

The Incidence of Needle Stick and Sharp Injuries among Healthcare Workers in Saudi Arabia, 2012-2014

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Introduction

- WHO estimates that 2 million Needle Stick and Sharp injuries (NSSIs) occur among Healthcare Workers (HCWs) annually.
- Hepatitis C, hepatitis B and HIV are serious risks of NSSIs.
- In Saudi Arabia, NSSIs are reported and documented using EPINet™ system
- Majority of NSSI reports have covered single medical centers.
- No comprehensive assessment of incidents has been performed.



Objectives

- Determine the incidence of NSSI among HCWs from 2012 to 2014 and its distribution by region and HCW occupation category.
- Assess the pattern of NSSIs in terms of severity, body location of injury, and circumstances of occurrence.

Methods

- Secondary data analysis using the NSSI database of the Ministry of Health (MoH) from 2012 to 2014
- Database included 1,361 reports of injuries occurring in MoH hospitals across the country
- Incidence rates (IR) and 95% Confidence Intervals were estimated

Results

- Total of 395 cases occurred in 2012, 419 in 2013, and 547 in 2014.
- Highest IR in Najran. Lowest IR in Al-Jouf and Makkah regions.
- Nurses had highest IR across all years, while Allied Health Professionals had the lowest.
- Patient rooms and wards were the most common locations of incidents (N=510)
- Home-care settings were the least common (N=4).
- Left index finger (N=162) was found to be the most commonly punctured finger.
- NSSIs that occurred during the use of the sharp item had the highest percentage (33.8%).
- 740 superficial, 469 moderate and 70 severe NSSIs occurred.
- Needles caused 77.52% of injuries.
- General syringe use was original purpose most frequently mentioned (26.3%).
- Lowest percentage of injuries was obtaining body fluid or tissue samples (1.18%).

Table 1. Incidence rate and confidence intervals of needle stick and sharps injuries (NSSI) by region, KSA, 2012 to 2014

Region	Number of NSSIs	Incidence Rate*	95% Confidence Interval
Najran	187	5.63	4.87 - 6.48
Tabouk	106	3.06	2.52 - 3.68
Northern	78	2.66	2.12 - 3.30
Aseer	146	1.61	1.35 - 1.88
Qaseem	126	1.61	1.35 - 1.91
Riyadh	265	1.14	1.01 - 1.28
Eastern	171	1.06	0.87 - 1.18
Al-Bahah	29	0.89	0.61 - 1.27
Medinah	61	0.76	0.58 - 0.95
Makkah	125	0.54	0.45 - 0.64
Al-Jouf	24	0.54	0.35 - 0.79
Unknown	43		
Total	1361		

*Incidence rate is per 100 beds

Table 2. Incidence rate (IR) and confidence interval (CI) of healthcare workers (HCWs) by job category, KSA, 2012 to 2014.

Year	Allied Health Professionals		Physicians		Nurses	
	IR ^a	95% CI	IR ^a	95% CI	IR ^a	95% CI
2012	1.84	1.42 - 2.36	2.86	2.26 - 3.56	3.84	3.38 - 4.34
2013	1.92	1.51 - 2.20	2.20	1.70 - 2.80	4.28	3.80 - 4.71
2014	2.17	1.74 - 2.67	3.73	3.07 - 4.50	4.85	4.34 - 5.38

^aIR = incidence rate per 1000 workers of each category

Table 3. Numbers and percentage of needle stick and sharps injuries (NSSIs) by location of incidents within hospitals, KSA, 2012 to 2014.

	2012		2013		2014		Total	
	#	%	#	%	#	%	#	%
Clinical Laboratories	5	1.27%	5	1.19%	17	3.11%	27	1.98%
Dialysis Facility	5	1.27%	8	1.91%	12	2.19%	25	1.84%
Emergency Department	69	17.47%	64	15.27%	74	13.53%	207	15.21%
Home-Care	1	0.25%	1	0.24%	2	0.37%	4	0.29%
Intensive Care unit	30	7.59%	18	4.30%	31	5.67%	79	5.80%
Operating Room/ Recovery	69	17.47%	63	15.04%	79	14.44%	211	15.50%
Outpatient Clinic/Office	15	3.80%	16	3.82%	30	5.48%	61	4.48%
Patient Room/Ward	133	33.67%	175	41.77%	202	36.93%	510	37.47%
Procedure Room	8	2.03%	4	0.95%	5	0.91%	17	1.25%
Venipuncture Center	0	0.00%	1	0.24%	5	0.91%	6	0.44%
Total	395	29.02%	419	30.75%	547	40.19%	1361	100%

Conclusion

- NSSI rates ranged from 0.54 to 5.63 (per 100 beds) across regions.
- Nurses have higher IRs compared to other HCWs
- Results show that education and training as well as adherence to safety protocols require strengthening among Saudi HCWs.
- Rates possibly underestimated because of underreporting.

Recommendations

- Implement policies that focus on strict adherence to safety protocols and eliminate non-compliance.
- Intensify training and educational programs for HCWs.
- Compare rates before and after implementing educational and training sessions to assess training effectiveness.
- Investigate underreporting.
- Conduct studies on safety devices.



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