TITLE: Inclusion of Poisoning Mortality and Morbidity in the National Public Health Surveillance System (NPHSS)

Position to be Adopted
Poisoning is a major cause of morbidity and mortality in the United States and should be included as part of the National Public Health Surveillance System. The following indicators should be included:

1. Rates of fatal poisoning, all ages
2. Rates of hospitalization for poisoning, all ages
3. Rates of fatal poisoning among children under age 5
4. Rates of hospitalization for poisoning among children under age 5
5. Rates of fatal unintentional poisoning by illicit drugs
6. Rates of hospitalization for unintentional poisoning by illicit drugs

Background and Justification
Poisonings were reported as the underlying cause of death for 18,549 people in the United States in 1995 and were the leading cause of injury death for people ages 35-44. (1) Poisoning death rates for the total population that year were the highest since 1979. Fatal poisonings among adult males age 35-54 have increased particularly rapidly. From 1985-1995 poisoning death rates in this group nearly doubled to 24.0 per 100,000, and their drug-related poisoning death rate nearly tripled, from 5.5 to 16.1 per 100,000. Drug poisoning death rates for females, while lower than for males, also increased during this time period. In 1995, the age-adjusted poisoning death rate was 9.6 per 100,000 for all males and 3.6 per 100,000 for all females. (1) Among unintentional poisoning deaths, the illicit drug poisoning mortality rate increased 91% from 1988 to 1997, while the mortality rate for all other unintentional poisonings increased only 8% over the same time period. Included in the unintentional illicit drug poisoning category were unintentional poisonings by other specified drugs (E858.8) in which unintentional poisonings attributed to multiple drugs are coded. In New Mexico from 1995-1998, 75% of deaths coded E858.8 in vital statistics files were linked to a death in Office of Medical Investigator files that listed heroin, metamphetamine, or cocaine as a drug cause. (2)

In recent years, psychoactive drug intoxications without suicidal intent have been the leading cause of fatal and non-fatal poisonings in the United States, but other poisonings remain important public health problems. In 1995, more than 5,000 poisoning deaths were due to suicides, and that same year exposure to gases and vapors accounted for 15.3% of poisoning deaths. (1)
In 1997, based on data from the National Hospital Discharge Survey (NHDS), poisoning (as the first listed diagnosis, ICD-9-CM 960-989) accounted for an estimated 196,666 hospitalizations. When this category is expanded to include any poisoning discharge diagnosis, first or otherwise, the estimated number of poisoning hospitalizations increases to 284,000. (3)

**Justification for Indicators Chosen**

No single data source is likely to provide all the data needed to monitor fatal and non-fatal poisonings. Several data sources and measures of poisoning incidences are needed for public health surveillance. Potential sources of data include poison control center data, hospital discharge data, mortality data, and the Census of Fatal Occupational Injuries. Comprehensive state level hospital discharge data coded using ICD-9-CM provides a valuable resource where this data source is available, particularly when external cause of injury codes (E-codes) accompany the condition codes (formerly known as nature of injury or N-codes). Death certificate data (vital statistics) with ICD-9 condition codes and external cause of injury codes is available in all states. Although the corresponding ICD-10 codes are not included in this position statement, they should be used when appropriate. The ICD-9 codes used in the surveillance definition below are consonant with the grouping of external cause codes recommended by CDC for presenting injury mortality data.4

Identifying the intent behind an illicit drug poisoning is often difficult. The choice of using as an indicator only codes for *unintentional* poisonings by illicit drugs, rather than including all intent categories, is based on the limitations of the ICD-9 coding system. For poisonings of suicidal, homicidal, and undetermined intent the coding system does not differentiate poisonings due to illicit drugs from poisonings due to licit drugs. While coding practices for illicit drug poisonings differ from state to state, in many states these poisonings by default are coded as unintentional, unless information suggesting some other intent is available. Therefore, while including only *unintentional* poisonings in this indicator will miss some cases of illicit drug poisonings, it is the best available indicator.

**Goals for Surveillance**

- Estimate the number and incidence of poisoning deaths and poisoning hospitalizations.
- Estimate the number and incidence of illicit drug poisoning deaths.
- Monitor trends over time
- Identify high risk groups and geographic areas for interventions and prevention programs
- Determine the need for further resources to support poisoning prevention.
- Evaluate the effectiveness of prevention measures.

**Proposed Methods of Surveillance**

1. State/Local: analysis of vital statistics and hospital discharge data
2. National: analysis of vital statistics and hospital discharge data
Proposed Surveillance Definitions
A case of poisoning is an unintentional or intentional exposure to a chemical substance or other toxin that causes temporary or permanent end organ toxicity. In terms of International Classification of Disease code ranges, poisoning is defined by an E code in the ranges E850-E869, E950-E952, E962, E972, and E980-E982 or by the underlying cause N code 305. A child poisoning is defined as a poisoning of a person aged less than 5 years coded with the same E or N codes as described above.

Unintentional illicit drug poisoning is defined by E codes in the ranges of E850.0 (opiates and related narcotics - heroin), E854.2 (psychostimulants - amphetamines), E855.2 (local anaesthetics - cocaine), and E858.8 (other specified – includes polysubstance).

Data to be Collected
Vital statistics and hospital discharge data systems will be ongoing sources of poisoning data.

Information Systems to Collect and Transmit Information
Local/State: vital statistics and hospital discharge data.
National: vital statistics and hospital discharge data.

Temporary / Permanent
Permanent

Federal Agency / Data Systems Involved
National Center for Injury Prevention and Control
National Center for Health Statistics
National Center for Environmental Health
National Institute for Occupation Safety and Health
Substance Abuse and Mental Health Services Administration
HRSA/MCHB

Coordination with other Organizations
Agency for Response:
  National Center for Health Statistics
  National Center for Injury Prevention and Control
  National Center for Environmental Health
  National Institute for Occupational Safety and Health

Agency for Information:
  State and Territorial Injury Prevention Directors Association
  American Association of Poison Control Centers
Substance Abuse and Mental Health Services Administration
Poison Control Centers
National Center for Health Statistics, CDC
National Center for Injury Prevention and Control
National Center for Environmental Health
National Institute for Occupational Safety and Health
Association of State & Territorial Dirs. of Health Promotion & Public Health
Education
Council of State and Territorial Epidemiologists
Suicide Prevention Advocacy Network (SPAN)

References:
2. Unpublished data. New Mexico Department of Health; Santa Fe, NM.

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