



Blood & Body Fluids Exposure: a two year prospective study in an emerging multinational healthcare facility

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Goals (can take out)

Challenges

BBFE program

Lessons Learned

Conclusions

Recommendations





Global Burden of Bloodborne Pathogens

- 2 million HCPs experience BBFE each year
- 37.6% of Hepatitis B, 39% of Hepatitis C and 4.4% of HIV/AIDS in HCPs due to NSI (1)
- Asymmetry in BBFE reporting and prevention
 - 90% of infections in HCPs are attributed to occupational BBFE are in the developing world,
 - 90% of the reports of an occupational exposure to BBFE are recorded in the developed world (2).



Regional Impact

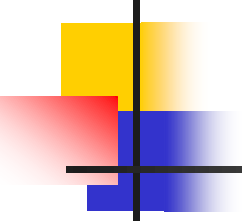
- According to published studies, 40-70% of all needlestick injuries are unreported (3, 4).
- There are limited research data published on blood and body fluid exposure (BBFE) from the Middle East (5,6),
- WHO Eastern Mediterranean reported an average of four NSI per year per HCP (7).



BBFE: Infectious Diseases

- Hepatitis B, C & HIV
- 50 different pathogens -

References (8-14)



HIV 1/ AIDS	Lassa Fever (1)	Yellow fever virus (4)
Hepatitis B	Yersinia (2)	Corynebacterium striatum (4)
Hepatitis C	Plasmodium (2)	Mycobacterium leprae (4)
Hepatitis D	Parvovirus (2)	Mycobacterium marinum (4)
Hepatitis G (4)	Blastomycosis (3)	Rickettsia rickettsii (4)
Malaria	Brucellosis (3)	Streptococcus pyogenes (4)
Dengue Fever	Cryptococcosis (3)	Blastomyces dermatitidis (4)
Treponema pallidum (Syphilis)	Mycoplasma caviae (3)	Cryptococcus neoformans (4)
Herpes simplex 1 (4)	Mycobacteriosis (3)	Leishmania sp. (4)
Mycobacterium Tuberculosis	Sporotrichosis (3)	Plasmodium falciparum (4)
Diphtheria	Staphylococcus aureus (3)	Plasmodium malariae (4)
Gonorrhoea	Streptococcus pyogenes (3)	Plasmodium vivax (4)
Typhus	Toxoplasmosis (3)	Trypanosoma brucei (4)
Rocky Mountain Spotted Fever	Bolivian viral hemorrhagic fever (4)	Blastomyces dermatitidis (4)
Human T-cell lymphotropic virus HTLV I and II (1)	Crimean Congo viral hemorrhagic fever (4)	Cryptococcus neoformans (4)
Cytomegalo virus CMV (1)	Marburg viral hemorrhagic fever (4)	Sporotrichum schenkii (4)
Ebola Fever (1)	Varicella zoster virus (4)	



Challenges

- Lack of:
 - BBFE program
 - Legislative req. to report exposures
 - National or hospital guideline for BBFE
- barriers to reporting:
 - cultural sensitivity (Stigma HIV),
 - resources, analytical resources,
 - ethical concerns for performing sensitive test (HIV, hepatitis C),
- Administrative & Legislative sensitivity to HIV and Hepatitis
- HCPs from 40 countries



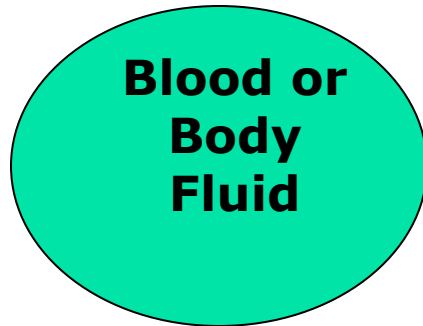
OSHA and CDC

- OSHA:
 - Prevention
 - Reporting
 - Documentation
- CDC
 - Post exposure prophylaxis (15, 16)
 - Evidence based

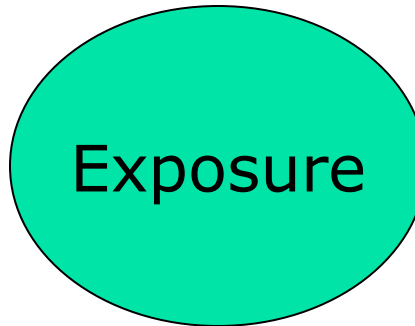


BBFE Programme

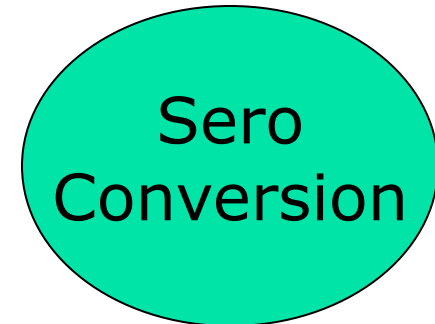
Concern



Incident



Outcome



Primary Prevention:

Policies / Procedures

- HCPs participation
- Immunization
- Treatment protocol
- Lab/ Pharm
- Awareness & Reporting

Secondary Prevention:

- Counselling
- Post Exposure Prophylaxis
- Follow up



Immunization Campaign

- Mandatory Immunisation for Hepatitis B
- Screening of all staff
- Post immunization blood test
- Database
- Achievement
- Pre: Unknown
- Intervention: Coverage 95% (4500)



Staff Training

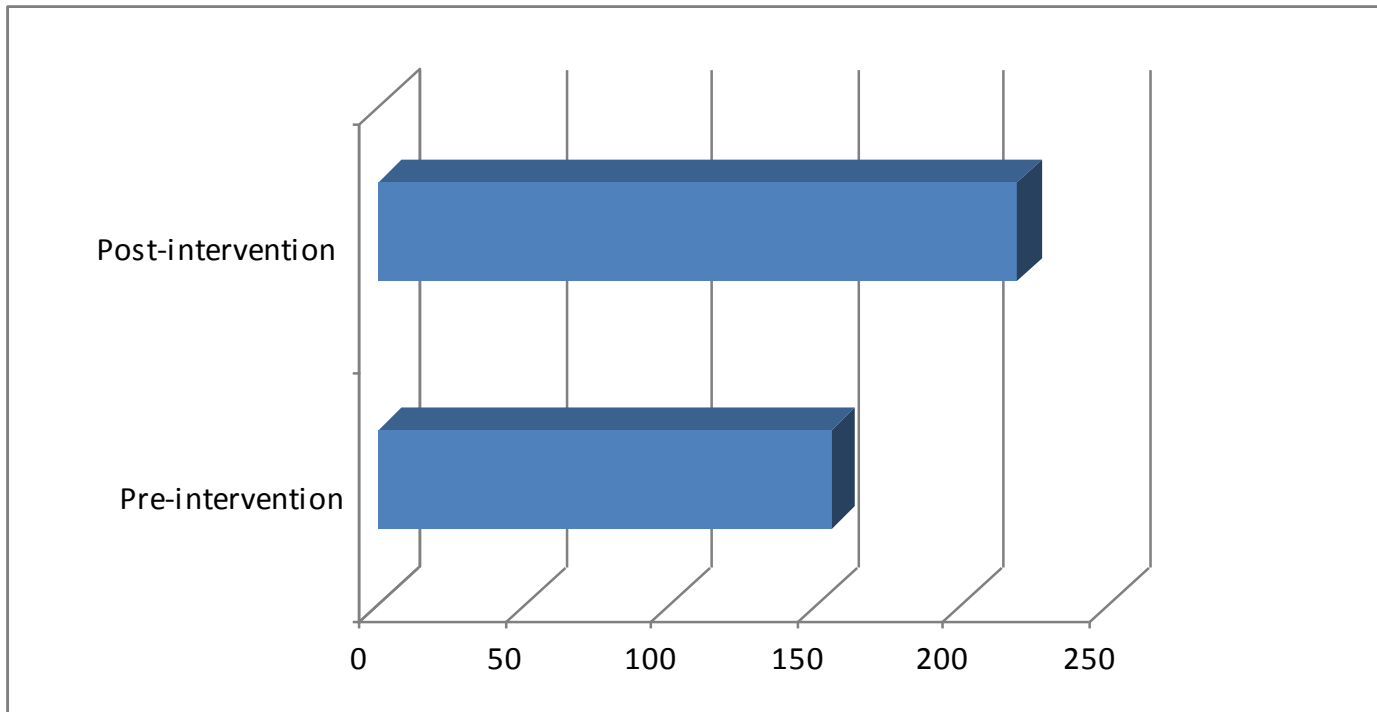
- OHS links and infection control champions (125):
Behaviour based safety
- ED physicians training: Same treatment and follow up
- Annual awareness sessions: Increased awareness and reporting



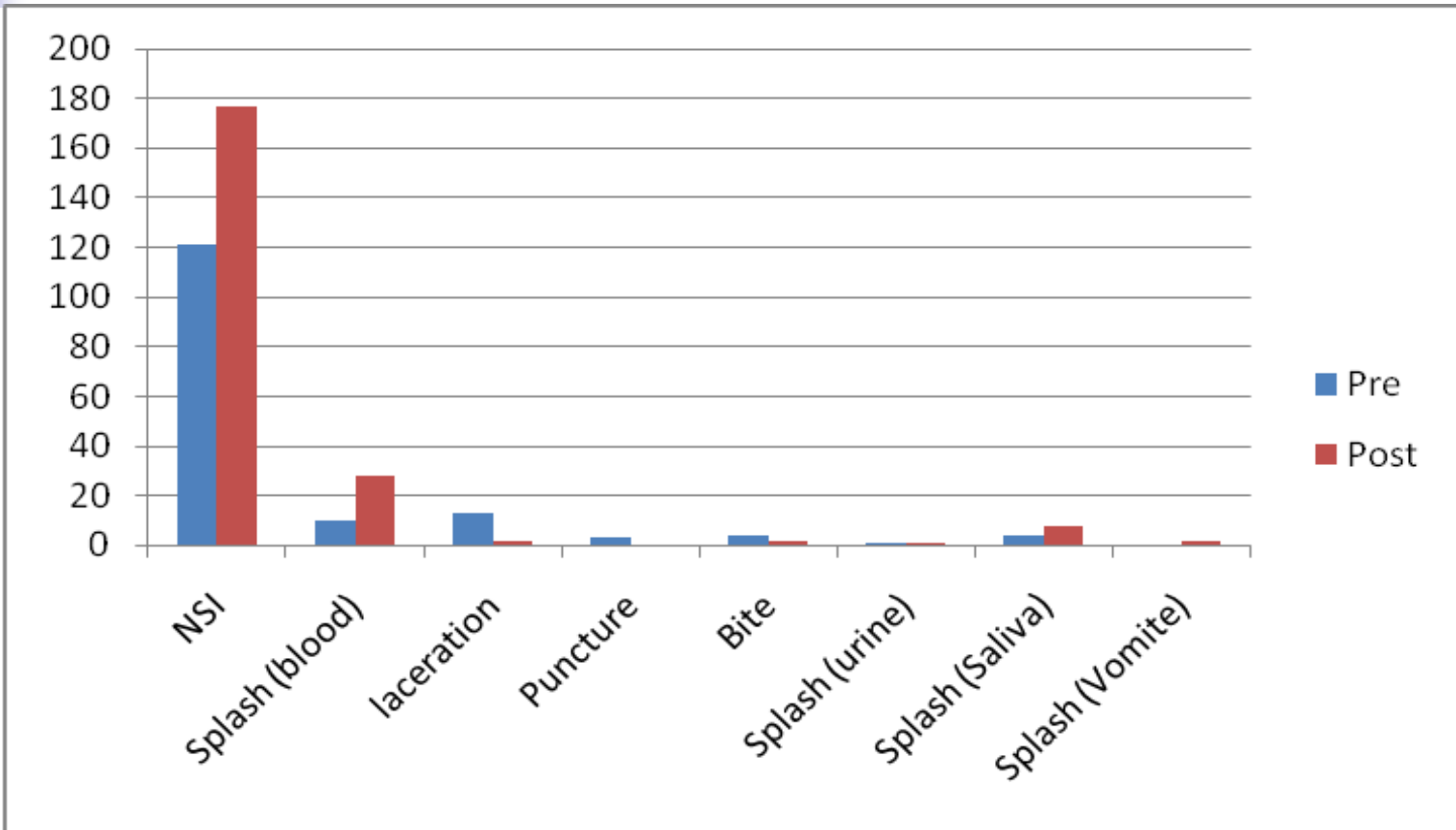
Laboratory

- Reporting time reduced to 2 hr from 24 – 48 hr.
- It was made essential that all requests for Needle Stick Injury (NSI) have both source and staff information to ensure follow up.
- All NSI reports were to be send to OHS Clinic for review and follow up
- All NSI case where an infected source was found was double checked to confirm the findings.

Reporting



Type of Exposure





Initial Assessment

Location	Pre Intervention	Post Intervention
Emergency Room	0	77
OHS Clinic	156	143



Staff blood analysis (immediately post exposure)

Blood analysis	Pre Intervention	Post Intervention
Done	149	219
Not Done	7	1



Staff's blood analysis (at six months follow up)

	Pre Intervention	Post Intervention
Blood analysis		
Normal	71	64
Not applicable	10	149
Not Done	66	5



Multivariate Logistic Regression

Variable	Intervention		Logistic Regression		
	Pre intervention	Post intervention	Odds	P Value	95% CI
Patient's Blood Analysis	107	205	2.163	0.021	(1.123-4.165)
Staff's Blood Analysis (Immediately after exposure)	188	296	0.826	0.867	(0.089-7.688)
Staff's Blood Analysis at three months	156	290	2.338	0.252	(0.547-9.993)
Staff's Blood Analysis at six months	119	287	24.438	0.000	(9.906-60.292)



Safer Devices and Practices:

- Type of glucometer pen was changed
- Improved design and larger size of sharps containers were ordered.
- Height of the wall mounted sharps containers was changed to improve compliance.
- Retractable needles and needle with plastic shields were introduced.
- Special training sessions were provided for HCPs related to refresher for safe techniques while handling sharps and needles



Lived Experience

- **Experiencing the unexpected**
 - “I was not distracted I was more cautious than ever. But I had this bad feeling that this will go wrong” (Dr. A)
- **Inevitability and finality**
 - “It’s amazing how a single event can change one’s life”. (Ms.C)
- **Responsibility & Risk**
 - “I do think at times that this could happen again, why not change the profession? But then there are so many nurses which work all their life and nothing happens to them” (Ms. C)



Lived Experience cont.

- **Impact of stigma**

- “This is not a simple disease like cancer. It has a stigma to it. You need to live but you live with people. This disease (HIV) is more a social problem to me than the health concern. If it would be hepatitis B or C or cancer only I would die but in this my whole family will be ruined. Everyone will see them like they have done something wrong....and my whole family is terrified” (Ms. B)

- **Legal & financial implications**

- “I will be deported and the treatment is too expensive at home. I will lose my job and get a disease which is very expensive to be treated”; (Ms. C)



Conclusions

- Hospital specific BBFE program
- Influence of stigma and social factors
- Trust on the BBFE program and PEP
- Our reporting was comparable to other international reporting rates but improved after the intervention.
- Engineering controls



Recommendations

- BBFE program: developed by HCPs
- BBFE treatment protocol/guideline
- Improve awareness
- Post exposure counselling
- Win the trust of HCPs: Post exposure prophylaxis

Question & Answer





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