The Overdose Training and Take-Home Naloxone Scheme at the Lambeth Community Drug and Alcohol Service in London: From Research to Practice

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SUMMARY: Naloxone is an opioid receptor antagonist that is used as an emergency rescue treatment for opiate overdoses. Historically, naloxone was used exclusively by emergency and other medical services. The case for widening the provision of take-home naloxone beyond medical services is of particular significance because of the substantial increase in the number of drug-related deaths involving opiates in England and Wales. The subject of opiate overdoses and take-home naloxone has been extensively investigated by the National Addiction Centre, King's College London. The findings of these investigations indicate that widening access to naloxone for people who are likely to witness overdose incidents could significantly reduce the number of opiate-related deaths. This paper will investigate how these research findings and subsequent recommendations have been applied in clinical practice, looking specifically at an overdose training and take-home naloxone scheme in a community drug and alcohol service.

KEY WORDS: OPIATE OVERDOSE – NALOXONE – OVERDOSE TRAINING – DRUG-RELATED DEATH

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1 BACKGROUND

Naloxone is an opioid receptor antagonist used to reverse the effects of an opiate overdose. A naloxone injection reverses an opiate-induced depression of the respiratory system and allows crucial extra time for an ambulance to arrive. Historically, the antidote was used exclusively by emergency and other medical services as a standard treatment for suspected opiate overdoses. This practice has now shifted and take-home naloxone has been made available to people who may need to act as non-medical resuscitators when witnessing an opiate overdose.

The Deaths Related to Drug Poisoning in England and Wales, 2013 report (ONS, 2014) showed a substantial increase in the number of drug-related deaths involving heroin/morphine by 32% (from 579 to 765) as compared to the previous year. Over half (56%) of all the deaths attributed to drug poisoning involved opiate drugs. The report also indicated that the number of drug misuse deaths in England increased sharply by 21%, from 1,492 deaths in 2012 to 1,812 in 2013, the highest figure since 2009.

Since 1996, the National Addiction Centre, King's College London has carried out considerable research on opiate overdoses and take-home naloxone (*Table 1*). This research has provided conclusive evidence for the need for drug users, relatives, and other individuals without medical qualifications who are likely to witness an opiate overdose to receive overdose management training and take-home naloxone.

Overdose management training and take-home naloxone schemes have been introduced in parts of the UK, Europe, North America, and Australia. "Although still a prescription-only medicine, UK law was changed in 2005 to allow Naloxone to be given by injection by anyone in order to save someone's life. In 2012, the UK Government's Advisory Council on the Misuse of Drugs recommended that Naloxone, and associated training, be made more widely available to prevent more than 2,000 fatal opioid overdoses that happen annually in the UK." (KCL, n.d.).

This paper will review the main findings and milestones in naloxone and opiate overdose research at the National Addiction Centre, which has been influential in causing a shift in the standard practice of opiate overdose management. Research findings have contributed to providing evidence-based recommendations that have been applied in clinical practice. An example of this is the Overdose Training and Take-Home Naloxone Scheme at a Commu-

Table 1 / Tabulka 1

Milestones in naloxone research at the National Addiction Centre, King's College London, 1996–2015

Mezníky ve výzkumu naloxonu v letech 1996–2015 (the National Addiction Centre, King's College London)

1996	First published serious consideration of take-home naloxone in BMJ editorial	Strang et al., 1996
1999–2002	Testing the feasibility/acceptability of take-home naloxone among drug users	Strang et al., 1999 Strang et al., 2000 Best et al., 2002
1998–1999	Identification of peer presence at majority of overdose events	Powis et al., 1999
2001	First pilot take-home naloxone provision in the UK	Dettmer et al., 2001
2003–2005	Confirmation of clustering of opiate overdose deaths following release from prison	Singleton et al., 2003 Farrell & Marsden, 2005
2005	Change of legislation: naloxone can be administered by anyone in an emergency for the purpose of saving a life	Strang et al., 2006
2006	Identification of family and other carers as intervention workforce	—-
2008–2009	Development of training tools and outcome measures: an Opioid Overdose Knowledge Scale (OOKS) and an Opioid Overdose Attitudes Scale (OOAS) to evaluate take-home naloxone training	Williams et al., 2013
2009–2011	Training users and family members in overdose management and naloxone administration and assessment of impact. Randomised trial of family/carer training in overdose crisis management plus naloxone	Strang et al., 2008a Strang et al., 2008b Williams et al., 2014
2012–present	Launch of first randomised control trial of take-home naloxone (N-ALIVE)	Strang et al., 2013
2014–2015	– WHO: a guideline on Community Management of Opioid Overdoses – EMCDDA: Preventing Fatal Overdoses: – Systematic Review of the Effectiveness of Take-Home Naloxone – The Addictions Department, KCL: Naloxone Saves Lives Conference	WHO, 2014 EMCDDA, 2015

Table source: http://www.kcl.ac.uk/ioppn/depts/addictions/research/drugs/Naloxone/index.aspx

Zdroj: http://www.kcl.ac.uk/ioppn/depts/addictions/research/drugs/Naloxone/index.aspx

nity Drug and Alcohol Service in London. The aims and outcomes of this scheme will be described in more detail in this paper.

● 2 RESEARCH ON PREVENTING DEATHS FROM HEROIN OVERDOSES AND TAKE-HOME NALOXONE AT THE ADDICTION CENTRE, KING´S COLLEGE LONDON

The proposal to distribute naloxone to opiate users as a treatment intervention in cases of a heroin overdose was originally put forward at the Third International Harm Reduction Conference in 1992 (Strang, 1992). Further support for take-home naloxone was pointed out by Strang and Farrell (1992): "Perhaps a case can be made for distributing ampoules of the opiate antagonist naloxone. Its potential for abuse is nil, the risks are probably minimal, and considerable benefit may accrue if drug users could give emergency doses of antagonist to fellow injectors who inadvertently overdose." Four years later, the idea of take-home naloxone was explored more seriously in a BMJ editorial (Strang et al., 1996); the distribution of take-home naloxone in a disposable preloaded syringe was discussed as a tool with great potential to address the problem of deaths from accidental opiate overdoses.

A pre-launch study (Strang et al., 1999) looking at the prevention of opiate overdose fatalities and the acceptability of take-home naloxone among drug users was conducted and the following findings were established: 1) a history of personal overdoses was found among 38% of the community sample and 55% of the treatment sample. The overdoses mainly involved opiates and took place in the company of friends; a substantial proportion of drug users (54% and 92%, respectively) had witnessed at least one overdose (again mostly involving opiates), of whom a third had witnessed a fatal overdose; 2) most (70%) drug misusers considered take-home naloxone to be a good proposal; 89% of those who had witnessed an overdose fatality would have administered naloxone if it had been available. The authors (ibid.) estimated that at least two-thirds of the overdose fatalities that had been witnessed could have been prevented by the administration of home-based supplies of naloxone.

Take-home naloxone pilot schemes in Berlin and Jersey contributed to the first published report of lives directly saved by the provision of take-home naloxone. The authors observed encouraging results, with no adverse effects of the naloxone being reported and 10% of the naloxone that had been distributed saving lives (Dettmer et al., 2001).

Further research into opiate-related overdoses explored specific settings where drug users are at particular risk of overdoses and drug-related death. A higher risk of an overdose exists in the period when tolerance to opiates has temporarily decreased after voluntary or involuntary cessation of use. Three main settings involving a risk of an opiate overdose were identified: 1) early in methadone treatment; 2) post-detox/rehab discharge, and 3) post-release from prison. For drug-using offenders, the transition back into the community is particularly hazardous. Multiple studies have confirmed an increased risk of drug-related deaths, particularly during the first two weeks after release from prison (Farrell & Marsden, 2008; Seaman et al., 1998). A threefold to eightfold increase in the risk of a drug-related death was found in the first two weeks after release from prison compared with the subsequent 10 weeks (Merrall et al., 2010). Cornish et al. (2010) investigated the risk of death during and after opiate substitution treatment, with the following results: 1) the clients who started on opiate substitution treatment had a twofold to threefold higher risk of death in the first 14 and 28 days of treatment compared with the risk during the rest of their time in treatment; 2) the risk of death increased eightfold to ninefold in the month immediately after the end of opiate substitution treatment; 3) the overall risk of death during opiate substitution treatment was lower than the risk of death out of treatment.

The examination of the impact of the overdose management training and provision of take-home naloxone for opiate users showed that training in the management of overdoses can be given successfully to drug users in treatment, resulting in substantially improved knowledge and competence (Strang et al., 2008a). The naloxone resources and training materials are available on the web pages of the National Addiction Centre.[1]

Prior to 2006, only drug users' peers were given consideration as potential non-medical resuscitators in cases of drug-related overdoses. The question of whether family members might be an overlooked target population for overdose management training and the provision of take-home naloxone was explored. Strang et al. (2008b) reported that 30% of carers had witnessed heroin or opiates being used and 20% of carers had witnessed an overdose, eight of these overdoses resulting in death. The majority of carers (88%) wanted training in overdose management, particularly in emergency naloxone administration (88%). "The above data indicate an extensive overlooked carers population who have previously received minimal training and guidance but who are actively interested in receiving overdose training, enhanced by provision of a take-home emergency naloxone supply" (ibid). Subsequently, Williams et al. (2014) carried out a randomised trial to evaluate heroin overdose management training for family members based on emergency recovery procedures and the administration of take-home naloxone. The findings from this study indicate that take-home naloxone training for family members

1/ http://www.kcl.ac.uk/ioppn/depts/addictions/research/drugs/Naloxone/Resources.aspx

of heroin users increases their opiate overdose-related knowledge and competence, which is then still well retained after a three-month follow up. It was demonstrated that family members could be effectively trained to deal with a heroin overdose, including emergency naloxone administration (ibid).

The first randomised control trial of take-home naloxone (N-ALIVE) in the UK commenced in 2012. The trial was designed to investigate the effects of a take-home emergency supply of naloxone on the number of deaths from heroin overdoses in the first 12 weeks post-release from prison.

Prisoners are randomly assigned either to treatment as usual or to treatment as usual plus a supply of take-home emergency naloxone. The preliminary phase of the trial involves 5,600 prisoners on release. The subsequent full N-ALIVE trial will involve 56,000 prisoners on release; this will be the largest-ever randomized intervention trial with a prisoner sample (Strang et al., 2013).

The research on opiate overdose management and take-home naloxone has been attracting considerable attention. The World Health Organisation (2014) introduced guidelines for "Community Management of Opioid Overdose" with the aim of increasing the availability of take-home naloxone for people who are not medically trained but are likely to witness an opioid overdose. The EMCDDA (2015) published a systematic review of the effectiveness of take-home naloxone. In 2014 the Addictions Department, King's College London hosted a one-day conference, "Naloxone Saves Lives", on the provision of naloxone and opiate overdose management in the community. The presentations and slides are available on the web pages of the National Addiction Centre.[2]

The current naloxone research is focused on several areas. If successful, N-ALIVE will demonstrate the effectiveness of take-home naloxone and overdose training in reducing overdose deaths immediately after release from prison (Strang et al., 2013). The National Addiction Centre is also exploring how to further improve naloxone. The non-injecting routes for administering naloxone, including a nasal spray, have been investigated. However, further studies into the optimal dose of naloxone are needed (Strang et al., 2014). The availability of take-home naloxone and overdose training is being extended to people who are likely to witness an overdose, including non-healthcare staff from addiction services and hostels, high-risk clients, families, and peers. Additionally, it has been suggested that the regulations should be changed to allow naloxone to be available without prescription as part of drug treatment or possibly as an over-the-counter medication (ibid).

2/ http://www.kcl.ac.uk/ioppn/depts/addictions/events/NaloxoneSavesLives/Conference.aspx

● 3 TAKE-HOME NALOXONE INITIATIVES IN EUROPE AND IN THE CZECH REPUBLIC

There are between 6,000 and 8,000 drug-induced overdose deaths reported in Europe every year, with opiates found in most overdose cases (EMCDDA, 2016). In Europe take-home naloxone is currently available in Denmark, Germany, Estonia, Spain, Italy, the United Kingdom, and Norway (EMCDDA, 2015). According to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA, 2016), action is urgently needed to improve the availability of take-home naloxone in the European Union (EU) member states.

In the Czech Republic no programmes have been implemented or tested regarding the distribution of take-home naloxone (Mravčík et al., 2014). Although the number of overdose deaths in connection with opiates remains relatively low compared to other EU member states, 93 deaths in connection with opiates were identified in the Czech Republic in the 2009–2014 period (Mravčík et al., 2015). The circumstances of these fatal overdose cases require more investigation in order to establish whether such deaths could be prevented with take-home naloxone. Reducing fatal drug overdoses is an important public health challenge and many research findings presented in this paper suggest that the distribution of take-home naloxone, complemented by training in intervention, can prevent overdose-related deaths.

● 4 LAMBETH COMMUNITY DRUG AND ALCOHOL SERVICE

The Lambeth Community Drug and Alcohol Service (Lorraine Hewitt House) consists of the South London and Maudsley NHS Foundation Trust and three non-governmental organisations: Blenheim, Addaction, and Foundation66 (Foundation66 has recently merged with Phoenix Futures). The Consortium delivers a range of services, predominantly for individuals who are living in the London Borough of Lambeth and experiencing problems with alcohol, opiates, stimulants, and novel psychoactive substances (e.g. GHB, GBL, and mephedrone).

Treatment is primarily focused on (1) pharmacological interventions, particularly opioid substitution therapy with methadone or buprenorphine and community detoxification, and (2) psychosocial treatment, including triage assessment, key working, care planning, brief interventions, advice and support, relapse prevention, motivational interviewing, and harm minimisation. Additional services offered by the Consortium include opiate overdose training and take-home naloxone, screening for blood-borne viruses, needle exchange, a smoking cessation clinic, a sexual health clinic, a hepatitis C clinic, counselling and psychotherapy, and support for partners and families.

The Consortium is closely linked with other addiction services in the Borough of Lambeth, including a GP Shared

Care Team (treatment and support at GP surgeries), Aurora (offering peer support activities and involvement based on peer mentoring), the Recovery Centre (providing support with a comprehensive group programme and recovery-oriented activities), and the Drug Rehabilitation Requirement Service (DRR – for clients who are referred through the courts on a DRR Order).

5 THE OVERDOSE TRAINING AND TAKE-HOME NALOXONE SCHEME AT THE LAMBETH COMMUNITY DRUG AND ALCOHOL SERVICE

The Overdose Training and Take-Home Naloxone Scheme at the Lambeth Community Drug and Alcohol Service started in 2009. The distribution of take-home naloxone and overdose training have been identified as a key service for clients at risk of opiate overdoses, including all clients on opiate substitution treatment and those who have recently become opiate-free. Overdose training and take-home naloxone are offered at the first opportunity when the risk of an opiate overdose is identified; for new clients and those starting a new treatment episode this is usually at triage assessment.

Overdose training and take-home naloxone are offered to clients whose condition and treatment are known to involve an increased risk of an overdose resulting in death, including:

- clients starting a new opiate substitution treatment (OST) episode and whose daily dose of OST medication is being titrated to an optimal dose. The first two weeks of OST are associated with a higher risk of opiate overdose. All new clients and those being re-started are offered take-home naloxone directly at the beginning of the treatment episode;
- clients detoxing from opiate substitution treatment, including clients detoxing because of successful completion of the treatment;
- clients recently released from prison or discharged from an in-patient detoxification unit or residential rehab.

Overdose training and take-home naloxone are not delivered exclusively to current drug users but also to other individuals who are likely to witness an opiate overdose and may need to use naloxone in order to save someone's life. All clinical workers (nurses, drug workers) are trained to administer naloxone when an opiate overdose is suspected. Training is also offered to friends, relatives, and non-medical professionals in frequent contact with drug users at risk of overdosing (e.g. support workers at hostels). Clients' relatives, carers, and friends are actively encouraged to undergo the training session when possible as they may need to administer naloxone in the event of an opiate overdose. More than one take-home naloxone kit can be issued to a service user if required, e.g. one to be carried by the client, plus one to be held by a family member or partner.

The opioid overdose management training includes a demonstration of the take-home naloxone kit. The training is based on the Heroin Overdose & Naloxone Training developed by the National Addiction Centre[3] and comprises the following topics.

- What is naloxone? An introductory slide covers basic information, including an explanation of what naloxone is, what the effects of naloxone are (service users should understand that naloxone is a short acting antidote to opiates and causes opiate withdrawal), and the importance of the safe storage of take-home naloxone.
- The main risk factors related to opiate overdoses.
- Recognising an opiate overdose.
- The actions to take when discovering a person who has overdosed on opiates: always call an ambulance; check airways; place the person in the recovery position; administer naloxone. Clients must be taught that an ambulance must always be called because the overdose victim may need more naloxone or could return to a state of respiratory depression and must be monitored by a healthcare professional.
- The recovery position.
- How to administer naloxone. Naloxone is supplied in a 2ml prefilled syringe containing 2ml of solution together with two needles. The syringe and needles are contained in a yellow box no bigger than a pen box.
- Safe disposal of needles.
- Common and dangerous myths about opiate overdoses.
- Naloxone and the law in the UK.
- The final part of the training provides advice on where to keep a naloxone kit and additionally encourages service users to inform their peers and carers about naloxone and overdose management. Clients are given clear guidance on the need for a replacement naloxone kit once it has been used, if they lose the kit, or if the naloxone they have been issued reaches its expiry date.

The length of the training session is approximately 15 minutes, although this can be flexible if the session needs to be shorter. A naloxone prescription is signed by a doctor and also by the client, who confirms that they were trained on how to recognise an opiate overdose and administer a syringe pre-filled with naloxone. The take-home naloxone kit can only be issued to a named client, but in the event of an emergency, that kit can be administered to any person whose life is at risk of an opiate overdose. In addition

3/ See http://www.kcl.ac.uk/ioppn/depts/addictions/research/drugs/Naloxone/Resources.aspx

to a take-home naloxone kit, the client receives a copy of the Overdose Training slides and a card confirming that they have been prescribed naloxone by the Lambeth Community Drug and Alcohol Service.

6 CONCLUSIONS

The research on naloxone and opiate overdose management from the National Addiction Centre has contributed significantly to the development of more innovative evidence-based practice (*Table 2*). Historically, in emergency cases of a suspected opiate overdose, naloxone was used only by medical services. However, addiction services have started to provide take-home naloxone and overdose training with the aim of increasing the availability of naloxone to service users at risk of an overdose and to people likely to witness an opiate overdose.

The availability of take-home naloxone is particularly important for a number of reasons: 1) the high prevalence of drug-related deaths caused by an opiate overdose; 2) the higher number of opiate overdoses that occur after prison release, during the early stages of methadone treatment, and after discharge from detox/rehab; 3) the high rate of opiate overdoses occurring within the home and witnessed by friends, partners, or family members; 4) the fact that most witnesses will actively intervene and show extensive support for the provision of supplies of take-home naloxone. These findings support the provision of short-term (but crucial) overdose management treatment carried out by drug users and their friends and relatives while awaiting the arrival of the emergency services.

The Overdose Training and Take-Home Naloxone Scheme at Lambeth Community Drug and Alcohol Service is a strong example of how research findings and evidence-based recommendations can be applied effectively in clinical practice. The Scheme provides life-saving medication to people likely to be affected by an opiate overdose. The feedback from clients indicates extensive support for the Scheme.

Table 2 / Tabulka 2
Key messages on take-home naloxone and opiate overdose research (the National Addiction Centre, King's College London)
Distribuce naloxonu a prevence předávkování opiáty – klíčové poznatky z výzkumu (the National Addiction Centre, King's College London)

– Opiate overdoses are a common hazard; a history of personal overdoses was found among a significant proportion of drug users
– The increased risk of overdoses in particular settings: during the first two weeks after release from prison; at the start of opiate substitution treatment and immediately after stopping treatment; post-detox/rehab
– Most overdoses involve opiates
– Overdoses are frequently witnessed by friends, partners, or family members and occur at the person's own home or a friend's home
– Most witnesses intervene actively and show extensive support for the provision of take-home naloxone
– Training in management of overdoses – including take-home naloxone – can be given successfully to drug users in treatment, resulting in substantially improved knowledge and competence
– Family members can be effectively trained to manage opiate overdoses, including emergency naloxone administration
– Increasing access to naloxone for people likely to witness an overdose could significantly reduce the numbers of opiate-related deaths

Table source: references
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POKROČILEJŠÍ METODY STATISTICKÉ REGULACE PROCESU

KNIHY

Jarošová Eva, Noskievičová Darja

První kniha na českém trhu, která se věnuje výhradně statistické regulaci procesu. Jejím cílem je seznámit odbornou veřejnost s pokročilejšími metodami SPC, a to s důrazem na jejich aplikaci, a poskytnout určitý návod pro výběr vhodného regulačního diagramu.

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