NIOSH Hazardous Drugs List Update

Larry Reed and Tom Connor, NIOSH
Public Meeting -- August 28, 2007

**Purpose**

To obtain and discuss comments on the definition of hazardous drugs and the proposed updated list of drugs.

- Welcome and introductions
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>9:00 am</td>
<td>Welcoming remarks and introductions</td>
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<tr>
<td>9:15 am</td>
<td>NIOSH presentation on the process for updating the definition and list</td>
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<tr>
<td>10:00 am</td>
<td>Questions and presentations by public</td>
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<td>10:30 am</td>
<td>Questions and presentations by public</td>
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<td>10:45 am</td>
<td>Questions and presentations by public</td>
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<td>11:30 am</td>
<td>Questions and presentations by public</td>
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<tr>
<td>11:45 am</td>
<td>Lunch</td>
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<tr>
<td>12:30 pm</td>
<td>Questions and presentations by public</td>
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<tr>
<td>12:45 pm</td>
<td>Questions and presentations by public</td>
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<tr>
<td>1:15 pm</td>
<td>Break</td>
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<tr>
<td>2:00 pm</td>
<td>NIOSH closing remarks and plan/timeframe for finalizing definition</td>
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<td>2:15 pm</td>
<td>Adjourn</td>
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<td>3:00 pm</td>
<td>4:00 pm</td>
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<td>4:00 pm</td>
<td>5:00 pm</td>
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Niosh ALERT

Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings
Process to Review & Update the Definition of Hazardous Drugs

Step 1

Gather relevant scientific literature

Review relevant literature

No changes

Go to Step 2

Yes

Post plan for revising definition on HHS/CDC Web site

Prepare proposed changes to current hazardous drugs definition

Obtain Clearance by NIOSH OD

Post Federal Register Announcement of Public Meeting

Conduct announced public meeting

Revise proposed definition based on public comments received

Send comments to external peer reviewers

Prepare document detailing peer review comments

Post proposed definition on HHS/CDC Information Quality Peer Review Web site

Revise proposed definition based on peer review comments

Final document and NIOSH response sent to NIOSH OD for final approval

Revised definition of hazardous drugs incorporated into the Alert on the NIOSH Web site

NIOSH response to peer reviewers on HHS/CDC Quality Peer Review Web site
Panel of Expert Reviewers

Caroline Freeman (OSHA)
Melissa McDiarmid (U Maryland)
Bruce Naumann (Merck & Co, Inc.)
Marty Polovich (ONS)
Cynthia Reiley (ASHP)
Chuck Schwartz (Pfizer Global Environment,
Health, and Safety/PhRMA)
Debora Van der Sluis (Genentech/BIO)
S. Leigh Verbois (FDA)
Katie Slavin (ANA)
Vernon Wilkes (VHA)
Current NIOSH Definition of Hazardous Drugs

- Carcinogenicity
- Teratogenicity or other developmental toxicity ++
- Reproductive toxicity ++
- Organ toxicity at low doses ++
- Genotoxicity +

Structure and toxicity profiles of new drugs that mimic existing drugs determined hazardous by the above criteria.
Current NIOSH Definition of Hazardous Drugs

All drugs have toxic side effects, but some exhibit toxicity at low doses. The level of toxicity reflects a continuum from relatively nontoxic to production of toxic effects in patients at low doses (for example, a few milligrams or less). For example, a daily therapeutic dose of 10 mg/day or a dose of 1 mg/kg per day in laboratory animals that produces serious organ toxicity, developmental toxicity, or reproductive toxicity has been used by the pharmaceutical industry to develop occupational exposure limits (OELs) of less than 10 μg/m3 after applying appropriate uncertainty factors [Sargent and Kirk 1988; Naumann and Sargent 1997; Sargent et al. 2002]. OELs in this range are typically established for potent or toxic drugs in the pharmaceutical industry. Under all circumstances, an evaluation of all available data should be conducted to protect health care workers.

In evaluating mutagenicity for potentially hazardous drugs, responses from multiple test systems are needed before precautions can be required for handling such agents. The EPA evaluations include the type of cells affected and in vitro versus in vivo testing [51 Fed. Reg. 34006–34012 (1986)].
Current NIOSH List of Hazardous Drugs

Based on 6 criteria in definition

- 136 Drugs
- 89 Antineoplastics (AHFS)
- Others
- Antivirals
- Immunosuppressants
- Hormonal agents
- Monoclonal antibodies
Pfizer (2004)
Centers, Ann Arbor, MI (Revised 2/2003)
The University of Michigan Hospitals and Health
8/2002
The Northside Hospital, Atlanta, GA (Revised)
(Revised 9/2002)
The Johns Hopkins Hospital, Baltimore, MD
8/2002
The NIH Clinical Center, Bethesda, MD (Revised)

Hazards Drugs
Current NIOSH List of
Current FDA Warning for Cytotoxic Anticancer Drugs

“Procedures for proper handling and disposal of anticancer drugs should be considered. Several guidelines on this subject have been published. There is no general agreement that all of the procedures recommended in the guidelines are necessary or appropriate.”
Update to the NIOSH List of Hazardous Drugs (2007)

- All new FDA drug approvals since 2004
- All new FDA drug warnings since 2004
- Current NIH list of hazardous drugs
Drugs Reviewed for 2007 Update

Based on these three sources:

- 62 Drugs fit the NIOSH definition of a hazardous drug
- 87 Drugs do not fit the NIOSH definition of a hazardous drug
Summary of Process for Updating List of Hazardous Drugs

1) NIOSH review group

2) Public comment
   a) Public meeting (8/28)
   b) NIOSH docket (closes 9/20)

3) External peer review panel

4) NIOSH finalizes updated list of hazardous drugs
Contact Information

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