Author's response to reviews

Title: Tracking and monitoring the health workforce: a new human resources information system (HRIS) in Uganda

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Author's response to reviews: see over
Dear Independent Editorial Production Team:

Thank you for your email dated February 2, 2011. We appreciate your assistance preparing our manuscript for publication in Human Resources for Health.

We are submitting our edits to the revised manuscript. We have made the following edits, as listed below:

Cover Page:
- We have updated Pamela A. McQuide’s country affiliation from Nairobi, Kenya to read as follows: “IntraHealth International, Chapel Hill, North Carolina, U.S.A., Former Uganda Country Point Person for IntraHealth International”

Abstract:
- In the second sentence in the Background section, we have changed the font of the comma after the word “outdated” so that it is black instead of blue and is no longer underlined.
- In the second sentence of the Results section, we have added an “a” before council so the sentence now reads, “Of the 17 405 nurses and midwives who obtained a council registration…”

Background:
- In the last sentence of the third paragraph of the background section, we have added parenthesis around the word (HRIS), to read as follows: “…to support the development of comprehensive human resources information systems (HRIS) at training institutions…”
- In the 4th sentence of the 6th paragraph of the background section, we have removed a comma so the sentence reads, “Prior to decentralization, the licensure requirement was not routinely exercised by employers because newly qualified nurses and midwives would receive an automatic posting immediately following examination results and would register at the UNMC at their leisure.”
• In the first sentence of the second paragraph under Building HRIS Stakeholder Leadership, we have removed a comma so the sentence reads, “It should be noted that when the Capacity Project started work in Uganda, a separate, Government-recognized Human Resources Technical Working Group (HRTWG) already had an official charter.”

• In the first paragraph under Ensuring Data Quality and Security, we have edited the 4th and 5th sentences for clarity to read as follows: “The UNMC also adopted a new data validation process following system implementation. When a nurse physically comes to the Council for registration...”

Methods:
• As recommended by the Editorial Team, we have added the second sentence in the second paragraph of the Methods section which reads, “(Please see Additional File 1 for a list of data fields collected in the UNMC HRIS.)”

• In the last sentence of the second paragraph of the Methods section, we have removed a comma so the sentence now reads, “Licenses must be renewed every three years and a mandatory continuing professional education requirement must be completed prior to renewal.”

• In the last sentence of the fifth paragraph in the Methods section, we have removed a comma so the sentence now reads, “The hope of the UNMC is that once the UNMC’s new on-site verification process...”

Results:
• At the end of the 8th sentence of second paragraph of the Results section, we have made a correction to a number that was previously mistyped. Instead of reading, (68%, N=2509) this number has been corrected to read “(68%, N=2059).”

• In the 4th sentence of the third paragraph of the Results section, we have added “in 2009” to clarify the sentence, which now reads, “These are the health workers who most likely compose the actual nursing and midwifery workforce in 2009.”

Discussion:
• In the 4th sentence of the fourth paragraph of the Discussion section, we have deleted the word “and” and replaced it with “although” for purposes of clarify. The sentence now reads, “Limited resources have been put in place to enforce this law although employers are beginning to routinely insist on registration verification.”

• In the 5th sentence of the fourth paragraph of the Discussion section, we omitted the word “Moreover,” from the beginning of the sentence.

• In the 1st sentence of the fifth paragraph of the Discussion section, we added a space between “on” and “17”.

• In the 2nd sentence of the ninth paragraph of the Discussion section, we replaced the phrase “using HRIS data” with “that used the HRIS data to determine,” so the sentence now reads, “One of the outcomes of the HWAB was the creation of a semi-annual report that used the HRIS data to determine the number of filled and vacant positions in public hospitals and health centers throughout the country.”

Authors Contributions:
• As recommended by the Editorial Team, we have added a sentence to the end of the Authors Contributions section that reads as follows: “All authors have read and approved the final manuscript.”
We would like to thank the editorial production team for their time and their valuable assistance.

Sincerely,

Julie C. Spero
IntraHealth International
Response to comments of reviewers

Reviewer: Jennifer Nyoni

Reviewer's report:

The subject is an interesting one and one of the HRH areas that has little information on in publications. The subject is well defined and the methods are well defined and the details are okay and can be repeated elsewhere with the following suggestions for improvement.

1. Minor essential revisions

The title and the abstract initially give the impression that the HRIS being discussed covers all categories of health workers to be used for HRH planning including other aspects of HR details normally found in the HRIS until one reads the results and the last part of the methods that it is focused more on registration and licensure with the council. I would therefore suggest that the title be revised to reflect that. The suggestion for the title could be something like “Tracking and monitoring ……….at the UNMC in Uganda”

Response: To correct this impression, we have altered the article’s title to read, “Tracking and Monitoring the Health Workforce: Implementation and Analysis of a New Human Resources Information System (HRIS) at the Uganda Nurses and Midwives Council”

The writing is acceptable, simply put and clear -with the following suggestions for improvement:

- There is a mix of past and present tenses in some of the sentences that can confuse the reader that the authors may consider reviewing. The examples of these are third paragraph in the introduction;
  Response: To reduce confusion regarding verb tenses, we have made edits to paragraphs in the introduction. In the 2nd paragraph of the introduction, we have clarified that the data from the nursing vacancy rate in Uganda is from 2009. In the 3rd paragraph of the introduction, we have reordered the structure of the paragraph to reduce the change in tenses and improve the paragraph’s flow.

- The use of wrong words e.g.:
  o First chapter on introduction, second sentence where there is ‘distribute’ instead of administer (I think health workers do more than just distribute medicines)
  Response: We have replaced the word “distribute” with “administer” as per the reviewer’s suggestion.

- Fourth paragraph last sentence recommendations were ‘passed’ instead of made. Normally resolutions are passed and recommendations are made
  Response: We have rephrased this sentence to read, “At the 2008 East, Southern and Central Africa Health Community (ECSA HC) Forum on Best Practices, recommendations were made and subsequently, a resolution was passed by the ECSA Health Ministers to support the development of comprehensive HRIS at training institutions, regulatory bodies and employers, and to build capacity for HRIS use to inform policy and decision-making [9].”

- The second sentence in the first paragraph- ‘building HRIS stakeholder leadership’. The sentence on the Malawi example is misplaced as it confuses the flow. It can come later in the paragraph
  Response: We have moved the sentence with the Malawi example earlier and added a transition sentence to improve the flow of the paragraph.

2. Discretionary revisions
A bit more information on how the SLG contributed to the exercise and how the SLG benefitted also on this process so that replication can be clear on how they played their role.

Response: We have clarified the role of the Health Workforce Advisory Board as a sub-group of and an advisor to the Human Resources Technical Working group in paragraphs 9 and 10 of the Introduction, under “Building HRIS Stakeholder Leadership”. In addition, we have added paragraphs 9 and 10 in the Discussion section to elaborate on the role and benefits of the SLG/HWAB/HRTWG.

A bit more can be shared on how the MOH is benefiting from the much improved HRIS for the council for the broader HRIS nationally as this would be useful for other countries those who would like to replicate or are already in the process.

Response: Please see paragraphs 5, 7, 8, 9, and 10 in the discussion section. We have added these paragraphs to illustrate how the HRIS has benefited the Government of Uganda in matters of licensure verification, the creation and use of evidence-based semi-annual HRH report, and in the provision of data for the supplement to the Uganda Human Resources for Health Strategic Plan.

Reviewer: Scott Barnhart

Reviewer’s report:

Recommend: Publish if essential revisions are satisfactorily completed.

This is a descriptive study of the implementation of a human resource tracking system which was implemented at the Uganda Nurses and Midwives Council. The article provides important documentation of the process for implementation, some system design, and a description of the data and numbers of nurses entered into the system. As the authors point out there are multiple stakeholders, (UNMC, MOH, employers, nurses etc). The ability of the system to serve these stakeholders and to also shape policy needs greater amplification in the introduction and discussion and conclusions.

Response: Please see paragraphs 5, 7, 8, 9, and 10 in the discussion section. We have added these paragraphs to illustrate how the HRIS has benefited the Government of Uganda in matters of licensure verification, the creation and use of evidence-based semi-annual HRH report, and in the provision of data for the supplement to the Uganda Human Resources for Health Strategic Plan.

There are several ways this article could be strengthened.

1. Describe the UNMC in greater detail. What is statutory authority of the council? How does it relate to the MOH. How does it relate to licensure and how does it serve as a repository for information for hiring? What services does the council provide (noted in the article are test fee receipts- are tests given).

Response: To clarify the UNMC’s role regarding both licensure and hiring information repository, we have added paragraphs 5 and 6 to the introduction, which detail A) the UNMC’s legal authority as per the 1996 Uganda Nurses and Midwives Act, B) the UNMC’s role as an arm of the MOH that makes recommendations to the Government regarding issues pertinent to nurses and midwives, C) the UNMC’s role providing and tracking nursing and midwifery registrations and licenses, and D) the UNMC’s repository of licensure and registration data that can be verified at time of hire. In response to the reviewer’s question about services, specifically tests and test receipts, we have noted the UNMC’s former role and the Ministry of Education and Sports’ current authority in this regard. We have removed the paragraph in the discussion section that mentioned test fee receipts.

2. The UNMC should be described in the context of the Ugandan Health system.
Response: We have described the role of the UNMC in the context of the Ugandan Health System in the 5th paragraph of the introduction, which begins, “The UNMC is an official body charged with regulating standards for nursing and midwifery in Uganda...."

3. Describe any activities of UNMC around accreditation. In the table it notes who has graduated. Are there criteria for accrediting schools and is that necessary to register a person in the data base.
Response: We have clarified the UNMC’s historical and current role regarding school accreditation in the 5th paragraph of the introduction using the following language: “(The UNMC used to be responsible for accrediting schools of nursing, but a later statute has since granted the Ministry of Education and Sports authority to govern nursing and midwifery training curricula, examinations, and training institution accreditation. Legal structures within the country have determined that the most current law takes precedence until both statutes are harmonized.) The UNMC also provides recommendations and contributions to the Ministry of Education regarding nursing and midwifery training and accredited curricula.”

4. Along with the helpful clarification of definitions of enrolled and registered please include licensure.
Response: We have included the following definition in the 2nd paragraph of the methods section: “The term “licensed” means that a nurse or midwife has obtained a license from the UNMC that allows her to practice nursing. Licenses must be renewed every three years, and a mandatory continuing professional education requirement that must be completed prior to renewal.”

5. Describe in detail (perhaps as an appendix) the data fields collected;
Response: We have included an appendix with the data fields collected at the end of the manuscript.

6. Describe the process for ascertaining data quality.
Response: In addition to the paragraphs in the methods section regarding the elimination of duplicate entries, we have added the following text in the 5th paragraph of the methods section: “To further ascertain data quality, frequencies were run on all data fields to identify and eliminate obvious outliers due to errors in data entry. Analyses were also conducted on all dates to ensure that dates were entered in a way that made sense chronologically (ex. ensuring that dates of birth preceded dates of training and ensuring that dates of training at lower levels preceded dates of training at more advanced levels). In cases where data appeared to be in error, comparisons were made to hard copy records. However, it should be noted that in many cases, the hard copy records themselves were incomplete or were filled out incorrectly. The hope of the UNMC is that, once the UNMC’s new on-site verification process (during which individual nurses and midwives review a print-out of their record from the UNMC database and recommend updates if needed) becomes routine, the number of errors in the database will decrease over time.”

7. Describe in greater detail limitations. How much can or cannot be learned about whether someone is actually working, where they are working, or whether they are even in the country or alive?
Response: In order to further clarify the limits of the data set, we have added paragraph 7 to the section on limitations): “The UNMC is clearly still in the beginning stages of a transition from an entirely paper-based system to an electronic HRIS. Because the data are largely limited to the historical records, unless a nurse or midwife has verified the information in person, it is not possible to use these data to definitively determine whether that individual is currently active in the workforce. This uncertainty is a major limitation of the dataset and should be considered when interpreting our results. However, at the same time, the HRIS represents an enormous step forward for the UNMC and the larger Ugandan health system. Previously, this workforce information was only accessible in hard copy files; now, these data are electronically available and can be aggregated and analyzed for decision-making. It is the hope of the HWAB and the UNMC that as the system continues to be used and nurses and midwives regularly review and update their information, the data in the system will become increasingly more reliable and accurate.”
8. Perhaps consider a section on improvements based on preliminary uses.
Response: We have elected not to include a section on improvements based on preliminary uses. As we have noted at several points throughout the manuscript (please see the 5th paragraph of the Methods section, the 7th paragraph of the limitations section, and the 4th and 6th paragraphs of the Discussion section) the greatest improvement to the system will be the on-going validation of the data, which is currently taking place as nurses review their records during licensure. As the data continue to be updated and used over time they will become more accurate and current.

9. There is a considerable drop off from enrollment to graduation to licensure. This drop off needs to be explained. Does it represent poor data capture or poor rates of progression through the educational system.
Response: As we noted in the original draft in the fifth paragraph of the limitations section, “Licenses to practice, which must be renewed every 3 years, have only been recorded in the database if they were obtained in 2005 or later.” However, we have further clarified this in the fourth paragraph of the discussion section, noting that “Our analyses demonstrated that the rates of licensure were very low, due to the fact that licenses to practice were only recorded at the UNMC from 2005 onward.” Although we did not directly address the drop off from enrollment to graduation, we did point to this area as a starting point for future research as was noted in the original draft in the 3rd paragraph of the discussion section: “Data on graduation and registration rates from training institutions can be used to identify successful training programs. Follow-up studies can then be conducted to determine the reasons why some programs graduate a greater percentage of students than do others. Lessons learned from the successful programs can be applied to institutions where graduation rates are not as high.”