Does Naloxone Provision Lead to Increased Substance Use? A Systematic Review to assess if there is evidence of a 'Moral Hazard' associated with naloxone supply

<u>Wai Chung Tse<sup>1,2</sup></u>, Filip Djordjevic<sup>3</sup>, Viandro Borja<sup>4</sup>, Louisa Picco<sup>1</sup>, Tina Lam<sup>1</sup>, Anna Olsen<sup>5</sup>, Sarah Larney<sup>6</sup>, Paul Dietze<sup>3,7,8</sup>, Suzanne Nielsen<sup>1</sup>

- 1. Monash Addiction Research Centre and Eastern Health Clinical School, Monash University
- 2. Monash University School of Medicine, Monash University
- 3. Burnet Institute Centre for Epidemiology and Population Health Research Behaviours and Health Risks Program
- 4. Alfred Mental and Addiction Health program, Alfred Health, Melbourne, VIC 3181, Australia
- 5. Australian National University College of Health & Medicine
- 6. Université de Montréal and Centre de Recherche du CHUM
- 7. National Drug Research Institute
- 8. School of Public Health and Preventive Medicine, Monash University

## Contact: Wai Chung Tse, 0466-626-777, waichung.tse@monash.edu

**Introduction and Aims:** Take home naloxone (THN) programs have been rapidly upscaled to respond to increasing opioid-related mortality. One often cited concern is that naloxone provision could be associated with an increased opioid use, due to the access of naloxone to reverse opioid intoxication. We aimed to determine whether naloxone provision is association with increased substance use in those enrolled in THN programs.

**Design and Methods:** A systematic review of current literature involving THN programs as the intervention and people who use opioids as the participants to measure the change in opioid or other substance use following naloxone provision as part of participation in a THN program.

**Results:** Seven studies with 2578 participants were included in the systematic review. Five studies reported on the primary outcome of heroin use, of which none provided evidence of an increase of heroin use across the study population. Five studies reported on other substance use including benzodiazepine, alcohol, cocaine, amphetamine cannabis and prescription opioid use, with no study finding evidence of an increase in non-opioid substance use associated with naloxone provision. Four studies reported on changes in overdose frequency following naloxone provision, with three studies reporting no change, while one study in people prescribed opioids found a reduction in opioid-related emergency department attendances in participants that received naloxone.

**Discussion and Conclusions:** We found no evidence that naloxone provision was associated with increased opioid or other substance use, nor did we identify increased overdose among those provided THN. Concerns that naloxone supply may lead to increased substance use were not supported by data from clinical trials and cohort studies.

## **Disclosure of Interests Statement**

SN and PD have received funding from Indivior. SN has received research funding from Seqirus, and PD has received research funding from Gilead, all untied and unrelated to this investigation. PD and SN have served as unpaid members of an Advisory Board for Mundipharma.