

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form ([see an example](#)) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Investigation of a safety-engineered device to prevent needlestick injury: Why hasn't StatLock stuck?
AUTHORS	Griswold, Sharon; Bonaroti, Alisha; Rieder, Christopher; Erbayri, John; Parsons, Jessica; Nocera, Romy; Hamilton, Richard

VERSION 1 - REVIEW

REVIEWER	Dr. Sumathi Muralidhar Senior Microbiologist Regional STD Teaching, Training & Research Centre Vardhman Mahavir Medical College Safdarjang Hospital New Delhi INDIA
REVIEW RETURNED	21-Dec-2012

GENERAL COMMENTS	Figure 3 is not necessary. It may be deleted and the data in it can be provided in text form.
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REVIEWER	Dr. HF van der Molen Coronel Institute of Occupational Health, Academic Medical Center Amsterdam Senior researcher / Manager No competing interest
REVIEW RETURNED	21-Jan-2013

THE STUDY	Methods are not clearly described. Limit the methods needed for answering the research question. E.g. now information is presented of the prospective cohort study which is not used for answering the questions. Also describe your methods for making a cost analysis. In results the para about focusgroups contains information for the methods section.
RESULTS & CONCLUSIONS	Also in results the focusgroup results is almost the same as presented in the table
REPORTING & ETHICS	I think these statements are not applicable for this study.

REVIEWER	Gérard PELLISSIER, PhD, GERES (Groupe d'Etude sur le Risque d'Exposition des Soignants aux Agents Infectieux, Paris, France. Competing Interests: None
REVIEW RETURNED	25-Jan-2013

THE STUDY	The authors state that Article focus is to define whether an alternative SED could help prevent NSI. In fact the article focus could be better to try to answer the question : why an available SED (that could help prevent NSIs) is so poorly used by healthcare workers in this hospital ? A key point is that introduction of SED in an hospital should be accompanied by education, detailed information and training of healthcare workers. Unfortunately this point is not considered in the article and some data presented suggest that information and training has not been provided, or has been poorly provided, to healthcare workers. (one example among others : « Only 30% had previous knowledge of the needleless SED that is supplied in all CVC safety kits at our institution », page 9, Lines 3-5). Moreover, involving healthcare workers in the choice of SED that has to be introduced in the hospital is another factor affecting success. Was this the case here ? These points must be further discussed in the article because they could explain at least partly why StatLock has not stuck.
GENERAL COMMENTS	<p>MINOR CONCERNS :</p> <p>Abstract, page 4, Lines 36-38 : A retrospective analysis... conducted over a 4-year period (July 2007-June 2001/ instead of July 2011 (to be corrected also in the text of the article)</p> <p>Results, page 7, Line 54 : Resident NSIs accounted for 87% (118 of 136) of the total physicians NSIs</p> <p>Results, page 9, Lines 18-19 : Forty-nine percent of residents ? : 26/95=27% ?</p> <p>1-The study presents the results of primary scientific research. YES</p> <p>2-Results reported have not been published elsewhere. YES</p> <p>3-Experiments, statistics, and other analyses are performed to a high technical standard. YES</p> <p>4 - Experiments, statistics, and other analyses are described in sufficient detail. NOT NECESSARILY</p> <p>5 Conclusions are presented in an appropriate fashion and are supported by the data NOT NECESSARILY</p> <p>6-The article is presented in an intelligible fashion and is written in standard english. YES</p> <p>7-The research meets all applicable standards for the ethics of experimentation and research integrity. YES</p> <p>8-The article adheres to appropriate reporting guidelines and community standards for data availability. YES.</p>

VERSION 1 – AUTHOR RESPONSE

From Reviewer: Dr. Sumathi Muralidhar

Figure 3 is not necessary. It may be deleted and the data in it can be provided in text form.

Response: We have deleted Figure 3 completely. The data from the this figure is explained in text form in lines 190-203. The "Figure 4: Close calls involving needlestick injuries witnessed in the 2 months preceding survey administration in July 2011" from the original manuscript has been changed to "Figure 3: Close calls involving needlestick injuries witnessed in the 2 months preceding survey

administration in July 2011.”

From Reviewer: Dr. HF van der Molen

Methods are not clearly described. Limit the methods needed for answering the research question. E.g. now information is presented of the prospective cohort study which is not used for answering the questions. Also describe your methods for making a cost analysis. In results the para about focusgroups contains information for the methods section. Also in results the focusgroup results is almost the same as presented in the table

Response: We have added more specific information in the “Methods” section, including a detailed explanation of the cost analysis of NSI in our institution in lines 142-150. We have also added a new table (Table 1) that explicitly lists the minimal charges for each NSI to clearly demonstrate our cost analysis. The methods used for the focus group were taken from the “Results” section and placed in the “Methods” in lines 166-173.

The description of the ongoing prospective cohort study has been removed from the methods section since it is not directly addressing the focus of this article. Instead, we explained this ongoing study in the discussion section in lines 326-333 because it is important ongoing research as to how to educate HCWs on the use of an SED and to determine if education and practice with an SED could effectively decrease rates of NSI.

Instead of presenting the same data from the focus group in both the text and the table, we have changed the text to offer a brief summary of the various responses (lines 244-250). The specific statements made by the residents have been kept in the table format, now called “Table 2.”

From Reviewer: Gérard PELLISSIER

The authors state that Article focus is to define whether an alternative SED could help prevent NSI. In fact the article focus could be better to try to answer the question : why an available SED (that could help prevent NSIs) is so poorly used by healthcare workers in this hospital ? A key point is that introduction of SED in an hospital should be accompagnied by education, detailed information and training of healthcare workers. Unfortunately this point is not considered in the article and some data presented suggest that information and training has not been provided, or has been poorly provided, to healthcare workers. (one example among others : « Only 30% had previous knowledge of the needless SED that is supplied in all CVC safety kits at our institution », page 9, Lines 3-5). Moreover, involving healthcare workers in the choice of SED that has to be introduced in the hospital is another factor affecting success. Was this the case here ? These points must be further discussed in the article because they could explain at least partly why StatLock has not stuck.

MINOR CONCERNS :

Abstract, page 4, Lines 36-38 : A retrospective analysis... conducted over a 4-year period (July 2007-June 2011/ instead of July 2011 (to be corrected also in the text of the article)

Results, page 7, Line 54 : Resident NSIs accounted for 87% (118 of 136) of the total physicians NSIs

Results, page 9, Lines 18-19 : Forty-nine percent of residents ? : $26/95=27\%$?

Response: We have modified the Article Focus Points and added additional discussion text to the article to emphasize the fact that NSI are occurring despite the existence of this SED. Our survey data shows that many study participants were unfamiliar with the device, and never received official training, but this alone does not account for the lack of utilization. The focus group data demonstrates that HCWs who are already familiar with Statlock are hesitant to use the device because of concern for efficacy, patient safety, or simply personal preference.

The 4 year period has been corrected to “July 2007 to June 2011” throughout the manuscript (Lines 43, 75, 190).

The typo in stating the percentage of residents NSIs has been corrected in line 191.

The previous statistic “49% of residents stated that they had at least one near miss...” has been corrected in lines 230-232.

VERSION 2 – REVIEW

REVIEWER	Gérard PELLISSIER, PhD, GERES (Groupe d'Etude sur le Risque d'Exposition des Soignants aux agents infectieux), Paris, France. Competing interests: none.
REVIEW RETURNED	22-Mar-2013

GENERAL COMMENTS	<ul style="list-style-type: none">- Your cost analysis estimates (2,723 USD per NSI) are much higher than those previously published in the literature (Gil LA, et al, Gac Sanit 2006;20:374-81 / Laufer NF, et al, AJIC 1994;22:75-82 / Jagger J, et al, Advances in Exposure Prevention 1998;3(3):1-3 / Roudot-Thoraval et al, ICHE 1999;20:614-7);- A straight suture needle is used to suture the CVC to the patient's skin: it should be possible at least to use curved suture needles less at risk of NSI;- Introduction/ last paragraph ; and Conclusion: Barriers to the utilization of SED include lack of information on the availability of the device!- Discussion/ first tree lines / 1st paragraph: The observing increase in reporting of NSI is certainly due to the awareness raising action conducted in the hospital;
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