Prison-based prescriptions aid Scotland's National Naloxone Programme

Opioid overdose is a major cause of premature mortality and life-years lost not only in eastern Europe but in Scotland, as confirmed by the Global Burden of Disease Study 2015.[1]

Scotland's opioid-related deaths averaged 400 per year in 2006–10,[2] and 10% of them occurred in the 4 weeks after prison release. Annually, around 30 000 clients receive methadone-substitution therapy,[3] which is continued in Scottish prison custody.[4]

In 2005, the opioid antagonist naloxone was added to the UK's exempt list of prescription-only medicines that could be administered intramuscularly by anyone in an emergency to save life. In January, 2011, Scotland became the first country to introduce a centrally funded, evaluated National Naloxone Programme, designed to have 80% power within 3 years to detect a 30% reduction (from 10% to 7%) in its primary outcome: the proportion of opioid-related deaths within 4 weeks of prison-release.[2] By 2014–15 (calendar years), the proportion had reduced to 4%,[5] a 60% reduction compared with 2006–10 (table).

Every 2 years, Scotland's Needle Exchange Surveillance Initiative (NESI), which is geographically representative of Scotland's problem drug users, interviews over 2000 people who have recently injected drugs (80% of them within the past 6 months). Ethical approval for NESI was obtained from the National Health Service West of Scotland Research Ethics Committee. From 2011, NESI has asked interviewees about prescriptions of take-home naloxone in the past year, and whether their most recent prescription was from prison.[6] The percentage of NESI respondents prescribed take-home naloxone in the past year increased from 8% in 2011/12 (financial year) to 32% in 2013/14 to 51% in 2015/16, mirroring the increased effectiveness of Scotland's National Naloxone Programme in 2014–15 (p=0·013; table).

There was, however, a decrease in the proportion of take-home naloxone supplied to NESI respondents by Scottish prisons between 2013/14 and 2015/16 (p=0·0018), perhaps because regional targets were set (and met) for community-based provision of take-home naloxone to 15% of the regions' problem drug users by the end of 2013/14 (rising to 30% by the end of 2015/16) and before prison-based advisory targets were introduced in 2014/15.[2] We found important heterogeneity in provision of take-home naloxone by sex, age-group, homelessness, and recency of injecting with greater provision for people younger than 35 years, the homeless, and those who had injected drugs in the past 6 months (appendix); however, the proportion whose naloxone was most recently received from prison was about 13% irrespective of recency of injecting (appendix).

When past-year incarceration rate and average duration of incarceration are taken into account,[6] Scottish prisons provided take-home naloxone to 67% (95% CI 53–81) of NESI's female past-year prisoner releases but to only 39% (34–44) of their male counterparts, and to 48% (40–55) of past-year NESI prisoner releases younger than 35 years but to only 37% (31–43) of their older counterparts (appendix). Community provision in the past year was higher for females than for males, higher for those younger than 35 years than for those aged 35 years or older, and higher for NESI interviewees who had been homeless in the past 6 months than for those who had not. However, community provision was noticeably low at 28% (24–32) for those with a history of injection drug use who had not injected in the past 6 months.

As a safeguard against increasing numbers of age-related opioid deaths, naloxone provision should be offered to older clients,[3,7] including those who have not injected in the past 6 months.

SMB and AMA both served on Scotland's National Naloxone Advisory Group. SMB is also co-principal investigator for England's prison-based N-ALIVE pilot trial of naloxone-on-release. SMB holds GlaxoSmithKline shares. SMB thanks the Isaac Newton Institute for Mathematical Sciences, Cambridge, UK, for support and hospitality during

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	Number of opioid-related deaths	Observed opioid-related deaths within 4 weeks of prison release*	Financial year of NESI survey	Percentage of responders who had been in prison in the past year (n/N)	Mean length of incarceration (months)	Percentage of responders who had been prescribed take-home naloxone in the past year (n/N)	Percentage of those prescribed naloxone in the past year who received it most recently from prison (n/N)
2006–10 (5 years)	1970	193 (9·8%; 8·5–11·1)	2011/12	17% (367/2154)	5·0	8% (175/2146)	16% (27/168)
2011–13 (3 years)	1212	76 (6·3%; 4·9–7·6)	2013/14	20% (458/2342)	5·4	32% (745/2331)	19% (138/ 732)
2014–15 (2 years)	942	37 (3·9%; 2·7–5·2)	2015/16	17% (448/2696)	5·0	51% (1383/2696)	13% (186/1383)

Periods given span 5 calendar-years before and after the start of Scotland's continuing NNP. Information on past-year prescriptions obtained from NESI surveys done approximately 1 financial year after analysed period. NNP= National Naloxone Programme NESI=Needle Exchange Surveillance Initiative. *Data are n (%; 95% CI).

Table: **Primary effectiveness of Scotland's NNP in reducing opioid-related deaths with a 4-week antecedent of prison release and increasing past-year prescriptions of take-home naloxone to people who inject drugs**

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What are funders doing to minimise waste in research?

For more on the *Lancet* Series on reducing waste and increasing value in medical research see http://www.thelancet.com/series/research

The *Lancet*'s Series on reducing waste and increasing value in medical research was published in 2014. Subsequently, developments consistent with the recommendations made in the Series were documented in an article based on informal enquiries made of research funders and regulators, researchers and research institutions, and journal editors. We have explored in greater detail how the most influential of these actors in the research community, the research funders, monitor and take steps to reduce waste in the research they support; and how they support methodology research and research infrastructure needed to show how waste can be reduced.

We searched the websites of 11 research funding organisations (appendix); extracted relevant information to indicate the extent to which each organisation adopted waste-reducing policies and processes; and contacted staff at each organisation to check the accuracy of our extractions, although interpretations were our judgments. Our work demonstrated the lack of transparency in several key policies and processes; however, further in-depth evaluation is required to assess whether these policies are achieving the goals of reducing research waste. A detailed presentation of our findings is available in the appendix.

Membership of the grant committees in the organisations we investigated was dominated by academics and clinicians, which may be problematic given the evidence that the priorities of patients and clinicians can differ from those of researchers. The National Institute for Health Research (NIHR) and the Netherlands Organisation for Health Research and Development (ZonMW) had the most extensive involvement of members of the public.

Practice and policy decisions, in both health care and health research, are often made without any reference to systematic assessment of existing research evidence.[1] Of the 11 funders, only NIHR requires reference to relevant systematic reviews in all funding applications for new research. Four funders require systematic reviews to show that new clinical trials are needed.

All funding agencies require registration of clinical trials before recruitment of patients. NIHR also requires registration of other study types, for example, registration of systematic reviews in the PROSPERO database. NIHR is the only funder that emphasises the importance of publishing protocols.

Only six of the 11 funding agencies are explicit that they require publication of full reports of the research they have funded. No funder has a comprehensive strategy to make available full datasets of all research projects.

The UK Medical Research Council (MRC) and NIHR have a joint funding scheme for methodology research. The French Ministry of Health funds methodological research at the Centre Cochrane Français (appendix). the US National Institutes of Health (NIH) and ZonMw have also funded methodology research, and NIH and NIHR have internal staff and departments responsible for such research to inform decisions in different sections of their respective agencies.

Our survey shows that information on the policies and processes used by research funding agencies to reduce waste and support methodological research and research infrastructure is generally not transparent or readily available. It appears that the processes of governance do not, in general, hold accountable the funding agencies we have surveyed for assessing whether and how they address the questions raised by the reduce research waste framework.

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