A more dangerous ‘heroin’: the synthetic opioid overdose crisis in the United States

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The US is experiencing an unprecedented drug overdose crisis with over 70,000 opioid-related deaths reported in 2017 (1). These deaths stem from a “triple wave epidemic” of opioid pill, heroin and synthetic opioid (e.g. fentanyls) overdose (2). The risk of overdose is geographically uneven with the US Northeast, Midwest and Mid-Atlantic regions at higher risk (3). The risk environment has changed dramatically as street heroin has new sources, comes in new forms and is adulterated with synthetics. Our research is exploring this rapidly evolving crisis with an emphasis on understanding how persons who use heroin are affected by and adapting to this dramatically changing risk landscape.

The Heroin in Transition (HIT) study, funded by the US NIH/NIDA is a 5-year project utilizing multiple disciplinary lenses including economics, epidemiology and anthropology. In the first few years we have focused on the anthropological research. Anthropological inquiry in public health is used for exploration when many unknowns exist – as is the case in the current epidemic. The aim of this time-intensive work is to understand the experiences and beliefs of users themselves and directly observe their use of novel opioid combinations. We do this through ‘hotspot’ research visiting areas in the US reporting significant changes in the heroin supply or high levels of overdose. Sites visited in 2016-2017 included Baltimore, MD; Lawrence and Lowell, MA; Chicago, IL and Charleston, West Virginia.

This research has revealed a number of insights. Both quantitative and qualitative data show the rampant individual and social devastation brought on by the crisis (3, 4). In all the places we have visited we hear stories of recent loss – from most participants. There are impressive structural risk changes – with major changes in the ‘heroin’ supply, including a new highly refined and potent form of heroin from Mexico and rampant adulteration of heroin with various fentanyls esp. in the high-risk regions (2). The qualitative data reveal a number of themes: reports of remarkable daily to weekly variation in ‘heroin’ potency, compounded by fentanyl; such that folks don’t know what to expect on a given day (5). The desirability of fentanyl is controversial with some officials reporting that profit and demand are driving the synthetic phenomenon. Our data argues otherwise: there is mixed desirability for fentanyl with some desiring it but many fearful of it; as tolerance changes this may evolve as well. Can persons who use ‘heroin’ discern the synthetics? Yes, our data shows multiple ways to discern (4). And risk taking goes in both directions: increased risk taking by a new generation of users, but also re-invention of harm reduction adaptations including use of ‘tastes’ and tester shots.

The evolving heroin and fentanyl co-epidemics are unprecedented in scope and are leading to seismic changes in the risk landscape for users. These changes are supply, not demand, driven. Much of the concern about fentanyl and other synthetics focuses on potency relative to heroin/morphine. Our research finds that vicissitudes of heroin/fentanyl purity and combinations may outweigh the risk due to potency solely. A new generation of heroin users faces daunting risks – structural and behavioral – for overdose, as well as viral and bacterial infections, due to lack of adequate prevention and education programs.

We know the potential solutions. This US crisis may spur on the institution of healthier drug policies and expansion of harm reduction and treatment services. Headwinds include 'tough on drug' policies that, despite lack of sufficient evidence base, are popular in the US. Structural interventions include peer naloxone programs, supervised consumption spaces, drug surveillance and point of use fentanyl checking. Behavioral interventions include peer-based education on use of intranasal 'tasting' and tester shots and HIV/HCV prevention.

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