Safe Infection Devices … 10 Years Out, Where Are the Gaps?

Ed Krisiunas, WNWN International Inc.

A Webber Training Teleclass

Safe Injection Devices:
10 years out...

Where are the gaps?

Ed Krisiunas
WNWN International, Inc.

Hosted by Paul Webber
paul@webbertraining.com

www.webbertraining.com May 26, 2011

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SKYPE - Boutiquewaste

Objectives

1. Participants will have an understanding of the historical context of the safe injection devices
2. Participants will be able to identify current resources to evaluate safe injection devices
3. Participants will be able to identify sources of current data that discuss the impact of safe injection devices
4. Participants will be able to discuss global implications of safe injection practices.

Disclaimer

- The specific mention or photograph(s) of a safety needle or sharps container or other device or product is not an endorsement of that product or company.

The Federal Needlestick Safety and Prevention Act (H.R. 5178)

Signed into law November 6, 2000
Became fully effective in April 2001

ECRI Institute
The Discipline of Science. The Integrity of Independence.

TOP 10 HEALTH TECHNOLOGY HAZARDS FOR 2011

Reprinted from Volume 39 Issue 11
November 2010

8. Needlesticks and other sharps injuries

www.ecri.org ▶ HEALTH DEVICES NOVEMBER 2010

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References

University of Virginia Health System:

http://healthsystem.virginia.edu/internet/epinet/home.cfm

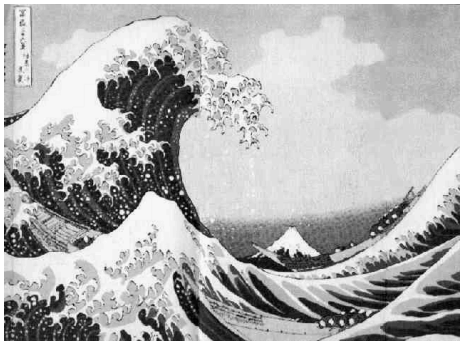
"Tenth Anniversary of the Needlestick Safety and Prevention Act: Mapping Progress, Charting a Future Path"

Nov. 5-6, 2010
Charlottesville, VA

A bit of history..

Edinburgh physician Alexander Wood and Frenchman physician Charles Pravda independently pioneered the hypodermic syringe for drug administration. Dr Wood first injected a patient with morphine in 1853. He gave a description of his innovation in a paper entitled "A New Method for Treating Neuralgia by the Direct Application of Opiates to Painful Points", published in the Edinburgh Medical and Surgical Journal (1855).

The first recorded fatality from a hypodermic-syringe induced overdose was Dr Wood's wife. The tragedy arose because she was injecting morphine to excess. Later, in the American Civil War (1861-65), an estimated 400,000 soldiers became addicted to opiates after liberal use or morphine injections as well as opium pills: "The returning veteran could be...identified because he had a leather thong around his neck and a leather bag (with) Morphine Sulfate tablets, along with a syringe and a needle issued to the soldier on his discharge...This was called the "Soldier's Disease". (Gerald Starkey)



The Breaking Wave Off Kanagawa by Hokusai

The first wave…

Development of the disposal hypodermic syringe

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1954
Glenn Murdoch – New Zealand
Disposable Hypodermic Syringe

D'Iorio Restaurant
Waterbury, Connecticut, USA (Monoject)
1957
Louie's Steakhouse
Columbus, Nebraska, USA (BD)

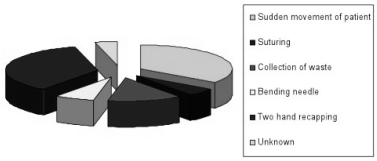
Numbers of needlestick injuries in one year and activities in which the injuries were incurred

Staff	No of accidents	Prevalence/ 100 staff	When injury occurred: During procedures	Handling and disposal of equipment	Handling of sharps containers	Handling of other refuse
Nursing	29	3·03	9	12	8	
Laboratory	10	3·94	6	4		
Porters	10	16·95	0	2	2	6
Domestics	7	3·76	0	2	1	4
Medical	4	2·96	2	1	1	
CSSD	2	16·67	0	2		
Others	2	0·25	0	2		
Total	64		17	25	12	10

CSSD = Central sterile supply department.

BMJ - Needlestick injuries in staff – Waldron 290 (6477): 1285 - 1985

Behaviors reported to be associated with NSIs



Source: AJIC; Occupational Exposure to needlestick injuries and hepatitis B vaccination coverage among HCWs in Egypt; Talaat et al; 2003.

Sharps Injuries Classification

During Procedure	After Procedure		
	Before Disposal	During & After Disposal: Container Related	During & After Disposal: Other
50%	30%	10%	10%

OSHA
United States Department of Labor

Occupational Safety and Health Administration
www.osha.gov

Bloodborne Pathogen Standard
29 CFR 1910.1030

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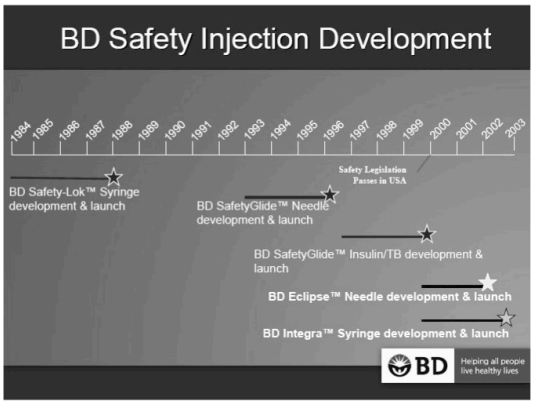
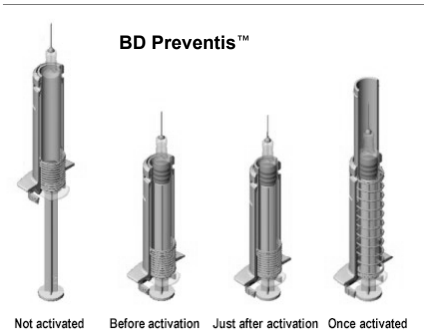


What is a "Safe Needle Device"?

A "safe needle" device incorporates engineering controls to prevent needlestick injuries before, during or after use through built-in safety features.

- **Passive safety features** remain in effect before, during and after use; health care workers do not have to activate them. Passive features enhance the safety design and are more likely to have a greater impact on prevention.



- **Active devices** require the health care worker to activate the safety mechanism. Failure to do so leaves the worker unprotected. Proper use by health care workers is the primary factor in the effectiveness of these devices.

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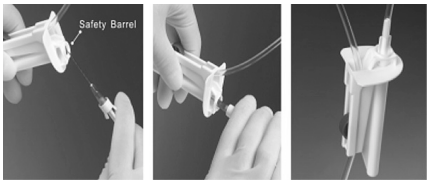
- An **accessory safety device** is a safety feature that is external to the device and must be carried to or temporarily or permanently fixed to the point of use. This design also is dependent on employee compliance and according to some researchers, is not desirable.

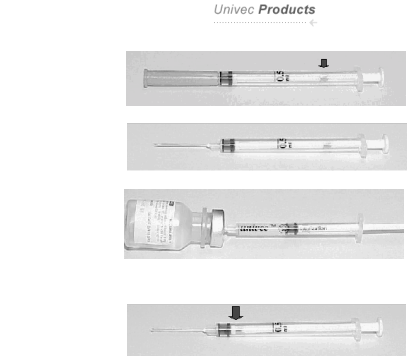
- An **integrated safety design** means that the safety feature is built in as an integral part of the device and cannot be removed. This design feature is preferred.

Safety I.V. Set syringe disposal kit. Insert - Lock - Dispose



Taiject Medical Device Co Ltd

Clave Needle-Free Connector



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Risks abound everywhere..

- In preparation
- In delivery
- In disposal

Risk Control Hierarchy

SOLUTION

- **Eliminate** *(e.g. Rx patches)*
- **Substitute** *(e.g. blunt suture n.)*
- **Isolate** *(e.g. nearby sharps container)*
- **Minimize** *(e.g. ESD)*
- **Admin Controls** *(e.g. no needle removal)*
- **PPE** *(e.g. double gloves)*

3 Broad Categories of Safety Devices

- IV Giving Sets
- Injections & Blood-taking
- Sharps disposal safety

Where to find safety products?
www.premierinc.com/safetystore
http://www.isips.org/the_list.php

Important Features of a Safety Device

- Minimizes Risk of BBP Exposure
- Clinically Approved
- Clinically Accepted
- Passive Safety
- Affordable

EVALUATING SAFER NEEDLES
A UNISON GUIDE
"NEEDLE SAFETY AT WORK"

www.unison.org.uk/acrobat/B337.pdf

Training for Development of Innovative Control Technology
USA

www.tdict.org

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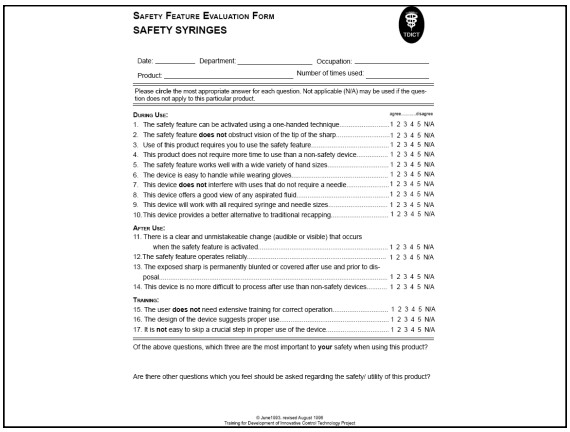


SAFETY FEATURE EVALUATION FORM
SAFETY SYRINGES

Date: _____ Department: _____ Occupation: _____

Product: _____ Number of times used: _____

Please circle the most appropriate answer for each question. Not applicable (N/A) may be used if the question does not apply to this particular product.

DURING USE: agree ..... disagree

1. The safety feature can be activated using a one-handed technique..... 1 2 3 4 5 N/A
2. The safety feature **does not** obstruct vision of the tip of the sharp..... 1 2 3 4 5 N/A
3. Use of this product requires you to use the safety feature..... 1 2 3 4 5 N/A
4. This product does not require more time to use than a non-safety device..... 1 2 3 4 5 N/A
5. The safety feature works well with a wide variety of hand sizes..... 1 2 3 4 5 N/A
6. The device is easy to handle while wearing gloves..... 1 2 3 4 5 N/A
7. This device **does not** interfere with uses that do not require a needle..... 1 2 3 4 5 N/A
8. This device offers a good view of any aspirated fluid..... 1 2 3 4 5 N/A
9. This device will work with all required syringe and needle sizes..... 1 2 3 4 5 N/A
10. This device provides a better alternative to traditional recapping..... 1 2 3 4 5 N/A

AFTER USE:

11. There is a clear and unmistakeable change (audible or visible) that occurs when the safety feature is activated..... 1 2 3 4 5 N/A
12. The safety feature operates reliably..... 1 2 3 4 5 N/A
13. The exposed sharp is permanently blunted or covered after use and prior to disposal..... 1 2 3 4 5 N/A
14. This device is no more difficult to process after use than non-safety devices..... 1 2 3 4 5 N/A

TRAINING:

15. The user **does not** need extensive training for correct operation..... 1 2 3 4 5 N/A
16. The design of the device suggests proper use..... 1 2 3 4 5 N/A
17. It is **not** easy to skip a crucial step in proper use of the device..... 1 2 3 4 5 N/A

Of the above questions, which three are the most important to **your** safety when using this product?

Are there other questions which you feel should be asked regarding the safety/ utility of this product?

© June1995 revised August 1998
Training for Development of Innovative Object Technology Project

Assessment of safety needles/safe needle devices - During Use:

1. Safety feature can be activated using a one handed technique
2. Safety feature does not obstruct vision of the tip of the sharp
3. Use of this product requires you to use the safety feature
4. Product does not require more time to use than a non-safety device
5. Safety feature works well with a wide variety of hand sizes
6. Device is easy to handle while wearing gloves
7. Device does not interfere with uses that do not require a needle
8. Device offers a good view of any aspirated fluid.
9. Device will work with all required syringe & needle sizes

After Use

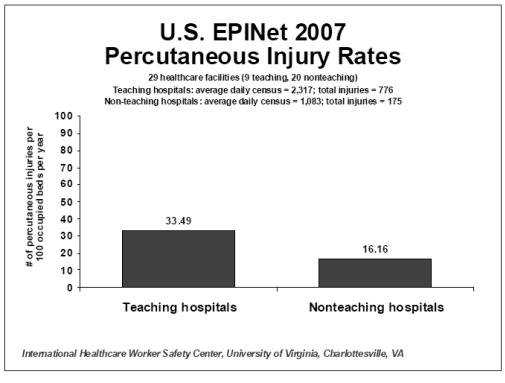
10. There is a clear and unmistakable change (audible or visible) that occurs when the safety feature is activated.
11. The safety feature operates reliably
12. The exposed sharp is permanently blunted or covered after use and prior to disposal
13. This device is no more difficult to process after use than non-safety devices

Training

14. User does not need extensive training for correct operation
15. The design of the device suggests proper use
16. It is not easy to skip a crucial step in the proper use of device

Of the above questions, which three are the most important to your safety when using this product?

Are there other questions that you feel should be asked regarding the safety/utility of this product?



Massachusetts Sharps Injury Surveillance System
Occupational Health and Surveillance Program
Massachusetts Department of Public Health

www.mass.gov/dph/ohsp

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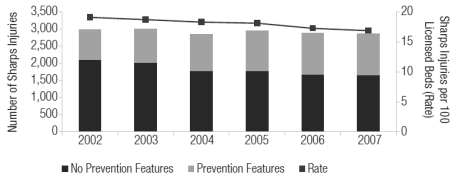
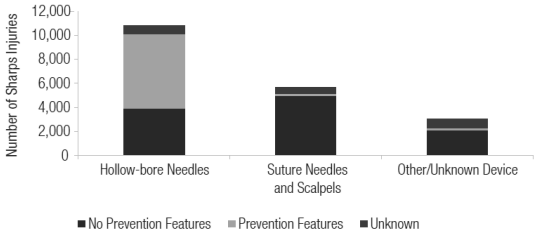
www.cste.org/webpdfs/HealthofMAchapter9.pdf

Figure 9.6 Number and Rate of Sharps Injuries Among Hospital Workers

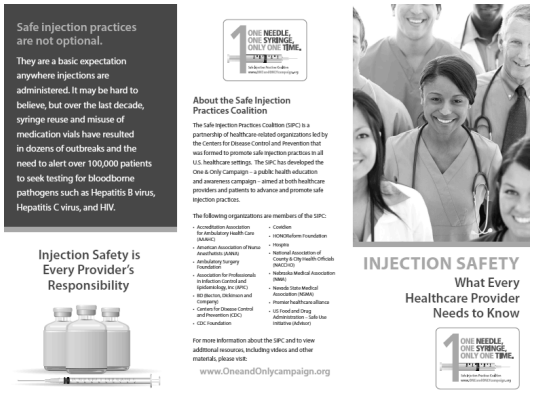


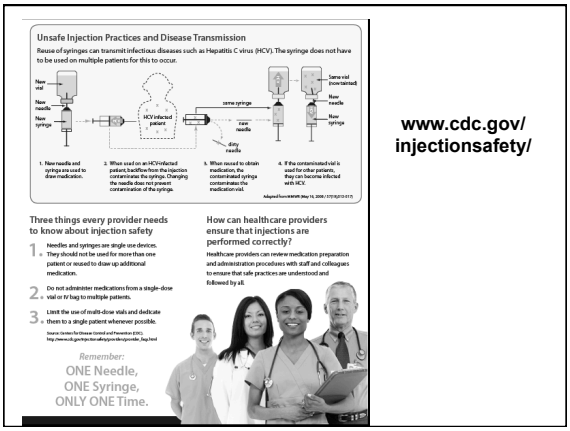
Source: MDPH Sharps Injury Surveillance System, 2002–2007.
*Statistically significant decrease in rate over time (p< 0.05).

Figure 9.7 Sharps Injuries among Hospital Workers by Device and Presence of Engineered Sharps Injury Prevention Features



Source: MDPH Sharps Injury Surveillance System, 2002–2007.





www.cdc.gov/injectionsafety/

OSHA Inspections 1910.1030 Bloodborne Pathogen Standard

Before the NSPA (1992 – 2000)

- Total # Inspections* – Approx. 17,983
  - Total # un-programmed – 12,252 (68%)
  - Total # programmed – 5731 (32%)

After the NSPA (2001 – 2010)

- Total # Inspections* – Approx. 19,790
  - Total # un-programmed – 10,068 (51%)
  - Total # programmed – 9720 (49%)

Fed States & State Plan States using 29 CFR 1910.1030

10 YearsLater: Where are Now

- Dramatic increase in use of engineered devices
- To what extent ?
- Is there backsliding ?
- How are HCWS being involved in evaluation and selection

Dr. June Fischer – TDICT Nov. 4 , 2011

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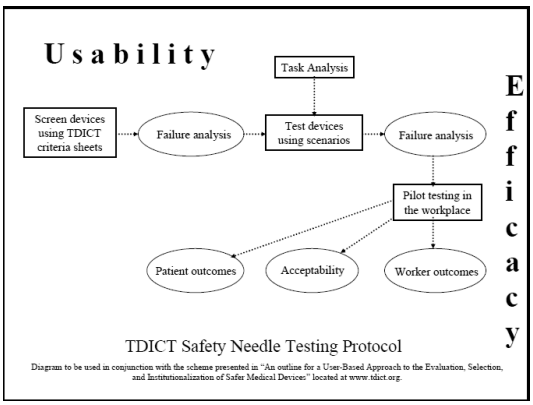
Boal WL, Leiss JK, Ratcliffe JM, Sousa S, Lyden JT, Li J, Jagger J. The national study to prevent blood exposure in paramedics: rates of exposure to blood. Int Arch Occup Environ Health 2010 83:191-9. Available at:http://www.ncbi.nlm.nih.gov/pubmed/19437031?dopt=Abstract

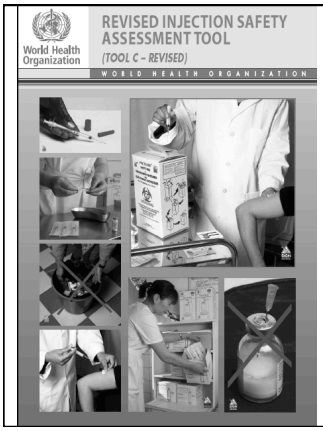
Jagger J, Berguer R, Phillips EK, Parker G, Gomaa AE. Increase in sharps injuries in surgical settings versus non-surgical settings after passage of national needlestick legislation. Journal of the American College of Surgeons 2010 (April);210(4):496-502.



European Biosafety Network

Directive 2010/32/EU – Implementation Update No 1

The June 2010 publication of EU Council Directive 2010/32 /EU, on the prevention of sharps injuries in the hospital and healthcare sector, highlighted the importance of consistently implementing mandatory measures to prevent these potentially fatal injuries. Existing legislation has largely proved to be ineffective. The Directive must be implemented in all Member States by 11 May 2013 at the latest.



www.who.int/injection_safety/Injection_safety_final-web.pdf

SIGN Safe Injection Global Network

The "Safe Injection Global Network" (SIGN) was established in 1999 as a voluntary coalition of stakeholders aiming to achieve safe and appropriate use of injections throughout the world. The WHO department of Essential Health Technologies provides the secretariat for the network.

http://www.who.int/medical_devices/collaborations/network/en/

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SIGN Safe Injection Global Network

- Standards for autodisable syringes
- Improved immunization practices
- Improved waste disposal practices
- New guidelines on phlebotomy

http://www.who.int/injection_safety/en/

Next meeting: Dubai, UAE 9-11 November 2010

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MMIS
Making Medical Injections Safer

5 year project – 2004-2009

Part of the USA President's Emergency Plan for AIDS Relief (PEPFAR) focusing on countries with high HIV prevalence

Contractors : John Snow, Inc. (JSI), Program for Appropriate Technology in Health (PATH), Academy for Educational Development (AED), and the Manoff Group,

Centers for Disease Control and Prevention (CDC) and the US Agency for International Development (USAID) awarded funds for the implementation of "Rapid Interventions to Decrease Unsafe Injections" in 11 countries.

Focus was African and Caribbean countries

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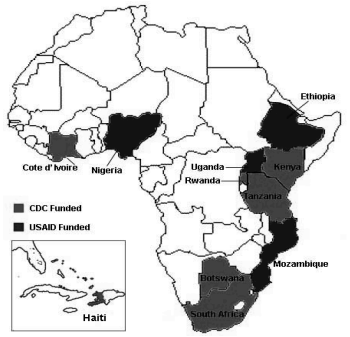
MMIS Clountries



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MMIS
Making Medical Injections Safer

http://portalprd1.jsi.com/portal/page/portal/MMIS_WEBSITE_PGG/MMIS_HOMEPAGE_PG

- Injection safety and infection control
- Interpersonal communication
- Health care waste management
- Commodity supply and logistics
- Supportive supervision
- Advocacy and behavior change communication
- Other injection safety related topics

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Final Comments

- Many products exist in the market place
- Injuries have been reduced
- Find the best product for the application
- Safer devices are generally more expensive than conventional devices, but the total additional cost for a facility is a small fraction of the total costs of appropriate management of occupational injuries.

Thank –You!

COMING SOON …

30 May	**(Free Teleclass – Live Broadcast from CHICA-Canada Conference) Benchmark and Performance Measurement** Speakers: Zahir Hirji, Bridgepoint Hospital (Toronto) and Leslie Forrester, Vancouver Coastal Health Sponsored by GOJO (www.gojo.com)
9 June 11	**Using Checklists to Prevent Healthcare Associated Infections** Speaker: Prof. Peter Pronovost, Johns Hopkins University Sponsored by: Virox Technologies Inc (www.virox.com)
14 June 11	**(Free Teleclass – 10th Anniversary Lecture) Ten Years of Infection Prevention and Control: How Far Have We Come?** Speaker: Prof. Syed A. Sattar, University of Ottawa Sponsored by: Virox Technologies Inc (www.virox.com) and Diversey (www.diversey.com)
15 June 11	**(South Pacific Teleclass) Pandemic, Public Health and Emergency Care: Contemporary Trends and New Challenges for Infection Control and Infectious Diseases** Speaker: Prof Ramon Shabam, Griffith University, Australia

www.webbertraining.com/schedulep1.php

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