



Safer Needle & Sharps Device Usage Survey

Acknowledgements

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A Survey of Health Care Providers to Collect Information About the Use of Needleless Systems and Other Safe Needle Devices

Section 1: Authorization for the Survey

The survey was authorized by the Maine Legislature during the 119th Legislative Session. Under Resolve 115¹ the Department of Labor and the Department of Human Services shall conduct a survey of public and private health care providers and field providers, including, but not limited to, emergency medical technicians, to collect information about:

- 1. The use of needleless systems and other safe needle devices by employees; and
- 2. The process used or to be used by the providers to comply with federal regulations or state rules regarding engineering controls to protect employees against exposure to bloodborne pathogens.

Section 2: Research Methodology

A: Survey Design

A cross-sectional design was selected because it is the most appropriate method for gathering descriptive data such as utilization data of needleless systems and other safe needle devices. In addition, a cross-sectional survey will enable the researchers to assess the prevalence of needlesticks and sharps injuries.

B: Survey Instrument

The Bureau of Labor Standards (BLS) designed a survey using resources from the International Health Care Worker Safety Center at the University of Virginia² and from the Service Employees International Union³. A panel of experts reviewed the survey for content validity. (See Appendix A.)

C: Sampling Frame

The sampling frame included all licensed providers working in the state who may need to use needles and other sharp instruments in the course of their work. Mailing lists were obtained from the Department of Human Services, Division of Licensing and Certification, Maine Emergency Medical Services and the Board of Dental Examiners.

D: Survey Implementation

Surveys were mailed to providers with an enclosed cover letter and a pre-paid postage return envelope. Follow-up phone calls were made to non-respondents to increase the response rate of the survey.

¹119th Maine Legislative Session, H.P. 1532 L.D. 2185 – http://janus.state.me.us/legis/ros/lom/LOM119th/Res90-137/RES90-137-25 htm

² http://www.med.virginia.edu/medcntr/centers/epinet/home.html

³ Safer Needle and Sharps Device Usage Survey, SEIU Washington, D.C.

Section 3: Results

A: Response Rate

The sampling frame consisted of 1,208 health care providers and field providers including emergency medical technicians. An overall response rate of 69.5% (840) was attained. Of these 840 providers, 67.9% (570) reported using some form of safer needle or sharps device. Table 1 describes the response rate by provider category, while Figure 1 shows the distribution of the type of device used by the providers.

Table 1. Response rate by provider category

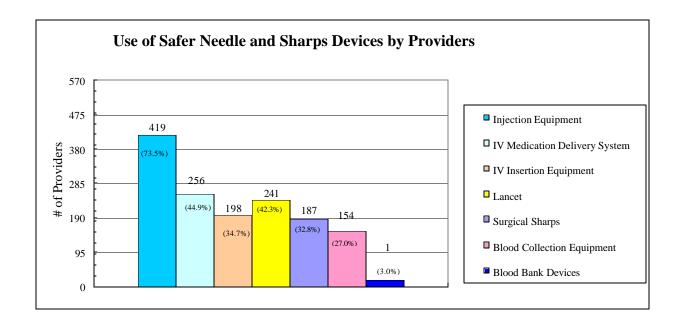
Provider (combined)*	% of Surveys Received	# of Responses	# of Surveys Mailed
Ambulance	61.4%	121	197
Dentist	72.8%	449	617
Dialysis	91.7%	11	12
Health Care	72.1%	49	68
Home Health	70.8%	46	65
Hospital	97.7%	42	43
Long Term Care	57.8%	115	199
PHN* & Blood Bank	100.0%	7	7
Total	69.5%	840	1,208

^{*}Public Health Nurse

B: Use of safer needle and sharps devices by providers

The four most common types of equipment used as reported by the providers were injection equipment, IV medication delivery system, IV insertion equipment and lancet.

Figure 1. Use of safer needle and sharps devices by providers (n=570)



C: The use of safer needle and sharps devices by the seven major provider categories

Table 2 shows the use of safer needle and sharps devices by the seven major provider categories. The results show that hospitals and ambulance services have a higher rate of use of the following equipment: a) Injection equipment, b) IV Medication Delivery system, c) IV Insertion Equipment and d) Lancet when compared to the other categories of providers.

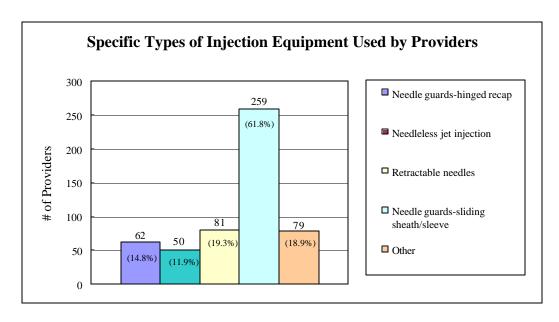
Table 2. Use of safer needle and sharps devices by the seven major provider categories

Device Category	Am lar (n =	ice		itist 449)		lysis = 6)	Ca	alth ire : 49)	Hor Hea (n =	ılth	Hosp (n =		Term	ng Care 115)	Blo Ba	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Injection Equipment	79	65.3	220	49.0	6	54.5	13	26.5	10	21.7	31	73.8	60	52.2	0	0.0
IV Medication Delivery system	95	78.5	24	5.3	6	54.5	13	26.5	26	56.5	40	95.2	52	45.2	0	0.0
IV Insertion Equipment	89	73.6	7	1.6	2	18.2	6	12.2	15	32.6	33	78.6	45	39.1	1	14.3
Lancet	71	58.7	2	0.4	2	18.2	27	55.1	20	43.5	35	83.3	83	72.2	1	14.3
Surgical Sharps	18	14.9	135	30.1	2	18.2	4	8.2	22	47.8	6	14.3	0	0.0	0	0.0
Blood Collection Equipment	48	39.7	4	0.9	6	54.5	21	42.9	18	39.1	32	76.2	24	20.9	1	14.3
Blood Bank Devices	1	0.8	0	0.0	0	0.0	0	0.0	0	0.0	15	35.7	0	0.0	1	14.3

D: Specific types of injection equipment used by providers

Of the different types of injection equipment used, 50 providers (11.9%) reported using needleless jet injection devices, while 19.3% (81) use retractable needles. The most commonly used injection equipment was the needle guards-hinged recap type. Over 61.0% (259) of the providers reported using this type of equipment.

Figure 2: Specific types of injection equipment used by providers



E: Use of different injection devices by provider category

About 26.4% (32) of ambulance services reported using needleless jet injection, while 14.3% (6) of the hospitals use such a device. About 37.0% (45) of the ambulances and 31.0% (13) of the hospitals reported using retractable needles. Table 3 describes the distribution of use by provider category.

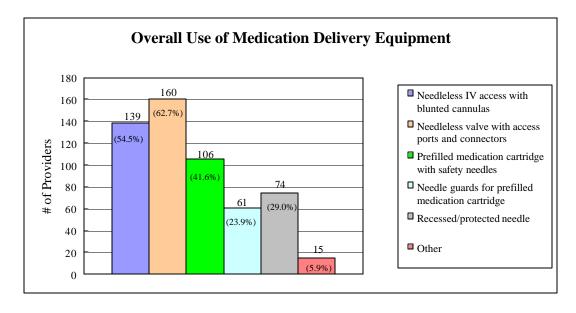
Table 3: Use of different injection devices by provider category

									Но	me			Long	Term	PH	N &
	Ambı	ılance	Der	ntist	Dial	ysis	Healtl	n Care	Hea	alth	Hos	pital	Ca	are	Blood	Bank
	(n =	121)	(n =	449)	(n =	11)	(n =	49)	(n =	46)	(n =	42)	(n =	115)	(n =	= 7)
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Injection Equipment	79	65.3	220	49.0	6	54.5	13	26.5	10	21.7	31	73.8	60	52.2	0	0.0
Needle guards-hinged recap	7	5.8	34	7.6	2	18.2	4	8.2	1	2.2	9	21.4	5	4.3	0	0.0
Needleless Jet Injection	32	26.4	4	0.9	0	0.0	2	4.1	4	8.7	6	14.3	2	1.7	0	0.0
Retractable Needles	45	37.2	2	0.4	0	0.0	4	8.2	2	4.3	13	31.0	15	13.0	0	0.0
Needle guards-sliding																
sheath	38	31.4	136	30.3	6	54.5	6	12.2	6	13.0	21	50.0	46	40.0	0	0.0
Other	6	5.0	58	12.9	2	18.2	0	0.0	1	2.2	6	14.3	6	5.2	0	0.0

F: IV medication delivery equipment

Over 60.0% (160) of the providers reported using the needleless IV type with blunted cannulas, while 54.5% (139) reported using the needleless valve type with access ports and connectors.

Figure 3: IV medication delivery equipment



G: Use of IV medication delivery systems by provider category

The survey found that about 70.0% (30) of the hospitals reported using needleless IV type with blunted cannulas, while 64.3% (27) reported using the needleless valve type with access ports and connectors.

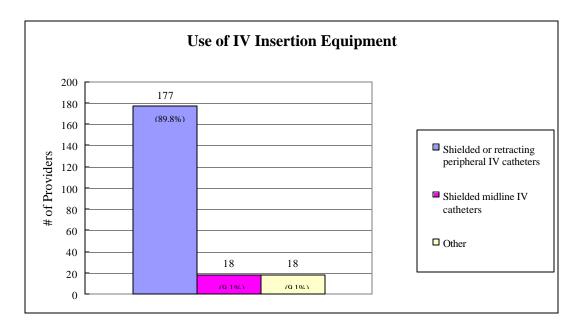
Table 4: Use of IV medication delivery systems by provider category

	Ambi	ılance 121)		ntist 449)	Dial (n =	-		n Care : 49)	He	ome alth = 46)		pital = 42)	Ca	Term are 115)	Blood	N & l Bank = 7)
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
IV Medication Delivery system	95	78.5	24	5.3	6	54.5	13	26.5	26	56.5	40	95.2	52	45.2	0	0.0
Needleless IV Access with Blunted Cannulas	50	41.3	2	0.4	2	18.2	6	12.2	15	32.6	30	71.4	34	29.6	0	0.0
Needleless Valve with access ports	55	45.5	3	0.7	4	36.4	8	16.3	18	39.1	27	64.3	45	39.1	0	0.0
Prefilled medication cartridge	54	44.6	9	2.0	2	18.2	3	6.1	7	15.2	14	33.3	17	14.8	0	0.0
Needle guards for pre- filled medication	33	27.3	9	2.0	1	9.1	3	6.1	3	6.5	5	11.9	7	6.1	0	0.0
Recessed/protected needle	36	29.8	6	1.3	3	27.3	1	2.0	3	6.5	10	23.8	15	13.0	0	0.0
Other	5	4.1	1	0.2	1	9.1	2	4.1	2	4.3	3	7.1	1	0.9	0	0.0

H: Use of the IV insertion equipment

About 90.0% (177) of the providers reported using shielded or retracting peripheral IV catheters.

Figure 4: Use of the IV insertion equipment



I: Use of IV insertion equipment by provider category

The major users of IV insertion equipment are ambulance services and hospitals.

Table 5: Use of IV insertion equipment by provider category

		ılance		ntist	Dial	ysis		n Care		me alth		pital		Term are		N & l Bank
	(n =	# % # % ;		(n =	11)	(n =	49)	(n =	46)	(n =	42)	(n =	115)	(n =	= 7)	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
IV Insertion	on															
Equipment	89	73.6	7	1.6	2	18.2	6	12.2	15	32.6	33	78.6	45	39.1	1	14.3
Shielded or retracting peripheral IV catheters	82	67.8	2	0.4	1	9.1	6	12.2	12	26.1	32	76.2	42	36.5	0	0.0
Shielded midline IV																
catheters	6	5.0	1	0.2	1	9.1	0	0.0	2	4.3	5	11.9	3	2.6	0	0.0
Other	6	5.0	4	0.9	1	9.1	0	0.0	2	4.3	2	4.8	2	1.7	1	14.3

J: Use of lancets by provider category

The retractable type of lancet is the most commonly used among all providers surveyed. There were three ambulance services that reported using laser lancets.

Table 6: Use of lancets by provider category

		ılance 121)		ntist 449)		ysis 11)		h Care 49)	Hea	me alth 46)		pital = 42)	Č	Term are 115)	Blood	N & l Bank = 7)
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Lancet	71	58.7	2	0.4	2	18.2	27	55.1	20	43.5	35	83.3	83	72.2	1	14.3
Laser lancet	3	2.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Retracting lancet	50	41.3	2	0.4	2	18.2	23	46.9	19	41.3	35	83.3	77	67.0	1	14.3
Strip lancet	16	13.2	1	0.2	0	0.0	1	2.0	0	0.0	0	0.0	3	2.6	0	0.0
Other	7	5.8	0	0.0	0	0.0	4	8.2	1	2.2	1	2.4	3	2.6	0	0.0

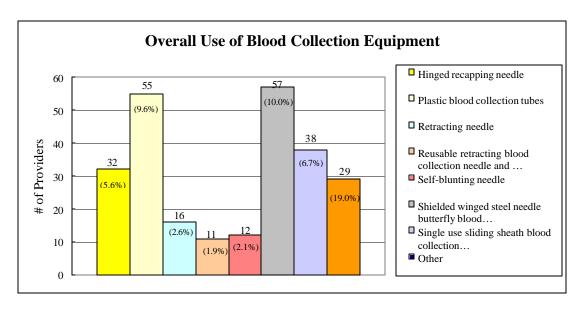
K: Use of surgical devices by provider category

Table 7: Use of surgical devices by provider category

	Ambı (n =	ılance 121)		ntist 449)	Dial (n =	-		n Care : 49)	Hea	me alth (46)		pital = 42)	Ča	Term are 115)	Blood	N & l Bank = 7)
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Surgical Sharps	18	14.9	135	30.1	2	18.2	4	8.2	22	47.8	6	14.3	0	0.0	0	0.0
Quick-release scalpel blade handles	4	3.3	70	15.6	0	0.0	1	2.0	3	6.5	0	0.0	0	0.0	0	0.0
Retracting scalpel	2	1.7	0	0.0	0	0.0	0	0.0	6	13.0	2	4.8	0	0.0	0	1.0
Blunted suture needles	0	0	13	2.9	1	9.1	0	0.0	13	28.3	3	7.1	0	0.0	0	0.0
Cut- or puncture- resistant barrier products	4	3.3	38	8.5	1	9.1	3	6.1	10	21.7	3	7.1	0	0.0	0	0.0
Other	10	8.3	34	7.6	0	0.0	0	0.0	8	17.4	0	0.0	0	0.0	0	0.0

L: Use of blood collection devices

Figure 5: Use of blood collection devices



M: Use of blood collection devices by provider category

Table 8: Use of blood collection devices by provider category

	Ambi	ılance 121)		ntist 449)	Dial (n =	lysis 11)		n Care (49)	Hea	ome alth = 46)		pital = 42)	Č	Term are 115)	Blood	N & l Bank = 7)
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Blood Collection																
Equipment	48	39.7	4	0.9	6	54.5	21	42.9	18	39.1	32	76.2	24	20.9	1	14.3
Hinged recapping needle	1	0.8	0	0.0	1	9.1	6	12.2	3	6.5	16	38.1	4	3.5	1	14.3
Plastic blood collection tubes	14	11.6	0	0.0	3	27.3	11	22.4	4	8.7	14	33.3	9	7.8	0	0.0
Retracting needle	3	2.5	0	0.0	0	0.0	2	4.1	2	4.3	7	16.7	2	1.7	0	0.0
Reusable retracting blood collection*	4	3.3	0	0.0	0	0.0	0	0.0	0	0.0	3	7.1	4	3.5	0	0.0
Self-blunting needle	3	2.5	0	0.0	0	0.0	0	0.0	0	0.0	6	14.3	3	2.6	0	0.0
Shielded winged steel needle butterfly**	5	4.1	0	0.0	0	0.0	7	14.3	11	23.9	18	42.9	15	13.0	1	14.3
Single use sliding sheath blood***	27	22.3	0	0.0	0	0.0	2	4.1	3	6.5	3	7.1	2	1.7	1	14.3
Other	9	7.4	4	0.9	2	18.2	1	2.0	5	10.9	5	11.9	2	1.7	1	14.3

^{*} Reusable retracting blood collection needle and tube holder with sharps container

^{**} Shielded winged steel needle butterfly blood collection needles

^{***} Single use sliding sheath blood collection needle and tube holder

N: Use of limited blood bank devices by provider category

Table 9: Use of limited blood bank devices by provider category

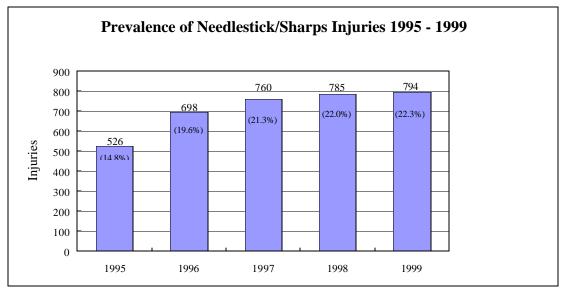
		ılance 121)	-	ntist 449)	Dial (n =	ysis 11)		n Care (49)	Hea	me alth : 46)		pital 42)	Č	Term are 115)	Blood	N & l Bank = 7)
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Blood Bank Devices	1	0.8	0	0.0	0	0.0	0	0.0	0	0.0	15	35.7	0	0.0	1	14.3
Segment sampling devices	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	15	35.7	0	0.0	1	14.3
Others	1	0.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Section 4: Reporting and Prevalence of Needlestick/Sharps Injuries 1995-1999

A: Reporting of needlestick/sharps injuries

Of the 840 respondents, 463 (55.1%) indicated they had a data collection system in addition to that required by Occupational Safety & Health Administration (OSHA). The survey results indicate that the number of needlestick/sharps injuries has been on the rise since 1995. The data presented in Figure 6 includes clean as well as contaminated needlestick or sharps injuries.

Figure 6: Prevalence of needlestick/sharps injuries 1995-1999*



^{*} May include non-contaminated needlesticks.

B: Prevalence of needlestick/sharps injuries by provider category: 1995-1999

Hospitals and dentists reported the highest numbers of needlestick and sharps injuries of all the providers surveyed. **This finding must be interpreted with caution**

In order to assess the risk of needlestick and sharps injuries among different providers, the odds ratio must be computed using the number of hours worked by workers and an investigation of other possible contributing risk factors. This is beyond the scope of this survey.

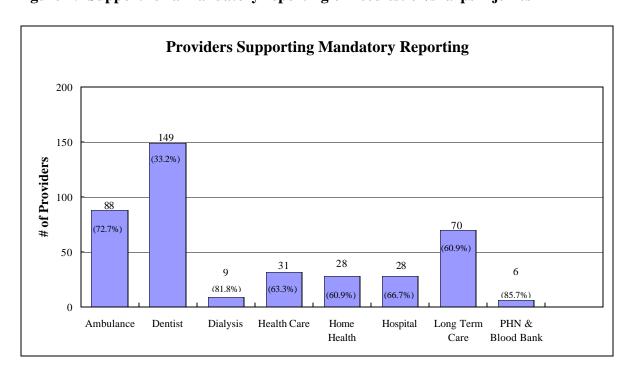
Table 10: Prevalence of needlestick/sharps injuries by provider category: 1995-1999

Provider	1995	1996	1997	1998	1999
Ambulance	0	2	13	10	9
Dentist	18	16	33	41	49
Dialysis	3	8	2	9	6
Health Care	7	4	4	8	7
Home Health	8	9	16	19	27
Hospital	480	639	665	667	662
Long Term Care	10	20	27	31	34
PHN & Blood Bank	0	0	0	0	0
Total	526	698	760	785	794

C: Support for a mandatory reporting of needlestick/sharps injuries

A total of 409 (48.7%) providers indicated they would support a mandatory reporting of needlestick/sharps injuries in addition to what is required by OSHA and the Maine Workers' Compensation Board (WCB). OSHA and WCB only require reporting of injuries if there is time lost from work or medical attention rendered (beyond first aid).

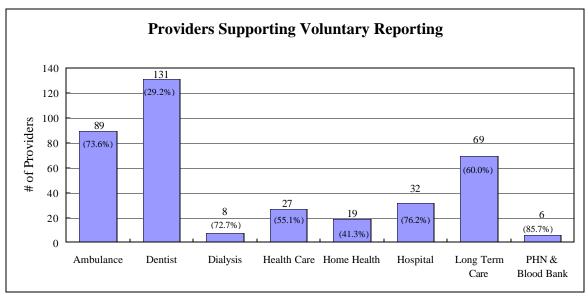
Figure 7: Support for a mandatory reporting of needlestick/sharps injuries



D: Support for a voluntary reporting program for needlestick/sharps injuries

A total of 381 (45.4%) providers indicated they would support a voluntary reporting program.*

Figure 8: Support for a voluntary reporting program for needlestick/sharps injuries

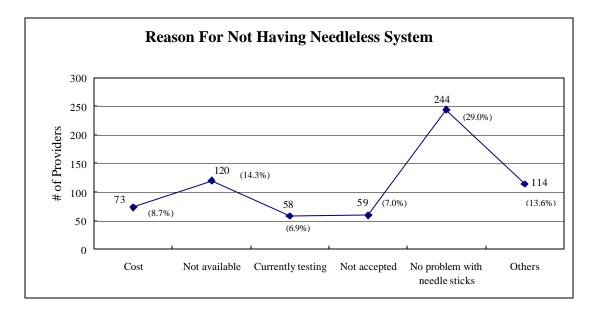


^{*(}Note: There were a number of providers who indicated they wanted additional information concerning mandatory and voluntary reporting before indicating whether or not they would support mandatory or voluntary reporting.)

E: Reasons for not having a needleless system

Of the providers, 244 (29.0%) reported having no problems with needlestick/sharps injuries as a reason for not having a needleless system.

Figure 9: Reasons for not having a needleless system



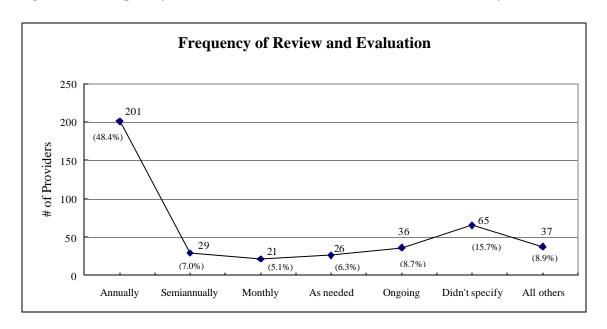
F: Reasons for not having a needleless system by provider category

Table 11: Reasons for not having a needleless system by provider category

Reason		ılance 121)		ntist 449)		ysis 11)	Health (n =		Ho Hea (n =	alth		pital : 42)	C	Term are 115)	Blood	N & I Bank = 7)
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Equipment Cost	12	9.9	22	4.9	0	0.0	12	24.5	9	18.4	3	7.1	15	13.0	0	0.0
Current Equipment not Available	8	6.6	98	21.8	4	36.4	3	4.1	1	2.0	2	4.8	3	2.6	1	14.3
Testing New Equipment	8	6.6	6	1.3	4	36.4	8	0.0	7	14.3	7	16.7	18	15.7	0	0.0
Available Equipment not Accepted	6	5.0	43	9.6	3	27.3	1	2.0	2	4.1	3	7.1	1	0.0	0	0.0
No Previous Problem with NSI	27	22.3	161	35.9	4	36.4	11	6.1	11	22.4	2	4.8	28	24.3	0	0.0
Other	19	15.7	54	12.0	3	27.3	10	10.2	5	10.2	1	2.4	17	14.8	5	71.4

G: Frequency of review and evaluation of current needleless system

Figure 10: Frequency of review and evaluation of current needleless system





Appendix A SAFER NEEDLE & SHARPS DEVICE USAGE SURVEY

«ID»					
<pre>«First_Name» «Last_Name» «Degree» «Title» «dba» «Address1» «Address2» «City», «State» «Zip»</pre>					
Instructions: Does your facility/organization use any of the following safety devi ☐ Yes ☐ No If "No", please sign and return to us in the pos					
 If "Yes" please complete the survey. 1) For Section 1, check "Yes" if your organization uses that categ 2) For each section you check "Yes": ?? Check the specific type of equipment you use. Indicate the ?? Write down the areas or departments where you use that categories type of equipment). (Please use acronyms to define Area/s (e.g., OR for operating room, 	number of years you have used each type ategory of device. (We do not need to kno	of equipment.			
Example: ✓ Yes ✓ No Injection Equipment	<u>No. of</u> <u>Io</u> <u>Years Used</u>	lentify Area/s <u>Utilized</u>			
Needle guards-hinged recap _X_ Needleless jet injection Retractable needles _X_ Needle guards-sliding sheath/sleeve Others (please specify)		OR, ER, Nursing			
Section 1:					
 Yes □ No Injection Equipment Needle guards-hinged recap Needleless jet injection Retractable needles Needle guards-sliding sheath/sleeve Others (please specify) 	<u>Years Used</u>	dentify Area/s <u>Utilized</u>			
 Yes □ No IV Medication Delivery Systems Needleless IV access with blunted cannulas Needleless valve with access ports and connectors Prefilled medication cartridge with safety needles Needle guards for pre-filled medication cartridges Recessed/protected needle Others (please specify) 					
☐ Yes ☐ No IV Insertion Equipment Shielded or retracting peripheral IV catheters Shielded midline IV catheters Others (please specify)					

☐ Yes	□ No	<u>Lance t</u>	<u>No. of</u> Years Used	Identify Area/s Utilized		
	Lase	Lancet				
		cting Lancet				
	Strip					
	Otne	rs (please specify)				
☐ Yes	No	Surgical Sharps				
		k-release scalpel blade handles				
		cting scalpel				
		ted Suture Needles or puncture-resistant barrier products				
		rs (please specify)				
☐ Yes	□ No	Blood Collection Equipment				
	Hing	ed recapping needle				
	Plast	ic blood collection tubes				
		cting needle				
		able retracting blood collection needle and tube				
		nolder with sharps container				
		olunting needle ded winged steel needle butterfly [®] blood				
		collection needles				
		e use sliding sheath blood collection needle and				
		ube holder				
	Othe	rs (please specify)				
☐ Yes	□ No	Blood Bank Devices				
	Seg Oth	ment sampling devices ers (please specify)				
Secti	ion 2.					
Section 2: 1. Does your facility/organization review and evaluate current needleless systems (i.e., engineering						
co	ntrols) to re	duce or eliminate exposure to bloodborne pathogreview				
2 If	way da nat l	nove a needleless system at this time, places indi	eate why. Cheek all that apply			
	 If you do not have a needleless system at this time, please indicate why. Check all that apply. ☐ Equipment cost ☐ Current equipment not available ☐ Available equipment not accepted by medical profession ☐ No previous problems with needle sticks ☐ Others 					
	_					
		number of individuals in your organization who,				
inj		OSHA reporting requirements, does your facility Yes , please provide number of cases reported for No				
		acility/organization support mandatory reporting No	of needle stick/sharps injuries?			
		acility/organization participate in a voluntary nee No	edle stick/sharps study?			
Name o	of Person C	ompleting Survey: (Print)				
Signatu	ıre					
m:d		m 1 1 2				
Title:		Telephone N	umber:			