

## **Accurate record keeping in referral hospitals in Pakistan's North West Frontier Province and Punjab: a crucial step needed to improve maternal health**

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### **Abstract**

**Objective:** To assess record keeping practices in referral hospitals in the North West Frontier Province (NWFP) and Punjab province, focusing specifically on United Nation's Emergency Obstetric Care (UN EmOC) indicators of maternal morbidity and mortality.

**Methods:** This cross-sectional survey collected information at the health facility level, using UN process indicators to assess EmOC services. The study enrolled 170 health facilities from 19 randomly selected districts in Punjab and NWFP.

**Results:** The study found poor record keeping practices in the health care facilities of both provinces. A few facilities had no records at all; information on obstetric complications was inconsistent. Many facilities' records were marked by duplications, inaccuracies, and data was deficient.

**Conclusion:** Health policies and planning in any country depend heavily on having correct and timely information on health parameters. In Pakistan, many recording and data collection problems can be solved by having well-designed and accurately maintained data registers. Proper and regular supervision and staff training are invaluable components of data collection. Efforts to improve record keeping may provide a low-cost, low-technology way to document progress towards improving maternal health (JPMA 57:443:2007).

### **Introduction**

According to the latest UN (WHO-UNICEF-UNFPA) estimates, 529,000 women still die each year from complications of pregnancy and childbirth, and millions are disabled, the vast majority being in developing countries.<sup>1</sup>

Pakistan, with a population of 151 million, of whom 67% live in rural areas<sup>2</sup>, lags behind many countries with similar income levels in terms of its maternal mortality ratio, which stands out at 500 per 100,000 live births.<sup>3</sup>

The launching of a safe motherhood initiative in Pakistan in 1987 encouraged many international groups to propose a variety of strategies to address the problem of

maternal mortality.<sup>4</sup>

It is now well established that, while the majority of severe obstetric complications cannot be predicted, many can be prevented and still more can be treated if emergency obstetric care (EmOC) is available, accessible, and of good quality.<sup>5</sup>

The emphasis has been laid on the importance of access to EmOC to manage the common causes of obstetric death: haemorrhage, obstructed labour, unsafe abortion, eclampsia, and infection.<sup>6,7</sup> A set of process indicators was formally issued by UNICEF, WHO, and UNFPA in 1997 to address these causes of death.<sup>8</sup> These process indicators are

increasingly recognized as useful and valid for assessing EmOC service availability, use, and quality.<sup>9</sup>

Ideally, data used to calculate the EmOC process indicators should come from a single source, namely maternity admission registers. But often in Pakistan, several registers are used causing confusion, inconsistency, and data deficits.<sup>10</sup> Worse, in few health care facilities, registers do not even exist.

The hospital's records provide visible evidence of what it is accomplishing. When records are accurate and complete, they furnish a basis for evaluating hospital activities.<sup>11</sup> If they are inaccurate and incomplete, proper evaluation is difficult.

The quality of data is particularly crucial for the definition of obstetric complications<sup>10</sup>, but this information is often not recorded, as in many cases there is no column in the register which specifically asks whether any obstetric complication occurred.<sup>4</sup> This incompleteness of hospital records compromises the calculation of such indicators as the case fatality rate and the caesarean section rate.<sup>10</sup>

A study in Pakistan highlighted that record keeping was non-standardized and records were of poor quality and that important information was often missing from records, even in teaching hospitals in Karachi.<sup>12</sup> Another survey indicated that only a few health facilities in Pakistan provide EmOC services and many do not keep standardized maternal health records. This absence or poor quality of record keeping clearly affects data quality and undermines evidence-based decision making.<sup>13</sup>

The objective of this study was to assess maternal morbidity and mortality related record keeping practices in referral hospitals in Pakistan's North West Frontier Province (NWFP) and Punjab provinces using UN EmOC indicators.

## Methods

This study was carried out as part of a broader study conducted to collect information at the health facility level using UN process indicators, which are increasingly recognized as useful and valid tools to identify the availability, use, and quality of emergency obstetric care.<sup>8</sup>

Two of Pakistan's four provinces, Punjab and NWFP, which account for some 70% of Pakistan's population, were selected for this particular study. To minimize bias, random sampling was done at both the area and the health-facility levels. To better evaluate the situation, in the first stage of sampling, 30% of districts in both provinces (n=19 districts) were randomly selected. In the second stage, in 11 districts in Punjab and 8 in NWFP, all public health facilities providing EmOC (n=170) were included: 120 hospitals from Punjab and 50 from NWFP. The reliability and validity of hospital record information were checked by

repeating data collection from a 10% sample of hospitals.

In Pakistan, provinces are further divided for administrative purposes into districts. Depending on population size, each district has four or more rural health centers (RHC), two or three "Tehsil" hospitals and one district hospital. The RHCs are providing basic EmOC services (i.e. administration of parenteral antibiotics, oxytocin, and anticonvulsants; manual removal of placenta and retained products of placenta; and assisted vaginal delivery). The Tehsil and District hospitals, provide comprehensive EmOC (the basic EmOC services above, plus caesarean section and blood transfusion).<sup>13</sup>

Two teams undertook the study, one in each province, both trained by the chief investigator. Data collection took place from July to September 2003. The records cover 12 months of facility activities. The needs assessment was conducted using mainly pre-established tools.<sup>8</sup>

Permission was obtained from the ethics review committee at the University of Tokyo, Japan, and from the Ministries of Health in Punjab and NWFP, Pakistan. Data processing and analysis were carried out using SPSS version 10 (SPSS Inc., Chicago, IL, USA) to produce frequencies and percentages.

## Results

During the study, data on EmOC indicators were collected from all the sources available in the health care facilities, which included the following:

- \* Labour and birth register (operating theater register),
- \* Antenatal register for registration of pregnancies,
- \* Gynaecological ward register for postoperative care or other disease records,
- \* Out patient Department (OPD) registers for general checkup records.
- \* and, Emergency registers

The data showed that in many hospitals the main information for EmOC was obtained from the labour or birth registers, followed by OPD and antenatal registers (see Table 1).

A comparison of data records between the two provinces showed that most of the health facilities in NWFP had better maintained labour/birth registers and gynaecology ward registers than in Punjab, while antenatal and OPD registers were better kept in Punjab. A labour/birth register was present in 75% of hospitals visited in Punjab and 92% visited in NWFP. Antenatal registers were found in 32.5% hospitals in Punjab and 26% in NWFP (Table 2). It is also important to note that overall, 16 (9.4%) facilities had no maternal health record keeping system.

**Table 1. Information sources for maternal health in health facilities (n=170).**

Data source	Number of cases
Labour / Birth register	136 (80%)
Gynaecology ward register	20 (11.8%)
Antenatal register	52 (30.6%)
OPD register	62 (36.5%)
No record available	16 (9.4%)

Due to multiple responses the percentage is more than 100%

**Table 2. Information sources for maternal health in health facilities: comparison between Punjab and NWFP.**

Data source	Punjab:	NWFP:
	Number of cases	Number of cases
Labour / Birth register	90 (75%)	46 (92%)
Gynaecology ward register	5 (4.2%)	15 (30%)
Antenatal register	39 (32.5%)	13 (26%)
OPD register	51 (42.5%)	11 (22%)
No record available	15 (12.5%)	1 (2%)

Due to multiple responses the percentage is more than 100%

Our review of the records and record keeping systems revealed a number of deficiencies. Most of the information on obstetric complications was either lacking from the registers or inconsistent. The existing case records did not highlight obstetric complications. Also the information on time of admission and/or treatment was non-existent. Records were poorly stored because of inadequate filing space. In addition, one health facility in NWFP (2%) and 15 (12.5%) in Punjab had no maternal health records at all.

Interviews with medical staff responsible for record keeping revealed that medical personnel lacked knowledge and skills in recording and properly managing information and were not fully trained in the concepts of information use. Administrators' underutilization of available information at the local level also seemed to undermine service planning and management.

During our study it was noted that almost all the public health facilities lacked standard, uniform guidelines for the registration of pregnancies, births, deaths, and complications. Problems of duplication, incompleteness, and inaccuracy of data also surfaced, causing difficulty for health administrators and researchers to accurately and reliably identify and define health problems.

## Discussion

Health records contain information about people's health and what they, the government, and others are doing about it. Records serve to describe the incidence, prevalence, and causes of major diseases, as well as the availability and effectiveness of attempts to treat them.<sup>14</sup>

Health information, like skilled manpower, drugs, money, equipment, and so forth, is one of the essential ingredients of an effective health care delivery system. National health managers and planners need information not only for conducting specific programs but also for assessing individual facility effectiveness.

In Pakistan, while health system planning has been reasonably well formulated at the central level, implementation has been disappointing, particularly at the social and geographic periphery. System management, including effective means for handling health-related information, has been fundamentally deficient.<sup>15</sup> In the new health care provider paradigm, efficient and effective management, manipulation, and use of information are essential to sustain economic vitality and growth.<sup>16</sup>

It is understood that while the majority of severe obstetric complications cannot be predicted, many can be prevented and still more can be treated if emergency obstetric care (EmOC) is available, accessible, and of good quality. EmOC indicators should be monitored continuously<sup>13</sup>, but that is dependent on regular access to facility records that are reliable and of good quality, so that information can be interpreted properly, indicators can be developed, evidence-based conclusions can be drawn, and policy decisions can be taken at the local and national levels to improve maternal health.

Our study uncovered a need to standardize the record keeping system, as information on maternal health is now difficult to obtain. One important EmOC indicator, namely complication during pregnancy, was missing. It is imperative to develop standard formats to facilitate all relevant information with a minimum expenditure of time and resources.

Another issue requiring due attention is the duplication, inconsistency, and incompleteness of the information found on various health record forms. Record keeping systems for monitoring maternal mortality programmes can be improved considerably by the establishment and supervision of the necessary data management mechanisms.

These improvements can be accomplished with existing record keeping systems, without great expense or technological requirements. Many recording and data collection problems can be solved merely by having well-designed and accurately maintained registers. Staff training is a crucial component of this process. Proper and regular supervision could improve staff work performance.

Record keeping was found to be adversely affected by health service personnel's lack of motivation. Since local health service supervisors and health workers rarely receive feedback on the data they report to higher levels, they have

little incentive to ensure the quality of data they collect or even to comply with reporting requirements.<sup>14</sup>

Accurate record keeping also generates data that serves research purposes, not to speak of improved planning and management of hospitals and higher quality of services offered. Efforts to improve record keeping hold the promise of a low-cost, low-technology way to establish evidence-based approaches to safer motherhood and family health.

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