

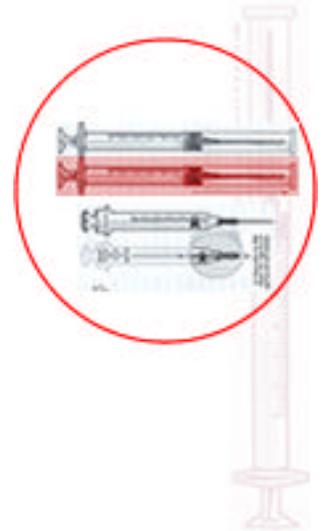
NIOSH recommends that health care facilities use safer medical devices to protect workers from needlestick and other sharps injuries. Since the passage of the Needlestick Safety and Prevention Act in 2000 and the subsequent revision of the OSHA Bloodborne Pathogen Standard, all health care facilities are required to use safer medical devices.



## SAFER MEDICAL DEVICE IMPLEMENTATION IN HEALTH CARE FACILITIES

### SHARING LESSONS LEARNED

NIOSH has asked a small number of health care facilities to share their experiences on how they implemented safer medical devices in their settings. These facilities have agreed to describe how each step was accomplished, and also to discuss the barriers they encountered and how they were resolved, and most importantly, lessons learned.



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## Phase 4: Conducting a Device Evaluation

Our full service home health agency services the inner city, suburban and rural areas. Our organization is made up of 390 culturally diverse employees, 69% providing direct patient care. We carry an average daily census of 2800 patients and provide comprehensive home health and hospice services for adult, maternal and pediatric clients.

### What safer medical devices did we choose to evaluate?

As indicated in our Phase 2 and 3 reports, the Sharps Injury Prevention Team identified **venipuncture (blood drawing)** and **injection devices** as high priority for the agency. A multidisciplinary team of nurses who draw blood and give injections to adult, pediatric and maternal patients were chosen to pilot and evaluate the devices in the skills lab, and next in the home health field.

### Training:

Training was provided in a one-hour period by the supply manager to the team of providers in charge of evaluating the devices. We chose to train for all devices during one session in order to limit the nurses' time out of the field. This allowed us to save about three hours for each nurse involved in the training. (Note that our staff conducted the training instead of a vendor representative because the product vendors were not able to meet the time frame required by our agency.)

1. The supply manager, who is also a RN and wound, ostomy and continence nurse specialist, researched the products in advance and was familiar with the use of each product prior to the training. The supply manager called the product vendors and additional information (practical tips) was provided by phone.
2. The manufacturer's user instructions were provided to the staff.
3. An artificial arm was used, and a demonstration with verbal instruction was provided.
4. The devices were readily available to the staff at the training, and each staff member had an opportunity to use the device on the artificial arm and ask questions. Most of the staff were a part of the identification and screening phase, and were already familiar with the equipment.
5. The device evaluation process and expectations were explained to the staff and supplies were handed out.

### Evaluation of the Devices:

The process used to evaluate the device was as follows:

1. Evaluating staff members were provided with ample equipment.
2. An evaluation form developed by the team was provided (see attachment).
3. A minimum of 5 patients per device was required before the nurse could complete the written evaluation form.

4. The staff were given two months time to evaluate the devices and turn in the forms to the supply manager. (Most of the staff were able to complete the evaluations before the two-month deadline.)

### **Criteria for Device Evaluation:**

As in the screening phase, we used the NIOSH criteria for desirable characteristics, rating the device on a scale from 1-5 on each of the following:

- Needleless (injection and venipuncture devices are not needleless, however the blood transfer devices were examined as well)
- Safety feature is an integral part of the device
- Passive activation requiring no activation by the user preferred
- Safety feature engaged with a single-handed technique
- Activation allows the clinician's hands to remain behind the exposed sharp.
- The user can easily tell whether the safety feature is activated.
- The safety feature cannot be deactivated
- Device performs reliably (and consistently)
- Device easy to use (not cumbersome, and works quickly, narrowing the window of vulnerability of potential exposure)
- Device safe and effective for patient care
- Staff member's overall opinion of the device

**Lesson learned:** Needed to include additional sufficient information. We should have included the patient in the evaluation here. For example, the 1-10 pain rating for injection or venipuncture, and their perception of safety.

### **Analyzing Data:**

The evaluation forms were returned to the supply manager and tallied, giving a total score for each device. The personal notations/ comments were listed. These data were collectively presented to the team and a decision was made regarding the safer medical devices our agency would use based on the score and overall opinion of the evaluator.

If an evaluator did not receive a referral for blood work on enough patients to conduct a fair evaluation (5), the evaluator telephoned the facilitator who in turn attempted to increase those assignments to that evaluator. If the referrals were not possible in the area in which the evaluator worked, the material was returned. This only occurred one time.

The staff and management were given an opportunity to critique the evaluation process informally by phone. No changes were recommended.

## **Lessons Learned:**

We have gone through the evaluation process more than once for safer butterfly devices. Once the initial decision was made and remaining staff were trained, complaints from the field staff were communicated to the facilitator about the safer butterfly device. It was apparent that the field staff needed to be re-taught because the device was not always being used in the fashion recommended by the manufacturer. This caused a decrease in accuracy when drawing the blood. To come to this conclusion, the facilitator spoke with those staff members that complained about the device. A demonstration by the user was made on the artificial arm. The mistakes made by the user were obvious to the facilitator.

### *Greater proficiency noted by evaluating team than field staff:*

The initial team seemed to take more time to learn about the equipment before using it, possibly due to the responsibility perceived by the evaluator.

The evaluator was held to a greater proficiency and needed to become familiar with various safer devices to be evaluated. The field staff seemed to be in a hurry to learn about the devices and get on their way. A solution that would have saved additional training time, would be to set specific parameters for proficiency in the skills lab, rather than allowing the user to determine when they felt comfortable using the device.

**Role of sharps injury prevention team during the evaluation:** The sharps injury prevention team is responsible for analyzing the results of the evaluation, and collectively making the ultimate decision in choosing the safer device. The team also planned the necessary training procedures and follow up. The implementation/ monitoring phase will be explained in the Phase 5 report.

## Time Incurred

The time it took for the Agency to Evaluate one safer medical device is included below.

Type of Staff	Hours
Management	12
Administrative Assistant	5
Clinicians	18
Administration	.5
Total	35.5 hours

Other, non-labor items:

Item
Computer system with Internet access
Xeroxing, paper
Safer Medical Devices
Artificial arms
Space for meetings

## Safer Medical Device Evaluation Form

Name: \_\_\_\_\_

Number Times Used: \_\_\_\_\_

Department: \_\_\_\_\_

Device	Rating 1-5 agree- disagree
<b>Needleless</b>	
<b>Safety feature is integral part</b>	
<b>Passive activation (requires no activation by user)</b>	
<b>Single handed technique to engage safety feature</b>	
<b>Hands remain behind the exposed sharp</b>	
<b>Easy to tell safety feature activated</b>	
<b>Cannot be deactivated</b>	
<b>Performs reliably and consistently</b>	
<b>Easy to use</b>	
<b>Safe and effective for patient care</b>	
<b>Overall opinion of the device (your comments):</b>	