

Defining Controlled Substances Overdose: Some Challenges

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To the Editor

Drug overdose deaths have increased dramatically in the US in recent years [1]. Both national and state public health agencies need accurate data about these deaths to determine the types and sources of drugs involved and to develop appropriate prevention measures. A major challenge to date has been identifying which deaths involve drugs that are regulated because of their potential for abuse. The current coding scheme for mortality, the Tenth Revision of the International Classification of Diseases (ICD-10), represents an improvement over the Ninth Revision in identifying the drugs involved in deaths, but ICD-10, which categorizes drugs pharmacologically, is ill-suited to categorizing drugs by their regulatory status. The article by Dasgupta et al. "Defining controlled substances overdose: should deaths from substance use disorders and pharmaceutical adverse events be included?" [2] provides important insight into the challenges in defining subsets of drug overdose deaths. However, there are some points we would like to clarify.

First, we'd like to correct a couple of points made about the existing definitions critiqued by Dasgupta et al. The authors state that, "All the NCHS and ISW definitions Table 1 include pharmaceutical adverse events, even if the medicines involved were not controlled substances. We could not find a clear justification for this." However, these definitions were not intended to capture only deaths involving controlled substances. The National Center for Health Statistics (NCHS) definition includes both controlled and non-controlled substances, and it has been used by CDC and other federal agencies to identify deaths that are not related to controlled substances. There are no "discrepancies between federal health agencies" with regard to what the codes capture. In addition, the authors state that all the previous definitions include "pharmaceutical adverse events," a term that to our knowledge includes both drug overdoses and adverse drug effects, i.e., conditions resulting from use as directed, such as anaphylactic reactions [3]. The NCHS definition cited does not in fact include any of the Y40-Y59 codes dedicated to adverse drug effects.

Second, we'd like to emphasize that some of the codes chosen for the proposed definition of overdose mortality from controlled substances by the authors Table 5 include more than controlled substances. For example, the authors include some specific underlying cause codes (X40, X60, and Y10) when no specific drugs are listed among the contributing causes. However, those underlying cause codes are for non-controlled analgesics such as salicylates, acetaminophen, and NSAIDs, rather than "unknown drugs". The authors also include codes for sedatives and psychotropic drugs (X41, X61, and Y11), but these codes include deaths from non-controlled psychotropic drugs such as antidepressants and antipsychotics, which are commonly found among drug overdose deaths in the United States [4]. Also problematic is the inclusion among "controlled substance toxicology codes" of the codes for general anesthetics (T41.2) and "other organic solvents" (T52.8) because only some of the compounds in these categories are controlled substances.

Third, some of the codes chosen by Dasgupta et al. might represent

the effects of controlled substances, but they don't necessarily represent overdose deaths. Drug-related mental and behavioral disorders (the "F" codes) are not used to code acute drug intoxication under the current coding rules. Many death certificates assigned F codes have infections and cardiac problems as contributing causes of death, suggesting that these codes are used for chronic poisoning or the consequences of injection drug use, not acute overdoses. As Dasgupta et al. indicate, a more complete accounting of the multiple effects of drugs would be useful. That is why NCHS has for many years reported a mortality category that goes beyond overdose deaths called drug-induced deaths [5], which includes such F-coded deaths as well as other medical complications of drug use.

Finally, we would like to take this opportunity to point out that definitions are only as good as the data to which they are applied. A significant problem with overdose mortality in the U.S. is that about a quarter of the death certificates for drug overdose deaths do not specify the type(s) of drugs involved, so counts of overdoses of controlled substances or any other specific drug subtypes are underestimated in some states [6]. The U.S. Centers for Disease Control and Prevention has been working collaboratively with experts in the field to improve the investigation, diagnosis, and documentation of drug overdose deaths [7], and this should improve the information upon which such definitions rely.

Disclaimer

The findings and conclusions in this report are those of the author and do not necessarily represent the views of the Centers for Disease Control and Prevention.

Conflict of Interest

The authors have no conflicts of interest with respect to this letter.

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Received November 09, 2013; Accepted November 15, 2013; Published November 19, 2013

Citation: Paulozzi LJ, Warner M, Jones CM (2013) Defining Controlled Substances Overdose: Some Challenges. *J Clin Toxicol* 3: 175. doi:10.4172/2161-0495.1000175

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