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► [Impact of training for healthcare professionals on how to manage an opioid overdose with naloxone: effective, but dissemination is challenging.](#)

Mayet S., Manning V., Williams A. et al

International Journal of Drug Policy: 2011, 22, p. 9–15.

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Training for addiction treatment staff in managing overdose using naloxone, seeded in London by the National Addiction Centre, 'cascaded' to other staff and to patients at a disappointingly slow pace; on average each clinician trainee trained one drug user every 11 months.

SUMMARY Naloxone is a medication administered usually by injection which rapidly reverses the effects of opiate-type drugs such as heroin, including the respiratory depression which can cause what are normally referred to as 'overdose' deaths. In the UK naloxone-based overdose prevention programmes were hampered by the prescription-only status of the medication, but in 2005 the law was amended to permit emergency administration by any member of the public. A prescription is written for the opiate user at risk but the drug can then be kept for them by other people who can legally use it in an emergency, and not just for the named patient.

The featured report derives from a [study](#) of the impact of training opiate-using patients in overdose prevention and providing them with a take-home supply of naloxone. The parent study concluded that training in overdose management can successfully be given to drug users in treatment, resulting in substantially improved knowledge and competence. Among the 239 patients trained, 10 of the 172 who responded to this question had in the next three months used naloxone to reverse an overdose suffered by another person, mostly encountering little difficulty during the administration and no unexpected adverse effects.

Rather than the final result in the form of the trained patients and the use they made of naloxone, the featured report concerns the professional training phase of this study. The issues addressed are how well the study's strategy worked at recruiting professionals to be trained who would then train patients, what the barriers and facilitators were to engaging in training, and how far the professionals benefited from their training.

Main findings

Training was initiated by the National Addiction Centre in London, where three trainers trained 100 drug treatment service clinicians in four sessions. Clinicians were also advised on how themselves to conduct a group or individual training session and given training materials. Armed with these resources, the clinicians were then expected to train other clinicians (and drug using patients) in a 'cascade', encouraged by project leaders appointed in each service. In the event the 100 clinicians cascaded the training to a further 119 clinicians, totalling 219 trained clinicians at 20 drug treatment services in [six locations](#) in England. Over the following year, the 219 clinicians then trained 239 drug using patients. On average, only 1.2 additional clinicians were trained for each of the original 100 trainees, who then on average each trained 1.1 drug users.

A sub-sample of all 41 trained clinicians at three services were surveyed by post about the main barriers to implementing naloxone training and how these might be overcome. Over 9 in 10 responded. Most frequently and in all the three services, they indicated that staff resource issues in terms of time and caseloads were a major barrier to training. Other barriers were that clients did not feel they needed the training as they were stable and/or being prescribed opiate substitutes, they could not get to the training sessions or simply did not turn up, clinicians lacked confidence in training, felt they needed more training or refresher training, the naloxone preparation was too difficult to assemble or administer, and lack of funding for a continued naloxone service.

Pre- and post-training questionnaires were used to assess the impact of the training on the clinicians. Of the 219, 185 completed both sets. Some of the questions were about overdoses in general: factors which heighten the risk of an opioid overdose, how to recognise signs of an overdose, and what actions should be taken during an overdose. On these issues, before training clinicians scored an average of 18 out of 26 correct answers. After training this had risen significantly to 21. Other questions were specific to naloxone. Here too knowledge had improved, particularly in respect of the length of time (usually around 20 minutes but up to four hours) during which naloxone exerted its protective effect. Before training 4 in 10 did not know the answer to this question; after training, virtually all did. Among the other findings, the proportion who felt confident about administering naloxone rose from just under half to nearly 9 in 10, and the proportion willing to do so in an overdose situation rose significantly from 70% to 99%.

The authors' conclusions

Whilst training significantly improved individual knowledge and confidence of clinicians when dealing with an opioid overdose, the 'cascade method' was only modestly successful in disseminating this training to a large clinician workforce. When large numbers of clinicians were trained, this was in services with a local lead who took responsibility for and personally delivered most of the training, suggesting that the cascade approach might be most suitable where local leads are willing to implement training. Given the barriers identified, training trainers alone may not be sufficient to cascade training successfully.

There were clear signs that before training other people, clinicians in drug treatment services themselves require training. Their pre-training knowledge of risk factors, signs and actions to be taken in respect of opioid overdose was reasonable, but many gave wrong answers to important questions, such as failing to recognise 'pinned pupils' as a sign of an opioid overdose. Many believed some 'overdose myths' – such as that stimulants reverse an opioid overdose – which could dangerously waste time during an incident. In these respects, before training they were no or only a little more knowledgeable than the drug users they went on to train. Training largely remedied these deficiencies for both clinicians and drug users, though some clinicians continued to be unsure of appropriate responses, indicating a continued training need.

Before training fewer than half of the clinicians – all of whom worked in environments where opioid overdoses can and do occur – were not confident of their ability to administer a naloxone injection. Training effectively enhanced clinicians' confidence in undertaking this emergency procedure.

FINDINGS COMMENTARY Just how slowly the 219 clinicians extended the training to their drug user patients can be appreciated by calculating that on average each trained one every 11 months. Among the reasons given, the second most common (excluding research requirements) was that stable clients or those being prescribed opiate substitutes felt they did not need the training. A



[report](#) from the same study followed up a subsample of 70 drug user trainees (nearly all from Birmingham) for six months after the training. The 46 recontacted at this time had witnessed 16 overdoses since the training and generally responded appropriately, but none were known to have administered naloxone. For many this was because they were reluctant to carry the pre-loaded syringe around with them, partly due to fear of being identified as a drug user, and partly because some had completed treatment intended to divorce them from drug use and by extension, drug using associates, including those who might overdose.

Such findings highlight an inherent contradiction between treatment which the patient hopes and expects to divorce them from drug use and drug using circles, and being provided with training and medication of direct use only if they stay sufficiently involved in such circles to witness an overdose. A [study](#) of the training of the carers of opiate users conducted by the English National Treatment Agency for Substance Misuse found analogous concerns among families as well as drug users, who wanted detoxification and a spell in prison to signal to the drug user and to others that their relative was starting a new drug-free life. Training might also expose the trainee as a drug user to their families and prison authorities. In the end the 16 pilot sites recruited 495 carers for the training over eight months, on average 31 carers per site and just under four per month. Concern that getting involved in overdose prevention would mark them out as a drug user was also found among homeless drug users in England [interviewed](#) about using naloxone.

Another issue exposed by the NTA study is that when opiate users are highly vulnerable to overdose – when they have stopped using in a protected environment which they are leaving – is also the time when they and their families may be least receptive to anti-overdose training. Families and carers of active users who are aware they are using, and active users themselves, especially those out of treatment, will be less subject to these concerns, but harder to reach and possibly harder to train than those more stable and/or in treatment.

Recruitment problems are, it seems, not insurmountable, and services found ways of accommodating to similar apparent contradictions when many years ago it became important to counsel drug users leaving treatment about the risks of HIV transmission due to sharing of injecting equipment – a warning predicated on the recognition that even treatment 'successes' often relapse. However, surmounting such difficulties might require a reprioritisation of the anti-overdose part of the harm reduction agenda. Even among the clinicians who agreed to be trained for the featured study and the services which agreed to release them for the training, the lack of priority given to overdose prevention is revealed by the primary barrier of insufficient time to train drug users. In essence this means overdose prevention in the form trialled by the study was considered well down the list of priorities with a call on the clinicians' time.

For these and other reasons, while naloxone certainly can contribute substantially to reducing deaths, it is **not the whole solution**. Other limitations include the fact that fatal overdoses in particular tend to happen when the person is alone and/or out on the street. One concern is that naloxone might displace rather than supplement routine resuscitation techniques which remain important in the period before naloxone takes effect. Studies suggest too that despite training, having naloxone available might offer a further excuse for drug users who witness an overdose to avoid contact with the authorities by calling for an ambulance. There is also the prospect that people revived by naloxone might be unhappy about having an expensive heroin high reversed and/or withdrawal precipitated, deterring its use. Though such concerns cannot be dismissed, most can be addressed in volunteer recruitment and training programmes, and they do not threaten the potential for such programmes to on balance save very many lives. For more detailed commentary see the [Findings analysis](#) of the main report of the featured study.

Further guidance is available in the appendices to [a study](#) of the training of the carers of opiate users conducted by the English National Treatment Agency for Substance Misuse. In 2008 staff from one of the English NHS trusts which piloted naloxone training for families and carers produced a UK-focused [practical guide](#) to naloxone prescribing, training and use. The Scottish Drugs Forum runs a [web site](#) offering resources, advice, guidance, information and news on naloxone programmes and administration. This [international web site](#) offers advice and practical assistance on starting a take-home naloxone programme. [Guidance](#) on overdose prevention in general with an emphasis on the role of naloxone has been produced by the Eurasian Harm Reduction Network. In the USA the Chicago Recovery Alliance has produced a freely available [training video](#). The manufacturers of the naloxone preparation Prenoxad licensed for emergency use in the home or other non-medical setting by appropriate individuals for reversing opioid overdose [offer advice](#) on its use. For more Findings analyses on naloxone in overdose prevention run [this search](#), and for more on overdose prevention in general and developments in the UK see this ['hot topic' entry](#).

Last revised 17 January 2014. First uploaded 14 February 2012

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[The NTA overdose and naloxone training programme for families and carers](#) STUDY 2011

[Overdose training and take-home naloxone for opiate users: prospective cohort study of impact on knowledge and attitudes and subsequent management of overdoses](#) STUDY 2008

[Consideration of naloxone](#) REVIEW 2012

[Drug Matrix cell C1: Management/supervision: Reducing harm](#) MATRIX CELL 2013

[Guidelines for the psychosocially assisted pharmacological treatment of opioid dependence](#) DOCUMENT 2009

[Overdosing on opiates part II: prevention](#) REVIEW 2001

[Consideration of the use of foil, as an intervention, to reduce the harms of injecting heroin and cocaine](#) DOCUMENT 2010

[A review of opioid dependence treatment: pharmacological and psychosocial interventions to treat opioid addiction](#) REVIEW 2010

[An evaluation of a heroin overdose prevention and education campaign](#) STUDY 2010

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