Author's response to reviews

Title: Tobacco cessation Clinical Practice Guideline use in rural and urban hospital nurses: A pre-implementation needs assessment

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Version: 6 **Date:** 19 February 2012

Author's response to reviews: see over

February 16, 2011

Philippa Harris, PhD
Executive Editor
BMC Nursing
BioMed Central

Dear Dr. Harris,

We are pleased to resubmit the manuscript "*Tobacco cessation clinical practice guideline use in rural and urban hospital nurses: A pre-implementation needs assessment*" for your re-review and consideration for publication as an original research contribution in *BMC Nursing*.

We believe we have addressed all of the Reviewers' concerns and have detailed our responses. We very much appreciate the thoroughness of the reviews.

I will be the corresponding author on this submission.

Thank you for considering this manuscript.

Sincerely,

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Reviewer's report
Title: Tobacco cessation Clinical Practice Guideline use in rural and urban
hospital nurses: A pre-implementation needs assessment
Version: 5 **Date:** 9 January 2012
Reviewer: Doris Leung
Reviewer's report:

(1) Are the methods appropriate and well described?
i. It is incorrect to apply Bonferroni adjustment to 'an average of 7 comparisons per family, the p-value was set at alpha=.01 to be consistent across comparison.' The aim of Bonferroni adjustment is to keep the overall Type I error to a pre-assigned level for each family of comparisons by taking account of the number of comparisons were made in each family. That is, we want to keep the overall Type I errors across family to be consistent for comparison, not the alpha levels.

Response: We have revised the text to reflect the Bonferroni calculations for each family of comparisons, and have clarified in each table and figure what the exact alpha level was.

> To test for rural and urban differences, chi-square was used for categorical and dichotomous comparisons and t-tests for continuous variable comparisons, controlling the probability of Type 1 errors occurring by using Bonferroni adjustments for the "family-wise" comparisons—the p value was set at $\alpha = .01$ for global 5A comparisons, demographics, beliefs/confidence/time, systems, and intervention activities for "advise" and "assist", and at $\alpha = .004$ for facilitating factors and $\alpha = .003$ for inhibiting factor comparisons. For "ask", "arrange", and "assess" activity comparisons, the p value was set at $\alpha = .05$, $\alpha = .03$, and $\alpha = .02$, respectively.

(2) Are the data sound? Does the manuscript adhere to the relevant standards for reporting and data deposition?
i. Please state the reason clearly in the manuscript for why there were responses from only 12 of the 13 participating hospitals (p.11) as the readers need to know, whether there is no response from nurses in that hospital or the hospital did not cooperate so that there is no response. The two situations lead to a total different story and have different implications to the interpretation of the results.

Response: All hospitals agreed to cooperate. The nurses in one hospital did not respond.

Under "Setting" in the Methods section (pg 7), we have revised the wording to say:
> "All hospitals in LHIN 14 agreed to participate."

In the Results section, under "Response rate" (p 12), we have revised the wording to say:
> "A total of 269 nurses from 12 of the 13 participating hospitals returned completed surveys…".

Although we have not said it in the paper because it is anecdotal and could reveal the identity of the hospital, nurses at the hospital that did not respond were actually positive about providing cessation interventions and attended our information sessions but their

hospital was undergoing many organizational changes and we were told that the nurses probably didn't respond because they were at the moment being "surveyed to death".

ii. The post-hoc calculation of the margin of sampling error of the response rates of the urban and the 12 rural hospitals were problematic (p.11-12). Such result only applies to the case when a 'random' or 'representative' sample is drawn from the population. The problem here is: The authors have conducted a population-based survey but the response rate was low and hence the sample might not be representative and the results generated from the study might be biased. The direction of the bias tended to be a positive one as those nurses who do smoking cessation interventions are expected to be more likely to answer and return the questionnaires.

Response. We have removed the margin of error from the paper. It was added in our first revision in response to the Reviewer's initial request for an effect size—although, as the Reviewer indicates, the margin of error only applies to a random sample, we had checked with our epidemiologist who said that using a margin of error is commonly (although erroneously) used in situations like this so he did not think it unusual that the Reviewer asked for it. However, it is obvious from this second review that we misunderstood what the Reviewer was asking for and thus have removed the margin of error. We did address the response rate by using the total number of nurses employed at the hospitals at the time of survey distribution as the denominator for a very conservative estimate of the response rate.

We have also acknowledged the relatively low response rate throughout the discussion as requested by the Reviewer:
Pg 16, first sentence of the Discussion:
> The picture that emerged from this pre-program evaluation was encouraging, at least from the perspective of those nurses who took the opportunity to share their views.

Discussion: Pg 16, 1st sentence, 2nd para:
> Although the response rate was relatively low, interpretation of the findings was enhanced by using previously published survey items with good internal reliability and comparing the outcomes to the study on which the current study was based and which had a high response rate [13]—the outcomes of the 5A protocol steps, especially for rural nurses, were remarkably similar between the two studies.

Limitations: pg 20:
> Another limitation is the relatively low response rate. Although the response rate was within the expected range [28] and the outcomes were similar to the study [13] on which the current study was based, the nurses who responded to the survey might not be representative of the target population and thus the outcomes are not necessarily generalizable to all acute-care nurses working in the region or in other areas of the province or country. Obtaining a high survey response rate, especially in the fast-paced environment of acute care, can be difficult to achieve and is one of the disadvantages of survey research [27].

We appreciate the Reviewer's concern and believe that we have addressed the relatively low response rate. However, it goes beyond the data to say that the bias tended to be a

positive one—we don't know if that is the case, especially given that our results are remarkably similar to the Johnston et al. 2005 study (on which our study was based), which had a high response rate. Also, approximately one third of the respondents reported not intervening at all, only about one-quarter of the nurses assisted frequently, and there were comments in the "Inhibiting Factors" section of the results that indicated that at least some of the respondents did not see intervening as part of the nursing role. As noted below, we have revised the limitations and added a paragraph in the discussion to address the Reviewer's concerns.

iii. The total numbers of nurses in the urban (n=1055) and the 12 rural hospitals (n=572) do not sum up to the total population size of N=1667 (p.11). Please explain.

Response: This was a typo—it should be 1627. This has been corrected.

iv. The description of the results on systems-level Clinical Practice Guidelines is insufficient as a table was given to summarize the results (Table 2) which represents that the authors think the results are important. In addition, it is unclear what the percentages stand for especially for items with 3 options for responses in Table 2. On the other hand, there was no description of materials reported in the 'Training' section in the 'Survey Instrument' section.

Response: a) We have expanded the Results section on systems-level guidelines (pg 13):
> There were significant rural-urban differences in the proportion of nurses reporting having systems-level cessation supports, with less than half of the urban nurses reporting any systems. Specifically, significantly more rural nurses reported having a tobacco documentation system, cessation resources in the hospital (self-help materials, posters, and quit line contact information), and policies to identify tobacco use and document cessation counselling (Table 2). There were no urban-rural differences on having received cessation training (11% overall had training), having community-based cessation resources in the hospital (27%), or policies to provide cessation counselling (36%).

 b) we have added what the percentages represent in Table 2.
> [a] Answer options yes, no, and unsure.
> [b] Answer options yes and no.

c) There is a description in the Survey Instrument section in the Methods that clarifies what "training" questions were included on the survey. In the Results section, the outcomes are described in text. Please note that the "materials" given as an example in parentheses for "self-study materials" (e.g., video/CD/DVD, books, pamphlets, web, etc) appeared as reported in the methods sections and were provided as examples only, not as separate questions.

METHODS (pg 10): Cessation training.
> The preferred method for future training and training topics of interest were measured using a "check all that apply" type list designed for this study based on tobacco activities suggested in the Guideline [8]. The question stem was: "Which of the following

resources would you use to learn more about tobacco cessation for patients? (Please check all that apply)—brief in-service (e.g., 10-minutes) during departmental meetings, 1-hour workshop, ½ day workshop, full-day workshop, and self-study materials (e.g., video/CD/DVD, books, pamphlets, web, etc).” The stem for training topic items was: “If you were to receive tobacco cessation training, or further training, what areas would you like to know more about?” (Please check all that apply)”—how to: ask patients about tobacco use, advise patients to quit, assess readiness to quit, assist with quitting (provide social support, recruit social support, counsel, what self-help materials to provide, what to do if a patient continues to smoke), arrange follow-up (find/recommend post-discharge services), and how to organize your office in terms of record keeping and patient flow so that tobacco use status of patients is assessed at follow-up visits.

RESULTS (PG 13): Training:

There were no rural-urban differences for the preferred training format or content. Format preferences included anything brief—in-service trainings during meetings (40%), self-study (38%), and 1-hour or half-day workshops (34% each); few wanted full-day workshops (20%). The preferred training topics included assessing readiness to quit (73%), counselling (62%), and how to find/recommend post-discharge services (62%). Preferences for specific counselling topics included: providing advice (57%), choosing self-help materials (58%), providing social support (57%), and helping patients recruit social support (57%). There was little interest in asking patients about tobacco use (20%), likely because most nurses reported asking as part of their practice. There were two significant rural-urban differences: more rural nurses wanted to know how to counsel patients who continued to smoke (47% vs. 29%, $p \leq 0.01$) and how to organize files for patient follow-up (31% vs. 17%, $p \leq 0.01$).

(3) Are the discussion and conclusions well balanced and adequately supported by the data?
The discussion on the outcomes of 5A protocol steps on p.16 was incomprehensive. There are many other possible reasons for such a result, see for example the reasons stated in 2(i) and (ii) above.

Response: The paragraph on the 5A protocol on p 16 involves a discussion about how our outcomes were remarkably similar to the original study on which our study was based and that it is difficult to compare to other studies because of the different types of measurement scaling and reporting across studies (which we discuss further). We revised the paragraph to more clearly take into account the low response rate and as noted below in the next comment, have revised the limitation section on generalizability.

Although the response rate was relatively low, interpretation of the findings was enhanced by using previously published survey items with good internal reliability and comparing the outcomes to the study on which the current study was based and which had a high response rate [13]—the outcomes of the 5A protocol steps, especially for rural nurses, were remarkably similar between the two studies. Compared to other studies, the levels of “ever intervening” with tobacco in the current study were substantially higher but “frequently intervening” was lower [11, 12]. However, it is difficult to compare with other studies due to inconsistencies of measurement scaling and reporting across studies [21]. Some researchers treat

interval scales as categorical and report proportions by scale option for each survey item (e.g., % reporting frequent, occasional, seldom, and never) without presenting an overall percentage for each of the global 5A steps [14], while others report the proportion who have ever done a given activity, without reference to frequency [22]. Some studies use "unbalanced" rating scales (i.e., an unequal number of favourable responses at one end of the scale, such as "almost always" and "frequently"), which tends to result in more positive responses [23]; these studies then dichotomize the reporting of "frequently" intervening using the top two positive responses [11, 12], whereas "frequently" in the current study represented only the top anchor choice. These methodological inconsistencies suggest the need for more research in this area to develop standardized measures and methods of reporting.

The material regarding generalizability of the findings in the 'Limitation' section should be rewritten because the sample might not be representative of the target population.

Response: We have rewritten the limitatation section on generalizability.

> Another limitation is the relatively low response rate. Although the response rate was within the expected range [28] and the outcomes were similar to the study [13] on which the current study was based, the nurses who responded to the survey might not be representative of the target population and thus the outcomes are not necessarily generalizable to all acute-care nurses working in the region or in other areas of the province or country. Obtaining a high survey response rate, especially in the fast-paced environment of acute care, can be difficult to achieve and is one of the disadvantages of survey research [27].

(4) The meaning of some sentences is hard to follow. For example, 'There are often fewer speciality resources such as smoking cessation services in rural areas, thus, nurses working in rural areas can help decrease …' on p.3. Also, I am not sure the use of the clause of 'can help decrease', 'can help ensure' are correct as I cannot find such usage of 'can help' in a dictionary.

Response: We have revised the wording.

> Although there have been great achievements in the decline of smoking over the last few decades and concomitant decreases in smoking-related diseases and mortality [1], smoking cessation has slowed in Canada [2] and smoking rates in rural areas remain markedly higher than in urban areas [3]. Integrating cessation interventions into daily nursing practice and offering assistance to all patients who smoke is one strategy to increase smoking cessation [4] since few people seek out cessation assistance on their own [5]. This can be especially important in acute care settings where patients tend to be receptive and cessation interventions have been found to be exceptionally effective [6, 7]. The aim of the present study was a pre-program evaluation of hospital-based nurses' tobacco intervention beliefs, confidence, training, practice, and perceived intervention barriers and facilitators. It was designed to identify relevant information prior to implementing tobacco cessation guidelines across a large northern rural region, home to 1 urban and 12 rural hospitals.

Reviewer's report
Title: Tobacco cessation Clinical Practice Guideline use in rural and urban hospital nurses: A pre-implementation needs assessment
Version: 5 **Date:** 11 January 2012
Reviewer: Virginia Rice
Reviewer's report:

I think that the authors have done a terrific job in responding to the concerns of myself and the other reviewer. However, I am still very troubled with the 'planned comparison' of 13 rural hospitals and 1 urban hospital when there is no way to determine the representativeness of any of the hospitals. Question #7 could be to "Examine the similarities and difference of the nurses who worked in the rural hospitals compared to those who worked in a very large urban one."

Response: We have taken the Reviewer's suggestion and reworded the section.
We also examined the similarities and differences of the nurses who worked in the rural hospitals compared to those who worked in the larger urban hospital. These comparisons were made because data are lacking for nurses working in rural hospitals, and to avoid overweighting the outcomes by the one urban hospital which had more than two times the number of nurses employed relative to all the rural hospitals combined.

By the way did the authors look a the inter-hospital differences among the nurses who worked at just the rural ones? [The authors are assuming these groups of rural nurses are similar.]

Response: Although inter-hospital differences would be interesting, it would not be feasible due to the number of comparisons that would be necessary even if each of the 11 rural hospitals were only compared with the others combined as a group—it would require upwards of an additional 860 comparisons based on the variables currently assessed in the paper and the alpha level adjustments to control Type 1 errors would be about 0.0008 so it is not likely that anything would surface from the analyses. The sample sizes are also relatively small by hospital. However, as noted in the paper, we did develop an intervention based on this needs assessment that includes a tracking tool that has become part of patients' charts so we will be able to collect more objective data relative to the 5A's in the future, which overtime will allow inter-hospital comparisons (with fewer variables).