometimes over an hour and a half) and very complex in terms of the methods used and information presented. There have been cases where users have walked out of the room once they heard how long the session was going to take. There has also been a suggestion that some users have not turned up because of it. On some occasions, the amount of information presented has not only confused the observers, but apparently the presenters as well.

A proposal to shorten and simplify the sessions might appear to conflict with the finding that sessions that covered many programme elements had the largest percentage improvements in knowledge. However, this association is likely to be the result of the best schemes doing everything well. There is some evidence from the observation data to show that some schemes provided good-quality sessions across a range of measures.

Recommendation 10

We recommend that the training sessions are substantially shortened and simplified, while at the same time maintaining the quality of the remaining components of the training.

(Issue 9) One suggested that the project focus on older users who are ready to come off drugs.

It is true that older users are more at risk from overdose and that older users are more interested in coming off drugs and more interested in naloxone. It is not clear though whether this means that the programme should target those groups who do attend or those who do not attend. We do not support this proposal and prefer instead that the sessions are open to everyone.

Recommendation 11
We recommend that the training sessions are kept open to all users.

Naloxone

(Issue 10) One ampoule of naloxone might not always be enough to reverse an overdose.

(Issue 10) One interviewee recommended that the THN kit should include a double dose of naloxone. This recommendation was based on personal experience of having to supervise the administration of a second dose of naloxone to a friend after the first failed to have the necessary effect.

(Issue 10) Interestingly, this interviewee reported owning two THN kits. When asked to explain how he had come to possess two kits, he explained that he had lost one and then found it again after having received a replacement. He was keen to keep both kits given his experience of needing to administer two doses to a friend who had overdosed in the past.

We have heard the case for and against distributing double doses several times. The argument in favour is that one ampoule is often not enough to reverse the effects of

the opiates or to keep them reversed. The argument against is that inappropriate double dosing could result in chronic withdrawal and might have the effect of deterring the administrator from calling an ambulance. We are not qualified to comment on the medical risks involved.

> Recommendation 12
> We recommend that the programme managers and other qualified persons look again at the medical arguments for and against double dosing and determine whether additional lives would be saved if a second dose were provided.

(Issue 11) The shape of the current kit could be improved to make it more ergonomic.

(Issue 11) One of these five explained 'it's a perfect size, it fits in your pocket. I forget it's there to be honest'.

The issue of the size and shape of the kit container was made on several occasions. As indicated above, the views are currently mixed.

> Recommendation 13
> We recommend that the issue of the kit container is monitored to determine whether there are any problems emerging with its current design.

(Issue 12) Another kind of delivery system might be considered including nasal sprays, EpiPens or inhalers.

There has been some concern expressed over the use of needles especially among users who are sometimes under the impression that naloxone needs to be administered intravenously, which for some of them might be difficult. The use of needles is also problematic in prison environments, which means that prisoners cannot see the kit before it is distributed to them. Other methods of administration

have been proposed. Again, this is a medical matter and not for us to offer an opinion.

Recommendation 14
We recommend that the use of alternative methods of administering are monitored and their feasibility for use in the scheme is assessed.

(Issue 13) The interviewee did not call an ambulance. When asked why not, he explained that it was because the naloxone had worked and the person had come back to life.

There is a continual concern that distributing naloxone to users will prevent them from calling an ambulance. It is widely known that the effects of a single dose of naloxone are short lived. Hence it is important that an ambulance is called should a further dose of naloxone be required and if further medical interventions are required. There is no evidence of this difference from the results of our own research. Nevertheless, it does no harm to keep emphasising the importance of calling an ambulance

Recommendation 15
We recommend that training sessions stress even more than they do already the necessity of integrating naloxone into a broader response package.

(Issue 14) It is worth considering whether naloxone could be distributed without training.

While there are clear benefits to ensuring that all persons in possession of naloxone are fully trained and aware of the health issues involved in overdose events, there remains a counter argument that training is much more difficult to achieve in practice than distributing naloxone. This leads to the argument that it is the availability of naloxone which is the key to saving lives. Hence, the proposal about whether naloxone could be distributed with no or limited training. We believe that there is no problem (and maybe several advantages) in using more than one method of

distribution. However, the idea of training has substantial benefits apart from teaching the proper use of naloxone. These include the harm-reduction benefits resulting from offering hepatitis B and C and HIV tests to clients and through providing training in first aid and other life-saving techniques. Hence, we have two recommendations relating to this issue

Recommendation 16
We recommend that different methods of distribution are considered and where appropriate implemented.

Recommendation 17
We recommend that THN based on client training continues as the preferred method of distribution.

Recruitment

(Issue 15) One proposal was to make naloxone training compulsory for any person on the agency prescribing programme on the grounds that they could all be at risk of overdose.

This proposal gets to the heart of one the key issues in relation to community distributed naloxone which is whether it should be voluntary or compulsory. There is no legitimate way, of course, outside of the criminal justice system that training in naloxone use could be made wholly compulsory. However, there are many constraints that could be placed on service users who are already in receipt of treatment. A decision has to be made therefore whether semi-coercive methods should be used to encourage the training of users in naloxone use. The issue is clearly a fundamental one and there are no easy answers. However, we would be concerned to see measures put in place that undermined one form of treatment in order to promote another.

Recommendation 18

We recommend that THN training remains voluntary for users in the community.

(Issue 16) It was also suggested that users might be paid an incentive to attend the training. This was argued on the grounds that the naloxone provided is likely to be used on someone else. This means that the service user is being asked to take on a carer function, which should be compensated.

(Issue 16) They both recommended that an incentive (e.g. money or shopping vouchers) be given to encourage attendance.

(Issue 16) One interviewee suggested that recruitment could be improved by offering incentives to service users to attend. He described how a £5 incentive had been used in the Channel project (a substance users' focus group) which resulted in an impressive level of attendance.

Issue 16) One interviewee suggested that offering first aid qualifications as an add-on element to the training would help to recruit some people.

The above comments all relate to the idea of improving recruitment by either paying recruits to attend or by providing some other incentive. While there may be some ethical issues involved, this method has been used in other contexts and also in one of the THN demonstration sites. It is usually argued that the recipient is being paid a fee to covers costs involved. In fact, some users have said that they could not attend certain sessions because they could not afford it.

Recommendation 19

We recommend that the issue of reimbursement is explored to determine whether users might be rewarded for their time through some kind of incentive.

(Issue 17) One service user recommended that the leaflets and publicity material be changed to emphasise that naloxone does not have to be administered intravenously.

(Issue 17) Two interviewees thought that more could be done in terms of publicity. One felt that there was a lack of knowledge about it while the other felt that knowledge was widespread.

We are aware that there has been extensive discussion about the nature and effectiveness of publicity as a means of enhancing recruitment to training sessions. Publicity needs to perform several functions including dispelling myths about the scheme (such as naloxone requires intravenous injection) and avoiding stereotyping as well as promoting factual information. In our view more could be done in this respect.

> Recommendation 20
> We recommend, that future publicity should be more professional and sophisticated and aim to achieve multiple objectives.

Working with partners

(Issue 18) It is not possible to stop police turning up at an overdose event if they feel there is a need to do so.

(Issue 18) The police are aware of naloxone and information about it has been placed on their news bulletins. One force has introduced naloxone training as part of the routine first aid training for all police officers.

These two comments refer to a broader debate about the role of the police at overdose events when naloxone is available. There have been many reports of the kinds discussed earlier about misunderstandings between the police and the user, which has resulted in some occasions in naloxone not being used. The outcome of these debates has been for greater efforts by the police in becoming informed about

naloxone and the way that it is used in overdose events. One force has already started naloxone training as a routine part of first aid training for all police officers.

Recommendation 21

We recommend that publicity about naloxone is more widely distributed to include other agencies as well as the general public.

Recommendation 22

We recommend that inter-agency communication between the police and other agencies and the THN scheme continues and where possible is enhanced.

References

Christophersen, O., Rooney, C. and Kelly, S. (1998) 'Drug related deaths: methods and trends', *Population Trends* 93, 29–37.

Dettmer, B., Saunders, J. and Strang, J. (2001) Take home naloxone and the prevention of deaths from opiate overdose: Two pilot schemes. *BMJ*, 322: 895-896.

Farrington, D. P., Gottfredson, D. C., Sherman, L. W. and Welsh, B. C. (2006). The Maryland Scientific Methods Scale. In L. W. Sherman, D. P. Farrington, B. C. Welsh, and D. L. MacKenzie (Eds.), *Evidence-based crime prevention (revised edition)* (pp. 13- 21). New York: Routledge.

Galea, S et al: 2006 Provision of naloxone to injection drug users as an overdose prevention strategy: Early evidence from a pilot study in New York City. *Addictive Behaviours*, 31: 907-912.

Green, T., et al (2008) Distinguishing signs of opioid overdose and indications for naloxone: an evaluation of six overdose training and naloxone distributions programs in the United States. *Addiction*, 103: 979–989.

Kimber J, Palmateer N, Hutchinson S.J., Hickman M, Goldberg DJ and Rhodes T (2010) 'Harm reduction among injecting drug users - evidence of effectiveness'. *European Monitoring Centre for Drugs and Drug Addiction, 2010*, Chapter 5, 115-163.

Matheson, C. (2009) *Take-Home Naloxone and Overdose Prevention Training for Drug Users.* Brief Topic Review. Aberdeen: Clinical Effectiveness and Reference Group for Addictions (CERGA).

Maxwell, S., et al (2006) Prescribing naloxone to actively injecting heroin users: A program to reduce heroin overdose deaths. *Journal of Addictive Diseases*, 30, 129-133

McAuley, A., et al (2009) Responsible management and use of a personal take-home naloxone supply: A pilot project. *Drugs: education, prevention and policy*; 1–12.

Seal, K.H., Downing, M., Kral, A.H., et al. (2003) Attitudes about prescribing take-home naloxone to injection drug users for the management of heroin overdose: a survey of street-recruited injectors in the San Francisco BayArea. *J Urban Health*. Jun 2003, 80(2):291-301.

Simini, B. (1998) Naloxone supplied to Italian heroin addicts. *Lancet*, 352: 967.

Strang, J., et al. (2008) Family carers and the prevention of heroin overdose deaths: Unmet training need and overlooked intervention opportunity of resuscitation training and supply of naloxone. *Drugs: education, prevention and policy*, 15 (2), 211-218.

Tobin, K.E., et al. (2009) Evaluation of the Staying Alive programme: Training injection drug users to properly administer naloxone and save lives. *International Journal of Drug Policy*, 20,131–136.

Welsh Assembly Government (2008a) *Working Together to Reduce Harm. The Substance Misuse Strategy: Three-year Implementation Plan 2008-11*. Cardiff: Welsh Assembly Government.

Welsh Assembly Government (2008b) *Working Together to Reduce Harm. The Substance Misuse Strategy: 2008-18*. Cardiff: Welsh Assembly Government.

APPENDIX 1: ADDITIONAL TABLES

1: Introduction (additional tables)

Figure A1.1 Number of deaths related to drug misuse, England, 1993-2009

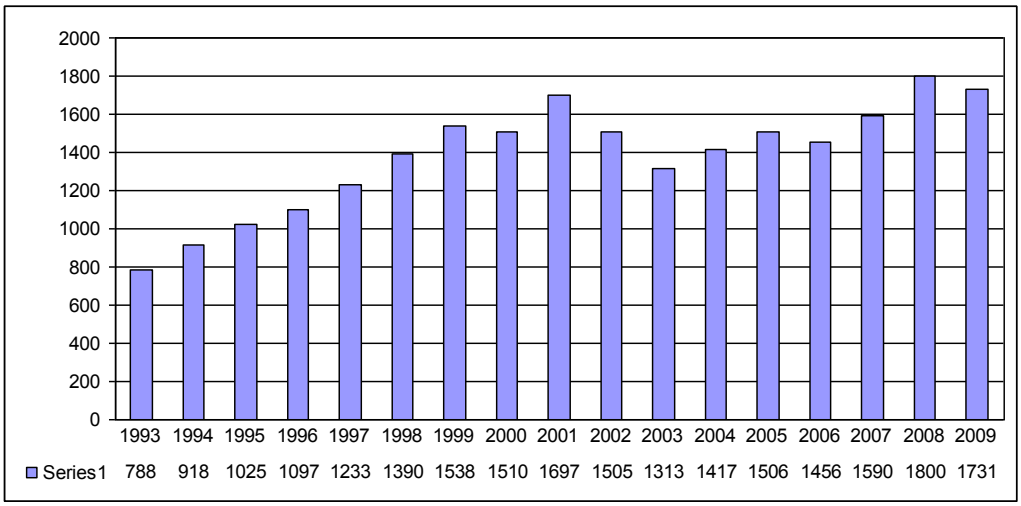
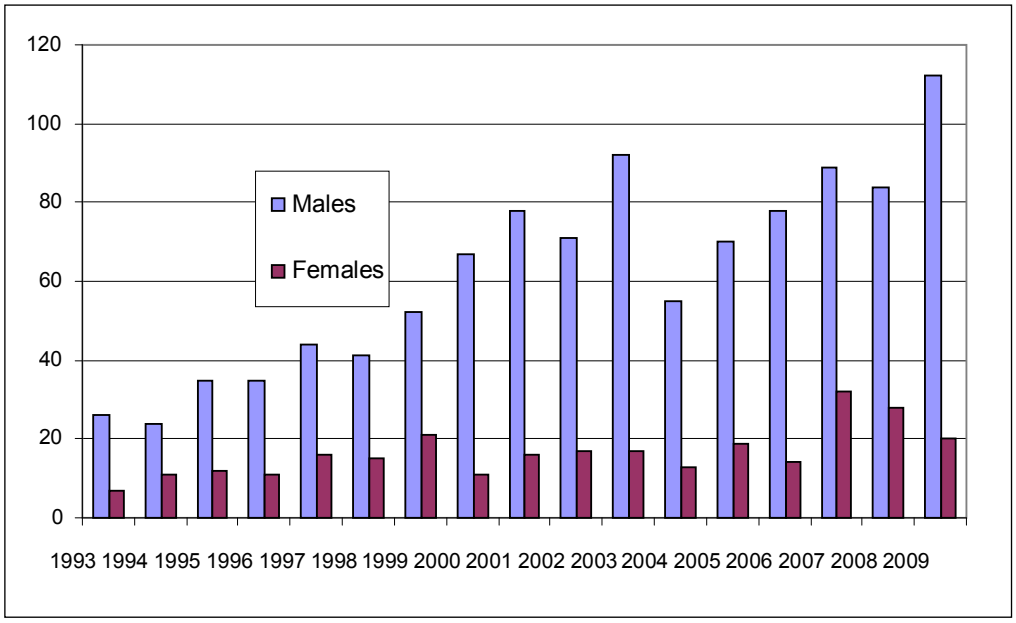


Figure A1.2 Number of deaths related to drug misuse, Wales, 1993-2009 by gender



Notes: as Figure 1

Table A1.1 Summary of selected pre-post outcome evaluations of naloxone distribution programmes

	Year	Reference	Location	Programme	Methods	Number of clients	Outcomes
1	2008	Green, T et al.	USA Baltimore, San Francisco, Chicago New York New Mexico	Overdose training and naloxone distribution programs	Clients were allocated equally to receiving training or not receiving training. Participants completed a post training questionnaire on overdose knowledge	10 each from 6 sites (62 in total)	Trained participants recognized more opioid overdose scenarios accurately and instances where naloxone was indicated than did untrained participants.
2	2010	Wagner, KD	USA Los Angeles, CA.	Overdose prevention and response training programme for IDUs. The programme comprised a 1-hour training session participants learned skills to prevent, recognise, and respond to opioid overdoses, including: calling for emergency services, performing rescue breathing, and administering an intramuscular injection of naloxone.	Participants completed an interview at baseline and at 3-month follow-up.	Between September 2006 and January 2008, 93 IDUs were trained. Of those, 66 (71%) enrolled in the evaluation study and 47 participants (71%) completed an interview at baseline and 3-month follow-up.	There were significant increases in knowledge about overdose and the use of naloxone. Twenty-two participants responded to 35 overdoses during the follow-up period. Twenty-six overdose victims recovered, four died, and the outcome of five cases was unknown.
3	2009	Lopez-Gaston, R et al:	UK Birmingham and London	Patients were trained in the recognition and management of overdoses. After successful completion of the training, participants received a supply of 400 micrograms of naloxone (in the form of a preloaded syringe) to take home.	Patients with opioid dependence syndrome were trained and followed up six months after receiving naloxone.	Seventy patients	At follow-up, the majority of drug users had retained the naloxone prescribed to them. Retention of knowledge was strong in relation to overdose recognition and intervention.
4	2009	Tobin, KE et al:	USA, Baltimore, Maryland,	The purpose of this study was to evaluate the Staying Alive (SA) programme which trained drug users to prevent and respond to opiate overdose using techniques including mouth-to-mouth resuscitation and administration of naloxone. A 1 hour training was conducted by two facilitators. Participants who successfully completed the programme were provided with a kit that	The study included 85 participants who completed a pre- and post-test interview.	A pre- and post-questionnaire.	Post-training, a greater proportion of participants reported using resuscitation skills taught in the SA programme along with increased knowledge specifically about naloxone. Naloxone was administered by 19 participants with no reported adverse effects.

				contained naloxone.			
5	2008	Strang J.	UK South East, South West, Midlands and North of England	A national initiative to provide training in the management of overdose was delivered to staff working in a range of drug treatment facilities across England. Trained staff in 20 drug agencies then provided their clients with training in management of overdose and provided them with a take-home supply of naloxone.	Opiate users in treatment completed a pre-training questionnaire on overdose management and naloxone administration. They were re-assessed immediately post-training, at which point they were provided with the take-home emergency supply of naloxone. Three months later they were re-interviewed.	A total of 239 opiate users.	Significant improvements were seen in knowledge of risks of overdose, characteristics of overdose and appropriate actions to be taken and in confidence in the administration of naloxone. Eighteen overdoses had occurred during the 3 months between the training and the follow-up. Naloxone was used on 12 occasions. One death occurred in one of the six overdoses where naloxone was not used. Where naloxone was used, all 12 resulted in successful reversal.
6	2008	Shaw A.,	Scotland, Glasgow	A total of 47 training sessions were delivered service users and family members completing the sessions. Each participant received a THN supply kit after completing the session.	All trainees to completed a structured self-completion questionnaire before the start of training. Follow-up telephone interviews were conducted three months after training.	216 Take-Home-Naloxone packs were distributed to drug users.	The trainees reported increased confidence in recognising an opiate overdose following GNP training. There were 11 recorded uses of naloxone since the beginning of the GNP with 10 successful reversals. There was one death associated with naloxone intervention
7	2010	McCauley et al	Scotland, Lanarkshire	Lanarkshire Naloxone (Narcan) Pilot project Training was delivered by the Scottish Ambulance Service and involved a half day session which covered both educational and practical skills	Post-training interview plus follow-up interviews at 2 and 6 months	Twenty-three clients were trained alongside 18 ‘buddies’.	Cumulative scores for knowledge improved from a mean of 7.03 pre-training to 10.54 at 2 months and 10.33 at 6 months. Similar improvements were shown for questions relating to client confidence in THN. Three overdoses were witnessed by clients during the pilot with two lives saved. Eighty-nine percent were followed up at 2 months. Ninety-four per cent of these claimed to still have their THN
8	2005	Seal et al.	USA, San Francisco	Training injection drug using partners to perform cardiopulmonary resuscitation (CPR) and administer naloxone in the event of heroin overdose. Participants took part in 8-hour training in heroin overdose prevention, CPR, and the use of naloxone.	IDUs were recruited from street settings in San Francisco. Following the intervention, participants were prospectively followed for 6 months	24 IDUs (12 pairs of partners)	Knowledge about heroin overdose management increased. Study participants witnessed 20 heroin overdose events during 6 months follow-up. They performed CPR in 16 (80%) events and administered naloxone in 15 (75%). All overdose victims survived.

9	2006	Maxwell S	USA, Chicago	A outreach program to educate opiate users in the prevention of opiate overdose and its reversal with intramuscular naloxone	Informal reports of uses of naloxone	Since institution of the program in January 2001, over 3,500 vials of naloxone have been prescribed.	There were 319 reports of peer reversals.
10	2006	Galea, S et al	USA, New York City	The program had two main components. First, participants underwent an overdose risk and response training. Second, a physician met with each participant, reviewed the training and each individual's suitability for naloxone distribution, and then prescribed preloaded syringes with naloxone.	A questionnaire was administered to all participants before their participation in the program. A modified version of the questionnaire was used to reassess participants at their 3-month follow-up.	25 participants were recruited. 22 participants were followed-up in the first 3 months;	11 of the 22 followed up reported witnessing a total of 26 overdoses during the follow-up period. Naloxone was administered 10 times. All persons who had naloxone administered lived.

Table A1.2 Summary of selected descriptions of the effectiveness of naloxone distribution programmes

Year	Ref-erence	Country	Programme type	Evaluation design	Number of clients	Outcomes
2001	Dettmer, B.	Germany	In January 1999 drug users in Berlin were given naloxone to take home. Opiate misusers attending a healthcare project (operating from a mobile van or ambulance) were offered training in emergency resuscitation after overdose, provided with naloxone (two 400 mg ampoules), needles, syringes, an emergency handbook, and information on naloxone.	16 month follow up	124 opiate misusers	40 reported back, with 22 having given emergency naloxone (two on two occasions, one on three, and one on four
2001	Dettmer, B.	Jersey	From October 1998 over the next 16 months naloxone (one minijet ready filled with 800 ìg naloxone) was provided to 101 drug misusers in contact with local drug services, with instructions on intramuscular administration and the wider principles of resuscitation from overdose and recovery	16 month follow up	101 drug misusers	Five instances of resuscitation using naloxone were reported, and all fully recovered. No adverse consequences, other than withdrawal symptoms, were reported.
2002	Bigg	USA	In Chicago we have been teaching active opiate injectors how to manage over-doses for some time, providing naloxone to appropriate people. ... This programme now uses two physician volunteers who fill in the legally required prescription	Unknown period follow-up	We have reached over 550 people with this intervention	We have received reports of 52 uses of naloxone in physically unresponsive and usually cyanotic peers. All the uses were successful...
2008	Sherman et al.	USA	In April, 2004, the Baltimore City Health Department (BCHD) began an overdose prevention and naloxone distribution pilot programme, Staying Alive. Staying Alive was conducted at multiple locations throughout the city and participants were recruited through street outreach and publicity on the BCHD Needle Exchange Programme (NEP).... During the study's 14-month pilot phase which began in June, 2004, participants were enrolled by programme staff who explained the purpose of the training and obtained written informed consent. The 90-min training was conducted in small groups of three to ten participants by two health educators. The curriculum focused on: preventing opioid overdose; recognizing overdose symptoms; performing rescue breathing; calling emergency medical personnel; and administering an intramuscular injection of Narcan. After the training, participants completed a brief test reviewing the training's content, a short health screening and were then provided with a naloxone kit which included: three 3cc syringes with 21 gauge intramuscular needles; one 10mL vial of 0.4 mg/mL strength Narcan; a face shield for rescue breathing; a "sharps container;" a prescription for Narcan; and a one page informational sheet that reviewed the basic concepts of opioid overdose prevention and management including naloxone administration. Prescriptions were refilled in the needle exchange van.	The evaluation comprised both a qualitative and quantitative component...	25 participants who had completed the Staying Alive training and had reported using naloxone to revive an overdose victim.	The current study qualitatively explores types of skills and kinds of information that were shared by IDUs after participating in an overdose prevention and naloxone distribution programme in Baltimore, MD. Participants shared what they learned in both their actions as well as their conversations, which occurred within and outside of the context of overdose events. Results of this study indicate that among this small sample, the training was not only effective in teaching correct response skills but it also was effective in reaching people that did not participate in Staying Alive who were affected by overdose.
1998	Simini, B:	Italy	Measures aimed at containing the rising number of heroin overdose deaths in the Italian	Planned epidemiologi	No details	No details

			region of Emilia-Romagna have been launched by Celeste Franco Giannotti and Gianluca Borghi of Bologna's regional administration. The measures include education and distribution of the opioid antagonist naloxone to heroin users... Naloxone vials (0·4 mg in 1 mL) contained in a key-ring will be distributed, along with instructions, to heroin users attending addiction facilities. Vials will also be available to non-enrolled addicts via "street units" which already offer needle exchange facilities	cal monitoring in Bologna and surrounding provinces in the next few months will investigate whether deaths can be avoided with such public health measures.		

2: Outcome Evaluation (additional tables)

Table A2.1. THN Training questionnaire structure

Group No.	Group name	Total number of questions
1	Overdose risk factors	6
2	Usual signs of opiate overdose	8
3	Appropriate methods	10
4	Uses for naloxone	6
5	Method for administering naloxone	5
6	Time over which naloxone is effective	4
7	Recommended sites for administering naloxone	5
8	Confidence in carrying out selected procedures	5
9	Willingness to carry out selected procedures	5

Table A2.2. Changes in the percentage of correctly identified usual signs of opiate overdose before and after training

Signs	Pre-Training	n	Post Training	n	Relative percentage change	Signif. McNemar P-value
Fitting	38.4%	378	58.3%	391	51.8%	p<.001
Pin-point pupils	70.4%	415	89.3%	447	26.8%	p<.001
Blurred vision	46.6%	358	63.3%	387	35.8%	p<.001
Deep snoring or gurgling sounds	81.3%	427	97.0%	466	19.3%	p<.001
Bloodshot eyes	70.8%	363	79.6%	387	12.4%	p<.01
Lips or tongue turn blue	96.2%	452	98.9%	471	2.8%	p<.05
Shallow breathing	93.8%	437	96.3%	459	2.7%	ns
Loss of consciousness	98.2%	448	99.4%	471	1.2%	ns

Table A2.3 Changes in the percentage of correctly identified appropriate methods for dealing with signs of opiate overdose before and after training

Actions	Pre-Training	n	Post Training	n	Relative percentage change	Signif. McNemar P-value
Walk person around the room	52.0%	392	87.9%	405	69.0%	p<.001
Slap or shake the person	52.6%	409	74.5%	412	41.6%	p<.001
Shock the person with cold water	67.8%	391	91.9%	393	35.5%	p<.001
Give stimulants	82.9%	362	97.0%	398	17.0%	p<.001
Inject saline (salt) solution	88.8%	367	96.8%	400	9.0%	p<.001
Administer naloxone	95.2%	436	98.5%	474	3.5%	p<.01
Mouth-to-mouth if not breathing	95.3%	445	97.9%	467	2.7%	ns
Call an ambulance	99.3%	460	100.0%	476	0.7%	na
Place person in recovery position	98.9%	453	99.2%	475	0.3%	ns
Stay until ambulance arrives	98.5%	456	98.7%	474	0.2%	ns

Note: na=not appropriate as one of the cells had zero entries.

Table A2.4. Changes in the percentage of correctly identified uses for naloxone before and after training

Uses	Pre-Training	n	Post Training	n	Relative percentage change	Signif. McNemar P-value
Reversing benzodiazepine overdose	82.1%	364	95.6%	387	16.4%	p<.001
Reversing cocaine overdose	89.8%	361	97.2%	389	8.2%	p<.001
Helping someone to get off drugs	88.4%	372	94.4%	394	6.8%	p<.001
Reversing amphetamine overdose	92.1%	367	97.7%	388	6.1%	p<.01
Reversing alcohol overdose	94.0%	364	98.5%	388	4.8%	p<.01
Reversing opiate overdose	97.3%	450	99.4%	464	2.2%	p<.05

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Table A2.5. Changes in the percentage of correctly identified recommended method for administering naloxone before and after training

Method	Pre-Training	n	Post Training	n	Relative percentage change	Signif. McNemar P-value
Intravenous injection	67.2%	357	86.5%	363	28.7%	p<.001
Intramuscular injections	81.4%	404	97.2%	461	19.4%	p<.001
Subcutaneous injection	76.7%	348	87.4%	365	14.0%	p<.001
Orally	89.7%	351	97.3%	366	8.5%	p<.001
Nasal spray	95.4%	346	97.8%	363	2.5%	p<.001

Table A2.6. Changes in the percentage of correctly identified period to time over which naloxone is effective before and after training

Time	Pre-Training	n	Post Training	n	Relative percentage change	Signif. McNemar P-value
20 minutes to 1 hour	61.0%	344	82.0%	427	34.4%	p<.001
Effective for less than 20 minutes	57.1%	333	69.4%	363	21.5%	p<.001
4 to 12 hours	85.1%	308	96.8%	345	13.7%	p<.001
2 to 3 hours	88.1%	303	96.0%	347	9.0%	p<.001

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Table A2.7 Changes in the percentage of correctly identified recommended sites for administering naloxone before and after training

Site	Pre-Training	n	Post Training	n	Relative percentage change	Signif. McNemar P-value
Buttocks	67.9%	371	96.0%	455	41.4%	p<.001
Thigh	70.8%	377	95.2%	456	34.5%	p<.001
Upper arm	76.2%	387	98.3%	464	29.0%	p<.001
Lower arm	78.3%	327	93.0%	358	18.8%	p<.001
Chest	90.9%	318	96.9%	360	6.6%	p<.001

Table A2.8 Changes in confidence in carrying out selected procedures before and after training

Confidence	Pre-Training	n	Post Training	n	Relative percentage change	Signif. McNemar P-value
Confident to give naloxone	52.0%	431	87.0%	469	67.3%	p<.001
Confident to give mouth-to-mouth resuscitation	60.9%	427	81.7%	464	34.2%	p<.001
Confident to place in recovery position	71.6%	433	91.0%	467	27.1%	p<.001
Confident to check airways and breathing	73.4%	432	90.6%	467	23.4%	p<.001
Confident to phone emergency services	89.8%	433	95.9%	467	6.8%	p<.001

Note: The percentages relate to the proportion who said that they were 'very confident' to carry out the procedures.

Table A2.9 Changes in willingness to carry out selected procedures before and after training

Willingness	Pre-Training	n	Post Training	n	Relative percentage change	Signif. McNemar P-value
Willing to give naloxone	83.9%	435	96.8%	475	15.4%	p<.001
Willing to give mouth-to-mouth resuscitation	75.4%	431	84.7%	472	12.3%	p<.001
Willing to check airways and breathing	92.3%	429	97.0%	472	5.1%	p<.001
Willing to place in recovery position	93.8%	433	97.7%	472	4.2%	p<.001
Willing to phone emergency services	95.1%	430	97.9%	473	2.9%	p<.001

Note: The percentages relate to the proportion who said that they were 'very willing' to carry out the procedures.

Table A2.10 Changes in the number of correctly identified responses before and after training by each question group

Group name	Pre-Training	Post Training	Relative percentage change
Recommended sites for administering naloxone	76.3%	96.0%	25.8%
Time over which naloxone is effective	72.1%	85.6%	18.7%
Confidence in carrying out selected procedures	76.8%	90.8%	18.2%
Method for administering naloxone	82.0%	93.4%	13.9%
Usual signs of opiate overdose	76.1%	86.5%	13.7%
Overdose risk factors	70.5%	79.7%	13.0%
Appropriate methods	84.0%	94.6%	12.6%
Uses for naloxone	90.9%	97.2%	6.9%
Willingness to carry out selected procedures	91.4%	95.9%	4.9%

Table A2.11 Cardiff and the Vale: Changes in the number of correctly identified items before and after training by each question group:

Group name	Pre-Training	Post Training	Relative percentage change
Recommended sites for administering naloxone	80.2%	96.7%	20.6%
Usual signs of opiate overdose	75.3%	84.2%	11.8%
Confidence in carrying out selected procedures	77.6%	86.1%	11.0%
Uses for naloxone	88.0%	97.3%	10.6%
Method for administering naloxone	85.9%	91.6%	6.6%
Overdose risk factors	70.0%	74.6%	6.6%
Appropriate methods	85.3%	89.2%	4.6%
Willingness to carry out selected procedures	91.3%	95.0%	4.1%
Time over which naloxone is effective	69.0%	69.8%	1.2%

Note. 'Relative percentage change' is calculated by subtracting the pre-training percentage from the post-training percentage and dividing by the pre-training percentage.

Table A2.12 Newport: Changes in the number of correctly identified items before and after training by each question group:

Group name	Pre-Training	Post Training	Relative percentage change
Recommended sites for administering naloxone	74.5%	95.9%	28.7%
Method for administering naloxone	76.0%	92.3%	21.4%
Time over which naloxone is effective	77.2%	93.6%	21.2%
Confidence in carrying out selected procedures	75.7%	89.6%	18.4%
Usual signs of opiate overdose	74.0%	85.7%	15.8%
Appropriate methods	84.1%	96.6%	14.9%
Overdose risk factors	66.9%	75.9%	13.5%
Willingness to carry out selected procedures	90.2%	97.9%	8.5%
Uses for naloxone	91.6%	95.7%	4.5%

Table A2.13 Gwent: Changes in the number of correctly identified items before and after training by each question group:

Group name	Pre-Training	Post Training	Relative percentage change
Recommended sites for administering naloxone	62.3%	88.1%	41.4%
Time over which naloxone is effective	71.1%	87.7%	23.3%
Confidence in carrying out selected procedures	80.9%	98.1%	21.3%
Appropriate methods	82.9%	98.5%	18.8%
Usual signs of opiate overdose	72.5%	84.0%	15.9%
Overdose risk factors	69.0%	78.7%	14.1%
Uses for naloxone	86.1%	95.4%	10.8%
Method for administering naloxone	83.3%	90.1%	8.2%
Willingness to carry out selected procedures	92.8%	97.9%	5.5%

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Table A2.14 Swansea: Changes in the number of correctly identified items before and after training by each question group:

Group name	Pre-Training	Post Training	Relative percentage change
Confidence in carrying out selected procedures	69.2%	87.6%	26.6%
Method for administering naloxone	78.4%	96.5%	23.1%
Recommended sites for administering naloxone	82.6%	98.3%	19.0%
Overdose risk factors	72.2%	85.0%	17.7%
Appropriate methods	84.2%	96.2%	14.3%
Usual signs of opiate overdose	78.8%	87.7%	11.3%
Uses for naloxone	91.1%	95.8%	5.2%
Willingness to carry out selected procedures	92.4%	97.0%	5.0%
Time over which naloxone is effective	72.3%	75.4%	4.3%

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Table A2.15 North Wales: Changes in the number of correctly identified items before and after training by each question group:

Group name	Pre-Training	Post Training	Relative percentage change
Time over which naloxone is effective	70.4%	95.3%	35.4%
Confidence in carrying out selected procedures	74.4%	94.8%	27.4%
Method for administering naloxone	81.2%	100.0%	23.2%
Recommended sites for administering naloxone	77.0%	94.6%	22.9%
Appropriate methods	82.2%	96.4%	17.3%
Overdose risk factors	70.8%	81.7%	15.4%
Usual signs of opiate overdose	77.5%	88.1%	13.7%
Uses for naloxone	89.8%	100.0%	11.4%
Willingness to carry out selected procedures	88.4%	97.0%	9.7%

Table A2.16 HMP Cardiff: Changes in the number of correctly identified items before and after training by each question group:

Group name	Pre-Training	Post Training	Relative percentage change
Time over which naloxone is effective	71.6%	80.2%	12.0%
Confidence in carrying out selected procedures	82.8%	91.6%	10.6%
Overdose risk factors	72.3%	77.8%	7.6%
Appropriate methods	88.3%	93.7%	6.1%
Method for administering naloxone	96.2%	100.0%	4.0%
Recommended sites for administering naloxone	92.9%	96.3%	3.7%
Usual signs of opiate overdose	84.8%	86.6%	2.1%
Uses for naloxone	99.0%	100.0%	1.0%
Willingness to carry out selected procedures	97.1%	92.9%	-4.3%

Table A2.17 HMP Parc: Changes in the number of correctly identified items before and after training by each question group:

Group name	Pre-Training	Post Training	Relative percentage change
Recommended sites for administering naloxone	73.3%	96.3%	31.4%
Time over which naloxone is effective	72.1%	90.1%	25.0%
Overdose risk factors	68.1%	83.3%	22.3%
Usual signs of opiate overdose	74.9%	87.6%	17.0%
Confidence in carrying out selected procedures	78.3%	91.5%	16.9%
Method for administering naloxone	80.3%	91.4%	13.8%
Appropriate methods	83.6%	94.3%	12.8%
Uses for naloxone	92.5%	97.8%	5.7%
Willingness to carry out selected procedures	91.0%	93.9%	3.2%

Table A2.18 Pre-training percentage of correctly identified responses by research site

Group name	Cardiff	Newport	Gwent	Swansea	North Wales	HMP Cardiff	HMP Parc
Overdose risk factors	70.0%	66.9%	69.0%	72.2%	70.8%	72.3%	68.1%
Signs of overdose	75.3%	74.0%	72.5%	78.8%	77.5%	84.8%	74.9%
Method responding	85.3%	84.1%	82.9%	84.2%	82.2%	88.3%	83.6%
Uses for naloxone	88.0%	91.6%	86.1%	91.1%	89.8%	99.0%	92.5%
Method administering	85.9%	76.0%	83.3%	78.4%	81.2%	96.2%	80.3%
Time naloxone effective	69.0%	77.2%	71.1%	72.3%	70.4%	71.6%	72.1%
Sites for administering	80.2%	74.5%	62.3%	82.6%	77.0%	92.9%	73.3%
Confidence procedures	77.6%	75.7%	80.9%	69.2%	74.4%	82.8%	78.3%
Willingness procedures	91.3%	90.2%	92.8%	92.4%	88.4%	97.1%	91.0%

Table A2.19 Changes in correctly identified usual signs of opiate overdose before and after training by gender

Group name	Pre-Training	Post Training	Relative percentage change
Bloodshot eyes			
Males	74.5%	79.2%	6.3%
Females	76.3%	86.8%	13.8%
Shallow breathing			
Males	94.9%	98.6%	3.9%
Females	97.8%	95.7%	-2.1%
Lips or tongue turn blue			
Males	97.0%	98.7%	1.8%
Females	96.1%	98.0%	2.0%
Blurred vision			
Males	47.2%	59.2%	25.4%
Females	52.6%	71.1%	35.2%
Loss of consciousness			
Males	98.0%	99.3%	1.3%
Females	100%	100%	0.0%
Fitting			
Males	41.0%	58.6%	42.9%
Females	26.5%	44.1%	66.4%
Deep snoring or gurgling sounds			
Males	79.5%	96.2%	21.0%
Females	92.0%	98.0%	6.5%
Pin-point pupils			
Males	67.9%	89.4%	31.7%
Females	69.0%	76.2%	10.4%

Table A2.20 Changes in correctly identified usual signs of opiate overdose before and after training by age

Group name	Pre-Training	Post Training	Relative percentage change
Bloodshot eyes			
Age 16-31	70.3%	82.0%	16.6%
Age 32-65	74.6%	76.2%	2.1%
Shallow breathing			
Age 16-31	97.5%	98.7%	1.2%
Age 32-65	93.7%	97.5%	4.1%
Lips or tongue turn blue			
Age 16-31	97.0%	98.2%	1.2%
Age 32-65	96.3%	98.8%	2.6%
Blurred vision			
Age 16-31	42.6%	56.6%	32.9%
Age 32-65	48.7%	64.3%	32.0%
Loss of consciousness			
Age 16-31	97.6%	98.8%	1.2%
Age 32-65	98.8%	100.0%	1.2%
Fitting			
Age 16-31	38.8%	55.3%	42.5%
Age 32-65	34.7%	44.9%	29.4%
Deep snoring or gurgling sounds			
Age 16-31	84.1%	96.8%	15.1%
Age 32-65	78.3%	95.5%	22.0%
Pin-point pupils			
Age 16-31	67.6%	89.2%	32.0%
Age 32-65	68.8%	85.4%	24.1%

Table A2.21 Did you learn anything new?

	Learned a lot	Learned a little	Did not learn anything	n
Cardiff	73.0%	24.3%	2.7%	74
Newport	72.0%	25.6%	2.4%	83
Gwent	74.2%	25.8%	.0%	31
Swansea	73.5%	22.4%	4.1%	49
North Wales	74.2%	22.7%	3.0%	66
HMP Parc	59.0%	33.3%	7.7%	39
HMP Cardiff	59.5%	38.7%	1.8%	111
HMP Prescoed	66.7%	33.3%	.0%	3
Total				455

Table A2.22 Did you benefit in other ways from attending the training?

	Benefited a lot	Benefited a little	Did not benefit	n
Cardiff	71.8%	21.1%	7.0%	71
Newport	80.3%	16.7%	3.0%	66
Gwent	76.0%	16.0%	8.0%	25
Swansea	75.6%	19.5%	4.9%	41
North Wales	74.5%	21.8%	3.6%	55
HMP Parc	71.4%	22.9%	5.7%	35
HMP Cardiff	62.2%	29.6%	8.2%	98
HMP Prescoed	66.7%	33.3%	.0%	3
Total				394

Table A2.23 Was there anything about the training that could be improved or changed?

	Yes	No	n
Cardiff	22.2%	77.8%	36
Newport	11.8%	88.2%	51
Gwent	.0%	100.0%	16
Swansea	12.0%	88.0%	25
North Wales	27.6%	72.4%	29
HMP Parc	8.0%	92.0%	25
HMP Cardiff	19.7%	80.3%	61
HMP Prescoed	.0%	100.0%	1
Total			244

Table A2.24 Statements made by trainees about how they have benefited from the training

Theme	**Quotation**
Learned how to administer naloxone	I benefited a lot. I know how to do the recovery position and to carry out naloxone and what to look for.
	I have learnt how to save a life and how to use naloxone. How to put people in the recovery position properly.
	I now know how to administer naloxone from attending the training, I did the first aid course before and learned how to keep someone alive until the emergency services arrive.
	I've learnt how to give somebody naloxone and to spot overdosing.
	Improved my knowledge of the effects and administration of naloxone
	Knowing how to use naloxone, how long it lasts for and the way to use it.
	Learnt about what naloxone is, how it is administered, how it is used, what the signs of overdose are.
Gained confidence to take action	Refreshed my first aid and made me a little more confident about the whole thing.
	before the course I would really not be arsed helping someone who OD but now yes I'm more confident
	Cos I now feel confident to use naloxone cos I have been correctly informed
	Didn't know what it was used for, after training session now feels confident to administer naloxone
	I am confident that I will be able to give Naloxone.

	I have benefited because now I feel confident, if I was in the position to use the naloxone
	I have faced a needle phobia and now feel quite confident around needles
	it clarified what I new about naloxone and I'm 100% confident in using it now in emergency
	More confident of success. Less fear will help so much when placed in the position of dealing with an overdose. could make the difference between life and death
Learned how to give CPR	I have learned that you have to do 30 compressions to 2 breaths instead of 15 compressions. I would feel a lot more confident if it happen
	I have learnt the proper way to put someone in the recovery position and how to give mouth to mouth resuscitation.
	I have learnt to put someone in recovery position properly and how many times to push down on chest.
	I have refreshed memory on breath to compression and also have been refreshed on points of CPR.
	I learned a lot of new things about resuscitation and first aid that I never knew before, so I can do something if the worst happens.
	Revised how many breaths and how many compressions required.
	Yes I have, I have done resuscitation before but this was a good refresher course and a few things have changed.
Learned about overdose	Before the course I did not know anything about overdoses
	How and when Naloxone should be administered and what to do and what not to do in the event of an overdose`
	How to better deal with someone when he overdosed
	I am now more aware of the signs of an overdose
	I benefited a lot. I no how 2 do the recovery position and 2 carry out the naloxone and what 2 look 4.
	I learnt things about OD that I never new before.
	I now know what to look for when someone is overdosing and know what to do when some one goes over
	I now no exactly what to do if someone overdoses.
	I've learned what signs to look for in case of overdose and what would be the best thing for me to do.
It helped to dispel myths	Clarified overdose information. Able to dispel myths
	Correct procedure, saving lives and being made aware of overdosing and myths
	Didn’t know cold water was a bad thing

	Learned a lot about overdose truth behind overdose myths
	Learnt a lot about causes of overdose and the truth behind the myths of overdose prevention.
	Learnt about myths on how to help reverse overdose, learnt what naloxone is and how to administer it
	That slapping them is wrong that it can be given in the upper arm
Other comments	Asked my question and got answers
	Enjoyed it.
	Excellent!
	I benefited a lot from watching the DVD. Never heard of it before
	I enjoyed the session because the staff were good with the service users, no isms for example, I know I have the required tools if an associate overdoses. Ps thanks for the voucher
	I feel that I have learned to understand and sympathise more with people who have suffered an overdose etc.
	I knew I had a few things wrong
	I understand how dangerous injecting heroin really is and found the course interesting
	It has shocked me to get help and to help others
	Its the best things EVA for the streets
	Just in general everything was good to learn and interesting
	Yes I have learn a lot from the training witch as made me think more about self harm and the way I will use heroin again
	Yes I have. I think every needle user should have one.

Table A2.25 Descriptions of witnessed overdose events when naloxone was used

Narrative Number	Narrative of overdose event
1	Client who had attended first naloxone training was called to another service user's flat as he had overdosed. When Andrew arrived the patient was blue, unresponsive and only taking occasional gasps. Naloxone administered and CPR given. Patient became responsive, but confused, after approximately 5 minutes post issue of naloxone - colour returned. On arrival of ambulance, patient responsive but confused. Police attended. Andrew searched by police and explained he had administered naloxone. Police unaware of what naloxone was initially.
2	On Thursday May 13th I received a phone call from a friend stating that one of the boys had gone over and would I be able to go down and sort it out with Naloxone. I went over and he was blue and not breathing, so I put him into the recovery position and waited for the ambulance. The driver told me that had I not administered the injection he doubted whether my friend would still be alive. I think that this drug is one of the best things that GOALS gives out as it can save many lives.
3	DH arrived at flat after having drunk 6 cans and used heroin (unknown whether it was IV or smoked) After 20 minutes JG realised that he had slumped over sideways and was not responding to name or shake. When JG looked closer she realised his lips were blue and he seemed to have stopped breathing. Asked for assistance to get him on floor and then got the naloxone kit and prepared it which was fairly easy considering the panic situation. Injected it into his thigh but when he didn't immediately come round I asked a friend to dial 999 and sent them to meet the ambulance. I continued giving this whilst they administered further naloxone. After a 2nd dosage I was in the kitchen with the police giving my details. When he came round he was taken to the hospital. The police and paramedics were polite and helpful. I felt like relieved when they arrived as it took 15 minutes for them to arrive. I felt quite shaken by the experience but extremely pleased that I had attended the training...
4	About 1.50 am on 21/3/10 someone I know knocked on my door. when I opened it she fell through the door. I asked her what she had used and she said that she had been drinking and had been injected with £5 of heroin (she does not use heroin). She passed out in my hallway and she was gurgling like the death rattle. I ran to my kitchen and got the naloxone. I put the needle together and injected the naloxone into the muscle in her leg. I phoned 999 straight after and they talked me through what to do. She started breathing better and came around. She then started drinking more alcohol which I told her not to. Every time she had a drink she was sick. She said that there was no point sending an ambulance because she would not go with them. 999 advised me to keep an eye on her and ring back if there were any problems. She stayed for about an hour and then went home.
5	After seven bottles of wine and one bag of heroin.
6	I was in my flat and someone phoned me and asked me to come outside to give my naloxone to a friend of a friend who had overdosed whilst injecting heroin. I immediately went to where he was with a group of other people. He was on the ground and unresponsive with bluey grey lips. I tried the sternum rub but there was no response. I then checked his breathing and he was making a gurgling noise. I opened his mouth and checked for any obstruction and opened his airways. His friends prevented me from ringing the ambulance as they thought that he would be angry when he came round. I then gave him the naloxone into his upper outer thigh. After about 40 seconds - 1 minute, he took a deep breath and then started to breathe normally whilst he regained

consciousness. He didn't know what had happened to him and so I explained and reassured him. I stayed with him for 10 minutes until he was sat up and talking normally. I then left him with his friends and advised his friends to monitor him and ring the ambulance if he showed any signs of overdose again.

7 On 23rd October, B returned to SDP and told the co-ordinator that he had used his naloxone and needed it replenishing. B told the co-ordinator that he had been with several people when he noticed a female (J) who he knew had been using heroin began to breathe noisily and slowly and her lips became blue in colour. B said that he realised that J was suffering from an opiate overdose and was unconscious and so he immediately called the ambulance. He then placed J on the floor in the recovery position and administered the naloxone that he had on him. She did not respond to this and he ascertained that she was no longer breathing and so with the help of the operator's instructions and the knowledge provided to him from the training he was able to carry out basic resuscitation until the paramedics arrived to take over from him. B said that the overdose awareness training had help him to remain calm, not panic and given him the confidence to deal with the situation.

8 States happened outside the Huggard. Person had overdosed on heroin. Ambulance called. Refused to go to hospital. Person recovered.

9 I was made aware of someone having gone over and had my pot with me. I just done what I was trained to do. I made sure ambulance had been called and administered naloxone. I stayed with him until ambulance came.

10 J and Z found themselves a quiet spot on the street where unbeknown to anyone else they jointly prepared an injected a quantity of heroin. J suddenly noticed that Z became very quiet and slumped to the floor. When J looked more closely he immediately realised that Z had turned blue around his mouth and nose and he was unable to see him breathing. Z would not respond to any stimulation and J immediately recognised that he was in an unconscious state. J remembered that he was carrying his naloxone kit with him and so he immediately opened up his canister and drew up the naloxone with the syringe provided. He then injected Z with the naloxone into the muscle in Z's right thigh as he had been shown in training. Once this was accomplished J placed Z in the recovery position whilst he waited for the naloxone to take effect. This unfortunately did not happen and after a couple of minutes had passed J panicked and went to leave Z there. Within a minute he had second thoughts and fearing that Z was going to die he returned to Z and dragged him into the open road hoping that he could alert someone's attention and get some more help. J had been unable to call an ambulance as neither he nor Z had a mobile phone. Fortunately, the staff member who had initially spotted them both was again alerted when they came back into view and immediately ran to help. J shouted to him that Z had overdosed and an immediate call was made to the ambulance stating that this was a critical opiate overdose situation.

11 SW undertook training whilst in Swansea HMP. A person called SW whilst he was at the DRR to let me know that AM was on the floor on the street as he had overdosed on heroin. It took me 30 seconds to get there and I found AM with 2 other people on the pavement. I first pinched his ear and called his name but didn't get a response and so I shouted to the undercover police officer to call an ambulance and he then radioed it through. I had my naloxone kit with me and didn't have any difficulty getting it together and so I then pulled AM's trousers down and injected it into the muscle in his upper outer thigh. After about 2 minutes he came round and I then put him in the recovery position and kept talking to him and reassuring him that he was with someone he knew. Within 3 minutes he lost consciousness again just as the paramedics arrived. They then took over and administered several further naloxone doses. Once he was again resuscitated AM refused treatment in hospital and so I stayed with him for the next hour and I then put him on a bus to go home. the undercover police and ambulance service were helpful and respectful of both myself and AM.

12 DH arrived at flat after having drunk 6 cans and used heroin (unknown whether this was

IV or smoked). After 20 minutes JG realised that he had slumped over sideways and was not responding to name or shake. When JG looked closer she realised his lips were blue and he seemed to have stopped breathing. Asked for assistance to get him on floor and then got the naloxone kit and prepared it which was fairly easy considering the panic situation. Injected it into his thigh but when he didn't immediately come round, I asked a friend to dial 999 and sent them to meet the ambulance. I continued CPR until ambulance arrived and continued giving this whilst they administered further naloxone. After a second dosage I was in the kitchen with the police giving my details when he then came round and was then taken to hospital. The police and paramedics were polite and helpful. I felt relieved when they arrived as it took 15 minutes for them to arrive. I felt quite shaken up by my experience but extremely pleased that I had attended the training and received a naloxone kit as I'm sure this helped to sustain his life until the ambulance arrived.

13 BK received training whilst in Eastwood Park on two occasions and was given a naloxone kit on day of release. On the day I used my kit I was with my then partner (CH) and we had used heroin IV together about 90 minutes before we went together to the solicitors. Whilst I was in the solicitors CH went into the back room on his own and when I went into find him he was on the floor and his lips had turned blue, he was also breathing very slowly and shallowly. I called the solicitor immediately and he called the ambulance. I put CH into the recovery position as I was unable to rouse him by shaking him or calling his name. I then took out my kit and prepared the naloxone which I had no trouble in using. I then injected CH in the thigh through his jeans. After about three minutes CH began to come round and the ambulance crew arrived and asked me to leave the room whilst they took over. CH was taking to hospital where he survived. I found the training prepared me well for this situation and I don't feel that I need any extra training. I would use my naloxone kit again.

14 CP called into Newland today for Replenishing Stock of his take home Naloxone. Last night at approx 730 pm a friend he claims he had 'not seen for ages' called with a £10 bag (heroin) - used IV 'and went over' - CP called ambulance, administered his naloxone (obtained from CAU in Feb. 2010) and proceeded to carry out CPR under the instruction of the operator. His friend AS came around briefly 'only for a few seconds and went again'. 'I called the ambulance and the police turned up first before the ambulance'. CP states the police stayed until 10 pm searching his place and stripped searched him, found '5 valium' took them and said because I helped save a life they would not arrest me'. CP anxious to complete Replenishment Stock form and go - writer offered to discuss the issues of what happened, CP not willing to stay. Advised if he wants to talk to call back. Replenishment stock document and form copied - new naloxone given along with info pack and CPR mask.

15 L attended training. Couple of people in flat using together (IV). person had his hit then within 10-20 seconds slumped over, lips turned blue, put a mirror up to his face and only detected a faint mist otherwise breathing was almost undetectable. Person became unconscious and unraisable. Put him in recovery position an cleared his airways. Ambulance was rung whilst Naloxone kit was brought from another flat. Luke drew up naloxone without any difficulty and then injected into thigh. There was a brief delay before he almost instantly came back. The person was in withdrawals and confused. Ambulance was called back and told and told it was a false alarm . Person advised that he should go to A + E because naloxone may wear off. Luke monitored person for a further 30 minutes plus then left Luke was relieved that he had been able to intervene and felt pleased he had undertaken the training. It has encouraged me to take up further training. Noticed that instructions said it should be used in 1ml

16 Found him on bottom stairs . Put him into recovery position. Then he died. Gave him naloxone. Started breathing. Paramedics come took him to hospital. Still in. He will be ok.

17 Saw a male in a bus stop. Unresponsive in sitting position. Known alcohol and heroin user. Person injected naloxone. Came round and walked off.

18 N administered naloxone - he tried to put patient in recovery position and do CPR but

Huggard staff would not allow him to do so. Nigel explained that he had been trained and was competent in the procedure. He was still denied.

19 This was not an OD event. False alarm. "he thought is was funny to pretend to go over." This kit was replenished as it had been opened. Naloxone not used though as not a genuine overdose.

Source: Replenishment forms

Table A2.26 Descriptions of witnessed overdose events when naloxone was used

Case number	Site	Narrative of overdose event
1	Cardiff	The naloxone was used on a friend within a hostel setting. The person who had overdosed had recently been through a detox programme, hence tolerance was low. He reported no problems with giving naloxone. An ambulance was not called but the client survived. The client went back for replenishment.
2	Cardiff	The client used his second dose of naloxone Used within a hostel setting. The person who had overdosed had mixed heroin and diazepam. An ambulance was called, the client went into A&E and survived and the police did not attend the overdose.
3	Cardiff	Client used naloxone in a public toilet in Cardiff. The person did not call an ambulance. He came back for replenishment but would not divulge information on who he used it on.
4	Newport	Combination of heroin and alcohol (no longer a frequent heroin user) He overdosed within a hostel setting and a friend administered their naloxone to him. When the client came around from the overdose he insisted that they did not call an ambulance due to fear of being reprimanded by the hostel. The client reported this to the drug agency and had a replenishment dose of naloxone but would not name the person who had administered it.
5	Newport	Newport Client noticed a friend was no longer breathing Had been drinking heavily, used diazepam and heroin Naloxone was administered but person did not respond Police and ambulance attempted CPR with no effect Was established that the person also had an underlying heart problem Naloxone was replenished
6	Swansea	A client noticed a female breathing noisily and her lips turning blue, due to the training he immediately knew she was overdosing. He rang the ambulance service immediately, placed her in the recovery position and administered the naloxone. She did not respond to the initial dose so he carried out basic life support with the help of the operators instructions and the knowledge gained from training. The police turned up before the paramedics. He felt the attitude of the police was unsympathetic and their primary goal was to question people who were present. The paramedics then arrived and took over basic life support. A further 3 doses of naloxone was administered by paramedics before she regained consciousness. She was reluctant to attend hospital, however the police advised that if she did not attend she would be arrested by them for her own safety. Naloxone was replenished
7	Swansea	The same individual as case study 5 administered naloxone on an unknown male. He stated that he noticed his lips turning blue but he was still breathing. He administered the naloxone and put him in the recovery position, staying with him until he felt the person was not in any further danger. He did not call an ambulance due to his previous experience with the police.

8	Swansea	They found themselves a quiet spot on the street where unbeknown to anyone else they jointly prepared and injected a quantity of heroin. J suddenly noticed that Z became very quiet and slumped to the floor. When J looked more closely he immediately realised that Z had turned blue around his mouth and nose and he was unable to see him breathing. Z would not respond to any stimulation and J immediately recognised that he was in an unconscious state. J remembered that he was carrying his Naloxone kit with him and so he immediately opened his canister and drew up the Naloxone with the syringe provided. He then injected Z with the Naloxone into the muscle in Z's right thigh as he had been shown during the training. Once this was accomplished J placed Z in the recovery position whilst he waited for the Naloxone to take effect. This unfortunately did not happen and after a couple of minutes had passed J panicked and went to leave Z there. Within a minute though he had second thoughts and fearing that Z was going to die he returned to Z and dragged him into the open road hoping that he could alert someone's attention and get some more help. J had been unable to call the ambulance as neither he nor Z had a mobile phone. ... Fortunately the staff member who had initially spotted them both was again alerted when they came back into view and immediately ran to help. ... The staff member continued to monitor Z's breathing and it very suddenly deteriorated and stopped altogether. Z was then rolled onto his back and emergency CPR was then given by the trained staff member until the police and paramedics arrived. Once they were on the scene they then took over the CPR and administered further Naloxone. Z was then taken to hospital where he survived.

Source: Rhian Hills

Table A2.27 Descriptions of witnessed overdose events when naloxone was not used

Case number	Gender of client	Age of client	Narrative of overdose event
1	Female	18	Used too much heroin. Did CPR until ambulance. Ambulance called (took 20 minutes to arrive), and took him to hospital. Police wanted to arrest those present for manslaughter.
2	Female	30	Friend injected heroin at his house and went under and stopped breathing. Telephoned ambulance. They told her what to do. The ambulance arrived in 5-10 minutes
3	Male	38	Friend had a suspected overdose at the person's home. Both people had taken heroin, however the other person took the same amount but collapsed straight away.
4	Female	35	She overdosed because she hadn't had drugs in 7 days. She had her usual hit and went under. Took her to the bathroom and doused her with cold water until she came around. Took about an hour.
5	Male	u/k	He came into my house on his birthday. He went in to my bathroom and collapsed on the floor. He still had the needle in his hand. I carried out first aid until ambulance came. I think he may have had an injection.
6	Female	33	Wasn't breathing. Lips blue. Helped them. Mouth to mouth. No further (illegible).
7	Male	24	Noticed his breathing wasn't right and went a strange colour. Picked him up and helped him up over the sink and splashed water over him. He was sick.
8	Male	35	Person injected what was too much for them and I had to keep them conscious and active so that they did not 'slip' back into an overdose state.
9	Male	32	I injected myself with heroin following being released from prison and had a few pints. I woke up with the paramedics all around me, they cut my clothes and gave me an injection. I came around and was taken to hospital.
10	Male	33	A friend injected himself with heroin and within 20 seconds he keeled over on to the floor. I phoned 999 and they guided me through CPR and his lips turned blue. Ambulance only took 4-5 minutes
11	Male	40	I was with my friend in Aberdare Park and they injected themselves with heroin and overdosed from heroin. I phoned 999 and run away from the area. I am ashamed that I did not stay with him.
12	Male	44	A friend overdosed in my flat following injecting with heroin. I noticed he'd changed colour and he began slurring. So I acted quickly and walked him about and after approximately 20 minutes his colour came back and he was back with us.

Table A2.27 (Continued) Descriptions of witnessed overdose events when naloxone was not used

Case number	Gender of client	Age of client	Narrative of overdose event
13	Male	32	I injected myself with heroin, blanked out and when I came around my Dad had done CPR. An ambulance was present and they gave me naloxone. I was admitted but then discharged myself.
14	Male	48	A friend overdosed at my home following injecting heroin. Went to do the wash on the spoon. He got up to get water but he keeled over. I and a friend picked him up and spent 10-20 minutes trying to bring him around. His colour returned after that. He then left my home. Having naloxone at home would have been of benefit.
15	Male	35	Happened to the client, a combination of polydrug use that was in larger amounts than usual. Fell unconscious for three days, but woke up by himself on the third day.
16	Female	29	It was myself that experienced the OD when first started at about age 20. Woke up in ambulance and started crying as I saw my entire family standing outside and went to hospital and discharged.
17	Male	40	Started to inject, didn't finish hit. Woke up on the ward in hospital.
18	Male	29	Injected heroin after abstinence. Took valium. OD'd.
19	Male	27	I was at a friend's home. They injected themselves with heroin and went blue, stopped breathing. I rang an ambulance, which took 2 minutes to arrive, they gave an injection and he came around but refused further treatment. I would've done CPR if needed but I was confused about how many reps to count.
20	Male	37	I injected myself with heroin and it felt like a dream, very unusual, as if I was on a fairground ride. My friend found me, he did not ring the emergency services, and resorted to slapping me about to bring me out of it.
21	Female	22	My boyfriend overdosed in the toilets in McDonalds. I had to phone an ambulance. The people in McDonalds told me to get out. An ambulance came and took him to hospital. He came home a few hours later.
22	Female	22	I was with my boyfriend, we injected heroin and I overdosed. He phoned the ambulance and tried to do CPR. I was admitted to hospital but came home later.
23	Male	40	As I knocked on a door to buy heroin a man was in the house already overdosed and I helped bring him round by putting cold water over him and slapping him, walking him until he was semi conscious. He then was watched until he came round totally, where I then left.
24	Male	.	X-friend of mine overdosed and filled the bath up and put him in it and which fetched him around eventually.
25	Female	27	Went to phone ambulance for friend. I put him in the recovery position.

Table A2.27 (Continued) Descriptions of witnessed overdose events when naloxone was not used

Case number	Gender of client	Age of client	Narrative of overdose event
26	Male	23	After scoring heroin, we went back to a friend's house where in all the excitement after scoring the main in question used a little more than he would usually and it resulted in him overdosing. Within 10 seconds of him injecting he was unconscious. Paramedics were then called where they injected him with naloxone. He came around and immediately wanted another hit.
28	Male	21	Friend overdosed. Other friends present tried to wake him up by pouring cold water on him and walking him around. When he 'woke up', one friend gave him some amphet. 'to keep him awake' He did not want an ambulance called and went home.
31	Female	29	A friend had been drinking loads all day (about 6 litres cider and after shots). Hadn't used heroin for 1.5 days but decided to inject. He O/D and another friend called ambulance and put him in doorway by shop 'cos we didn't want to be connected to it. We watched from house to see if ambulance turned up.
32	Female	30	Partner was sick a couple of hours after taking his methadone (prescribed). Thought he'd brought it up and felt ill so used more heroin than normal in one injection (injected 0.5 bag). Friend and I got him to walk around and splashed him with cold water, then kept him awake (pinching him, splashing him, etc).
33	Male	23	A friend overdosed at first use of heroin. We were in a group at the country park drinking and having fun, they hadn't used before and smoked it, they'd been taking mephedrone and amphetamine too.
34	Male	29	My girlfriend took 4 bags of heroin and had sniffed 3 cans of butane gas, she became hysterical and ran away. I tried to find her for about an hour. I found her unconscious in Aberdare Park, carried her out of there and phoned an ambulance.
35	Female	41	I had a row with my boyfriend and he left and I drank 6 x 85 ml of methadone and took all of my thyroxin. My daughter found me in the bedroom and called an ambulance.
36	Male	26	I was with my brother. I took a deliberate overdose. I used IV I gram of heroin. I took 200 mg of diazepam. I had a bust up with my parents, my mother took me to hospital.
37	Male	42	A friend of mine was at my home and took too much methadone, he hadn't used it for 3 days. I had to call an ambulance for him, but he wouldn't go to the hospital.

Table A2.27 (Continued) Descriptions of witnessed overdose events when naloxone was not used

Case number	Gender of client	Age of client	Narrative of overdose event
38	Female	23	I had been drinking all day and used 6 bags of heroin. I drank my last glass of cider and went to sleep. I woke up and my friend had been giving me mouth to mouth, and CPR. I was then sick and my friend stayed awake with me all night.
39	Male	27	I had just come out of custody. I began using straight away. My friend used the naloxone injection on me that I was given when I got out.

Source: Comparison site questionnaire: Some missing cases.

Table A2.28 Descriptions of case studies of drug-related deaths in South Wales

Case number	Demographics and background	Narrative of overdose event
1	33 years of age Male Unemployed Single Living with mother	The deceased was released from prison 6 days before he self poisoned on heroin. At 8 am on the day he died, he spoke to his mother informing her of his intentions of going into town later that morning. He was in good spirit. His mother left home at 10 am but on her return at 12 noon she found the deceased slumped on his bed with evidence of drug use nearby. She attempted CPR and called an ambulance but he was pronounced dead at scene.
2	28 years of age Male Unemployed Partner with 3 small children in foster care and expecting 4th child Living temporarily along with partner at his sisters address	The deceased arrived home at 12:45 am under influence of drink and/or drugs. Shortly afterwards he had a domestic argument with his partner and then went to bed. At 9 am the following morning he briefly spoke to his partner but did not get out of bed. At 11 am his young niece went to check him but he was unresponsive. An ambulance was summoned but he was pronounced dead at the scene. Evidence of drug taking at scene included a used syringe and foil found next to the body.
3	35 years old Male Unemployed (lost job due to substance misuse) Living alone Separated from long term partner 4 children aged between 16-9 years of age living with their mother Recently reported upset with being unable to access children	On the proceeding day the deceased suffered a near fatal poisoning of heroin at a friend's house. Ambulance paramedics attended at the scene and administered naloxone effecting recovery. He refused further treatment or hospital admission. At 9 pm on the following evening the deceased returned to the same address and again injected himself with heroin and collapsed shortly afterwards. Ambulance paramedics attended but on this occasion could not resuscitate him and he was pronounced dead at the scene. 2 persons arrested on suspicion of supply.
4	49 years of age Male Unemployed Separated from partner and 5 children History of domestic violence Living alone in multi occupancy house after period of homelessness	The deceased was last seen alive leaving a probation office in the afternoon and his whereabouts are not known until he was found collapsed at this home address by fellow residents at 9:30 pm. Evidence of drug use found nearby. CPR attempted by residents but pronounced dead at the scene by paramedics.
5	22 years old Male Single Unemployed Lived at home with parent	Deceased had been out drinking with friends on the previous day and returned home at around 9 pm where he was intoxicated. He went to bed shortly afterwards with two bottles of water. His mother checked him at 11:15 pm when he was snoring. She then went to bed but when he had not woken up the following day at around 12:30 pm she found him unresponsive in bed. Ambulance attended but paramedics pronounced life extinct. Medication in room included asthma and flu antibiotics.

6	34 years of age Male Single Manual worker Living at home with partner and 2 dependant children History of domestic violence	The deceased left home at around 8 am to meet up with some drug using peers. His partner later noticed that a box of valium missing from the house. She tried to ring him several times during the day but did not get a reply. At 6:30 pm, an off duty fireman discovered his body in a car parked on an industrial site. Drug paraphernalia found nearby including burnt foil and diazepam tablets. He was in a low mood during past weeks after grandmother passed away.
7	37 years of age Male Labourer Living with partner and 3 dependant children Had periods of working away from home	The deceased met a friend and told him that he had just used a bag of heroin. Shortly afterwards he collapsed and CPR attempted but no response. He was driven to A&E Dept where he was pronounced dead after several uses of narcam.
8	42 years of age Male Single Unemployed Living alone in rented accommodation with previous homeless issues	Police forced an entry into his flat and found him dead in the sitting room. Drug paraphernalia found nearby included used syringes. The deceased was last seen purchasing 2 bottles of whiskey by neighbours a number of days before.
9	34 years old Male Unemployed Single Lived alone in a flat	Police attended at his flat after his mother reported not seeing him for several days. He usually contacted her to collect his medicine. He was found dead on the floor with a tourniquet around his arm and a syringe nearby. He was last seen several days before by his girlfriend when he attended at her home address intoxicated and he was sent away.

Source: Regional Confidential Review Panels on Drug Related Deaths for South Wales

3: Process Evaluation (additional tables)

Table A3.1 Characteristics of the observed training sessions across all sites combined

Variable		Number of sessions (n=14)
Date observed	Jan to Jun 2010	8
	July to Dec 2010	6
Session start time	0900-1200	7
	1300-1500	7
No of trainers	1	4
	2	4
	3	6
Sex of trainers	Male	3
	Female	6
	Mixed	5
No of trainees	1-5	11
	6-10	2
	11 plus	1
No of male trainees	0-5	12
	6-10	1
	11 plus	1
No of female trainees	0-5	14
	6-10	0
	11 plus	0
No of observers	0	6
	1	4
	2	3
	3	0
	4	1

Table A3.2 Variation in features of the training sessions across sites.

	Gwent	Newport	Cardiff	Swansea	Wrexham	Anglesey	Almwch	Holywell	Rhyl	Caernarfon	Colwyn Bay	HMP Parc	HMP Cardiff	HMP Prescoed
Was everyone present introduced:	y	n	u	y	y	n	y	y	y	y	y	-	y	-
Aim of session explained:	y	y	u	y	y	y	y	y	y	y	y	y	n	n
Purpose of naloxone explained:	y	y	u	y	y	y	y	y	y	y	y	y	n	n
Was an outline of the session given:	y	y	u	y	y	y	y	y	y	y	n	y	n	n
Was guidance given on how to fill it in:	n	n	u	n	y	y	y	y	y	y	y	y	n	n
Were they collected pre-training:	n	n	y	y	y	y	y	y	y	y	y	y	y	n
Was a pre-written chart/board used:	n	n	n	n	n	n	y	n	y	n	y	y	n	y
Was a blank flip chart/board used:	n	n	n	y	y	n	y	n	y	n	n	n	n	n
Was a PowerPoint presentation used:	n	y	y	y	n	n	n	n	n	n	n	n	n	n
Was a DVD used:	n	n	y	y	n	n	n	n	n	n	n	y	y	y
Were other aids used:	y	y	n	y	n	y	n	y	y	n	y	n	n	y
Risks of overdose:	y	y	y	y	y	y	y	y	y	y	y	y	n	y
Signs of overdose:	y	y	y	y	y	y	y	y	y	y	y	y	y	y
How to deal with an overdose:	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Purpose of naloxone:	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Mode of administration:	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Location of administration:	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Storage of naloxone:	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Duration of naloxone effectiveness:	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Injecting oranges:	n	n	y	y	y	y	y	y	y	y	y	n	n	n
CPR:	y	y	n	n	y	y	y	y	y	y	y	n	n	n
First Aid:	y	y	n	n	y	y	y	y	y	y	y	n	n	n
Other:	n	n	n	n	n	n	n	n	n	n	n	n	n	y
Clarity of trainer speech:	n	y	y	y	y	y	y	y	y	y	y	y	y	y
Opportunity to ask questions:	y	y	y	y	y	y	y	y	y	y	y	y	y	y
Were questions answered:	y	y	y	y	v	y	y	y	y	y	y	y	y	y
Was guidance given on how to fill it in:	n	n	n	n	y	y	y	y	y	y	y	n	y	n
Was a summary of the session given:	y	y	n	n	n	n	n	n	n	n	y	y	n	n
Were details on replenishment given:	y	y	y	y	y	y	y	y	y	y	y	y	y	y

Notes: 'y' =yes; 'n'=no; 'u'=unknown; and '-'=not applicable. Faded text means no variation across the row.

Table A3.3 Summary of qualitative observations: Gwent

Features of the training room	The training took place in a large, light and airy church hall in the middle of Cross Keys. Tables were laid out across the middle of the hall, with padded chairs. Refreshments (muffins, cake bars, crisps) were provided on paper plates and soft drinks (tea, coffee, squash) were also provided.
Features of the training session	The atmosphere was very relaxed and the clients were able to ask questions and discuss things. The main issue of concern was fear of being sued if they did something wrong in an overdose situation
Examples of any positive aspects of the training	... spoke clearly and slowly. His presentation was excellent. Very clear and easy to follow. All the clients were clearly engaged and all were given the chance to ask questions and to have a go. In fact, four of the five clients practiced putting someone in the recovery position and CPR on the dummy. The clients completed their forms and then left with their kits and certificates. They were also given a bag of goodies from Drugaid.
Examples of any negative aspects of the training	The main problem was that the pre-questionnaires had not been collected and I spotted at least one of the clients changing his answers. I did mention this to ... at the end. ... was a little difficult to hear and understand at times. This may have been partly due to the acoustics of the church hall. But, I think it was more to do with X's accent and nerves. My overall impression was that there were lots of things going on and not a lot of clarity in structure to the session.

Table A3.4 Summary of qualitative observations: Newport

Features of the training room	The training was conducted in a large room on the top floor of the old school building in Powell's Place. Comfortable chairs were arranged in a semi-circle with a large projector and computer rigged up behind. Near to the door was an urn from which clients could help themselves to make tea or coffee. ... The temperature was pleasant, neither too hot nor too cold.
Features of the training session	In the end ... did all of the presenting and took care of the paperwork. ... (the nurse) took the patients' names at an early point in the session and organised for the prescriptions to be drawn up. Another staff member (male) was in charge of the PowerPoint ... He did not say anything during the session. There was also a gentleman from the British Red Cross who delivered a 20 minute session on CPR and the recovery position. The whole atmosphere was relaxed and friendly, but also quiet. The clients were given the opportunity to ask questions, but very few of them did so.
Examples of any positive aspects of the training	The session did not begin until everyone settled down, so there were not late arrivals to disrupt the session. ... worked hard to put people at ease and used humour throughout the session.
Examples of any negative aspects of the training	The session did not begin with a round robin introduction. The clients were therefore not clear about who ... all the other people in the room were. ... did interrupt the First Aid session and asked clients to complete forms during the First Aid training. The First Aid trainer asked them to wait and do this after he had finished, which they did. The First Aid trainer gave out vouchers/cards in the middle of the naloxone training, which was a little disruptive to X. ... the naloxone that would be given to them had an 18 month shelf life that was due to run out in October 2010. ... advised them that they would receive phone calls at that time to come in and collect a new one.

Table A3.5 Summary of qualitative observations: Cardiff (Inroads)

Features of the training room	The session was held in the upstairs (first floor) room. The room is fairly large but is dominated by a large meeting table which is surrounded by chairs. The project was set up at one end and projected onto a large screen at the other end. The room was comfortable. No refreshments were provided.
Features of the training session	Only one client was being trained at the event. The main part of the presentation revolved around a PowerPoint presentation. At the end, ... attempted to show the Going Over DVD, but the sound was not working so he was not able to. Nevertheless, he did forward the DVD to the part where the person was put in the recovery position to demonstrate to the client what to do. A volunteer service user, trained by Danny Morris, also attended the session. ... He only spoke during the practical demonstration when he pointed out the importance of drawing a little blood back into the needle before injecting the naloxone. He said that this would help prevent damage to nerves or unplanned access to an artery.
Examples of any positive aspects of the training	The atmosphere seemed relaxed, so far as the client was concerned. The practical session using oranges went well and the client seemed to be engaged throughout the whole hour.
Examples of any negative aspects of the training	The session felt rushed and a little uncomfortable at times. The technological problems were disappointing as the Going Over DVD is entertaining and very informative. ... seemed uncomfortable with my presence ... Overall, his delivery was poor and felt rushed. When we spoke after the session he said that he did not want to tell the client stuff that he already knew (he was essentially tailoring the session to the client's needs).

Table A3.6 Summary of qualitative observations: Swansea

Features of the training room	Cool room, 11 comfortable chairs, refreshments (drinks/biscuits/sweets). Upstairs room, door left open for much of the time, buzzer kept going off downstairs. Refreshments were good but they were slightly disruptive with clients helping themselves throughout the session, which meant walking across the room in front of the projector.
Features of the training session	... kept calm even when everything started to go wrong. Clients arrived late and were disruptive. A real feeling of chaos developed. Workers from CJIT/DIP kept coming into the training room and then leaving. The whole flow was disturbed. ... was not in a position to do much about this as it was not her territory.
Examples of any positive aspects of the training	Clients were made to feel at ease and were not forced into saying any of their answers out loud. ... cleverly involved the clients and used their experiences to help illustrate points throughout the session. ... coped well with reluctant clients and ended up getting one to complete the whole session and get a kit.
Examples of any negative aspects of the training	It was a shame that the [three] observers kept coming and going during the session. This messed up the flow of things. It was difficult for ... to get the technology working quickly, largely because she was not working in her own environment.

Table A3.7 Summary of qualitative observations: Wrexham

Features of the training room	A central and busy location that seems easy to find and is in the DIP building. The actual room ... was an appropriate size ... there was enough space on the floor to conduct the First Aid ... The room was warm and tea and coffee was set up by the trainers in the room.
Features of the training session	It was a relaxed but professional atmosphere. The late arrival meant a disrupted timing as others had finished their questions and were ready to begin. One client kept falling asleep. The trainers didn't wake him. The trainers seemed happy to let the clients direct the timing of the breaks.
Examples of any positive aspects of the training	... and ... present as warm, genuine and empathic. They are both very pleasant to each of the clients and showed patience and kindness whilst completing the questionnaires. The Margin of Error explanation ... is always explained very clearly and is easy to understand.
Examples of any negative aspects of the training	One client lightly stabbed himself when re-sheathing, but was ok. The trainers did explain the risk of this beforehand. One client left ... and therefore was not provided with a naloxone kit. There was a slightly disjointed feel to this session - perhaps because this was how the session began.

Table A3.8 Summary of qualitative observations: Llangefni, Anglesey

Features of the training room	The room was very large and felt a comfortable temperature. There was also a kitchen that was part of the room so the clients had access to food and refreshments at all times. ... There was lots of space and the room was easy to access (two points of entry). ... This felt like a highly appropriate venue for the training.
Features of the training session	The trainers adopted a 'chat' style to the session and all clients appeared engaged for the majority of the session. It felt like an 'equal' environment, i.e. no criticism or judgement and it felt like a safe environment for the clients to talk freely, ask questions and make comments. All the clients appeared motivated and interested ...
Examples of any positive aspects of the training	The trainer's down-to-earth approach and interactive style encouraged the clients to participate. The disruption caused by clients talking to each other ...didn't appear to be a major issue ... the trainers seemed to just 'go with it'. ... mentioned ... that it is not their style to be authoritarian ... this seems like it is a tactic to treat the clients as equals rather than 'telling them off for talking'.
Examples of any negative aspects of the training	This group seemed to work very well together, with the exception of one group member dominating at times.

Table A3.9 Summary of qualitative observations: Amlwch, Anglesey

Features of the training room	I found this location difficult to find and it certainly didn't appear to be on any bus route. However, it was a very nice room and it was cool (it was very hot outside). The room was clean and spacious.
Features of the training session	All the clients arrived late due to difficulty finding the location. ... [First Aider] contributed more than usual during this session. It didn't seem that this was for any particular reason ... There was a 'chat around the table' approach (as I have seen in other sessions, but this appeared more serious, perhaps because the clients appeared focused and serious). The session was characterised by a comfortable and relaxed atmosphere.
Examples of any positive aspects of the training	The rapport and relationship between trainer and client seems to be very cohesive and they clearly don't place expectations on the client to participate and complete the training. Rather, it seems that they are positively encouraged to do so. ... was very humorous telling the clients about myths he has heard regarding ways to prevent overdose. ... The clients found this very amusing but it seemed appropriate and didn't distract from the aims of the session ...
Examples of any negative aspects of the training	[when filling in the post-test questionnaires] This is where the sessions tend to become slightly disjointed. This is because some may have completed the First Aid training and therefore may struggle to wait around while the others complete theirs.

Table A3.10 Summary of qualitative observations: Holywell

Features of the training room	... a hospital that seems newly built and is clean. The room itself was rather small but not too small to achieve the work. ... The temperature was comfortable but felt slightly too warm on occasions (no one complained however). There were no refreshments available in the room, but there was a small cafe in the hospital reception with very friendly and welcoming staff.
Features of the training session	... provided outline, aims, introduction. She is very calm and measured in her delivery. ... ... seemed a comfortable presence, saying a few comments where appropriate ... It felt relaxed but serious. ... took over at explaining naloxone and how it prevents overdose. There seemed to be quickly established rapport with the clients.
Examples of any positive aspects of the training	Sometimes the clients wanted to 'jump ahead' asking questions which would be explained later. The trainers were respectful by explaining this and were clearly patient with the questions, e.g. 'yes, you're right, but hold on until later.' It is evident that this training session would never have taken place if the trainers hadn't recruited the clients themselves. It also demonstrates how committed the trainers are to the training and also conveys their belief in it saving lives.
Examples of any negative aspects of the training	One client asked if a baby drank parent's methadone, would you give naloxone to the baby? Professionals said they'd weigh up the situation but they appeared unsure of what to say, i.e. exchanging glances. ... Call an ambulance. I got the sense that this was a difficult position for the professionals to find themselves in and clearly didn't want to verbalise a definitive answer.

Table A3.11 Summary of qualitative observations: Rhyl

Features of the training room	The room size was appropriate for the three clients attending the session and could have comfortably accommodated approximately six or seven. However, there wasn't much room on the floor for the First Aid training. ... The temperature was comfortable and tea and coffee were readily available.
Features of the training session	... begins the session by telling the clients why they are there ... [and provides] one-to-one help with the pre-training questionnaires. ... then takes over when discussing the risks and signs of overdose and his style is very much 'chatty' with the clients rather than giving the impression he is 'trying' to teach them something. ... ... from the British Red Cross did not make regular contributions until it was time for the First Aid.
Examples of any positive aspects of the training	The most striking aspect about this particular session was that there were only three clients and this low number seemed to work well, e.g. it felt manageable because it wasn't too noisy or confusing. The trainers demonstrated patients to the clients throughout. ... was very understanding and assisted [a client with needle phobia] and encouraged her offering positive reinforcement.
Examples of any negative aspects of the training	There was a fourth client (male) who abruptly decided to leave when the trainers explained they would be there for between one and a half and two hours. It may be difficult to keep up with all of the information being explained

Table A3.12 Summary of qualitative observations: Caernarfon, Gwynedd

Features of the training room	This was a very nice room indeed (dedicated to the Prince of Wales it seemed) decorated with huge paintings. It was a very spacious and cool room (it was quite a hot day). It was clean and comfortable and refreshments were available in the room.
Features of the training session	... gave a brief introduction and ... ... introduced the part about risks and signs of overdose. ... she delivered the information with clarity and ease. ... 'chipped' in information as she has done in previous sessions. There was a discussion about the police and it was reiterated and advised that the police would prefer to see the pack of naloxone sealed. However, ... stated that if they wanted to show it to their friends then this is their decision.
Examples of any positive aspects of the training	Although there were only two clients, it seemed to me worthwhile that the session took place. The quality of the relationship between trainer and trainee appeared enhanced (because of the one-to-one attention) and also there was no particular client dominating the session. The trainers demonstrated patience at all times, showed respect for what the clients were saying but reigned in the session in appropriately by steering its direction and therefore maintaining control.
Examples of any negative aspects of the training	The location was discussed in the context of client anonymity. Both the clients mentioned 'people know we're coming' (by entering the building). The trainers took this seriously and said they could request a change of location and referred to another building asking the service users for their thoughts on it and they agreed the other location would be better. It became apparent that the clients find it hard to listen for too long because they were tending to interrupt. ... both the clients commented that the sessions should be in the afternoon as most people don't get up until 12/1 pm.

Table A3.13 Summary of qualitative observations: Colwyn Bay

Features of the training room	The room was very nice indeed. It was very clean and spacious with a very long table, thus, accommodating at least 7/8 clients (comfortably). Refreshments were readily available. It was also warm. The Dawn Centre is an easy location to find.
Features of the training session	... generally, they each take on clearly defined roles. This time ... one of the clients had a doctor's appointment in the same building that would take him away from the training session for 10/15 minutes. The trainers were put in an awkward situation because this meant they would keep the other client waiting ... ... helpfully offered to begin with the First Aid part of the training ... it was evidently difficult to begin the First Aid without having explained what naloxone is. ... ... then provided the introduction ... and ... then discussed the risk factors.
Examples of any positive aspects of the training	X was making tea whilst ... was leading ... this is reflective of the relaxed presentation observed in previous sessions. This seems to add to the warmth of the atmosphere by presenting as relaxed and informal. ... volunteered to deliver the First Aid whilst waiting for the other client who was seeing the doctor, and this conveyed the flexibility of each of the trainers to find a way to still deliver the training despite there being interruptions. Both of the clients appeared very comfortable.
Examples of any negative aspects of the training	The client ... wanted to tell stories about his own experiences and interrupted a lot. The ground rules were pre-written on a piece of flipchart paper ... the clients' attention wasn't drawn to this throughout the session (and they did not read it) perhaps because of the disruption caused by the client's doctor's appointment.

Table A3.14 Summary of qualitative observations: HMP Parc

Features of the training room	The training took place in a large room on B Wing. The 17 clients sat in a semi-circle ... two or three trickled in a little late. There were not enough seats at the start ... one prisoner sat on the floor and another shared a seat. The room was comfortable and not too hot. There was occasional drumming noise from outside, but not enough to interfere with the session. No refreshments were provided. Prisoners were allowed to leave the room at any time, but only one or two took the opportunity ... they all came back in.
Features of the training session	X took the lead role in delivering the training. ... handed the OHPs to ... ... and then swapped roles with ... half way through. No ground rules were provided, but perhaps this was because the prison already has its own. Prisoners were advised not to open the kit as the police would confiscate it. There was some discontent as the prisoners said that they would like to show their mates.
Examples of any positive aspects of the training	The atmosphere was generally very relaxed. There was some freedom to discuss things but there did appear to be a restriction on time. This would be inevitable in the prison environment, I would imagine.
Examples of any negative aspects of the training	The DVD was shown on a small (17 inch) TV. I am not sure that all of the prisoners would have been able to see it clearly, but they did all seem to be engaged by it. ... did suggest that such a large group was not the most useful as it hindered discussions.

Table A3.15 Summary of qualitative observations: HMP Cardiff

Features of the training room	The training was conducted in a comfortable training room in the Substance Misuse Block (G Wing). The room was clean, airy and quiet. No refreshments were provided for prisoners. There were about 12 comfy chairs in the room but three were in a line across the middle of the room in front of a small flat screen TV/DVD player.
Features of the training session	It was not immediately obvious who was in charge of the session. ... probably did more than ... but ... regularly chipped in. ... also did the 'kit' demonstration at the end of the DVD and ran through the post-training questionnaire with the prisoners. The training session comprised: the paperwork, the DVD to the prisoners, and an 'opening of the kit' demonstration.
Examples of any positive aspects of the training	Certificates were handed out at the end which showed that the prisoners had completed the course. The prisoners were certainly made to feel comfortable. After the DVD ... took a naloxone kit and opened it in front of the prisoners. She explained that natural curiosity would probably mean that they open it upon release.
Examples of any negative aspects of the training	There was very little discussion about any of the issues, perhaps because the DVD does not give prisoners a chance. [more useful to pause the DVD at times and ask if any questions] The trainer went through each question in turn asking the prisoners for their answers. However, she then gave them the right answers, which means their post-test questionnaires are not necessarily an accurate measure of post-training knowledge.

Table A3.16 Summary of qualitative observations: HMP Prescoed

Features of the training room	The session was conducted in a large meeting room in a ground floor portacabin. The room was light and airy and the seats were arranged around a large meeting room table. No refreshments were provided to the clients. A small TV/DVD player was on a side unit and could be easily seen by all
Features of the training session	... was in charge of the session. However, there were several other CARAT workers also there ... All of these individuals chipped in at various points during the session. It worked well as the session become more relaxed and discussion-based rather than a formal 'training' event. The session was informal and did not have a set structure. The prisoners were asked at the start whether they wanted to watch the DVD first and then have a discussion. They both said yes.
Examples of any positive aspects of the training	The information was largely provided by the DVD. But, ... supplemented this with additional information ... ... was quite balanced in her views on naloxone ... she clearly emphasised the importance of its use in saving lives ... She felt that giving them a needle and syringe was a 'major trigger' and would arouse all sort of emotions among ex and current users. ... suggested that the naloxone could be drawn into the syringe directly without the needle. This would stop the needle from becoming blunt. The session was very relaxed and was more like a focus group. ... dealt with all of their queries and showed real concern for the clients ...
Examples of any negative aspects of the training	We waited for quite some time for a third prisoner to arrive, but he did not turn up. This meant that we were all hanging around for 20 minutes. It did not affect the session but did delay the start.

Table A3.17 Summary of qualitative observations: key themes

Theme	Observations
Shelf-life of THN kits	Newport: It was noted that the naloxone that would be given to them had an 18 month shelf-life that was due to run out in October 2010. ... advised them that they would receive phone calls at that time to come in and collect a new one. Cardiff: Interestingly, the naloxone was due to expire in November 2010. The implication of giving naloxone that has a short shelf-life to clients needs to be explored.
Observers	Swansea: I spoke with ... after the session and she commented that the sessions are 'over-observed' at the moment. This can disrupt the flow, particularly when they start answering the questions.
Doctors	Gwent: The doctor contributed to discussions when issues were not clear and when he has the knowledge necessary to resolve them. This worked well. Gwent: One key issue was the possibility of getting sued if they did something wrong when trying to save someone's life. The doctor said that it was part of the Good Samaritan's Law once they had training. Nobody would be prosecuted for trying to help someone.
Dominant clients	Swansea: ... said that in some sessions the group dynamics can be tricky. As with focus groups, you often get one or two clients who talk too much and others get upset by this. Llangefni: Overall, this group seemed to work very well together with the exception of one group member dominating at times. This particular client gave the impression that he held all of the facts which the trainers commented on after the session saying that it is common but they 'just go with it'. Rhyl: The other male client was quite dominant - he was story-telling quite a lot.
Size of groups	Amlwch: ... felt that 3-6 was the right number although the other trainers prefer more than 3 simply because it's more lively and there tends to be more interaction. Rhyl: The most striking aspect about this particular session was that there were only three clients and this low number seemed to work well, e.g. it felt 'manageable' because it wasn't too noisy or confusing. Caernarfon: The quality of the relationship between trainer and trainee appeared enhanced (because of the one-to-one attention) and also there was no particular client dominating the session. HMP Parc: The prisoners behaved well and clearly engaged with the session. This was in spite of the fact that there were 17 prisoners attending. ... felt that 'the larger the group, the less effective'. ... ... did suggest that such a large group was not the most useful as it hindered discussions.
Equipment issues	Cardiff: At the end, … attempted to show the Going Over DVD, but the sound was not working so he was not able to. Swansea: It was difficult for ... to get the technology working quickly largely because she was not working in her own environment (e.g. the need for extension leads etc). HMP Parc: The DVD was shown on a small (17 inch) TV. I am not sure that all of the prisoners would have been able to see it clearly, but they did all seem to be engaged by it.
Needles	Swansea: During the injection session, one client commented that 'It's teasing giving us these needles'. ... quickly told the group 'I should have said - you don't need to do this if you don't want to.' Swansea: One client decided to stick the needle into his arm instead of the orange ... ... felt that two trainers would be useful at this point. Wrexham: one client lightly stabbed himself when re-sheathing but was ok. HMP Prescoed: ... suggested that the naloxone be drawn up into the syringe directly without the needle. This would stop the needle from becoming blunt.
Kits	Newport: As part of the training, ... handed round a naloxone vial and showed the contents of the pack to the group (but the needle and contents were not handed around). Caernarfon: There was a discussion about the police and it was reiterated and advised that the police would prefer to see the pack of naloxone sealed. However,

	... stated that if they wanted to show it to their friends then this is their decision. HMP Parc: Prisoners were advised not to open the kits as the police would confiscate it. There was some discontent as the prisoners said that they would like to show it to their mates. HMP Prescoed: ... was concerned about the kits triggering emotions in the drug users. She was also concerned about giving the kits out on release and how some prisoners would not take it because of the message that they felt it gave out.
Ending sessions	Gwent: The session did not really have a formal end. Newport: The session did seem to peter out without any real formal ending. Wrexham: It seems that providing a summary of the session is difficult for trainers to do since after two hours the clients are ready to leave. Also, clients are finishing their post-training questionnaires at different times so this also makes finishing with a concise summary difficult.
Questions (medical issues)	Amlwch: One client also asked if naloxone could be given to a pregnant lady - the trainers said yes Holywell: One client asked if a baby drank parent's methadone, would you give naloxone to the baby? The professionals said they'd weigh up the situation but they appeared unsure of what to say, i.e. exchanging glances. ... I got the sense that this was a difficult position for the professionals to find themselves in and clearly didn't want to verbalise a definitive answer. Colwyn Bay: The younger client asked ... 'what if you don't have a phone or no signal'? ... said, 'someone has to call an ambulance, it's as stark as that. Otherwise if they really have overdosed then they will die. The trainers also explained that calling the emergency services is still possible even when your phone has no signal.
Delays in starting	Wrexham: The session was supposed to begin at 10 am but didn't begin until 10.25 as there was a late arrival ... When the client arrived he wanted a cigarette so the clients were allowed to go for a cigarette. When they came back in another client arrived, went to the toilet while the others were completing the pre-training questionnaires.
Humour	Newport: ... worked hard to put people at ease and used humour throughout the session. Amlwch: ... was very humorous telling the clients about myths he has heard regarding ways to prevent overdose .. The clients found this very amusing but it seemed appropriate ...
Focus on DVD	HMP Cardiff: There was very little discussion about any of the issues, perhaps because the DVD does not give the prisoners a chance. It may be more useful to pause the DVD at times and to ask the prisoners if they have any questions.
Certificates and other rewards	Gwent: The clients completed their forms and then left with their kits and certificates. They were also given a bag of goodies from Drugaid. HMP Cardiff: Certificates were handed out at the end which showed that the prisoners had completed the course.
Anonymity	Caernarfon: The location was discussed in the context of client anonymity. Both the clients mentioned 'people know we're coming' (by entering the building).
Transfer and court issues	HMP Cardiff: One of the prisoners was being transferred to Oxford before release. So, ... said she would contact agencies in that local area so that he could be given access to naloxone (as no THN programme in Oxford prison). HMP Cardiff: There was a discussion about how naloxone kits cannot be given to prisoners going to court as too much paperwork and too difficult to organise and manage. So, ... and ... said that they would liaise with Probation and DRR to ensure that access to naloxone is available in the community. The DRR can then call the prison and check they've had the training.
Slapping	HMP Prescoed: In the DVD, the friends of the overdose victim are slapping the person around the face. The paramedic also states that you might want to slap them a little to see if they come around.
Tailoring sessions	Cardiff: When we spoke after the session, he said that he did not want to tell the client stuff that he already knew (he was essentially tailoring the session to the client's

	needs).
Competence	Cardiff: This form [post-training questionnaire] is used to determine competence. Swansea: The clients were not able to get their kits unless they had completed the post-training questionnaire. This is used as a measure of competence by the dispensing nurse. As one of the clients did not meet the required level of competence (due to literacy and language issues) he was not able to collect a kit.
Coercion	Swansea: Some interesting issues emerged over the legal status of clients attending the session. At least 2 (possibly 3) were coerced into attending. ...There appears to be some tension between coercion and training. This seems to have a negative effect on the trainer, other clients and the training generally. But, these chaotic clients are the ones that ... feels most need to be targeted.
Stereotypes	Swansea: I spoke with one of the clients after the session. He enjoyed the training and said that 'a couple hours out of the day is not much ... it gives you the confidence to tackle the situation'. However, he also felt that the DVD (Mr Mange) stereotypes drug users. He said that he knew all sorts of heroin users and that many were working and had high-up positions in organisations. 'It's embarrassing - tarring us with the same brush.' He seemed embarrassed by the behaviour of one of the other clients (who seemed to be intoxicated and half asleep).
Opiate users only	Wrexham: One client said that he was not opiate dependent/using. The trainers commented afterwards that this is a shame because he's ideal as he said that he is around opiate users. Yet, he can't have naloxone. This seems to be a wider issue that has been raised in team meetings at Dewi Sant. The rule is that clients have to have been opiate dependent in the last six months to receive the naloxone. The feeling amongst practitioners is that this is rather ironic since you cannot administer naloxone on yourself - thus a person who isn't using opiates but is often physically in the presence of opiate users is an ideal candidate for the training and being provided with a naloxone kit.
Engagement	Llangefni: The trainers commented that all groups are different and approximately one in six groups might feel particularly disruptive. They explained that some groups are quieter and others are much noisier
Police	Amlwch:.. female client made a couple of negative comments about the police, e.g. I'm bound to be stopped with this ... I'm always stopped and the police consider us 4th class citizens. The female client asked if they'd get into trouble by 'guilt by association' if the police turned up to an overdose where they were also present. The trainers make the point about having attempted to save a life and this is the event being focused on.
Misuse of naloxone training	HMP Prescoed: During the post-DVD discussion, one prisoner referred to naloxone as a 'get out of jail free' card.

Table A3.18 Summary of interviews with site leaders: aims of the THN programme

The national THN programme What are the aims of the programme?
• I think that's got to be the key one obviously, to reduce mortality from drug related deaths. Um I think there's important um education that goes out alongside the naloxone. … it's an overdose prevention package. • ...the level of drug-related deaths and overdose ... to save people's lives, but also to take away the fear of what do I do? To say to people, "It is okay to be in that situation with that person and you can help". … It has been about empowering people to take responsibility for themselves and for others … • To reduce drug-related deaths and to be one element of a wider initiative to reduce drug related deaths .. for us it's a way of engaging more difficult to reach people into our service, because we're going out in the community and delivering the projects • Its principle aim is to reduce the amount of drug, drug related deaths definitely then … I mean I suppose there are sort of like, you know, maybe lesser aims along the way then … encouraging service users to take some sort of … responsibility for that as well, to increase obviously their knowledge and awareness along the way. So it's not just about actually preventing drug-related deaths, but it's also avoiding drug related deaths isn't it, in the first place. • I think the main priority is around reducing drug-related deaths, but then I think it's kind of probably grown now and gone beyond that in terms of educating services users around overdose prevention, first aid skills, which I think will come in useful be it an opiate-related death or any sort of incident. • … to reduce the risks of overdose … to target high risk groups … opiate users sort of leaving residential or community detox, all those initiating substitute scripts or sort or risky injectors or prison leavers.,,, I think there was a high risk … and geographical sort of hotspots in Wales for drug-related deaths, which include Cardiff and, and I think Swansea much more so. • I think it was to deal with, or prevent actually, any drug-related deaths … by actually making them more aware, so they're more aware of the dangers. So it's to help them share their knowledge as well. • It's trying to save lives. You know, that's what it is all about. I don't think there's any other reason why, or maybe there's a political reason behind it. Um, in other words, we've ticked the box for trying to save lives.

Table A3.19 Summary of interviews with site leaders: management of the programme

Management of the THN project Are you happy with the management structure?
• I think it's clear who, who does what. I'm very clear that, you know, Rhian is the lead and I would go to Rhian … If it's more to do with local funding or a local situation then I'd go to Sean … It needs a co-ordinator basically and not a consultant psychiatrist … it needs, you know, a drugs worker of some nature it doesn't matter what service they're in … but they oversee the naloxone project for Cardiff and the Vale. • I think so, yeah I think so. I think, you know, I'm, I mean I suppose the concern is that we don't allow it to go stale and don't allow it just to tick along. • I think it's great that there's a national group, the naloxone working group that's able to share good practice. I think it's great that it's being researched by the Uni Glam. I think that's been quite effectively sort of organised and managed • …the SMAT commissioner argued that there is no need for a co-ordinator of role, that nobody needs to co-ordinate it as such. [do you agree?] No, I don't … somebody somewhere has got to take some overall responsibility … • I think it's probably just unfortunate that I've been, ended up being responsible for North Wales, but other than that, yeah, if it was our local area it would have been a lot easier and the management structure seems fine. But, as I said to you, it's more now about how we take it forward and reduce the requirement for me to be as responsible. Because obviously, you know, the harm reduction team deliver other training, and they don't have to liaise with me and, and things like that. It's more around them taking a bit more ownership probably in the long-term once it's bedded in. • Yeah, because we obviously have our, our meetings [national working group meetings] as well where, you know, you can raise any issues. • Yeah, we don't seem to have any problems with it … It most probably could be improved, bit like everything, if you really want to look into it, but that's fine. • Yeah, yeah, I mean we've been to meetings, or I've been to meetings with her [Rhian] and there's no problem. But, I mean, I suppose there is, there still isn't an area link … We got very little support, to be perfectly honest to start with. Um, and it was, you know, we were told we needed to do this and we all went away, each individual prison went away and did their own thing, and it was based on, generally speaking, based on the trials that were going on in England. Um, so we were left out to just sort of muddle through, and try and set up a system, set up a process ourselves…. It appeared that we needed to just get on and do it, rather than, um, being, led through the process.

Table A3.20 Summary of interviews with site leaders: funding the THN programme

Funding the THN programme Is the level of funding that you receive sufficient?
• I've always said this, that, I mean, it's been done on the cheapie-cheap … We were told very clearly at the beginning there's no revenue money. You can't have money for people. You can have money for, you know, as I say materials and equipment and that sort of thing, but not for people. • Um, I'd love to say no, but I'm going to have to say yes, it has been. It has been. … we've put in two funding requests. We've worked out what we need and they've both been approved with, with no issues, so um there, there hasn't been an issue … we don't put in for loads of stuff, but we put in for doctor's time, we put in this time for the doll … staff to be trained, um nursing time, refreshments, administration … marketing … and we've got that … it hasn't been a problem for us. • I suppose you, we tailor the service to the funding really don't we. It has covered it so far. What I'd like to do, I think that we ought to offer er cash incentives to users to attend. • No … you need somebody to be recruiting people and you need people then, somebody to organise training, deliver training, follow people up possibly for additional training and also follow people up in terms of you, you know, for those who've you know, used or lost their kits or like I said need, you know, prop up training or, or need their kits, you know replaced if they expire and everything … I truly believe could be a full time post really. … You'd need funding for that post then, you know and there is no funding for that. • What we've received from, from WAG has been, yeah, more than sufficient, I suppose the concern is around the long-term availability of funding. • I mean the funding for the drug is, but certainly not in terms of staffing and, and implementing it. • Because we've incorporated it in, I think the CARAT worker would anyway, to me the only funding that we tend to look at is, is the kits itself. We don't tend to look at it for any other purpose. … if we really looked into it we could most probably ask for a lot more! But do you know, the relevance is, I mean if we're able to cope on what we've got, I mean you don't want to take advantage of it. It's there if you need it at some stage, then great. • Yes, yeah. … could we do anything else if we had more money? Well, I mean obviously the resources are getting slimmer and slimmer, so I mean, if we were asked to provide say training by the PE department for resuscitation, and that sort of thing, then obviously the funding would be, would be useful! Because I mean I don't suppose they would do it otherwise, because obviously it's stretching their resources too much.

Table A3.21 Summary of interviews with site leaders: training the trainers

Training staff How were the trainers trained?
• I sat in on one of the training sessions that Danny did and it was a very mixed group, you know, people from very different backgrounds and it is quite clear that the level of information … that the providers had [already] was very variable • They did um the training, Training the Trainers course with … yes it was Danny Morris, so they all did that • We did it in-house. I used to deliver overdose training in a past life, so I brought the package with me to Gwent … for the naloxone … we just did it in-house yeah … • When I came to work in the project in January the working group was already in existence and I was asked immediately to um … to err attend that working group because I'd had previous experience of delivering um Naloxone training then in another area. … I've just delivered training to all the staff who haven't had … who haven't um had … received the training … the trainers this week. • … elements of it would come from their professional background and their professional qualification. And then elements of it would come from experience of, and training courses that they've been on. … I worked very closely with them initially in terms of, drawing together the, the training, the training plan for the session. But, to be honest, it was what they were already delivering and then just adding on the naloxone. So, it's part of their, their role anyway to know, to know about all of this. … And the only one that is the challenge in terms of their lack of, skills would be around training in, in first aid. And that's where we have put some money aside for them to attend a train, the trainer's package on that. • … they arranged all that through Newlink … I think it took them through the DVD and I think that was about… … once they had completed the training, I know the nurses then and CARAT workers just sort of um, gradually, I got ... the substance misuse lead nurse in and then ... then sort of did some extra training with them because apparently it didn't quite sort of meet them being able to deliver the training. [what was missing from the Newlink training?] I think it was the, the thought of the questionnaires … the data collection , all of that. • A majority of them were trained by Kaleidoscope, and the rest of them would have been in-house trained by the actual CARAT workers that attended. … It was a very full delivery package including the kits and injecting oranges. … Off-hand, no, I can't think of his name [was it X?] X, yeah. • We had a trainer-trainer, trainer for trainers, we had, there was two people ... and … ... went on a trainer for trainers session and then they trained the rest of the CARAT team on, on it one day at the farm. … any of the CARAT workers could actually give the training to the prisoners. … it's an organisation in Swansea, but for the life of me I can't remember who it was now, and they got funded for it I know, from the Welsh Assembly Government … I think it was Swansea Drugs Project

Table A3.22 Summary of interviews with site leaders: training the trainers

How useful was the training?
• … so I think that's helped … I would hope anyway and that agencies are [now] giving out clear, accurate messages to service users about overdose. • ... when it started they went out in tandem … to do the training [of clients] … there was quite a lot of tweaking went on I think about what worked and what didn't work … … they really enjoyed the Training the Trainer … yes, yeah, oh very good, yeah, yeah. … • [and was the training useful?] Yeah, I think so, yeah. … our training department work very closely with the training providers, such as Newlink Wales, that offer Train the Trainer sort of stuff and, are very experienced in training … and we've got all Danny Morris' slides and stuff, you know we just nice other people's stuff. • [not asked] • [so the training itself isn't really there? As far as you guys are concerned you don't have to give those people any training?] No. • Oh yes, very. Yeah. Yeah. • I thought it was great, it was really good. Because I think you can overcomplicate and I think people got a bit concerned at the time because we put a couple of peer, peer support workers on the training as well … we tend to have peer support with CARAT anyway. But, I think for me it was personally to get a mixture of people, and sometimes it's easier peer to peer, and especially passing word of mouth … • The feedback from it wasn't particularly good. … Well, apparently it was a bit, I mean for a start they didn't know the numbers of who was supposed to be turning up for the training. So there was confusion there, because they didn't, they weren't expected … and also they were ill prepared because they didn't have the kit with them to show how to use it … and there is another problem as well. I think with the, with the video of course it doesn't show the, it shows the … wrong kit … which is a bit of a shame.

Table A3.23 Summary of interviews with site leaders: training clients

Training clients Are there any changes that you would like to make?
• Yeah. I think you … you need an option of having a one-to-one for some service users that will not access a group for various reasons, so you need that certainly as a back up. ... I know that Inroads did an ad hoc session. It wasn't their … their week of training, but they had a couple of users that were interested and um they booked them in to do an ad hoc session but I don't think they turned up either. • No, no I don't think so, it seems to work very well... No, I think that … I think there's flexibility, however I think they … they try to include everything that they were shown. Whether they do … you know, they ... they sometimes tweak the order and things and obviously no two groups are the same because of the people in the groups, but they do deliver everything. • There is too much paperwork, I think, at the moment. Erm, I don't know that I'd do, a testing the knowledge before and after. • [no comments] • Erm, no, probably not. Erm, as I said, the, the only thing that I think we need to do now is, erm, expand on the number of, erm… the number of different teams that are delivering the training. ...the other challenge and the issue is around the, erm, recording the information. ... in terms of, you know, writing out forms ... Because I've noticed that service users' names are where the trainers' names should be, and the trainers' names where the service users' names should be. … there have been some discussions around how you make filling out the questionnaire easier. And potentially integrating some of that into the training session at the beginning, so making it more part of the session as opposed to people having to just sit there and fill it out. • [no comments] • I think for me, yeah, I think there's a lot of information. I think sometimes visual aids are a lot better than the written aids.... Um, the kits as well, I mean it's harder for us to go through the kits with them, obviously within the prison, because of the needles and everything else with it, so we don't tend to do a lot with the kits. So they're not actually shown them until the last minute unless, as I said, the nurse is available • Well I think it works quite well as it is, you know, but I mean that's as long as the individuals that, that are involved continue to be involved. ...So I mean it's not a thing that's set in stone, concrete, or anything like that, although we have got a policy and, um, a procedure and a process. But I mean at the end of the day it still comes down to, um, an individual making sure that that process, um, happens.

Table A3.24 Summary of interviews with site leaders: recruiting clients

Recruiting clients How do you recruit clients?
• Sometimes we'll have weeks and weeks where nobody is booked in, so nobody's being approached or encouraged … that says to me, well have people lost, you know, professionals lost incentive now? … You just need to keep going … because then the service users eventually, they'll absolutely know, 'oh yeah, the training's going on at Inroads this week' … they know where it is, you know, and when it is and I think that's really important.
• We had a discussion with our doctors about making attendance at the naloxone training mandatory to joining the prescribing programme because that way you can at least reduce risk of overdose. ... They do have to come to the training and they do have to have, have basic life support training afterwards and then they become eligible for the programme. That has enabled us to make sure that everybody who comes and gets methadone off us on top of their heroin has had naloxone training.
• Asking case workers to put anybody forward … advertising through needle exchange … flyers and encouraging staff delivering needle exchange to mention it … we have outreach workers, so Fallon is an outreach worker, so her role is to get out into the community.
• … we have agreed recently that we will take referrals from outside agencies and as the single assessment service is actually based in our building at the moment err it's been agreed that anybody who comes through initial assessment or whatever um and is seen as being at risk then of opiate overdose, um will be referred directly... they may be jointly referred to other agencies but also back to us for um overdose prevention and Naloxone training. … a standalone session every Monday afternoon for training and prescribing … you can at least tell people that they can come then, you know.
• But, really, we've just gone out with, you know, just trying to get the courses full really and getting as many people as possible to sign up and attend. … the two big recruiters are the Community Drug and Alcohol Service and the Harm Reduction Service, because they're the ones that have got access to the biggest number of clients.
• every single prisoner that comes through, um, er, induction and through into the prison will have, um… they have a CARAT induction package, um, and within that is harm reduction overdose awareness … We decided to sort of setup the weekly groups and actually, you know, target people, offer this to them and really get this taken off the ground. And really for the last three, four months … already our figures have, you know, sort of dramatically increased. … we also showed the overdose DVD on a, on a loop system, so we'll be in prison itself on the television as well … so at certain times of the day that will just be shown … I mean they're not all watching obviously, but, but it is, it is shown. [if you want to recruit clients, so is it generally through CARAT?] Generally, yes, but they can self-refer … yes, and obviously nurses … and officers working particularly on this wing.
• … first of all they all get explained it in inductions, so as soon as they go through the induction process … I've incorporated it into the CARAT treatment, so basically anybody that's on the CARAT, or anybody in fairness, anybody in the prison … it's all part of their induction so they all get to hear about it as soon as they come in, so they don't necessarily have to be on the CARAT caseload to get the naloxone awareness unlike previous overdose sessions.
• Right, every single prisoner that comes here gets an induction. During that induction process he completes a couple of questionnaires, one of which relates to the naloxone. He'll see a video or a DVD on naloxone … he will be asked if he would be interested in taking home a kit of naloxone … so it's at that stage where it's established whether we have a client that's interested.

Table A3.25 Summary of interviews with site leaders: recruiting clients

How would you improve recruitment?
• … when we get a new assessment comes in, the nurse would go through all the bits and pieces she normally does, but would now, then, include a session just to discuss naloxone and then give out the naloxone. You could argue that could happen in other agencies as well. The only issue being, of course, in non-medical agencies, they still need a nurse to supply and there still has to be some arrangement for that.
• There is still an element of advertising, but we haven't been as proactive at advertising it as before. … the numbers from other agencies is drying up, you know, has dried up that little bit for us. So I suppose that's our next um .. there's that untapped need isn't there? That untapped provision where people are not coming in …
• I'd like to see more sort of informal, informal peer networks, you know, to encourage people to ask their mates to come along, but actually we haven't had great numbers coming through the doors. … What I'd like to do, I think that we ought to offer cash incentives to users to attend … I think they were in North Wales … if we were to give people an incentive we'd get bums on seats, we are valuing people's time for instance, it would get people through the door and it's like contingency management sort of strategy isn't it … you're asking people to provide a service really aren't you, and they're not gonna be using naloxone on themselves, they're gonna be using it on a peer … about £10 an hour or something, just as a token.
• … what I would like to do … well we hope to have some clinic time in the agency when he's supposed, when he will be doing Hep B vaccinations when he could also be doing replenishment kits … and we're also trying to link in with the homeless nurse round here to see whether there was any possibility she could fit some time in to do the training and be able to prescribe the kits.
• I'm a little disappointed that other services haven't been referring their service users in … particularly those that that re maybe the agency knows they're not in treatment, need to take a bit more responsibility for, for encouraging them. … probably there is potential for us to, to increase some peer-led education, training … but … I think, you know, it gets out there pretty widely.
• [no comment]
• I think sometimes workers are reluctant or don't put it across in a way that they could, because obviously the more people you've got in groups the more groups you're having to run. But, I do think that it could be, like I say, it goes back to advertising, the advertising at the moment is aimed singularly at the user instead of being a bigger picture of what if it's one of your friends … but otherwise, I don't think we could do any more than what we're doing.
• I think it's ok … it's really down to the individuals … if they don't want to do it, they don't want to do it and it's pointless forcing them to do it … they are giving the opportunity, and they have to make, they make a decision. And as I said, they can change that, they can change their minds while they're working with CARATs at any time.

Table A3.26 Summary of interviews with site leaders: working with partners

Partnership working How well do you work with other partners?
• Right from the start, as I say, we, we didn't want it to sit within one agency, we wanted it to have ownership across the board really, so each week it rotates in Cardiff at a different venue, the training, so CAU will do it one week and then it will move to Inroads, then it moves to Huggard, and the it will move to the Wallich. … [so they're all working together?] yeah [there is some good communication going on?] yeah.
• … we're collaborating a lot more with, with our partnership agencies and that, and I think that's been very good. … we're actually doing naloxone training for the police … that's a new initiative with Gwent Police. I think we might be the only, they might be the only police force in Wales who are doing it, I think.
• I'd like to have much closer liaison with the police … there are ways that we could work in partnership with the police that we miss, like when they raid drug users for instance, we could be there as a back up saying look does somebody want to come into the service or something, that sort of stuff. … really good contact with the ambulance service because they were co-delivering our overdose workshops prior to the naloxone project coming on line … and we attend the patient advisory groups and we deliver training to the ambulance service and we have quite close links with the ambulance services.
• There's a lack of liaison between the prison and the agencies and I understand that they're trying to tie up maybe through drug and alcohol helpline or whatever.
• Our police lead sits on our local group but also has sat on the national group and been very much involved from the beginning … we originally had a prison rep but then they were replaced and there probably hasn't been as much contact, but I have got a contact within the prison that I do regularly email the dates of all the training, so that he can make prison releases aware of those … we've got an ambulance rep again … it's not perfect but we try to make them as aware as possible … and they are regular attenders at the North Wales group.
• Yes, very good links. Yes. … Oh, oh, DIP, um, teams because obviously that's what we're part of and, um… Um, and obviously, you know, I've got very good links with Rosanna at CAU and through the drug-related death committee, so…
• I've never, we've never been contacted [by a drugs agency]. … I think the contact, it would be nice to have contact every so often, just to, for them to be aware that the person's had the training
• We don't, no. But hang on a sec, I don't, the CARAT staff may, as far as, you know, Kaleidoscope and various organisations are concerned, when, when individuals need support on the outside, then they will contact these agencies. … If they didn't want external support then that information wouldn't have been passed on.

Table A3.27 Summary of interviews with site leaders: other comments

Other comments
• I feel very much … that if I was sick tomorrow for three months, God forbid, I have a very worrying thought that, that, and I don't want to … sounds arrogant, you know, but, but it shouldn't rely on me, it should rely on as you say, very established systems that are in place to ensure that this would continue … and this is where it sometimes goes a little bit wrong if somebody's on sick or something, then it's scrambling around … so there's no overall co-ordination really. … key people are really trying very hard to, yeah, keep it all together. • I believe Inroads have used service users to provide the training on their own. • …the importance I think now of the programme is not allowing it to lose steam really, to blow itself out … how do we keep it that we don't just use it as a nice in-house tool where we're um, you know, we're making sure our clients who are coming in are covered and trained. How do we ensure that we can get other people still interested and involved? • I think naloxone has given us more a feeling about … what service users can do for us. Do you see what I mean? So, you know, we're training service users around giving naloxone training. • I think the training should be delivered along with basic life support techniques training, it shouldn't just be stand alone. I know that can be a bit tricky in terms of logistics … and I think that carers should have naloxone. I think that they, it should be in homeless hostels, you know, much more widely available … much more widely available … we could do things with drug related deaths that we don't, we miss a few tricks. • I think that we ought to offer cash incentives to users to attend. • I know that these kits have been used at least 17 times … that's 17 lives, you know, and I know I've seen, you know, I've actually, you know been present when … one of them was being used then or whatever and I know that that person would have died undoubtedly. … I just feel frustrated because if you had the time, you had the money … you could do so much more with this programme, you really could. • … it's been really critical to kind of like raise the awareness of it amongst other professionals as well including those in the substance misuse field who I think sometimes have, you know, well I just don't necessarily feel that it's a priority for their work really • … the Community Drug and Alcohol Service have been really good actually, because they send texts to remind people that the training's on, and things like that. • It's really good that, for once, Wales has been seen as leading the way in terms of rolling this out … although I do think it was rushed in places, I do think that it was really healthy as well that for once we haven't been sat round a table for three years and we come back together and we're still in the same position. … it's felt like something happened and we've moved forward and achieved something. • … the strengths have to be in the dedication of the staff that we've got delivering it, and the motivation to do that … • ...the weaknesses would be in the lack of funding … because it is asking people to, to fit it into an already, you know, overloaded schedule. • What I don't like about it is the actual kits, and the boys will say themselves that a lot of the problem is the needles. … it's having the needle in a pot at home, when they're trying not to lapse or relapse, it's always that, in the back of their mind. They're not comfortable with the kits going out with them. I mean the kits are looking a lot better than what I think they originally were, with the box and the needle attached to it! But, I don't know, and I can see why their point of view is, I mean they are scared about the fact, even the fact when they're aware that nobody can overdose by taking it, by accident. It's just the fact of actually having the needle in there. • I think a lot of the concerns were as well … was the younger element … that it was going to make them feel as if they could use a lot more … I do think the under 18s need the awareness … I think to get a lot more people on board, and a lot more open minded about it, would be nice. • If somebody comes in an says, 'look, um, I've, I've, I was a user but I'm no longer, but I mean, I, you know, my wife is', or what you have you, I mean I don't think we should necessarily turn round and say 'no you can't have it' …

Table A3.28 Summary of interviews with the paramedic representative

Key issues What issues are raised by THN for paramedics?
• I think there were probably mixed feelings … on the one hand you know there would have been forward thinking people … but then there may have been others that might have sensitivities about their own role being threatened or perhaps it being administered inappropriately. • I haven't heard any negative feedback in relation to, you know, these kits being administered by lay people, so as far as I'm concerned, you know, it's, it's all positive so far. • … generally … the feedback I've had from people is that they're really proud that they have done it. • … one [ampoule] might not be enough to, to reverse all cases … and that is one of the things that they've stressed with all the training … 'ring 999 first, then give the naloxone'. That's really important. • I guess … there are opportunities to just almost hand it out, almost prescribe it without the need for all of the training. Because these people are really experienced in, you know, the use of needles, syringes and they know what naloxone is. • It would be nice to have, a something which was, you know, a bit more sort of fit for purpose than the kit we've got because we've basically just cobbled together what we, what we could immediately put our hands on, noting that there wasn't a huge amount of money in the system to be able to have a really fancy box for it … I think it would be a flatter box … more shapely, ergonomic … • … these EpiPens … they've got a needle in them, but it isn't something that sticks out. The intranasal or even, you know, that patients take GTN spray when they've got angina … a metered dose or even an inhaler, something like that would, would be good. • … it's going to get worse … those signs and symptoms regardless of them getting up and walking them round, the drug is in there and if they increase their metabolism it's going to increase the effect of the drug and therefore deepen the symptoms and the level of unconsciousness. So, it might actually precipitate the you know the critical death rather than improving it. • [so essentially these people when they're giving their case studies or their examples, these people have not overdosed?] I would, they may have taken slightly more than they would have wanted to, but it wouldn't have taken them to the, the complete point. • … my own personal experience of police attendance at overdoses, I would say is all positive and, and not, I haven't had any negative • I think that one of the benefits has been that it's pulled a group of um … err disparate, I suppose in um … people together, the THN group itself, um and I think it's … it's formed some nice links and perhaps built some trust, ... You know, it's kind of breaking down a few barriers so I think there … I have to say I think it's been something that's really been worthwhile to be involved with. • … I think the weakness is probably the fact that it's err … there's no money for it really, in truth, you know. It's um … there's no money for anything though is there now? That's … that's the problem. Um and I guess if there's one thing that the demonstration will do is prove one way or the other whether it's worthwhile doing and if it is … you know, which I hope it is, then um perhaps the Community Safety Partnerships would pick it up or the area planning boards...

Table A3.29 Summary of interviews with the police representative

Key issues What issues are raised by THN for the police?
• I think that the, the stuff about, erm, police officers turning up to overdose and stuff is, is a really important area, and it's not… it's not a clear cut area. ... And I understand that they are going to turn up, even with protocols in place there's going to be times when it's right for… either for, for, erm, the protection of the ambulance staff, or because of, of some other reasons that the police turn up. I mean the best that we can hope for is to educate them about what naloxone is. • We've got the guidance that we put out, erm, I can't remember the exact date that it went out. That went out as a force e-mail to everyone, it also went on the news page... So there was a link to it there as news. We just tried to, to get it into the consciousness as much as possible. The guidance is, is part of the tools, erm, dropdown menu on FIS. What we've been trying to do for the last sort of six months, six, nine months is to get naloxone into the training. • It's just literally a little bolt-on on the first aid training, overdose awareness and naloxone awareness. So that if officers do turn up at overdose situations, they're going to be able to recognise what it is, hopefully, and they're not going to stop anyone using naloxone. We can't go as far as getting everyone trained to use it, because the implication's there, there's ethical implications of whether… Whether policemen want to give that or not. We can't force them to give it, do you know what I mean? It's the same with, with, erm, like insulin and stuff like that. Insulin the, the force guidance says not to give it at all, you're not allowed to give it. • [have you heard anything about kits being confiscated?] I haven't, because we've, what we've said also in this guidance is that any confiscated kits, or if they're found, or whatever should come back through me … to go back to the agency … we haven't had any, any come back to us … that's not saying that it hasn't happened, do you know what I mean? But … no reports, nothing's come back.

Table 3.30

What do you think of naloxone?
• It's good init? Well, it kills off the heroin effect for like a half hour, isn't it.
• I think it's a wonder drug, to tell you the truth. ... I can't ... if they can do that, for the life of me, work out why they can't cure people with, with drugs as well.
• I think it's a good idea because there's plenty of people out there who are taking heroin and the strength of it, and things like that. So if people have got that on them and know how to use it, if somebody's had an overdose or something, they can use it, they can save somebody's life. ... I think it's a very good idea ... and more people should get to know about it as well.
• Well, the main one is being able to save people's lives ...
• It's quite a good thing to have yeah.
• I don't know what it's like. I've never had to have it, yeah. ... I reckon it's good.
• All I know is that it straightens someone up when you inject em ... definitely a good thing.
• Nalaxone works and it works straight away. Is there any possibility of making a nalaxone into a dissolvable tablet ... Subutex has to be placed under the tongue ... now if we could make nalaxone into a tablet form, right, and if somebody was to go over, right, place a tablet under the tongue of the person that's gone over ... do CPR and it will still have the same effect ... not everybody uses a needle, a lot of people smoke ... if you smoke heroin you can still go over ... how would you feel if somebody started putting a needle in your arm? ... It works, it's brilliant, it works ... problem is, it sends you into an instant cluck and somebody wants to go out straight away and use again.

Table 3.31

Ever heard of THN being used?
• I've never heard of no one giving the naloxone, like, ever.
• No, I don't, no.
• I don't know anybody that's used it, yet. ... I heard of one person down south Wales, but if he didn't have it on him he wouldn't have been able to use it, so it was a good thing, him having it on him, at the end of the day.
• No, I don't, no. ... I've never had to use it ...
• No.
• I've actually had to use it, yeah, ... I've had to use it. I've done one lot and I'm on my second lot now, yeah. Coz I had to use it on a friend who overdosed in me flat. So, I used it. It didn't work, the first lot, but luckily enough I had a lodger staying at mine who had one as well, yeah, so I used two of em and it brought him back around, yeah. So, I saved his life really with it, yeah ... about two, three month ago ... I've had it now for about 18 month ... the nydroxone, the nyloxone or whatever it's called ...
• No, no, thank God ... no, no. ... I'm the only one who's got one, I know of, at the moment, like.
• I've used nalaxone myself ... I know of three people who've died and I know of three people who've used nalaxone and survived and one of them persons I used nalaxone myself ... we had a night out ... we were sharing a room ... he was lying on his back and doing the death rattle ... I looked at his eyes and ... I was on the 999 call for 13 mins, luckily I had a nalaxone kit with me ... it took a couple of seconds ... and he came straight out of it ... into his arm ... straight round, yeah ... there's a thing with jeans, if there was a woman in the street I wouldn't be undoing her jeans ... I find the easiest ... is in the arm.

Table 3.32

Overdoses
• I'm not around all that mess, I don't see people OD-ing and all that.
• I didn't do anything on that occasion because, because I didn't know what to do.
• I have brought somebody back in the past, a couple of times, but not using naloxone ... I just did mouth-to-mouth and kept pumping their heart until the ambulance turned up.
• I know people who have gone, gone a bit blue and they haven't been breathing, but they've come round within five/ten minutes. I've never witnessed someone going stone cold ... I checked their breathing, I checked their pulse ... and I just looked after the person until they started moving and coming round a bit, and then I knew they were ok ... that was before the training.
• Yeah ... it weren't around then ... we had to phone the ambulance we did.
• I think you actually need two, yeah. I don't think the dose is strong enough because we used the one on him yeah, when he overdosed, and after he'd overdosed we had to give him another one because the first one wasn't bringing him round, yeah. I don't think there was enough in the amp what you give us, so we had to use two yeah ... We didn't ring an ambulance coz when I injected him with two yeah, he started breathing and snoring, yeah, so we knew he was alive. We left him in the chair because he went white and his lips went purple when he took it, when he took the heroin, so we injected him. It was my mate who actually injected him. I told him where to inject him, yeah, coz I don't use needles. If I'm taking heroin, I smoke it ... So my mate knew better and with me having the training I told him where to put it, yeah, ... in the muscle in the arm. It didn't make any difference the first lot, I had do to two lots yeah. ... He was dead. He was actually dead. He'd gone white and his lips were blue, yeah. We didn't phone an ambulance because soon as we'd injected the second he started [snoring noise] like that yeah, snoring, he was still out of it but he was snoring, so we thought we won't call an ambulance coz he's breathing. So, we left the ambulance and just left him and eventually after about half an hour he woke up, yeah. ... We was going to phone an ambulance but he come round after the second injection. ... I was the first person in Colwyn Bay to use it
• Yeah, I have, yeah ... we just phoned the ambulance and they come and injected them and took 'em to hospital ... that was before I had the training yeah ... he was comatose basically and we tried to get him awake, slap him awake, but nothing was happening, so we just called the ambulance straight away like.
• I've been involved with five people that have gone over and three have actually, three have actually been fatal ... [what did you do when you didn't have naloxone?] The ambulance was called ... the ambulance man said 'did he or did he not have opiates' and he goes, 'yeah he did' and then straight away he gave the injection.

Table 3.33

What do you think of the THN scheme?
• It was alright, like. I've done it a couple of times actually ... if you didn't go, you wouldn't know, would you. ... it's good that you can save someone's life, like, you know what I mean? ... I just don't think I'll ever use it like ...
• I think it's the most wonderful thing in the whole world .. because people are going to do this thing, whatever, you know ... once you're involved in it you can't just stop one day because you're so ill that ... as soon as you've got £10 note in your pocket you'll go and get some more of this stuff. ... The benefits of the scheme are that people, lives can be saved, every day of the week, by not medical people, by people who are stood there when it's happening.
• I've got to be honest, I've got nothing bad to say about it, it's only good things ... it's saving people's lives, isn't it, at the end of the day, it's helping somebody, and if somebody can do that, all the better ... it's just handy to have there in case something does happen to somebody, because it does happen to people, people do overdose in front of people.
• I think it needs to be sold a bit better to service users to get them there, to get them on the training. I feel as though the posters, from my point of view, ask, 'have you ever gone over', which to me reads 'oh, I've gone over so the training's for me'. You know, if it was saying, you know, 'gain the skills necessary to save someone's life', it sells a bit more than asking someone if they've ever been over. Because a lot of people do interpret it as though 'oh, if I turn up for that then I've gone over on drugs at some point'. ... the main one [benefit] is being able to save people's lives, you know, so it makes people feel more responsible about how much heroin they're using, and using cocktails ...
• Yeah, I think it's a good idea giving it to people yeah. ... because the other people have got a chance of stop overdosing then.
• I reckon it's a good thing, yeah. Coz, you know, I had to use it on somebody, yeah. I think it's a good thing, yeah. ... you can save somebody's life with it, yeah.
• I think it's excellent, yeah ... it's nice to have something, you know, if someone's in the room and ODs, you can help save 'em like, you know, inject them and call an ambulance, I just feel more relaxed about it now like. ... I think it's a brilliant idea ... if someone goes over you know you can inject them into the muscle and that will bring them around for a bit like and you can phone the ambulance and it just gives you a bit more time. ... It's a great idea.
• I don't know, it's hard to explain because, they take it home and they put it straight under the, under the sink, so it's ok if you were to go over in a house where it's there, it's ok. But, it's too big to carry around. ... put your mobile phone in one pocket, your keys in the other ... nalaxone in another pocket ... say you want to get into a nightclub ... nalaxone is a fantastic idea but the problem is they are not asking questions from people that are there and doing it ... I know they are now ... I think it could move forward ...

Table 3.34

Any problem with the THN scheme?
• ... if you think someone's going over and you stick naloxone in them and then they're clucking, and they're not going to be too happy like.
• We, we thought we, you were, we were going to have to intravenously inject it, and some of these people you can't get a vein you know ... it's bad enough trying to catch, get your own vein, let alone somebody else's, especially when they're under the pressure that you're under, you know, because they're dead like. And it doesn't say that on the ... leaflets ... that's stopping other people coming along ... because they think it's going to be too much of a, too much of a hoo-hah trying to get it in, you know. ... that was the thing that was holding us back ... we've been doing it for twenty years ... we weren't new to it or anything.
• ... if there was too many people there, I don't think the key workers would be able to be, like, concentrate on each person, they'd sort of like talk to them as a group, whereas when there's only a couple of people there, they could do it like one-on-one, which is more comfortable for the person themself, to be honest.
• If there was a bit more of an incentive to turn up. I do know that people, when they were getting £10 vouchers for turning up, turned up ... whereas now they don't get any vouchers and it's a bit hit and miss. But, I feel it's just in selling the course to people so they turn up anyway ... they came from the Harm Reduction Team, I think they did it as a good will gesture.... if nobody's got money to come for training then they're not going to turn up. So even if they had their travel reimbursed, or something, maybe it would help. .. I can't just get rid in me head at the moment, about having some overdose posters up so people know what to do in an emergency, even if they're not trained ... should be up in pharmacies as well
• No ... no it's quite good, yeah. ...
• No, I don't think there's a problem at all. No. I think that, yeah, a lot more people who use heroin should do the course, yeah, and get it. Coz it's always handy to have, know what I mean? ... There are people who don't do it ... they probably can't be bothered, yeah ... I know one way of they'd definitely turn up ... offer 'em ten pound to come and they'd definitely do the course. All the courses I know where they've offered money it's been full and they've had to turn people away, yeah. ... if you don't want to give money away, give a ten pound voucher for Morrisons or a five pound voucher ... you'd definitely get people coming then.
• I found it totally ok, brilliant.
• I really believe that people need people that have been in certain positions [to teach them?] yeah ... not about the health implications ... but the reality of it ... Most people know about the recovery position, you know, we're talking about people who have been using needles for nearly ten years ... people do know about it ... it's just not working ... I don't know what's wrong with it ... I can't put my finger on why ... I think it's fantastic, but one of the big problems is you take nalaxone, you want to discharge yourself straight away because you want to go and, go and used again.

Table 3.35

What do other service users think of the THN scheme?
• Some people, when I went don't there some people was like concentrating and other people was just messing about ... it just depends how you want to take it, doesn't it. ... I know loads of people who haven't been ... because they're not on a script ... I don't think they'd go, to tell you the truth ... because if they won't go and like sort it proper, like, in the first place, are they going to go like training? ... most people who's not on, who's not on methadone don't want to know, do they ... that's why they remain anonymous, like. ... They just don't want any help.
• I'm sure they don't know enough about it ... it is a lack of information at the point of access.
• You get some who are interested, the older ones who want to come off heroin and who are willing to help the others, but you get the younger generation who's getting into it, they don't want to know, do they? They haven't experienced it themselves yet, they want to experience things for themselves ... and they're not willing to listen till they're ready to want to get off it or want to make a change in life ... these youngs ones ... they're not bothered, they just want to go out, score, and sort themselves out. They're not interested in treatment and things like that, or things that are going to prevent an overdose or anything like that. ... I've been in this game since I was 16 and I'm 38 now ... these younger ones, they're not interested.
• ... I have had people who have been in a situation of, of an overdose, where they've asked me for my naloxone ... by the time I'd finished looking for it, the lad had gone .. he went back to the house that he'd come from. ... Some of them think it's the same as adrenaline ... so obviously we've had to expel the myths to say ... it's not this Pulp Fiction type thing that people have to, you know, push through someone's rib cage ... it's not as full on as that.
• Well, I think that most of them come and do the training ... I'm not sure
• Everybody knows about it, yeah, but they don't get nothing for doing it, that's why they won't do it. There was a thing called Channel ... a users' focus group ... they used to give five pounds ... and that used to be full every week yeah ... full of drug users and alcoholics, yeah, because you used to get the five pounds ... had to turn people away ... good incentive to actually get people to come ... if you give people five pounds.
• Oh, they think it's a great idea. Yeah, yeah. I've told everyone I've got it like so if they have any ODs just to call me like, yeah. I just think it's a great idea. I think everyone should carry one, every heroin user should carry one.
• A lot of people say they'll do the training, right, but when it come down to it they don't turn up. Now my idea is ... the only way you're going to do that is if when somebody goes to let's say DIP and they are more or less pushed into it. That's the only way. ... the way that that could be done would be with, um, 'look you're going to lose your meth unless you come and sit in for half an hour and do this training'. ... that is one of the only ways that you're gonna do it ... I could walk around the streets right now and say 'will you gonna do this' , 'yeah, yeah, of course we will, of course we will' but when it comes down to it, they don't wanna do it. ... what a lot of people don't realise is that a lot of people are using needles about 5, 6, 7 times a day. You don't really need to teach people how to use a needle. ... I know people who could run rings around any nurse using a needle ... it's a waste of their day ... they don't see it as saving a life ... it's so hard to explain ... It's boring ... I could run the naloxone course in say 15 to 20 minutes ... I could run that course with a bit of humour in 10 to 15 minutes ... they get people to inject an orange ... I know people that could find a vein that not even one of your nurses could find.

Table 3.36

Reluctant to administer as users might be annoyed when they come round?
• I suppose if it were there though, and you couldn't wake someone up, you would just give it to them anyway, like, you know [it wouldn't stop you?] No.
• Yeah, um, that wouldn't bother me at all, no, definitely not.
• Yeah, I've heard that as well, to be honest, I've heard that. 'Oh, you've spoilt me buzz'. Well, hold on a minute, I saved your life. That's what I'm saying, all most people are worried about is the buzz from the next, from the next fix ... that wouldn't stop me from using it on somebody, no, if I've saved their life I don't care if I've wrecked their buzz, I've saved your life mate, at the end of the day ... So, I'd use it no matter what.
• There's a girl who volunteers with me who has been told specifically by her partner that 'do not give it to me if I go over' ... and she says to me, 'look, I don't care what she says to me, I'm going to give it to her whether she likes it or not.' .. but that's the only sort of conversation I've ever had on it. ... It's more about saving someone's life ... I'd definitely give it to someone if they needed it.
• That's not how I wouldn't mind doing it, because it's saving their lives init.
• I'm not bothered if they do, me. I won't let it happen again, nobody can took in my flat no more ... I'm not bothered. I'll use it. If I have to use it, I'll use it, yeah, I'm not bothered if they're annoyed or not.
• That wouldn't bother me, no ... no, I think it's only, you only give 'em one dose, I think it just might bring em round slightly, enough, enough time for the ambulance to get there and I'm sure they'll need more. It's only coz I watched this show 'Emergency Bikers' and they found someone in the gutter who'd OD'd like and they had to give him four lots before he come round and, like, he was still out of it after four lots of it. I just think it gives you enough time for the ambulance to get there, bring him round just for a little bit, and wait for the ambulance to get there.
• Yeah, of course it is ... you might have a big fella, one minute he's taking drugs, the next minute he's got six or seven people looking round him and he's gone into an instant cluck. [does that stop people using it?] No, people do use nalaxone.

Table 3.37

Do you carry your kit?
• No ... I'm not around all that mess, I don't see people OD-ing and all that.
• Yes, I carry it with me, yeah. Me and my partner went on the day so we both carry a kit round, but we've both been in situations separately, apart from each other, where people have almost died or died, so we've both got it ...
• Yeah, I always carry it with me ... always, yeah ... it's a perfect size, it fits in your pocket, I forget it's there to be honest. ... it's in me pocket now, to be honest.
• Yes, I do, yeah. ... all the time, bar when I'm out of work, because I don't need to then. ... I even know some people who have it, who have it on top of their TV, for instance, when I've gone round their house to do advocacy. ... People do carry it round with them, you know, it's like I've had people coming to me saying 'oh look what I've done ...' and pulling it out of their pockets and, you know, they've been really chuffed for doing it.
• Yeah, yeah.
• No, I don't carry it with me. I leave it in the house, yeah ... it's there ready. I've actually got three lots of it at the moment, because I've got a lodger staying at mine and he's got one, and I've got two ... because I lost one and I told them I'd lost it and when I was cleaning my flat yeah and I found it, yeah. So, I've ended up with two now.
• Yeah, yeah ... most of the time, yeah.
• No ... it's too big ... yes ... it's too big and too bulky ... I go round a few houses and you might find the odd kit there, the odd girl might carry it in a bag, but it's too big and too bulky. … out of 10 people I've asked, right, six said no they haven't done the training and four of them said yes and four of them no, they haven't got the kit on them.

Table 3.38

Reluctance to carry kits in case police stop and search them
• It could be an issue, that ...
• Well, I've been stopped by the police for a lot of things ... but they don't, they don't arrest you for carrying the kit.
• No, that doesn't bother me, that, because it says, everything's printed on the label, on mind, like. All they have to do is phone the council up, the drug council, and they'll verify that I'm allowed to use it, I'm allowed to carry it. So that doesn't bother me, that. ... it doesn't worry me one bit.
• We haven't had as many reports of the police doing something like confiscating it, that what other people have in other counties. ... I haven't really had any reports of any problems with the police here, no.
• If it's closed then the police can't take it off 'em can they, and if your name's on it.
• No, I'm not bothered about that. I mean I don't carry it around with me. I leave it in the flat, yeah. I don't take heroin at other people's houses. I take it home and do it there, yeah ...
• Yeah, that's what they tell me, the police can't do nothing about it, they can't even open it, like, and I think it's pretty safe.
• That's not a problem, as long as it's not open. But, the problem is that people that get the kit, open it just to see what's in it even though when you get trained you get to see what's in it, people still open it anyway. ... that comes back to the tablet ... if there could be a tablet in a box ...

Table 3.39

Prefer not to call an ambulance in case police turn up?
• Well, you do get charged if someone dies, if you administer it [heroin] ... I know people who's been in, who's had to do jail and everything for it ... because he administered, he give them the, the dose of, he gave her the dose of heroin and she died like. [and he called an ambulance?] yeah, like three and a half years he had for that ... you're not meaning to do it, he's just helping her out, you know what I mean.
• Yes, yes, that used to be the case, we're told it's not the case but the police do follow it up. But it wouldn't stop me calling.
• Yeah, that's true ... they're too afraid to phone an ambulance because nine out of ten times the police turn up with an ambulance if there's drugs involved, and then everybody gets hooked in on it, and they don't want to be involved in that in case they can't bring the person back and dies, and then they think they're going to be in trouble and involved in it themselves.... It wouldn't put me off, no, it wouldn't put me off, but it would put most people off.
• Yeah, we do that here, but what I say to people is that if you report it as someone's being non-responsive rather than report it as an overdose, then the police may not turn up. ...
• It wouldn't stop me but I think it would stop some people ... most probably concerned that they'd get arrested ... yeah my friend didn't yeah, ... he didn't phone the ambulance
• No, no, I wasn't worried ... no ... if the police had of turned up, I would have said I didn't know he'd had it, yeah, I would have said he'd had it in the bathroom ... when I wasn't there. .. Are you concerned P, my friend here, about the police turning up if we had to use naltrexone, are you concerned about it? No, he's not, as well, me friend, because he's got it, we both did the course together, yeah.
• I think it's a problem for some people like, but it's never a problem with me like.... I would always phone an ambulance up me, always.
• Nine times out of ten they give a ... false name and false address anyway ... people are not scared of the police ... whenever I call the police I actually say that somebody has stopped breathing. I never mention anything to do with drugs or anything like that.

Table 3.40

Other comments
• None
• It give me confidence in a situation where ... I have been in situations before where people have died, you know, and I felt helpless.
• They didn't look down on us because, because we're users. Sometimes you, people are little bit, I don't know, what could you say? A little bit, I don't know, they look down on you, sort of thing. They weren't like that, they were really helpful, and they wanted other people to come, to see if we could get some more people interested in coming. ... everything about it works great.
• Just try to target the older, the older, older ones really, the ones who have really had enough of the drugs and want to come off it. They're more, to be honest, they seem to be the ones that would be interested in wanting to do something, whereas the younger ones wouldn't. ... posters and things like that, or maybe an advert on the telly, or something on the radio, or something that they are going to hear ... word of mouth as well.
• ... being able to save people's lives ... makes people feel more responsible about how much heroin they're using, and using cocktails. The more people know about, and are aware of, overdose situations, I think the more responsible the public will be, the drug using community are going to be about it.
• The people I spoke to, they're a bit, you know, they wanted more of a , more flavour from the, from the first aid side of it ... it was more to do with getting a first aid qualification, like first aid at work, sort of thing ... as an add-on, yeah.
• I think it's quite good for people doing the training and having the kit. ... I think they go around the hostels now and do it as well
• I reckon you should do a bigger amp, you know, two lots of it, yeah, instead of doing one, one little amp, double the strength. You can still use one amp, but double the strength because we had to use two on him ... so that's a good thing to do love ... double the strength.
• ... they rely on me ... trouble is I only live in a small town with about six users ... it's just time, the trouble with heroin addicts the first thing they do is try and get sorted every day, it's just time basically ... I've tried to persuade them ... I was the only one that turned up ... I suppose do it later on in the day. Instead of having a morning appointment have an afternoon appointment, they'll all have got themselves sorted by then and they'll be able to fit it in.
• Do you know why people don't want to go to the hospital ... it's coz they can't get home ... I really believe a dissolvable tablet would help so much ... you wouldn't need much training ... [would this get more people into training?] yeah, you definitely would.
• If anyone needs a kit it's the night staff [of a hostel] and ... can't give them a kit ...

APPENDIX 2: RESEARCH METHODS

Research Methods

Introduction

The aims of the outcome evaluation are summarised in the specifications for the research. The key aims of the evaluation were:

- To conduct a process evaluation of the project during its first year
- To conduct an outcome evaluation of the scheme during its first year
- To make recommendations for more effective implementation
- To make recommendations on the collection of data relevant to outcome measures

Outcome evaluation

The original specifications for the research recommended that the outcome evaluation examined the:

- Evidence for positive impacts on drug users trained in THN by questionnaire
- Number of occasions in which naloxone is used in OD situations and patient survives
- Number of occasions in which naloxone is not used in OD situations but THN trained individuals do other life saving procedures, and patient survives
- Reduction in opiate mortality (but no direct link, other factors may be responsible-varying strength of batches imported, underlying trends in usage, etc.)

The details of the outcome evaluation changed slightly following the launch meeting with the funding body and following the early meetings with the national naloxone group. In effect, the outcome evaluation was revised to match the data that were already available or could be collected during the period of the research. One of the early lessons learned was that it would not be possible to determine changes in national level mortality rates relating to drug-related deaths, in that the data for 2010 would not be available until after the project had ended. However, information on drug-related deaths during the evaluation period that were known to us through the programme could be determined and assessed.

It was also not possible to conduct a full quasi-experimental design involving an experimental (THN) group and a matched control (non THN) group with pre-test and follow-up measures as originally envisioned. One reason for this was that many of the trainees were not in regular contact with the agency providing the training, which meant that any attempt at re-contacting either experimental or control group a later date would have been difficult. Another reason was that naloxone distribution was expanding across Wales at the time of the start of the demonstration project and it was not known with any certainty which sites would be naloxone free for long enough to complete both pre-test and follow-up measures. However, a control group

was selected and a single cross-sectional survey of users without access to naloxone was conducted.

The outcome evaluation involved various components which matched the data available. These were:

- A pre-training and post-training assessment of changes in knowledge, skills and behaviour following naloxone training
- A qualitative evaluation of the training session by trainees
- An assessment of overdose events when naloxone was used (THN sites)
- An assessment of overdose events when naloxone was not used (comparison site)
- An analysis of drug-related death statistics up to the end of 2009
- An analysis of case studies of drug-related deaths up to October 2010

Process evaluation

The specification for the research stated that the process evaluation should focus on three issues. These are:

- Number of people in target groups trained and issued with THN
- Background data on trainees
- Full evaluation of when naloxone was used

The process evaluation described in the original tender document has remained unchanged. This proposed that data were collected at each of the key stages in the process of administering the programme with the trainees. This included collecting background data on the THN project, monitoring the recruitment process and selection procedure, monitoring training sessions, monitoring the distribution of naloxone kits and monitoring the use of naloxone following training

The process evaluation involved various forms of data collection and analysis including the following:

- Monitoring the progress of the demonstration sites
- Monitoring the number of clients trained
- Monitoring the number of naloxone kits distributed
- Monitoring the number of kits used
- Observing the training sessions
- Interviewing key staff
- Interviewing service users

Sample selection

Sites

THN sites

As mentioned earlier, the initial sites were selected in areas that were known 'hot spots' for drug-related deaths. The prisons were included because of the known increased likelihood of prisoners overdosing on release. The four main prisons in Wales were selected to host this part of the research. Later sites in North Wales and South Wales were selected in part as a result of the interests of agencies in those areas to distribute naloxone. As these sites were in known hot spot areas, their involvement was not inconsistent with the aims of the project. The naloxone project leads were also cognisant of the fact that naloxone potentially could save lives, which meant that it would be ethically problematic to prevent sites from developing this facility.

Comparison site

In order to investigate the way in which users responded to overdose events when naloxone was not available, the study included a comparison site. The single comparison site was selected from among areas that were not part of the demonstration project at that time. The chosen site was in Rhondda Cynon Taff.

Trainees

The approach to recruitment of trainees was based on an 'open door' policy in that any user (whether in treatment or not) or any friends or family of users could request to attend a training session. In order to facilitate recruitment, posters were prepared and displayed in all agencies and take-away packs containing leaflets were also made available in places that users might visit.

Sample characteristics

The details of each client attending a training session were recorded on data collection forms usually at the start of training sessions.

A summary of trainees' characteristics is shown in Table M1.1 below. The majority of the respondents were male (83%) with a mean age of 33 (the sample was divided equally between those aged 31 and under and those aged 32 or more). Two thirds of the trainees were currently in treatment. Two-thirds had used heroin in the last 28 days and the remainder had used methadone or buprenorphine. Half of the trainees who responded were daily or nearly daily users of heroin and a quarter were daily or nearly daily users of methadone. Forty-four per cent of trainees said that they had overdosed at least once in their lifetimes and three-quarters had witnessed an overdose. One-third had witnessed a fatal overdose.

Clearly, the clientele of the training sessions includes the kinds of users that the schemes aimed to attract. The trainees were predominately regular opioid users who were familiar either first hand or through observation with overdose events. However,

this does not mean that they did not require training. Just over 50 per cent of those who had themselves overdosed in the past said that they did not go to hospital at that time.

Table M1.1 Characteristics of trainees

	n	% (1)
Gender		
Male	358	83%
Female	71	17%
Age		
Age 16-31	200	50%
Age 32-65	198	50%
Currently in treatment		
Yes	268	69%
No	107	31%
Drugs used in last 28 days		
Heroin	230	68%
Methadone	119	35%
Buprenorphine	33	10%
Drugs used daily or alternate days		
Heroin	168	50%
Methadone	91	27%
Buprenorphine	29	9%
Cocaine powder	18	5%
Cocaine crack	50	15%
Have you ever overdosed?		
Yes	195	44%
No	251	56%
(if yes) Did you go to hospital		
Yes	89	53%
No	80	47%
Not stated	26	-
Have you ever witnessed an overdose?		
Yes	334	75%
No	110	25%
Have you ever witnessed a fatal overdose?		
Yes	130	30%
No	306	70%

(1) % based on valid percentages (excluding missing values)

Limitations

The ideal quasi-experimental design includes both pre-test and post-test measures across an experimental and a matched control group. This is often depicted in the design shown below.

	Pre-test	Post-test
Experimental	Observation	Observation
Control	Observation	Observation

The design maximises interpretation by reducing the threats to internal validity and by providing the key elements of causality. Specifically, the use of a comparison group guards against the threat that other factors might have caused the changes being measured. The comparison group provides a marker for what might have been happening to these groups more generally. The use of pre-test and post-test measures provides temporal order so that the cause can be shown to precede the effect. It also helps to provide the third key element of causality which is a correlation between the application of the programme under evaluation and the change in outcome. If any one of the above elements is missing (e.g. no comparison group or no pre-test measure) the integrity of the design is weakened in that causality cannot so easily be assumed.

The table below (Table M1.2) summarises the main research designs used in the evaluation. It shows that there were no occasions in which all of the key elements of the quasi-experimental design were present. This means that there remain doubts about the nature of the connection between the programme and the outcome. These limitations would have to be taken into account in interpreting the findings and in drawing conclusions.

Table M1.2 Research designs used in the evaluation

Outcome variable	Data collection methods	Research design
(1) Learning about overdosing, overdose prevention, harm reduction, and how to use naloxone	Questionnaires	pre-post only exp only
(2) Practical application of naloxone administration	Replenishment forms	post only exp only
(3) Practical application of other harm-reduction measures	Replenishment forms	post only exp and control
(4) Number of fatal overdoses	Replenishment forms (exp) Questionnaires (control)	exp and control post- test only
	Trends in drug-related deaths ONS statistics	pre-test only (Wales)
	Comparing fatal and non fatal overdoses Replenishment forms Regional case studies	post-test only (exp) pre-test only (Wales)

It needs also to be noted that the method of sampling experimental and comparison groups was unavoidably biased in favour of witnessed events. Conversely, the data from the regional database of fatal overdoses was unavoidably biased in favour of unwitnessed events. It is likely that the presence of someone at the scene of an overdose is a critical element in the survival. Unbiased methods of sampling were unavailable to us. Ideally, it would be necessary to sample from all overdose events and to investigate from among these the proportion that survived or did not survive and to compare each group in terms of whether they were witnessed or not witnessed and to compare these two groups in terms of types of intervention used, including whether naloxone was used.

APPENDIX 3: RESEARCH INSTRUMENTS AND FORMS

Naloxone Training Questionnaire

We are asking all participants in naloxone training to complete a questionnaire *both* before and after training as part of the national evaluation of the scheme conducted by the University of Glamorgan. The aim is to determine if naloxone training is effective in improving knowledge and skills. It is not a test of you as an individual. The completed questionnaires will be treated as confidential and seen only by the service providers and the university researchers. If you have any problems in completing the questionnaire then please do not hesitate to ask for assistance from the trainer(s).

*(**THIS BOX IS TO BE COMPLETED BY THE TRAINER**)*

(The questionnaire needs to be completed **both** BEFORE and AFTER the session by each participant.)

Questionnaire was completed: BEFORE training ☐ AFTER training ☐

Presentation method: Talk only ☐ PowerPoint ☐ Flipchart ☐ Other ☐
(If other, please specify):_____

Venue: _____

Date: _____

Trainer(s) name(s): _____

_____

Participant's name: _____

Would you please tick whether the following statements are correct or incorrect? (Please tick EITHER 'correct' OR 'not correct' FOR EACH STATEMENT.)

The risk of a fatal opiate overdose increases when:

	Correct	Not correct
The user is not currently in treatment		
Heroin is used with other substances		
Heroin is cut with contaminants		
The user's tolerance decreases		
Heroin is injected		
The user is aged under 20		

Which of the following are the usual signs of an opiate overdose?

	Correct	Not correct
Bloodshot eyes		
Shallow/slow breathing		
Lips or tongue turn blue		
Blurred vision		
Loss of consciousness		
Fitting		
Deep snoring or gurgling sounds		
Pin-point pupils		

Which of these methods could be appropriate for dealing with a person who is showing signs of an opiate overdose?

	Correct	Not correct
Call an ambulance		
Walk the person around the room		
Inject saline (salt) solution		
Give stimulants		
Slap or shake the person		
Shock the person with cold water		
Perform mouth-to-mouth resuscitation if the person is not breathing		
Place the person in the recovery position		
Administer naloxone		
Stay with person until ambulance arrives		

Naloxone is used for:

	Correct	Not correct
Helping someone to get off drugs		
Reversing opiate overdose		
Reversing cocaine overdose		
Reversing alcohol overdose		
Reversing amphetamine overdose		
Reversing benzodiazepine overdose		

It is recommended that naloxone is administered by:

	Correct	Not correct
Intravenous injection		
Intramuscular injection		
Subcutaneous injection (under the skin)		
Orally		
Nasal spray		

Naloxone is usually effective for:

	Correct	Not correct
Less than 20 minutes		
20 minutes to 1 hour		
2 to 3 hours		
4 to 12 hours		

The recommended sites for administering naloxone by injection are:

	Correct	Not correct
Upper arm		
Lower arm		
Thigh		
Buttocks		
Chest		

How confident are you in carrying out the following procedures for overdose management?

	Very confident	Fairly confident	Not confident
Would be able to give naloxone?			
Would be able to place in recovery position?			
Would be able to check airways and breathing?			
Would be able to give mouth to mouth resuscitation?			
Would be able to phone emergency services?			

How willing would you be to carry out the following procedures for overdose management?

	Very willing	Might be willing	Not willing
Would be willing to give naloxone?			
Would be willing to place in recovery position?			
Would be willing to check airways and breathing?			
Would be willing to give mouth to mouth resuscitation?			
Would be willing to phone emergency services?			

** To be completed only <u>after</u> the training session **

	Yes – a lot	Yes – a little	No
Did you learn anything new?			
Do you feel that you benefited in any other ways from attending the training? (If yes) please specify in the box below.			
How have you benefited?			
Is there anything about the training session as a whole that you think could be improved or changed (If yes) please specify in the box below.			
What could be improved or changed?			

Thank you for completing the questionnaire

TAKE HOME NALOXONE SCHEME: DATA COLLECTION FORM

Service user's initials:		Postcode:		
Date of training:.....		DOB:		
Ethnic group: (please describe in your own words)		Gender Male ☐ Female ☐		
Age first used opiates:		Age first IV use, if applicable:		
Are you currently taking any prescribed medication?		Yes ☐ No ☐	(If yes) On the last occasion, what were you prescribed?	
Which illicit/non-prescribed opiate/s have you used at least once in the last 28 days? (please tick for each)		Heroin ☐ Methadone ☐ Buprenorphine ☐ Other (specify all)		
Have you injected opiates in the last 28 days?		Yes ☐ No ☐		
Which illicit/non prescribed opiate/s are you currently using daily or on alternate days? (please tick for each)		Heroin ☐ Methadone ☐ Buprenorphine ☐ Other (specify all)		
In the last 12 months, how many times have you gone 3 or more days without using any (whether prescribed or non prescribed) opiates?		Never ☐ Once or twice ☐ Several times ☐ Many times ☐		
Which other substances are you currently using daily or on alternate days? (please tick for each)		Cocaine ☐ Crack cocaine ☐ Alcohol ☐ Benzodiazepines ☐ Amphetamines ☐ Other (specify all)		
Have YOU ever overdosed?		Yes ☐ No ☐	How many times?.....	Main substance/s .....
(If yes) On the *last* occasion, did you go to hospital as a result?		Yes ☐ No ☐		
Where were you when YOU *last* overdosed?		Own residence ☐ Other residence ☐ Public place ☐		
Have you ever witnessed someone else overdosing?		Yes ☐ No ☐	How many times?	
Have you ever witnessed a fatal overdose?		Yes ☐ No ☐	How many times?	
Are you currently in treatment for substance use?		Yes ☐ No ☐	Which agency?	
Have you ever had a test for Hepatitis B/Hepatitis C?	Yes ☐ No ☐ DK ☐	(If no) Do you want one?	Yes ☐ No ☐	
Have you ever had a test for HIV?	Yes ☐ No ☐ DK ☐	(If no) Do you want one?	Yes ☐ No ☐	

For staff to complete:

Agency/Practice Code:	Agency Client No:

PROFORMA FOR RECORDING THE USE OF TAKE HOME NALOXONE AND REPLENISHING STOCK (when used, lost, or expired)

This form is to be completed by agencies when replenishing take home Naloxone.

Before replenishing stock - ensure that the client has undergone training and that this was received within the last 12 months. If the client was given naloxone in prison or from another area, then they will need to undertake the local training before naloxone can be replenished and the form completed.

Why is the naloxone being replenished? Please tick relevant box.		☐ Lost ☐ Stolen ☐ Confiscated or taken (by whom) …….. ☐ Expired (give date of expiry)……... ☐ Used to reverse an overdose	
When did you obtain the previous naloxone?		Date: ……..……	
From which agency did you obtain your previous naloxone?		……	
If naloxone was used to reverse an overdose, when was it used?		Date: ……..…… Time: ……..	
Who was your naloxone administered to?		☐ Self (by another) - state who administered it. …… ☐ Friend/ relative – give name or initials …… ☐ Unknown individual	
Were there any immediate adverse effects?		☐ Yes (please describe) …… ☐ No	
Had the person who was given naloxone recently come out of prison/custody/detoxification?		☐ Yes (please give date and details) …… ☐ No ☐ Don't know	
Where on the patient was the naloxone injected? Please also state whether this was IV or IM		……	
Was the recovery position used?	☐ Yes ☐ No	Was CPR used?	☐ Yes ☐ No
Did the patient attend A&E?	☐ Yes ☐ No ☐ DK	Was an ambulance called? If not, why not? ……	☐ Yes ☐ No
Did the patient refuse any assistance?	☐ Yes ☐ No	Did the police attend?	☐ Yes ☐ No
As far as you know, did the patient survive?	☐ Yes ☐ No	As far as you know, what drugs had been used and might have caused the overdose? ……..	
In what area was the patient when the overdose occurred? (e.g. Ely, Cardiff)		…….	
Where was the patient when the overdose occurred? (e.g. hostel, public toilet)		…….....	
Naloxone re-issued by? Please write name.		……..	
Batch number and expiry date		Number:…… Date:……	
Date of replenishment		Date:…….....	

FOR STAFF- Name of client: …….

Please also write a brief narrative overview of what occurred during the overdose event and its aftermath on the back of this form.

Research on Overdose Prevention

Screening Questionnaire

In collaboration with TEDS, researchers from the University of Glamorgan are conducting some research on overdose prevention. An important part of this research is to find out from service users what happens in overdose events. We are therefore asking all service users about any opiate overdose events that they may have witnessed or experienced in the last six months. Our aim is to help find out what works best in helping save people's lives.

1. Have you experienced or witnessed an opiate overdose event in the last six months?	Yes◯ (if yes, please continue) No ◯
2. Have you completed a questionnaire in relation to this event before?	Yes◯ No ◯ (if no, please continue)

If you have <u>not</u> completed a questionnaire relating to this incident before, we would like to ask you a few questions about the event. This should take no more than 10 minutes of your time.

3. Are you willing to complete a questionnaire in relation to this event?	Yes◯ No ◯

Questionnaire

Research on Overdose Prevention

The following questions relate to an overdose event that the service user has witnessed or experienced in the last six months.

Gender of service user:	◯ Male ◯ Female	Age of service user:	

Please give a brief narrative of what occurred during the overdose event and in its aftermath. (Please continue overleaf if necessary).

On what date did the overdose event occur?	
In what area was the patient when the overdose occurred? (e.g. Aberdare)	
Where was the patient when the overdose occurred? (e.g. hostel, toilet)	

What were the signs that the patient had overdosed?	
As far as you know, what drugs had been used and might have caused the overdose?	

Was the patient put in the recovery position?	◯ Yes ◯ No
Was CPR used?	◯ Yes ◯ No
Was an ambulance called?	◯ Yes ◯ No
Did the patient refuse treatment?	◯ Yes ◯ No
Did the patient attend A&E?	◯ Yes ◯ No ◯ DK
As far as you know, did the patient survive?	◯ Yes ◯ No
Did the police attend the event?	◯ Yes ◯ No

Observation Schedule

Training session	
Date:	
Start time:	
Location (e.g. Cardiff, InRoads):	
Session type: (e.g. client, carer)	
General observations (e.g. room size, temperature, seats, access, refreshments):	

Trainer characteristics	
Number of trainers:	
Name of trainers:	
Sex of trainers:	
General observations (e.g. were they all involved in delivering the training, clarity of role):	

Trainees	
Number of trainees:	
Number of males:	
Number of females:	
General observations (e.g. any late arrivals, affect on session):	

Other observers	
Number of observers:	
Observer name(s):	
Role of observer(s):	
General observations (e.g. any impact on the session):	

Introductions	
Was everyone present introduced:	
Aim of session explained:	
Purpose of naloxone explained:	
Was an outline of the session given:	
General observations (e.g. were clients made to feel comfortable, ground rules explained):	

Pre-questionnaire	
Was this part of training session:	Yes No
Was guidance given on how to fill it in:	
What kind of guidance:	Flip chart PowerPoint One-to-one Verbal
How many were completed:	
Were they collected pre-training:	Yes No
General observations (e.g. did trainer proceed slowly through each question, time taken) :	

Training (aids used)		
Was a pre-written chart/board used:	Yes No	
Was a blank flip chart/board used:	Yes No	
Was a PowerPoint presentation used:	Yes No	
Was a DVD used:	Yes No	(name:)
Were other aids used:	Yes No	(name:)

General observations (e.g. audibility, legibility):

Training (topics covered)	
Risks of overdose:	Yes No
Signs of overdose:	Yes No
How to deal with an overdose:	Yes No
Purpose of naloxone:	Yes No
Mode of administration:	Yes No
Location of administration:	Yes No
Storage of naloxone:	Yes No
Duration of naloxone effectiveness:	Yes No

General observations (e.g. other topics, quality and quantity of information provided):

Training (practical activities)		
Injecting oranges:	Yes No	
CPR:	Yes No	
First Aid:	Yes No	
Other:	Yes No	(name: .....)

General observations (e.g. any problems experienced, trainees injecting):

Training (style)	
Clarity of trainer speech:	
Opportunity to ask questions:	Yes No
Were questions answered:	
How engaged did trainees appear:	
Quality of trainer/trainee relationship	
General observations (e.g. relaxed atmosphere, freedom to discuss issues):	

Post-training questionnaire	
How many were completed:	
Was guidance given on how to fill it in:	
How were the completed questionnaires collected:	
What kind of guidance was given:	Flip chart PowerPoint One-to-one Verbal
General observations (e.g. did trainer proceed slowly through each question, time taken) :	

End of training	
Was a summary of the session given:	Yes No
Were details on replenishment given:	Yes No
How many kits handed out:	
General observations (e.g. was the session closed satisfactorily):	

Time finish:	

Debriefing with trainer	
Trainer's comments on session:	
Was this a typical session:	
If not, how was it atypical:	

General observations of the training event:

Interview Schedule for Site Leaders
Take Home Naloxone Evaluation

Introduction

Professor Trevor Bennett and Dr Katy Holloway from the Centre for Criminology at the University of Glamorgan, have been commissioned by the Welsh Assembly Government to conduct the national evaluation of the Take Home Naloxone programme.

An important part of the evaluation is to explore the views and experiences of the people who are involved in managing and delivering the programme. Please can I just confirm that you are willing to be interviewed about this? (If yes) are you happy for the interview to be recorded?

Please note that your responses will be kept confidential and that any quotations used will be anonymised in any publications.

First, I would like to ask a few questions about your job and employment history.

Personal details

Name:

Sex:

Area:

Agency:

What is your job title:

Briefly describe what your job involves:

Do you work on a full or part-time basis:

How long have you been doing this job:

What did you do before working in this job/agency:

What will you do next (probe career plans):

I would now like to ask you some fairly general questions about the Take Home Naloxone programme in Wales.

The national THN programme

Why do you think the THN programme was introduced in Wales:

What is it trying to achieve:

How is it trying to achieve these aims:

How is the programme organised and managed in Wales:

Who is it designed for (probe client group):

What overdose prevention existed before the THN programme in Wales:

I would now like to focus on your area/agency and explore how the THN programme was first introduced and how you became involved.

THN programme in your area

When was the THN programme set up in your area:

Why was your agency asked to be involved:

How did the programme get set up:

Who was responsible for setting it up:

When did you first get involved:

How and why did you get involved:

What is your involvement in it now (probe any changes):

I would now like to explore how the THN programme is managed in your agency/area.

Management of the THN programme

Who oversees the THN programme in your area (probe for details):

What agencies are involved in this area (probe for details):

Who is involved in the THN programme in your agency (probe roles):

Who in your agency liaises with the area manager (probe how and frequency):

Does anyone from your agency liaise with the other agencies in your area:

Who do you go to if you have problems with the THN programme:

How happy are you with this management structure:

Do you feel that the programme is properly led at each level (national, area, agency):

Could it be improved (probe how):

Let's now look at the resources provided for running the THN programme.

Funding the THN programme

Is the level of funding that you receive sufficient:

Does the level of funding prevent you from doing anything that you would like to (probe):

How much would you like:

Please can you describe the process of how you get funds from WAG:

Does delivering the THN programme affect the delivery of other services in your agency:

An important part of the THN programme is training clients so that they can use naloxone in overdose incidents. First, let's focus on the staff who deliver the training.

Training staff

How many people deliver training in your area:

How were these people trained (probe for details of who, why, costs etc):

What did this training involve (probe for topics, delivery methods, etc):

In your opinion, how useful was the training?

To your knowledge, is this training of trainers the same as in other areas:

Is refresher training available:

Now, let's focus on the training of clients.

Training clients

How often are training sessions held in your area:

Where is the training delivered in your area (probe why):

What does the training involve:

What methods are used to deliver the training in your area (e.g. flipchart, DVD, PowerPoint) (probe why):

How many trainers are required to attend a session (probe why):

Who else can attend the training sessions (separate sessions for carers?):

How and when are THN kits given out to clients:

If it was up to you, would you deliver the training any differently (probe for details):

Recruiting clients

How do you recruit clients to attend the sessions (probe why):

Do you use incentives or punishments to attract clients:

Do you target particular types of client:

Are you happy with this method of recruitment (probe for alternatives):

Monitoring the delivery of the THN programme is an important way of establishing whether or not it is successful. I would now like to find out how data are collected and recorded in your area.

Record keeping

What records are kept regarding the THN programme in your area (probe who):

How do you know to do this (probe who, why):

How thorough are the records (probe how long):
Who has access to them:

What happens to these records:

What systems are in place to find out if a THN kit has been used:

Do you recommend any changes to record-keeping practices:

The THN programme involves people from a range of different organisations working together. I would now like to ask you a few questions about how this works in practice.

Partnership working

Do you have contact with any of the following partners:

Police
Prison
Ambulance
Drug agencies
Other areas
WAG
Prescribers
Nurses
Other .....

If yes, please describe how these work in practice:

In your opinion, do they work well:

Could they be improved:

Finally, I would like to find out your opinions on the THN programme more generally.

General comments

Overall, what do you think of the programme (probe for personal views):

What are the strengths:

What are the weaknesses:

What is the future of the THN programme:

Would you like to stay involved:

Thanks!

Service user interviews

What do you think of the THN scheme?
What do you think of naloxone?
What do other service users think of the THN scheme?
Use of THN
Negative comments about THN
Prefer not to call an ambulance in case police turn up?
Reluctant to administer as users might be annoyed when they come round?

Reluctant to carry kits in case police stop and search them
Do you carry your kit?