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

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

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.
Summary

This study aims to address the problem of needlestick injuries in hospitals and evaluate the personal health service infection control measures of bloodborne infections against an internal guidance of 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 naaldprikbesserings in hospitale te ondersoek en die personeelgesondheidsdienste se infeksiebeheermaatreëls teen bloedgedraagde infekties teen internasionale standarde te evalueer deur gebruik te maak van die stel riglyne van die Sentrum vir Siektebeheer (CDC) in die Verenigde State van Amerika.

Naaldprikbesserings wat per ongeluk opgedoen word is die mees algemene beroepsbeseering in gesondheidsfasilitete. Die hoë prevalensie van ernstige infekties soos MIV en hepatitis-B het aan naaldprikbesserings ‘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 naaldprikbesserings 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 gebruikte wat in die fasilitete bestaan ten opsigte van personeelgesondheid en veiligheid en infeksiebeheer. Dokumente is ook versamal en gebruikte waargeneem in die hospital om die aansprake wat gemaak is te staaf.

Die resultate toon ‘n insidensie van 1.050 (Cl. 0.666 – 1.434) naaldprikbesserings per persoon per jaar, met 34% (Cl. 27.23% - 40.43%) van die 201 respondente wat ten minste een naaldprikbeseering in een jar gehad het. Slegs ongeveer 4% van die naaldprikbesserings 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 aanmeling 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 ontwerp ekperimentale 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 oorbylwendende 16%(3) het minder as 50% van hierdie noodsaaklike aanbevelings en gebruikie in plek gehad.

Al die aanbevelings is gegroepeer in 'n lys van 12 beleidsdokumente of geskryf. 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 gebruikie in die kategorie1A 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 gebruikie; toevallige naaldprikbeserings; voorafgaande aktiwiteite; aanmeldingskoers van voorvalle.
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