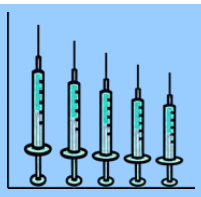
Sharps Injuries among Hospital Workers in Massachusetts



Findings from the Massachusetts Sharps Injury Surveillance System, 2011

Occupational Health Surveillance Program – Massachusetts Department of Public Health August 2014

Data Highlights and Prevention Measures

- 2,892 sharps injuries (SIs) were reported in 2011. The SI rate for workers in all MDPH licensed hospitals was 15.7 SIs per 100 licensed beds, similar to rates for 2009-10 (Figure 1). Comparable findings were noted in rates for employees (per full time employee equivalents) in acute care hospitals only (Figure 2).

- The trend in rates over time (Figures 2) suggests that the earlier observed decline in rates from 2002-2009 may be leveling off. Not all workers report their SIs to employee health, thus this plateauing could reflect a positive change, i.e., increased worker reporting. Nevertheless, these findings underscore the need for continued commitment to preventing SIs. Hospitals, in interpreting their own SI rates, need to understand reporting practices in their facilities.

- After excluding SIs due to suture needles, 53% of SIs involved (Sharps with engineered sharps injury protections) SESIPs. This is a substantially higher proportion than observed in the early years of surveillance (32% in 2002) and is good news as it likely reflects increased use of SESIPS as required. However, while use of SESIPs is critical to preventing SIs, these devices are not failsafe. These findings raise critical questions about the extent to which these injuries are associated with factors such as inexperience and lack of training in the use of these devices or flaws in the product design. Hospitals should provide training in use of SESIPS and safe work practices and involve front line workers in selecting devices as part of a comprehensive SI prevention program.

- Injuries during sharps disposal are entirely preventable. They account for 6% of reported SIs, and may be due to improper disposal, over filled or poorly placed sharps disposal containers. Prevention strategies include the appropriate placement and selection of containers that allow staff to determine when containers should be emptied before they are dangerously full. It is recommended that containers are replaced when ¾ full. It is also crucial to implement systems to regularly check containers to identify those that need replacement. This may be done by assigning someone to check containers at the beginning of a shift or other regular intervals, and requesting replacements where needed. Staff should be provided with a number to call when containers need to be replaced.

Since 2001, hospitals licensed by the Massachusetts Department of Public Health (DPH) have been required to report data on sharps injuries among workers to the Department annually (MGL/Chapter 111 s 53D). Data have been collected from all DPH licensed hospitals (approximately 99 hospitals) since 2001. This report includes data on sharps injuries that occurred during 2011.

The Massachusetts Sharps Injury Surveillance System is intended to provide information to assist Massachusetts hospitals and hospital workers in targeting and evaluating efforts to reduce the incidence of sharps injuries and the associated human and economic costs. For a more comprehensive description of the system, please see: http://www.mass.gov/eohhs/docs/dph/occupational-health/injuries/injuries-hospital-2004.pdf.

Key Definitions

Sharps injury (also referred to as an exposure incident): An exposure to blood or other potentially infectious materials as a result of an incident involving a contaminated sharp device that pierces the skin or mucous membranes. An injury with a clean sharp or device (before use) through contaminated gloves or other contaminated mediums is also considered a sharps injury. An injury involving a clean device without any contact with infectious materials is not considered an exposure incident.

Sharps device: Any object that can penetrate the skin or any part of the body and result in an exposure incident, including but not limited to needle devices, scalpels, lancets, broken glass, and broken capillary tubes.

Population under surveillance: All health care workers in acute and non-acute care hospitals licensed by DPH, as well as any satellite units (e.g., ambulatory care centers) operating under a hospital license.

Surveillance Period: Calendar year 2011.

Sharps injury rates: Sharps injury rates indicate the probability or risk of a worker sustaining a sharps injury within the surveillance period. Numbers are the counts of sharps injuries. A large hospital may have many workers who sustain sharps injuries but the rate of injury may be low. Conversely, in a smaller hospital, relatively few workers may sustain sharps injuries but the risk may be high. Both rates and numbers of injuries must be considered when targeting and evaluating prevention efforts. The rates presented in this report were calculated by dividing the number of sharps injuries among all workers by the number of licensed beds.

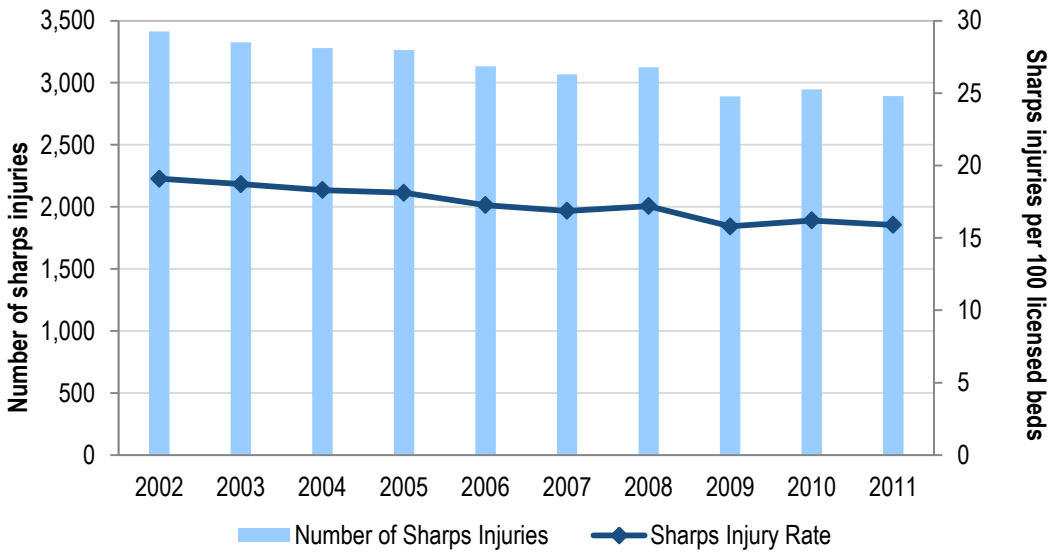
Sharps with engineered sharps injury protections (SESIPs): Needle devices and non-needle sharps used for withdrawing body fluids, accessing a vein or artery, or administering medications or other fluids, with built-in sharps injury prevention features or mechanisms that effectively reduce the risk of an exposure incident.

Findings

Table 1. Number and rate of sharps injuries among hospital workers by hospital characteristics, Massachusetts, 2011

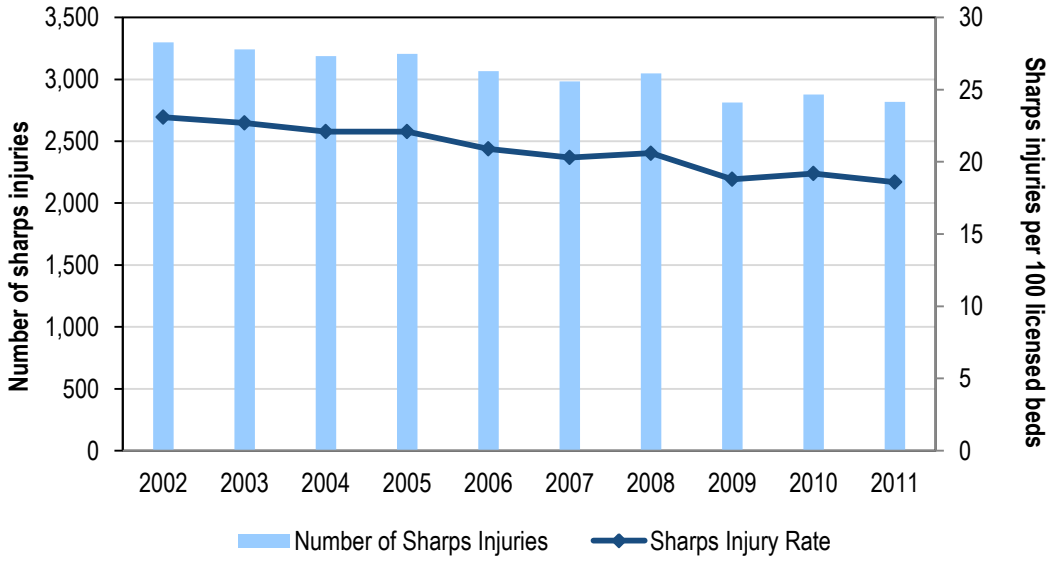
	Number of sharps injuries	Rate per 100 licensed beds	95% CI
Hospital size			
Small (< 100 licensed beds)	183	11.3	9.7-12.8
Medium (100-300 licensed beds)	982	10.1	9.5-10.7
Large (>300 licensed beds)	1,727	25.5	24.4-26.5
Service Type			
Acute care	2,817	18.6	17.9-19.2
Chronic care	75	2.5	2.0-3.1
Teaching Status			
Teaching	1753	25.9	24.8-26.9
Non-teaching status	1139	10.0	9.5-10.6
Total	**2,892**	**15.9**	**15.4-16.5**

Figure 1. Number and rate of sharps injuries among all workers in acute and non-acute care hospitals, Massachusetts, 2011



In all hospitals among both employees and non-employees from 2002 to 2011, there was a statistically significant decrease in the sharps injury rate (# of sharps injuries/ # of licensed beds) over the 10 year period. The rate decreased by 16.8% from 19.1 in 2002 to 15.9 in 2011.

Figure 2. Number and rate of sharps injuries among all workers in acute care hospitals only, Massachusetts, 2011



In acute care hospitals among both employees and non-employees from 2002 to 2011, there was a statistically significant decrease in the rate of sharp injuries from 2002 to 2011. During this period the rate of injuries decreased by 19.5% from 23.1 in 2002 to 18.6 in 2011. The rates for the past several years appear to be holding steady. A similar pattern was observed when calculating the rate of sharps injuries among employees of acute care hospitals by FTEs.

Table 2. Sharps injuries among hospital workers by worker and incident characteristics by hospital size, Massachusetts, 2011

	All Hospitals 97 hospitals		Hospital Size					
			Small 29 hospitals		Medium 53 hospitals		Large 15 hospitals	
	N	%	N	%	N	%	N	%
Work status of injured worker	**2,892**	**100**	**183**	**100**	**982**	**100**	**1,727**	**100**
Employee	2,485	86	170	93	842	86	1,473	85
Non-Employee Practitioner	292	10	8	4	92	9	192	11
Student	78	3	1	1	30	3	47	3
Temporary / Contract Worker	24	1	4	2	14	1	6	<1
Other / Unknown / Not answered	13	<1	0	0	4	<1	9	<1
Occupation	**2,892**	**100**	**183**	**100**	**982**	**100**	**1,727**	**100**
Physician	1,152	40	53	29	238	24	861	50
Nurse	1,017	35	76	42	417	42	524	30
Technician	467	16	33	18	224	23	210	12
Support Services	119	4	11	6	44	4	64	4
Dental Staff	13	<1	0	0	5	1	8	<1
Other Medical Staff	72	2	4	2	35	4	33	2
Other / Unknown / Not answered	52	2	6	3	19	2	27	1
Department where injury occurred	**2,892**	**100**	**183**	**100**	**982**	**100**	**1,727**	**100**
Operating and Procedure Rooms	1,261	44	78	43	353	36	830	48
Inpatient Units	551	19	41	22	263	27	247	14
Intensive Care Units	269	9	7	4	67	7	195	11
Emergency Department	261	9	18	10	116	12	127	7
Outpatient areas	187	6	7	4	69	7	111	6
Laboratories	137	5	11	6	34	3	92	5
Other / Unknown / Not answered	226	8	21	12	80	8	125	7
Device involved in the injury	**2,892**	**100**	**183**	**100**	**982**	**100**	**1,727**	**100**
Hypodermic needle/syringe	857	30	59	32	339	35	459	27
Suture needle	633	22	27	15	162	16	444	26
Other hollow bore needle	367	13	16	9	118	12	233	13
Scalpel blade	236	8	15	8	58	6	163	9
Winged steel needle	217	8	13	7	111	11	93	5
Vacuum tube collection holder/needle	79	3	11	6	36	4	32	2
Glass	28	1	3	2	8	1	17	1
Other / Unknown / Not answered	475	16	39	21	150	15	286	17
Procedure for which the device was used	**2,892**	**100**	**183**	**100**	**982**	**100**	**1,727**	**100**
Injection	699	24	49	27	283	29	367	21
Suturing	631	22	27	15	159	16	445	26
Blood procedures	375	13	27	15	178	18	170	10
Making the incision	338	12	22	12	99	10	217	13
Line procedures	319	11	18	10	114	12	187	11
To obtain body fluid or tissue sample	97	3	9	5	24	2	64	4
Dental procedures	10	<1	0	0	5	1	5	<1
Other / Unknown / Not answered	423	15	31	17	120	12	272	16

[a] Hospital size: small<100 licensed beds; medium 101-300 licensed beds; large >300 licensed beds

Table 3. Sharps injuries among hospital workers by occupation by hollow bore device, Massachusetts, 2011

Occupation	Total		Hollow Bore							
			Hypodermic Needle		Butterfly Needle Needle		Vacuum Tube		Other Hollow Bore	
	N	%	N	%	N	%	N	%	N	%
Nurse	805	100	473	59	101	13	42	5	189	23
Physician	354	100	235	66	11	3	4	2	104	29
Technician	239	100	85	36	82	34	29	12	43	18
Support Services	40	100	17	43	3	8	1	3	19	48
All Others/ Not Answered	82	100	47	57	20	24	3	4	12	15
Total	**1,520**	**100**								

Table 4. Sharps injuries among hospital workers by occupation by solid bore device, Massachusetts, 2011

Occupation	Total		Suture Needle		Scalpel		Other/ Unknown	
	N	%	N	%	N	%	N	%
Physician	798	100	473	59	150	19	175	22
Technician	228	100	68	30	50	22	110	48
Nurse	212	100	77	36	22	10	113	53
Support Services	79	100	6	8	6	8	67	85
All Others/ Not Answered	55	100	9	16	8	15	38	69
Total	**1,372**	**100**						

Table 5. Sharps injuries among hospitals workers by SESIP by hospital size: all devices and excluding suture needles, Massachusetts, 2011

	All Hospitals 97 hospitals		Hospital Size					
			Small 29 hospitals		Medium 53 hospitals		Large 15 hospitals	
Sharps Injury Protections	N	%	N	%	N	%	N	%
All devices	**2,892**	**100**	**183**	**100**	**982**	**100**	**1,727**	**100**
SESIP	1,198	41	80	44	525	53	593	35
Non-SESIP	1,501	52	94	51	402	41	1,005	58
Unknown/Not answered	193	7	9	5	55	6	129	7
Devices excluding suture needles	**2,259**	**100**	**156**	**100**	**820**	**100**	**1,283**	**100**
SESIP	1,189	53	80	51	517	63	592	46
Non-SESIP	910	40	69	44	251	31	590	46
Unknown/Not answered	160	7	7	4	52	6	101	8

[a] Hospital size: small= <100 licensed beds; medium=101-300 licensed beds; large=>300 licensed beds

Figure 3. Sharps injuries among hospital workers by device and SESIP, Massachusetts, 2011

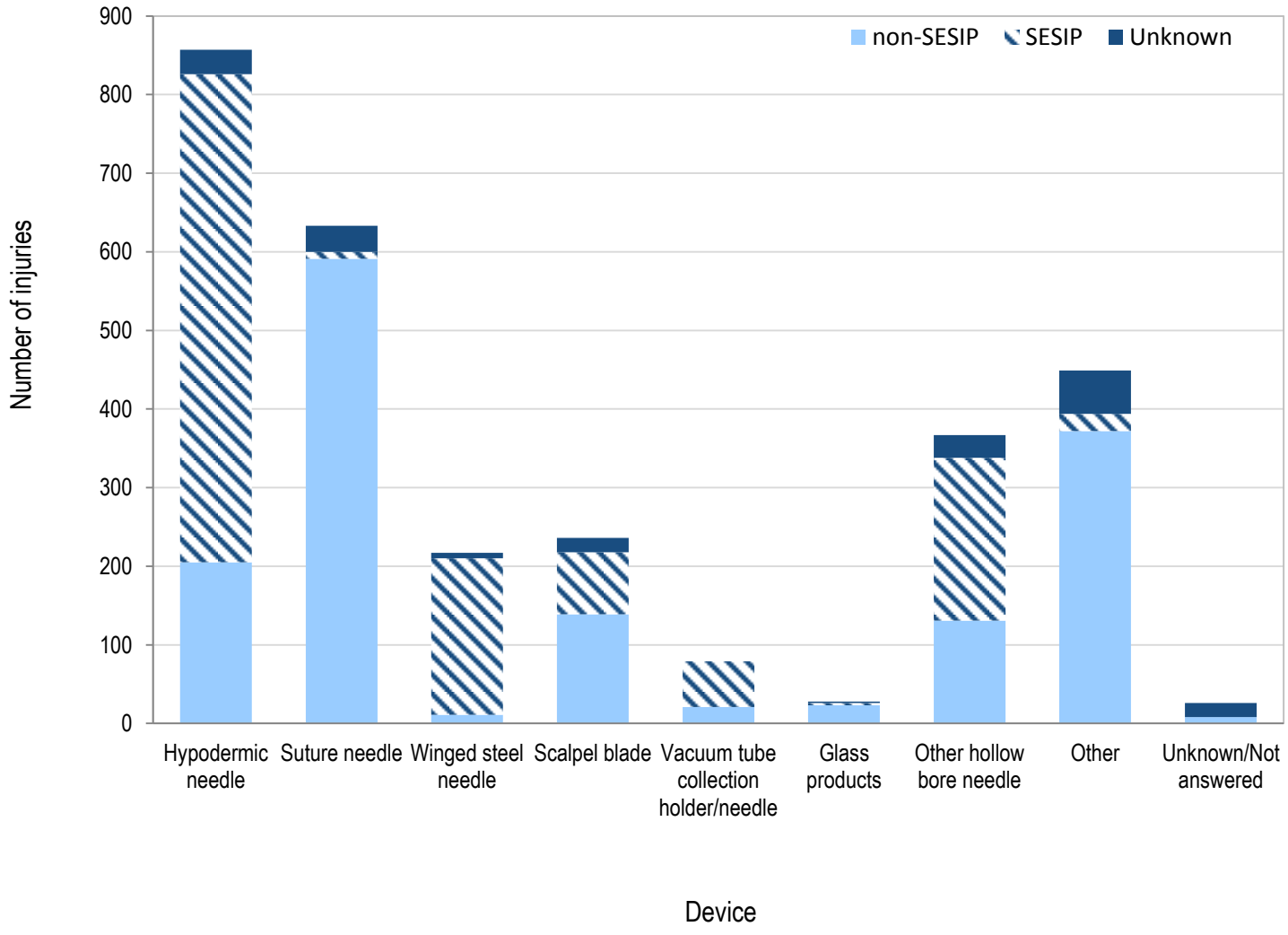


Table 6. Sharps injuries among hospital workers by procedure and SESIP, Massachusetts, 2011

Procedure	Total		SESIP		Non-SESIP		Unknown	
	N	%	N	%	N	%	N	%
Injection procedures	**699**	**24**	**511**	**43**	**168**	**11**	**20**	**10**
Subcutaneous injection	565	20	422	35	126	8	17	9
Intramuscular injection	97	3	82	7	15	1	0	0
Other injections	37	1	7	1	27	2	3	2
Blood procedures	**375**	**13**	**302**	**25**	**56**	**4**	**17**	**9**
Percutaneous venous puncture	258	9	235	20	16	1	7	4
Percutaneous arterial puncture	49	2	40	3	7	0	2	1
Finger stick/Heel stick	45	2	12	1	25	2	8	4
Other blood procedures	23	1	15	1	8	1	0	0
Line procedures	**319**	**11**	**223**	**19**	**81**	**5**	**15**	**8**
To insert peripheral IV/set up heparin	127	4	109	9	12	1	6	3
To insert central line	41	1	11	1	26	2	4	2
Other line procedures	151	5	103	9	43	3	5	3
Other procedures	**1,499**	**52**	**162**	**14**	**1,196**	**80**	**141**	**73**
Total	**2,892**	**100**	**1,198**	**100**	**1,501**	**100**	**193**	**100**

Table 7. Sharps injuries among hospitals workers involving devices included in prepackaged kits by hospital size, Massachusetts, 2011

	All Hospitals 97 hospitals		Hospital Size					
			Small 29 hospitals		Medium 53 hospitals		Large 15 hospitals	
	N	%	N	%	N	%	N	%
Device included in prepackaged kit	**2,892**	**100**	**183**	**100**	**982**	**100**	**1,727**	**100**
Yes	709	25	44	24	217	22	448	26
No	2,063	71	129	70	716	73	1,218	71
Unknown/Not answered	120	4	10	5	49	5	61	4
Total	**2,892**	**100**	**183**	**100**	**982**	**100**	**1,727**	**100**

[a] Hospital size: small <100 licensed beds; medium 101-300 licensed beds; large >300 licensed beds

Figure 4. Sharps injuries among hospital workers involving devices from prepackaged kits by SESIP, Massachusetts, 2011

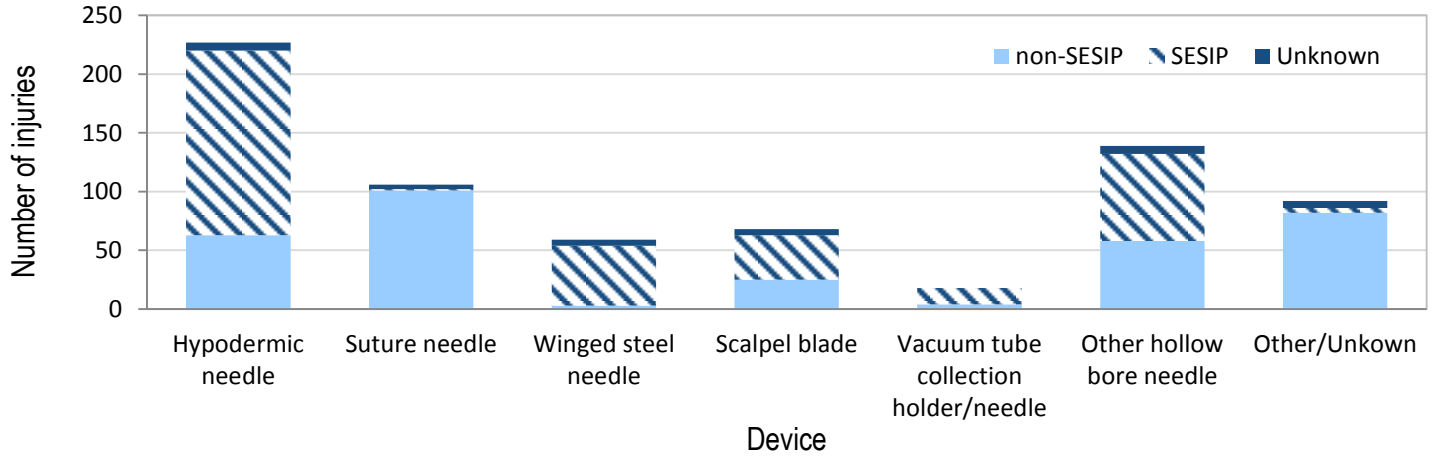


Table 8. Sharps injuries among hospital workers by when and how the injury occurred, Massachusetts, 2011

	All Hospitals 97 hospitals		Hospital Size					
			Small 29 hospitals		Medium 53 hospitals		Large 15 hospitals	
	N	%	N	%	N	%	N	%
Before use of the item	**25**	**1**	**0**	**0**	**7**	**1**	**18**	**1**
During use of the item	**1,292**	**45**	**81**	**44**	**409**	**42**	**802**	**46**
Suturing	365	13	17	9	87	9	261	15
Manipulate needle in patient	286	10	15	8	112	11	159	9
Patient moved and jarred device	233	8	15	8	91	9	127	7
Collision with worker or sharp	126	4	11	6	37	4	78	5
Handle/pass equipment	19	1	0	0	11	1	8	<1
Access IV line	19	1	1	1	6	1	12	1
Device malfunction	17	1	1	1	6	1	10	1
Recap needle	5	<1	1	1	1	<1	3	<1
Sharps injury prevention mechanism not activated	1	<1	0	0	0	0	1	<1
Other / Unknown / Nonclassifiable	221	8	20	11	58	6	143	8
After use, before disposal	**1,192**	**41**	**80**	**44**	**446**	**45**	**666**	**39**
Handle/pass equipment	291	10	17	9	73	7	201	12
Activating injury protection mechanism	213	7	11	6	98	10	104	6
Improper disposal	167	6	11	6	63	6	93	5
During clean-up	165	6	11	6	67	7	87	5
Collision with worker or sharp	116	4	12	7	36	4	68	4
Sharps injury prevention mechanism not activated	89	3	10	6	52	5	27	2
Recap needle	80	3	5	3	24	2	51	3
Device malfunction	25	1	1	1	15	2	9	1
Patient moved and jarred device	6	<1	1	1	3	<1	2	<1
Access IV line	2	<1	0	0	1	<1	1	<1
Other / Unknown / Nonclassifiable	38	1	1	1	14	1	23	1
During or after disposal of item	**181**	**6**	**11**	**6**	**76**	**8**	**94**	**5**
During sharps disposal	160	5	8	4	71	7	81	5
Collision with worker or sharp	7	<1	1	1	2	<1	4	<1
Device malfunction	5	<1	1	1	1	<1	3	<1
During clean up	3	<1	0	0	0	<1	3	<1
Sharps injury prevention mechanism not activated	2		0	0	2		0	
Other / Unknown / Nonclassifiable	4	<1	1	10	0	0	3	<1
Unknown / Not answered / Nonclassifiable	**202**	**7**	**11**	**6**	**44**	**5**	**147**	**9**
Total	**2,892**	**100**	**183**	**100**	**982**	**100**	**1,727**	**100**

[a] Hospital size: small<100 licensed beds; medium 101-300 licensed beds; large >300 licensed beds

Table 9. Sharps injuries involving select devices without sharps injury prevention features but for which SESIPs are widely available, by when the injury occurred, Massachusetts, 2011

Device	Total		Time of Injury									
			Before use		During use		After use, Before disposal*		During or after Disposal*		Unknown/ Non-classifiable	
	N	%	N	%	N	%	N	%	N	%	N	%
Hypodermic	205	100	3	2	67	33	106	52	16	8	13	6
Vacuum Tube	21	100	0	0	8	38	5	23	8	38	0	0
IV Stylet	18	100	0	0	13	72	4	22	0	0	1	6
Winged-Steele Needle	11	100	0	0	2	18	5	45	3	27	1	9
Total	**255**	**100**										

*SESIPs offer protection during the period after use. Injuries presented in this table that occurred after use (n=147) can be considered "never events" – events that could have been prevented with the use of SESIPS.

Table 10. Sharps injuries among hospital workers by occupation (detailed), Massachusetts, 2011

	N	%
Physician	**1,152**	**40**
Intern/Resident	496	17
MD	332	12
Fellow	98	3
Medical Student	73	3
Physician Assistant	71	3
Surgeon	43	1
Anesthesiologist	29	1
Radiologist	10	<1
Nurse	**1,017**	**35**
RN or LPN	898	31
Nursing assistant	53	2
Nurse practitioner	20	1
Patient care technician	19	1
Nurse anesthetist	10	<1
Nursing student	10	<1
Nurse midwife	7	<1
Technician	**467**	**16**
OR/Surgical technician	195	7
Phlebotomist	96	3
Clinical lab technician	61	2
Radiologic technician	42	2
Respiratory therapist/ Tech	26	1
Hemodialysis technician	3	<1
Morgue technician	1	<1
Psychiatric technician	1	<1
Other technician	42	1
Support Services	**119**	**4**
Housekeeper	65	2
Central supply	42	1
Safety/security	3	<1
Attendant/orderly	3	<1
Maintenance	3	<1
Transport/Messenger	1	<1
Laundry staff	1	<1
Other support services staff	1	<1
Other Medical Staff	**72**	**2**
Medical assistant	66	2
Physical therapist	1	<1
Other medical staff	5	<1
Dental Staff	**13**	**<1**
Dentist	7	<1
Dental assistant/tech	5	<1
Dental hygienist	1	<1
Other	**49**	**2**
Researcher	12	<1
EMT/paramedic	9	<1
Pharmacist	7	<1
Clerical/administrative	1	<1
Counselor/social worker	1	<1
Dietician	1	<1
Other student	11	<1
Other	7	<1
Unknown/Not Answered	**3**	**<1**
Total	**2,892**	**100**

Table 11. Sharps injuries among hospital workers by department (detailed), Massachusetts, 2011

	N	%
Operating and Procedure Rooms	**1,261**	**44**
Operating room	920	32
Labor and delivery	102	4
Radiology	96	3
Cardiac catheterization laboratory	37	1
Hematology/oncology	36	1
Endoscopy/bronchoscopy/cystoscop	20	1
Phlebotomy room	17	1
Dialysis	14	<1
Procedure room, unspecified	13	<1
Other procedure room	6	<1
Inpatient Units	**551**	**19**
Medical/surgical ward	469	16
Psychiatry ward	23	1
Pediatrics	19	1
Obstetrics/gynecology	17	1
Nursery	9	<1
Patient room, ward unspecified	11	<1
Specific ward, type unknown	3	<1
Intensive Care Units	**269**	**9**
Intensive care unit	206	7
Post anesthesia care unit	63	2
Emergency Department	**261**	**9**
Outpatient areas	**187**	**7**
Ambulatory care clinic	91	3
Physician's office	27	1
Dental clinic	17	1
Home health visit	15	1
Community health center	7	<1
Other outpatient areas	30	1
Laboratory	**137**	**5**
Histology/pathology	47	2
Morgue/autopsy room	7	<1
Microbiology	7	<1
Hematology	2	<1
Clinical chemistry	2	<1
Blood bank	1	<1
Other laboratory	30	1
Laboratory, unspecified	41	1
Other Areas	**206**	**7**
Central sterile supply	43	1
Rehabilitation unit	42	1
Dermatology	33	1
Long term care	21	1
Exam room	13	<1
Pain clinic	11	<1
Anesthesia	9	<1
Hospital grounds	5	<1
Ambulance	4	<1
Pharmacy	4	<1
Central trash area	4	<1
Employee health/ Infection control	3	<1
Other Location	14	<1
Unknown/Not Answered	**20**	**1**
Total	**2,892**	**100**

Table 12. Sharps injuries among hospital workers by device (detailed), Massachusetts, 2011

	N	%
Hypodermic needles/syringe (hollow bore)	**857**	**30**
Hypodermic needle attached to a disposable syringe	727	25
Hypodermic Needle Attached to a non-disposable syringe	45	2
Prefilled cartridge syringe	37	1
Unattached hypodermic needle	34	1
Hypodermic needle attached to IV tubing	9	<1
Hypodermic needle, unspecified	5	<1
Suture Needle	**633**	**22**
Curved suture needle	469	16
Suture needle, unspecified	137	5
Straight suture needle	27	1
Other Hollow Bore Needles	**367**	**13**
IV Stylet	141	5
Huber Needle	46	2
Biopsy Needle	24	1
Spinal or epidural needle	14	<1
Hollow bore needle, unspecified	83	3
Other type of hollow bore needle	59	2
Scalpel Blade	**236**	**8**
Butterfly Needle	**217**	**8**
Winged Steel needle attached to a vacuum tube collection holder	130	4
Winged Steele Needle	78	3
Winged Steele Needle attached to IV tubing	9	<1
Vacuum Tube Collection Holder/Needle	**79**	**3**
Vacuum tube collection holder/needle	61	2
Phlebotomy needle (other than winged steel needle)	18	1

	N	%
Glass	**28**	**1**
Medication ampule / Vial / IV bottle	7	<1
Pipette	6	<1
Specimen / Test / Vacuum tube	5	<1
Slide	2	<1
Capillary tube	1	<1
Other glass item	7	<1
Dental Device of item	**25**	**1**
Dental bur	5	<1
Scaler/curette	4	<1
Dental explorer	2	<1
Dental pick	1	<1
Other dental device or item	13	<1
Other	**424**	**15**
Wire	47	2
Lancet	46	2
Retractor	42	1
Scissors	27	1
Bovie electrocautery device	27	1
Cutting blade other than scalpel	26	1
Forceps	26	1
Other needle	18	1
Pin	18	1
Drill bit	12	<1
Electrode	12	<1
Needle/unspecified	11	<1
Trocar	10	<1
Bone chip/chipped tooth	8	<1
Staple	6	<1
Tenaculum	6	<1
Bone cutter	5	<1
Elevator	2	<1
Rod	1	<1
Other Type of Sharp Object	74	3
Unknown/Not Answered	**26**	**1**
Total	**2,892**	**100**

Table 13. Sharps injuries among hospital workers by procedure (detailed), Massachusetts, 2011

	N	%		N	%
Injection	**699**	**24**	**Line Procedures**	**319**	**11**
Subcutaneous injection	565	20	To insert a peripheral IV line or set up a heparin lock	127	4
Intramuscular injection	97	3	To insert a central IV line	41	1
Epidural/spiral anesthesia	13	<1	Other injection into IV site/port	29	1
Injection, unspecified	17	1	Draw blood from central or peripheral IV line or port	26	1
Other injection	7	<1	To insert an arterial line	17	1
Suturing	**631**	**22**	To connect IV line	15	1
Suturing	586	20	Draw blood from arterial line	11	<1
Suture removal	45	2	To flush heparin/saline	10	<1
Blood Procedures	**375**	**13**	Other line procedure	39	1
Percutaneous venous puncture	258	9	Line procedure, unspecified	4	<1
Percutaneous arterial puncture	49	2			
Finger stick/heel stick	45	2	**To Obtain Body Fluid or Tissue Sample**	**97**	**3**
Draw blood from umbilical vessel	10	<1			
Dialysis/AV Fistula site	10	<1	**Dental Procedures**	**10**	**<1**
Blood Procedure, unspecified	1	<1	Oral surgery	4	<1
Other blood procedure	2	<1	Restorative	2	<1
Making the incision	**338**	**12**	Dental drilling	1	<1
Making the incision	248	9	Hygiene	1	<1
Cauterization	11	<1	Other dental procedure	1	<1
Surgical procedure, unspecified	60	2	Dental procedure, unspecified	1	<1
Other surgical procedure	19	1			
			Other	**278**	**10**
			Transferring blood/body fluid to another container	30	1
			To obtain lab specimens	23	1
			Drilling	19	1
			Shaving	13	<1
			Procedure, unspecified	15	1
			Other procedure	178	6
			Unknown/Not answered	**145**	**5**
			Total	**2,892**	**100**

Resources

CDC Sharps Safety for Healthcare Settings: Workbook and Teaching Tools www.cdc.gov/sharpssafety

NIOSH Preventing Needlesticks and Sharps Injuries www.cdc.gov/niosh/topics/bbp/sharps.html

OSHA Bloodborne Pathogens and Needlestick Prevention www.osha.gov/SLTC/bloodbornepathogens