

Summary of the NSW Overdose Response with Take Home Naloxone (ORTHN) Project:

Development and evaluation of a model of care for the delivery of THN interventions for clients attending AoD, NSP and related outreach settings

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Background and Aims: An effective community approach to reducing morbidity and mortality from opioid overdose is the use of 'take home' naloxone by 'first responders', however there had been minimal uptake of THN interventions across NSW outside of services in south east Sydney since its introduction in 2012. This project aimed to design, evaluate and facilitate future roll-out of a model of care for THN that could be effectively implemented in services in contact with people at high risk of opioid overdose - those with a history of opioid dependence and/or injecting drug use.

The ORTHN clinical intervention was designed with the following features:

- The intervention targets people at risk of opioid overdose, attending Alcohol and other Drug (AoD) treatment, Needle Syringe Programs (NSPs), the Medically Supervised Injecting Centre (MSIC), primary health and related outreach services that target people who inject drugs.
- ORTHN involves a brief intervention with individual clients, taking approximately 10-30 minutes to deliver by credentialed health workers (nurses, allied health, health education officers, NSP workers), that involves client education regarding overdose prevention and responding to a suspected overdose, and provision of naloxone supplies - free of charge to clients.
- Regulatory approvals from NSW Ministry of Health (MoH) enabling credentialed workers to supply naloxone under the Clinical ORTHN Protocol, without involvement of medical practitioners or pharmacists in the model of patient care.

Methods: A mixed-methods translational research approach, incorporating a prospective longitudinal design in which the ORTHN clinical procedures, regulatory frameworks and training programs were designed, implemented in approximately 20 participating services, with an evaluation of client and worker outcomes, practices and perspectives. Approved by SESLHD HREC.

Results: 616 ORTHN interventions were delivered over an 8-month period. 37% were delivered in AoD treatment settings (including OTP and withdrawal); 36% in NSPs; 17% in primary health care settings; 14% at MSIC and 13% in outreach settings. Interventions were delivered by nurses (48%), HEO/NSP workers (31%); allied health (11%) and others (9%). Clients were predominately male (63%) with a mean ($\pm$ SD) age of 41.9 $\pm$ 9.5 years.

Client Results: A subsample of 145 client participants were enrolled in a prospective follow-up study examining overdose history, substance use, knowledge and attitudes immediately before and three months after the ORTHN intervention. Most (98%) had a lifetime history of injecting drugs, had previously witnessed (86%) or experienced an overdose (61%, on a mean ($\pm$ SD) number of 2.7 $\pm$ 1.3 occasions). At enrolment, most (82%) were in opioid agonist treatment, 36% were either homeless or at risk of eviction, 13% had been arrested and 21% participated in study or work in the preceding 28 days.

Clients had high levels of knowledge regarding overdose prior to the ORTHN intervention, and knowledge was generally maintained at three-month follow-up. There were significant improvements between baseline and follow up ($p < 0.001$) in self-efficacy regarding overdose response and THN use: “I have enough information about how to manage an overdose” (69% to 96% endorsed); “I would need more training before I can feel confident to help someone who overdosed” (54% to 22%); “If someone overdoses I would be able to inject naloxone” (85% to 99%).

One quarter (26%) of participants witnessed an overdose in the 3 months prior to ORTHN, and 26% did so in the 3 months after ORTHN intervention. Overdoses occurred in 6% of participants in the 3 months before - and 4% post-ORTHN interventions. Heroin (69%), alcohol (38%) and BZDs (38%) were the commonly used drugs in the 24 hours prior to the last overdose. The main overdose risk factor was the resumption of heroin use following a break (e.g. prison, detox or rehab).

10% of participants reported administering naloxone in the 3 months after the ORTHN intervention, with the overdose reversed in all cases. Assuming naloxone would continue to be used beyond the 3 month research follow-up, we estimate that naloxone was administered by 20% of ORTHN interventions— or 123 overdose reversals as part of the 616 interventions in the TRGS Project.

Staff Results: Approximately 230 health workers completed the ORTHN training program, and were credentialed to deliver ORTHN interventions under the NSW MoH Clinical ORTHN Protocol. Workers completed evaluation surveys before training, and at the end of the intervention period.

There were significant improvements in worker knowledge and attitudes regarding delivering THN interventions. Most staff (79%) reported providing ORTHN interventions during the project. Staff identified that the ‘average’ ORTHN intervention took between 10-19 minutes (39%) or 20-29 minutes (31%). There were high levels of staff overall satisfaction and endorsement for the components of the clinical ORTHN intervention. There similarly high levels of staff satisfaction and endorsement of the training program and credentialing criteria.

The recurring cost (excluding staff training) of providing ORTHN interventions is estimated at \$75 per intervention - \$25 for staffing costs and \$50 for wholesale medication (Prenoxad®) costs—considerably less than other models of THN service delivery (e.g. OTC pharmacy or doctor prescribed models). Using international estimates of 1 life saved for every 227 naloxone kits distributed (95%CI, 71 to 716) (Coffin & Sullivan, 2013), we estimate the cost of ORTHN per life saved = \$AUS 17,025 (95%CI=\$5,325 to 53,700).

Key recommendations include:

1. That the ORTHN program (regulatory framework, clinical intervention, training and credentialing framework) be expanded to include all AoD, NSP and related primary care services across public, NGO and private sector services across NSW.
2. That the ORTHN clinical intervention and procedures are appropriate for this target population and service settings, although will require ongoing refinements as the program is implemented. Governance for future variation in the ORTHN intervention rests with NSW Health.
3. That naloxone supplies for the program are extended to include all fit-for-purpose THN formulations (e.g. prefilled syringes, intranasal products) as they become available in Australia.
4. That naloxone continues to be supplied free to the client within the ORTHN model, with NSW Health reimbursing the cost of naloxone to participating services.
5. That individuals who are likely to witness an overdose (e.g., friends, families and carers of opioid users) should be able to access ORTHN interventions through the same services as opioid users themselves.
6. That training and credentialing should remain mandatory components of the ORTHN program.
7. Peer/consumer worker involvement in THN delivery is an essential component of changing the culture regarding overdose prevention and responses amongst high risk opioid users.

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