

Efficacy of Control Measures Used to Prevent Needlestick Injuries

The Hierarchy of Controls

Objectives:

- **Define the Hierarchy of Controls**
- **Describe the 5 main components in the Hierarchy and give an example of each**
- **Identify the efficacy of individual types of controls**

Hierarchy of Controls:

Most effective

- **Elimination of hazards**
- **Engineering Controls**
- **Administrative Controls**
- **Work Practice Controls**
- **Personal Protective Equipment**

Least Effective

Elimination of Hazard

- **Use of needle-less IV systems**
- **Removal of sharps and needles**
- **Elimination of unnecessary injections**

Elimination of Hazard

- **“Efficacy and Cost-Effectiveness of a Needleless IV Access System.” Yassi et al. 1995**
 - **Compared NSI for year before/after introduction**
 - **78.7% effective in reducing IV line-related NSI**
 - **Overall reduction of 43.4% in total NSI from all procedures**
 - **Also used universal precautions and education**

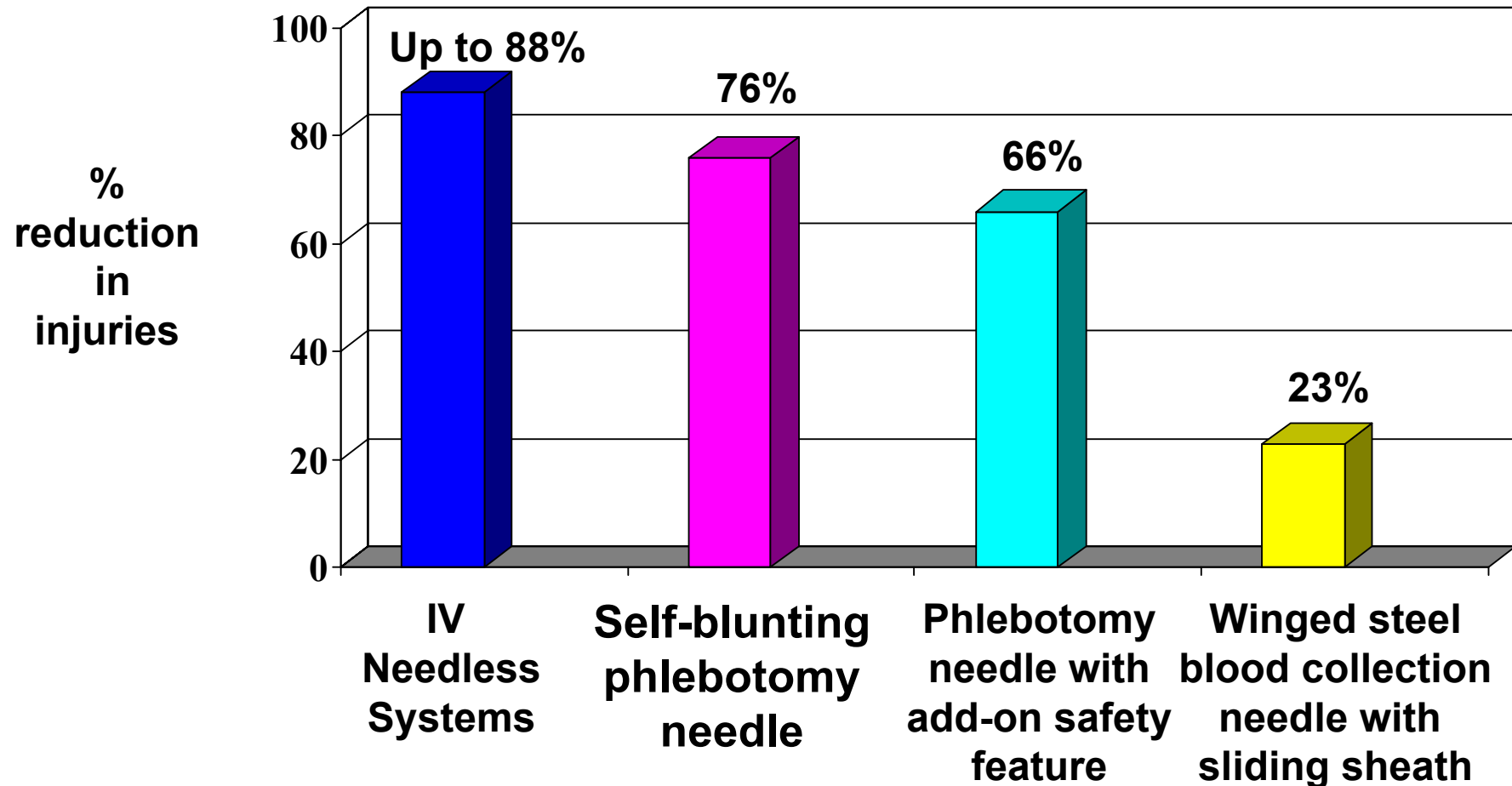
Engineering Controls

- **Needles that retract, sheathe, or blunt immediately after use**
 - **Active**
 - **Passive**
- **Sharps container styles**

Engineering Controls



Percent reduction in needlestick injuries for major safety device categories



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EPINet

Centers for Disease Control and Prevention

Engineering Controls

- **“A Review of Sharps Injuries and Preventive Strategies.” Trim et al. 2003**
 - Review of 7 studies of needle protective devices
 - **“results...demonstrate that needle protective devices reduced associated sharps injuries by 23-100%, with a mean of 71% compared with conventional products.”**

Administrative Controls

- **Policies limiting exposure to hazard:
Universal Precautions**
- **Allocation of resources demonstrating
commitment to HCW safety**
- **Needlestick prevention committee**
- **Consistent training on use of safe
devices**

Work Practice Controls

- **No re-capping**
- **Placing sharps containers at eye-level and at arms reach**
- **Emptying sharps containers before they are full**

Personal Protective Equipment

- **Barriers and filters between the worker and the hazard**
- **Gloves**
- **Gowns**

Useful Websites

- <http://www.cdc.gov/sharpssafety/>
Workbook for Designing, Implementing, and Evaluating a Sharps Injury Prevention Program
- <http://www.healthsystem.virginia.edu/internet/epinet/>
The International Health Care Worker Safety Center at the University of Virginia
- <http://www.cdc.gov/niosh/topics/bbp/safer/>
Safer Medical Device Implementation in Health Care Facilities
- <http://www.cdc.gov/niosh/2000-108.html>
NIOSH Alert: Preventing Needlestick Injuries in Health Care Settings