A study on the factors affecting the use of the POGS-Nationwide Statistics System (PNSS) among Philippine Obstetrical and Gynecological Society (POGS)-accredited institutions in 2016

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ABSTRACT

Objective: To evaluate the factors affecting the use of the POGS PNSS across institutions.

Basic Procedure: A cross-sectional study was done by the POGS Committee on Nationwide Statistics from November 2017 to April 2018. Eight representative institutions were chosen from POGS accredited institutions for service and training from the NCR, Luzon, Visayas, and Mindanao, based on the classifications of I. Complete Data, II. Incomplete Data, III. Wrong Format, and IV. No Data. Hospitals with the most number of admissions under each category were chosen. Interviews with chairpersons of the departments, Focus Group Discussions (FGD) with the OB-GYN residents, and actual direct observations of how data were encoded in the PNSS were done.

Results: All the chairpersons and Ob-Gyn residents of the selected institutions were aware of the importance of the PNSS especially in generating vital nationwide statistics like Maternal Mortality and Morbidity Rates. They had several pertinent suggestions on how improvement of the PNSS, like harmonization of classification of diseases with PHIC and ICD codes, and to include other co-morbidities in the system.

Conclusion: The factors affecting the use of POGS-PNSS in 2016 include: good attitude and compliance among POGS-accredited institutions, but there is a need to address multiple diagnosis including medical co-morbidities. Final diagnosis also needs to be PHIC-compliant, and there is a need to address the Data Privacy Act with the use of eMR (electronic medical records).

Keywords: Nationwide Statistics

INTRODUCTION

A study made by the Committee on Nationwide Statistics in 2016 published in the PJOG1 showed that compliance among POGS-Accredited institutions was poor. Review of data from 2012 to 2014 showed an increase in those who did not submit, from 51 (36%) to 75 (47.1%). For 2014, only 73 out of 161 (45%) had complete data submissions, 20 (12.4%) had incomplete data, 40 (24.8%) used a "wrong format," and 28 (17.3%) showed "No data," purportedly not submitting any data.

A review of the background on the system used by POGS to generate its data showed that in 2008, POGS started a system of electronically encoding compiled statistical data from its accredited institutions. This was called the Integrated Statistical Information System (ISIS), and the aim was to have on hand and for easy reference, data on nationwide statistics on admitted Obstetrics and Gynecology patients in all hospitals accredited for training and/or service. Several training sessions were conducted, involving representatives from 78 member hospitals. In 2012, encoding was shifted to an EXCEL-type interface which was deemed more user-friendly. However, poor compliance was reported by the committee.

During the three-year period (2012-2014), private hospitals from Luzon and Visayas did not report any maternal mortalities. It was thus inferred that there may be inaccuracies in the data submitted. It was highly probable that the Maternal Mortality Rate, including causes of direct and indirect maternal deaths, calculated from these available data generated from submissions of POGS-accredited hospitals, were inaccurate as well.

With the intention to improve national data collection, the POGS Committee on Nationwide Statistics conducted a nation-wide evaluation of the use of the present system (ISIS), now called the POGS Nationwide Statistical System (PNSS) by developing a questionnaire and visiting POGS-accredited hospitals in the NCR, Luzon, Visayas, and Mindanao. Face-to-face interviews with chairpersons, FGDs with residents and on-site observations on how data were encoded were done from November 2017 to April 2018.

It is hoped that through this evaluation the PNSS could be improved to become more relevant and user-friendly and to make it more meaningful and useful for interpretation, comparison, and provide a basis for preventive interventions in the future.

OBJECTIVES

The main objective of the study was to evaluate the use of the POGS PNSS across institutions. The socio-demographic profile of the individual institutions chosen for the study, the processes of the various institutions in handling the present PNSS, and determining the factors affecting its use were evaluated and reviewed.

METHODOLOGY

The protocol was sent to the Research Implementation Development (RIDO) of the University of the Philippines, College of Medicine for technical review. It was also registered at the Research Grant Administration Office (RGAO) of U.P. Manila.

Using qualitative methods, a cross-sectional study was done, involving eight POGS-accredited hospitals for service and training from the NCR, Luzon, Visayas and Mindanao. Under the classifications of: I. Complete Data, II. Incomplete Data, III. Wrong Format, and IV. No Data, hospitals with the most number of admissions under each category were chosen. These included three hospitals in the NCR, one in Luzon, three in the Visayas and one in Mindanao. The names of the hospitals were anonymized. Two hospitals were changed, one due to the activities of Mt. Mayon, and another hospital in Mindanao because of the peace and order situation. This resulted in an additional hospital each from the NCR and the Visayas.

The chair and members of the Nationwide Statistics Committee composed the study's research team. Qualitative methods were used to evaluate the existing POGS Nationwide Statistical System (PNSS). These involved 1) individual interviews with the chairs, vice-chairs or training officers of the chosen institutions, 2) focus group discussions with institution representatives in charge directly with the PNSS on the same visit, and 3) direct

observation of the process of data entry by designated encoders who may be a resident in training, a registrar from the institution, or any person designated to perform this task. The participating institution was informed of the visits at least a month in advance.

Prior to the data collection using the various methods, the Team Leader, who was a member of the core research group, convened the personnel in the institution for an orientation to the undertaking which included a short history on the POGS' statistical gathering, the rationale of the research, and secured the informed consent (Appendix A) from the participants. An Institution Case Report Form (Appendix B) was also accomplished by the Chair or her designated person.

For each visit to an institution, the Research Team, was composed of:
1. Team Leader, who oversaw the preparation of things needed prior to the visit and directed the activities during the actual visit;

2. Interviewer, who conducted the interview with the Institution's Chair or Vice-Chair or Training Officer regarding the use of the PNSS, guided by a prepared interview guide (Appendix B);

3. Focus group discussion moderator, who conducted the focus group discussion with representatives from the chosen institutions;
4. Focus group discussion scribe, who was the record keeper of the proceedings of the focus group discussion, and

5. Direct observer, who did the actual observation of the encoder as he/she entered data on the PNSS for the institution.

Individual interviews: The interviewer conducted the interview at the institution's office, using an interview guide (Appendix C) that was formulated.

Focus group discussions: Using the same guide as the one used in the interview, the moderator conducted focus group discussions with 4 to 6 participants. The participants were those directly involved in the PNSS process in their respective institutions. All sessions were recorded on tape and backed-up by written notes.

Direct observation: This was done with the encoder's actual entering of data into the PNSS being observed by a member of the research team. As observations were made, queries and clarifications was sought with the encoder.

APPENDIX A: INFORMED CONSENT FOR INDIVIDUAL PARTICIPANTS

Introduction: We are the members of the POGS Nationwide Statistics Committee for 2018:
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We are conducting a study entitled
"A STUDY ON THE FACTORS AFFECTING THE USE OF THE POGS-NATIONWIDE STATISTICS SYSTEM (PNSS) AMONG PHILIPPINE OBSTETRICAL AND GYNECOLOGICAL SOCIETY (POGS)-ACCREDITED INSTITUTIONS IN 2016"

If there are parts of the informed consent that you do not fully understand, you can ask any of the members of the team.

1. **Purpose of the research:** The primary purpose of any specialty database is to determine its mortality and morbidity rates as far as its accredited institutions for training and service are concerned. This will somehow help the society improve the services it renders to its concerned patients. For the Philippine Obstetrical and Gynecological Society, Inc. in particular, these are the Filipino women. The importance, therefore, of an accurate reporting of these data cannot be over-emphasized. Ten years ago, POGS came up with the Integrated Statistical Information System (ISIS) and later renamed POGS-Nationwide Statistics System (PNSS). Since then, however, there has been no evaluation of the system that has been made. This is the purpose of this research.

2. **Type of research and your participation:** This is a cross-sectional qualitative research involving 8 chosen institutions. Your institution is one of those. As a chosen institution, you will be visited by the research team and the following will be done:
    1. Interview with the Chair/Vice Chair/Training Officer
    2. Focus group discussion with 6 to 8 members of the institution directly involved with the use of the PNSS
    3. Direct observation of actual data entry to the PNSS

3. **Voluntary participation:** Your participation in this research is voluntary. It is your choice whether to participate or not.

4. **Benefits:** The study might not have a direct benefit to you but your participation will help us find out more about the use of the current PNSS.

5. **Risks:** There is a risk that in the course of the interview, focus group discussion, or direct observation, you will be sharing information confidential to you or to your institution that will make you feel uncomfortable. We do not wish this to happen. If this happens, we assure that all data gathered will be anonymized.

6. **Incentives:** You will not be provided any incentive while taking part in the research.

7. **Confidentiality:** All data will be anonymized. No identifying markers will be placed that will reveal the institution or the personalities in the institution in the study and in the final research output.

8. **Sharing the results:** The results that we will get from this research will be shared with you and the rest of the participants before it is made widely available through publications and conferences.

9. **Who to contact:** If you have any questions, you may contact: Dr. Helen Grace Te-Santos (0917-8048558), Team Leader

NAME OF PARTICIPANT: _____
SIGNATURE OF PARTICIPANT: _____
DATE: _____
WITNESSES: _____

RESULTS

There was good representation of both government and private hospitals, and a range of high and low volume patients' admissions per day in the eight institutions. (Table 1) Based on the Interviews and FGD questions, the following results were obtained:

1.   The chairpersons had been connected with the institutions for a mean of 16 years; and had been chairpersons of the department for a mean of 6.5 years.

2.   All the chairpersons had designated a particular person/ group of persons to ensure that the POGS PNSS in their institution was up-to-date. Most chairs also made sure that statistics were up-to-date.

3.   All the chairpersons were aware of the importance of the PNSS, especially in research.

4.   Almost all those involved in the encoding of the data did not have any formal training in the encoding. They were mostly taught by their seniors in this task.

5. For hospitals who did not have more than 5 admissions per day, encoding was done immediately by the resident on duty after his/her tour of duty. For those with more than 10 admissions, logging in was done on a weekly basis, based on a daily handwritten log by residents on duty. Two hospitals had a hospital admissions log book (one still used the previous yellow and green POGS logbooks) where the residents enter the data by hand, and then later encode it to the PNSS. One institution tried hiring an encoder but this did not work out because she was unfamiliar with the medical terms and many errors were made. In one government hospital that averaged 70 to 80 admissions per day for both OB and GYN cases, a first year resident logged in the admissions as they came in and these were checked by the senior. However, due to the high patient volume of this hospital, the department hired an encoder (a nurse) who did the encoding. She has been on the job for 5 years. In most institutions, the statistics were done by junior residents and were checked by the senior resident. There was one hospital where a consultant was in charge of statistics and she checked the entries regularly.

Overall, all the hospitals were conscientious in the logging in of their statistics.

The majority of resident/nurse encoders found the system simple to use, but too detailed. Some encoders added or deleted extra columns or cells because of the need to include multiple diagnosis, especially medical co-morbidities. The system thus read this as "Wrong format" or "No data" at all, even if the institution had submitted their data. Also, there were multiple OB and/or medical conditions or categories that were not available as options in the dropdown choices, and the encoders found these confusing. Most of the institutions continued to log in their statistics either in a separate notebook or logbook by hand.

To evaluate the current PNSS Excel software, a standard questionnaire was administered to the encoders, including a directly observed session with them. Data entry of five obstetrics cases were used to simulate the encoding process. The average estimated time to encode ranged from 2.4 minutes to 24 minutes per patient. The fastest time to encode 5 OB cases was 4.85 minutes, while the slowest was 23.37 minutes. 87.5% of the encoders were residents. Encoders did not anonymize the names, and were advised to do so prior to submission of data to ensure data privacy (Data Privacy Law). All the encoders did not modify the columns of the Excel file, which was the correct method; they used the dropdown choices to enter data rather than directly typed in data. All the encoders also did not leave any field blank, and labeled the file with the name of the institution, which were all correct. Eighty-seven percent of all encoders backed up their data, while 75% of the encoders used the daily handwritten census as the source of their data. Twelve percent still used the POGS logbook.

Suggestions obtained from these interviews and directly-observed encoding process include:

1. Standardization of nomenclature. Harmonize POGS nomenclature/diagnosis with PHIC, ICD code. This will ensure universality of the system and multiple encodings will be avoided for all admissions.

2. Include medical co-morbidities or other surgical procedures done on one patient in the system. Since the system only provided for one answer, encoders were forced to choose what they thought was the most important one and encode this, hence other data were lost. Moreover, certain surgical procedures could be grouped together as one (e.g. TAHBSO).

3. Add entries for important data like: twin pregnancies (currently, only one entry for the outcomes); gynecology admissions without surgery, e.g. for chemotherapy only; classification of hypertension; exact number of previous CS done; blood transfusions, etc.

4. Allow for monthly/quarterly submissions so errors could be detected and rectified early. At the POGS secretariat, a timely reply from those in charge of the PNSS would be needed, so that the involved institution could be notified immediately whether what they submitted were correct.

5. Have an instructional manual in hard copy or electronic form (CD or PowerPoint) on how to use the system for each institution which can be referred to when needed.

6. Put the POGS statistics online for easier access and direct encoding but this needs the safeguarding of data by the main office. One hospital has the so-called "ownership of form," unique to them, where data can be shared and edited among themselves.

7. Advice on how to address the Data Privacy Law.

Table 1. Matrix of eight hospitals with status, number of consultants, residents, admissions, encoders.

HOSPITAL	REGION	STATUS	NO. OF CONSULTANTS	NO. OF RESIDENTS
1	NCR 1 Government Hospital	Complete Data	24	32 (12, 9, 6, 5)
2	NCR 2 Government Hospital	Wrong Format	28	46 (16, 10, 14, 4)
3	NCR 2 Private Hospital	No Data	8	7 (1, 1, 2, 3)
4	LUZON Government hospital	Wrong Format	8	11 (7, 3 , 1, 1)
5	VISAYAS 1 Private hospital	Incomplete Data	23	3 all 4th yr. (2 to come back after maternity leaves)
6	VISAYAS 2 Private hospital	Incomplete Data	20	7 (1-2-0-4)
7	VISAYAS 3 Government hospital	Wrong Format	18	19 (3, 8, 4, 4)
8	MINDANAO Government hospital	Complete Data	26	26 (12, 4, 4, 6)

HOSPITAL	REGION	ADMISSIONS/ DAY	ENCODER	TAUGHT BY
1	NCR 1 Government Hospital	30	Post-duty res. checked by senior	Senior resident
2	NCR 2 Government Hospital	30 - 50	All RODs encode	Senior resident
3	NCR 2 Private Hospital	5	Post-duty resident	Senior resident
4	LUZON Government hospital	6-10		
5	VISAYAS 1 Private hospital	4-5	Post-duty resident	Senior resident
6	VISAYAS 2 Private hospital	6- 8	2nd year resident	2015: POGS & IT person. After that, senior resident
7	VISAYAS 3 Government hospital	40-60	1st year resident	Senior resident
8	MINDANAO Government hospital	70 - 80	1st year checked by RIC	Hired encoder (nursing graduate)

DISCUSSION

All the chairpersons and Ob-Gyn residents were knowledgeable in the use of the PNSS, and highly aware of its importance, although each institution differed in their schedule of entering data, depending on the volume of patients. There was a need to harmonize the nomenclature and classification of diseases with PHIC and ICD coding, and to expand the system to allow coding of co-morbidities, especially medical diseases, and other procedures not found in the PNSS. Moreover, there was a need to address the compliance to the Data Privacy Act.

CONCLUSION

To address the various problems that had beset the POGS Nationwide Statistics, and also importantly, to address the compliance to the Data Privacy Law, the committee is recommending that a shift to the electronic Medical Report (eMR) be made. This will be more user-friendly not only on the level of the individual Ob-Gyn but also to institutions that have high-volume patient loads. As these will be connected to the POGS Data Base, there will be no problems with compliance for the statistics needed for accreditation, and with approval from the POGS main office, statistics for Maternal Mortality, Morbidity etc. could be easily reviewed especially for those who need these data for research. Privacy of patients could also be secured, as they will be anonymized, thus addressing the stipulations of the Data Privacy Law. Moreover, we could also evaluate if all the data being encoded are important so we could come up with a shorter and simpler form.

LIMITATIONS OF THE STUDY

The study involved only 8 institutions deemed best representing the categories of compliance to the POGS PNSS. It is possible that inferences from them may not be applicable to all the POGS-accredited hospitals of the country. However we have tried our best to have chosen representative institutions in each region for each category. ■

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