
**Personnel Health Service Infection Control Policies and Practices
Regarding Accidental Needlestick Injuries in Selected
South African Hospitals**

By

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Personnel Health Service Infection Control Policies and Practices Regarding Accidental Needlestick Injuries in Selected South African Hospitals

Dedication

Part One: Review of Blood-Borne Occupational Health Problems in Hospitals

Part Two: Personnel Health Preventive Measures Against Blood-Borne Infection within Health Facilities

Part Three: Policies, Practices and Impact of Measures Against Personnel Exposures

Acknowledgement

Dedication

The author is greatly indebted to Dr. Jonekar Loren for his constructive contributions to the epidemiological investigation of the outbreak of this disease. He also wishes to thank the staff and managers in the health facilities involved in the study who spent time to provide the necessary information for the investigation.

This work is dedicated to my wife, Nkemdilim, my unofficial study leader, for her love and support; and to my children, Joey, Chiderah and Chibueze

I also give thanks to my family and friends for their support and encouragement.

Summary

This study aims to assess the problem of needlestick injuries in hospitals and evaluate the personal health service reduction cost of measures to reduce blood-borne infections against an international standard. The United States Centers for Disease Control and Prevention (CDC) guidelines

Acknowledgement

The author is greatly indebted to Dr. Jonathan Levin for his huge constructive contributions to the epidemiological study design and statistical analysis of this work. I also owe a lot of gratitude to my supervisors, Dr. F.C.A. Smith and Prof. C.B. IJsselmuiden. Their contribution to my training is invaluable. The co-operation of numerous staff and managers in the health facilities involved in this study, who spent time to provide the necessary information, is highly appreciated

Finally, I give thanks to my almighty creator for seeing me through my difficulties

Summary

This study aims to assess the problem of needlestick injuries in hospitals and evaluate the personnel health service infection control measures on blood-borne infections against an international standard, using the United States Centers for Disease Control and Prevention (CDC) guidelines.

Accidental needlestick injuries are the commonest occupational injury in health facilities. The high prevalence of serious infections with agents such as HIV or hepatitis B has given incidents of needlestick injuries new significance. While accidents cannot be avoided entirely, there are many effective technological/pharmaco-immunological as well as administrative and systems measures such as standard precautions, safety devices and improved instrument design that can reduce the occurrence of needlestick injuries and assist in managing the negative health sequelae.

This study was conducted by administering questionnaires to a sample of 230 doctors and nurses from a population of 7500 in 19 district and regional hospitals in Gauteng Province, to collect information on needlestick injuries. A response of 87% was obtained, with 201 individuals consenting to participate in the survey. Interviews were also held with the infection control personnel or any other person in-charge of personnel health in the selected hospitals, on the policies and practices present in the facilities on personnel health and safety infection control.

In addition, documents were collected or verified and practices observed to substantiate the claims made regarding policies and practices in the hospitals.

The result shows an incidence of 1.050 (CI. 0.666 - 1.434) needlestick injuries per person per year, with 34% (CI. 27% - 40%) of the 201 respondents having had at least one needlestick injury in the twelve months preceding the study conducted between November 2000 and April 2001. Only about 4% of these needlestick injuries were reported.

The mean percentage of estimated needlestick injuries reported, as shown in hospital records, is 3.5% in the regional hospitals and 5.9% in the district hospitals. The ratio of estimated: reported was compared using Mann-Whitney test for ranks. There is slight evidence ($p=0.0956$) that reporting is better in the district. There is no statistically significant difference between the incidence of injuries in doctors and that in nurses; and between the district and regional hospitals.

Compared against eight recommendations in the category IA group, which are infection control policies and practices strongly recommended for all hospitals by the Centers for Disease Control and Prevention, 5% of hospitals (1 hospital) had all the category IA recommendations in place, 31% (6 hospitals) had 75% of the recommendations and 47% (9 hospitals) had 50% to 60% of the

recommendations. The rest 16% (3 hospitals) had less than 50% of these strongly recommended policies and practices.

All the recommendations were grouped into a list of 12 policy documents or records. Only 2 hospitals (10%) had up to 6 of the 12 recommended policy documents or records. One hospital had none.

This study showed no statistically significant association between number of policies and practices in the category IA in the respective hospitals and the incidence of needlestick injuries. (coef. -107.486, conf. Interval -271 to 56, $t = -1.40$, $p = 0.182$). The correlation was however on the expected side of more policies in place, the less needlestick injuries.

Key words: Personnel health and safety; policies and practices; accidental needlestick injuries; preceding activities; reporting rate of incidents.

OPSOMMING

Die doel van die studie is om die probleem van naaldprikbeserings in hospitale te ondersoek en die personeelgesondheidsdienste se infeksiebeheermaatreëls teen bloedgedraagde infeksies teen internasionale standarde te evalueer deur gebruik te maak van van die stel riglyne van die Sentrum vir Siektebeheer (CDC) in die Verenigde State van Amerika.

Naaldprikbeserings wat per ongeluk opgedoen word is die mees algemene beroepsbesering in gesondheidsfasiliteite. Die hoë prevalensie van ernstige infeksies soos MIV en hepatitis-B het aan naaldprikbeserings 'n nuwe betekenis gegee. Terwyl alle ongelukke nie altyd vermy kan word nie, is daar tog effektiewe tegnologiese / farmoko-immunologiese sowel as administratiewe en sisteem-maatreëls soos byvoorbeeld standaard voorsorgmaatreëls, veiligheidstoerusting en verbeterde ontwerp van instrumente wat kan help om die probleem te verminder.

Die studie is uitgevoer deur die aanwending van vraelyste aan 'n steekproef van geneeshere en verpleegsters in 19 distriks- en streekhospitale in die provinsie Gauteng om die inligting oor naaldprikbeserings in te samel. Onderhoude is ook gevoer met infeksiebeheerpersoneel of enige ander persoon in beheer van personeelgesondheidsdienste in die onderskeie hospitale, oor die beleid en gebruike wat in die fasiliteit bestaan ten opsigte van personeelgesondheid en veiligheid en infeksiebeheer. Dokumente is ook versamel en gebruike waargeneem in die hospital om die aansprake wat gemaak is te staaf.

Die resultate toon 'n insidensie van 1.050 (CI. 0.666 – 1.434) naaldprikbeserings per persoon per jaar, met 34% (CI. 27.23% - 40.43%) van die 201 respondente wat ten minste een naaldprikbesering in een jar gehad het. Slegs ongeveer 4% van die naaldprikbeserings word aangemeld.

Die gemiddelde aanmeldingskoers in streekhospitale is 5.9%. Die verhouding van beraamde: aangemelde soos aangedui in hospitaalrekords is vergelyk met behulp van die Mann-Whitney toets vir rangorde. Daar is geringe bewys ($p=0.0956$) dat aanmelding in die distrik beter is. Daar is nie 'n statisties betekenisvolle verskil tussen die voorkoms van beserings in dokters en verpleegsters nie; ook nie tussen distriks en streekhospitale nie.

In vergelyking met agt kategorie 1A aanbevelings vir hospitale, ontwikkel deur die Sentrum vir Siektebeheer (CDC), gebaseer op bevindings van goed ontwerpte eksperimentele en epidemiologiese studies, het 5% (1) hospitaal al die kategorie 1A aanbevelings in plek gehad, 31%(6) hospitale het 75% van die aanbevelings , en 47%(9) hospitale het 50% tot 60% van die aanbevelings in plek gehad. Die oorblywende 16%(3) het minder as 50% van hierdie noodsaaklike aanbevelings en gebruike in plek gehad.

Al die aanbevelings is gegroepeer in 'n lys van 12 beleidsdokumente of geskifte. Slegs 2 hospitale het 6 van die aanbeveelde beleidsdokumente gehad. Een hospital het geen beleidsdokumente gehad nie.

Die studie het geen statisties betekenisvolle verband tussen die die aantal beleidsdokumente en gebruike in die kategorie 1A in die onderskeie hospitale en die voorkoms van naaldprik beserings getoon nie. (koëf. -107.486 , vertrouensinterval -271 tot 56 , $t=-1.40$, $p=0.182$). Die korrelasie was egter aan die verwagte kant van hoe meer beleidstukke in plek, hoe minder naaldprikbeserings.

Sleutelwoorde: Personeelgesondheid en –veiligheid; beleid en gebruike; toevallige naaldprikbeserings; voorafgaande aktiwiteite; aanmeldingskoers van voorvalle.

TABLE OF CONTENTS

TITLE PAGE.....	I
DEDICATION.....	III
ACKNOWLEDGEMENT.....	IV
SUMMARY.....	V
OPSOMMING.....	VIII
TABLE OF CONTENTS.....	X
LIST OF ANNEXURES.....	XIII
PART ONE	
REVIEW OF BLOOD-BORNE OCCUPATIONAL HEALTH PROBLEMS IN HOSPITALS.....	1
1. Introduction.....	2
1.1 <i>Important occupational health problems in the health setting</i>	2
1.2 <i>Blood-borne occupational health problems and risks</i>	2
2. Incidence of needlestick injuries.....	4
3. Cost of accidental needlestick injury.....	5
4. Conclusion.....	6
PART TWO	
PERSONNEL HEALTH PREVENTIVE MEASURES AGAINST BLOOD-BORNE INFECTION WITHIN HEALTH FACILITIES.....	7
1. Introduction.....	8
2. Mechanism of needlestick injuries.....	8
3. “Universal Precaution”.....	9
4. Preventive measures against needlestick injuries.....	10
4.1 <i>Engineering controls</i>	11
4.2 <i>Policies and practices</i>	12
4.2.1 Components of personnel health infection control.....	12
4.2.2 Objectives of personnel health infection control.....	12
5. Policy and practice recommendations.....	14
6. Conclusion.....	15
PART THREE	
POLICIES, PRACTICES AND IMPACT OF MEASURES AGAINST PERSONNEL EXPOSURES	17
1. Introduction.....	18
1.1 <i>Study relevance</i>	18
1.2 <i>Study question</i>	18
1.3 <i>Study population</i>	19
1.4 <i>Study design</i>	19
1.5 <i>Sampling strategy</i>	22
1.6 <i>Analysis</i>	23
2. Results.....	24
2.1 <i>Hospitals and individuals in the study</i>	24
2.2: <i>Accidental Needlestick Injuries in the preceding 12 months among respondents</i>	25
2.3: <i>Reporting of ANI</i>	26
2.4: <i>Activities preceding ANI and suggested preventive solutions</i>	27

2.5	<i>Occurrence of Skin and Mucous Membrane Exposures (MCE) in the past 12 months</i>	28
2.6	<i>Reporting of skin and mucous membrane exposures</i>	30
2.7	Contribution of different activities to Skin and Mucous Membrane exposures and suggested preventive solutions.....	31
2.8:	<i>Association between ANI and number of Policies and Practices in Category IA</i>	32
2.9:	<i>Association between ANI and number of written policy documents or records</i>	33
2.10:	Association between number of beds per doctor or nurse and incidence of needlestick injuries.....	33
2.11:	<i>Presence of the category IA recommendations in the facilities studied</i>	34
2.12	<i>Implementation of confidentiality and latex allergy policies</i>	38
2.12.1	Confidentiality.....	38
2.12.2	Latex allergy.....	39
2.13	<i>Cumulative number of recommendations practised in the 19 facilities</i>	39
2.14:	<i>Existence of appropriate written policy documents or records</i>	41
3.	Discussion	42
3.1	Incidence and reporting of needlestick injuries.....	42
3.2	Incidence and reporting of other exposures.....	46
3.3	Health policies, protocols and practices.....	46
4.	Recommendations	50
4.1	Accidental Needlestick Injury Prevention Measures.....	50
4.2	Skin and Mucous Membrane exposure prevention measures.....	51
4.3	Policy Recommendations.....	53
4.4	Implementation structures, systems and cost.....	54
5.	References	55

TABLE 1: INDIVIDUALS INTERVIEWED IN THE DIFFERENT HOSPITALS	21
--	-----------

TABLE 2: REASONS FOR NOT REPORTING ANI	27
---	-----------

TABLE 3: CONTRIBUTION OF DIFFERENT ACTIVITIES TO OCCURRENCE OF ANI	27
---	-----------

TABLE 4: SUGGESTED PREVENTIVE SOLUTIONS FOR ANI	28
--	-----------

TABLE 5: INTACT SKIN EXPOSURES	28
---	-----------

TABLE 6: NON-INTACT SKIN EXPOSURES	29
---	-----------

TABLE 7: MUCOUS MEMBRANE EXPOSURES	30
---	-----------

TABLE 8: REASONS GIVEN FOR NOT REPORTING SKIN AND MUCOUS MEMBRANE EXPOSURES BY RESPONDENTS	31
---	-----------

TABLE 9: SUGGESTED PREVENTIVE SOLUTIONS FOR SKIN AND MUCOUS MEMBRANE EXPOSURES	32
---	-----------

TABLE 10: FACILITIES WITH MEASURES TO ENSURE THAT HEALTH CARE PERSONNEL ARE FAMILIAR WITH PRECAUTIONS TO PREVENT OCCUPATIONAL TRANSMISSION OF BLOOD-BORNE PATHOGENS	34
--	-----------

TABLE 11: FACILITIES WHERE HEPATITIS B VACCINE IS ADMINISTERED TO PERSONNEL WHO PERFORM TASKS INVOLVING ROUTINE AND INADVERTENT CONTACT WITH BLOOD AND OTHER BODY FLUIDS	34
---	-----------

TABLE 12: FACILITIES WHERE ROUTINE SEROLOGIC SCREENING IS PERFORMED BEFORE VACCINATING FOR HEPATITIS B	35
---	-----------

TABLE 13: FACILITIES WHERE POST-VACCINATION SCREENING FOR IMMUNITY TO HEPATITIS B IS PERFORMED WITHIN 1 TO 2 MONTHS AFTER THE THIRD DOSE OF VACCINE FOR HEPATITIS B 35

TABLE 14: FACILITIES WHERE BOTH PASSIVE AND ACTIVE IMMUNISATION ARE USED FOR POST-EXPOSURE PROPHYLAXIS IN SUSCEPTIBLE PERSONS WHO HAVE NEEDLESTICK INJURIES, PERCUTANEOUS, OR MUCOUS MEMBRANE EXPOSURE TO BLOOD KNOWN OR SUSPECTED TO BE AT HIGH RISK FOR BEING HBSAG SEROPOSITIVE36

TABLE 15: FACILITIES USING APPROPRIATE RECOMMENDATION FOR POST-EXPOSURE PROPHYLAXIS AFTER PERCUTANEOUS OR MUCOUS MEMBRANE EXPOSURE TO BLOOD AND BODY FLUID THAT IS KNOWN OR SUSPECTED TO BE AT HIGH RISK FOR BEING HBSAG SEROPOSITIVE..... 36

TABLE 16: FACILITIES THAT ENSURE THAT EMERGENCY-RESPONSE EMPLOYEES ARE ROUTINELY NOTIFIED OF INFECTIOUS DISEASES IN PATIENTS THEY HAVE CARED FOR OR TRANSPORTED 37

TABLE 17: FACILITIES WITH POLICIES THAT ENSURE THAT HEALTH CARE PROFESSIONALS ARE FAMILIAR WITH HOSPITAL RULES TO PREVENT OCCUPATIONAL TRANSMISSION OF BLOOD-BORNE PATHOGENS..... 37

TABLE 18: FACILITIES THAT ENSURE THAT UPDATED HEALTH RECORD FOR ALL PERSONNEL ARE KEPT, MAINTAIN THE CONFIDENTIALITY OF THEIR RECORDS WHILE PROVIDING APPROPRIATE MANAGEMENT FOR OCCUPATIONAL ILLNESSES OR EXPOSURES..... 38

TABLE 19: FACILITIES WITH POLICIES THAT ENSURE THAT WHEN DATA ON PERSONNEL HEALTH ARE MADE PUBLIC, THE INDIVIDUAL'S CONFIDENTIALITY IS MAINTAINED, FOR EXAMPLE, BY RELEASING ONLY AGGREGATE NUMBERS..... 38

TABLE 20: FREQUENCY TABLE OF CATEGORY IA RECOMMENDATIONS (ANNEXURE 1) PRACTISED IN THE STUDIED HOSPITALS 39

TABLE 21: FREQUENCY TABLE OF CATEGORY IB RECOMMENDATIONS (ANNEXURE 1) PRACTISED IN THE STUDIED HOSPITALS 40

TABLE 22: FREQUENCY TABLE OF NUMBER OF WRITTEN POLICY DOCUMENTS OR RECORDS (ANNEXURE 2) FOR THE RELEVANT RECOMMENDATIONS IN THE 19 HOSPITALS STUDIED..... 41

List of Annexures

- Annexure 1: Personnel Health Service Managers' interview questions
- Annexure 2: Needlestick Injury questionnaire
- Annexure 3: List of Policies and records verified