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Reproductive Health Management Information System in Sri Lanka: Reflective writing

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1 | INTRODUCTION

Health Information (H.I.) are all health & health service related data, generated, captured, transmitted, stored, processed, analyzed & disseminated on paper/electronic format.

It handles data related to preventive health services, curative health services, health administration & research. This data are used for decision making in diagnosis, treatment, outcome assessment, administrative decisions and planning and monitoring. Therefore H.I. is regarded as one of the building blocks of health system.

H.I should be comprehensive, accurate, reliable, relevant, accessible, timely and cost effective for evidence based decisions.

National H.I. System has several subsystems;

- Curative health systems
- Preventive health systems
- Population census
- Civil & vital registration system

- Routine population based health surveys

They collect data on mortality/morbidity, outbreaks of diseases, social determinants of health, population, births, marriages, health care coverage, access, human resource, financing and quality of services. They are manual & paper based at collection and computerized at analysis at regional and central level. Dissemination of data is done with publications at different levels such as WER and AHB which are paper based.

Data from private sector is deficient except in large hospitals. No health records are maintained on notifiable diseases, immunization and mortality in small

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hospitals or by GPs.

Recent developments in HIS includes formulation of the National Policy on Health Information (M.o.H. 2017) and National Health Information Strategic Plan. Other initiatives are Health Automation & Innovations such as establishment of National e - health steering committee, national e - health guidelines & standards, training of medical officers on bio medical informatics, electronic IMMR, establishment of computer - maintenance units in hospitals, WEBIIS to register births, MCH data and immunization, e - RHMIS handling maternal & child health data, effort to introduce a personal health identification number, HR management system and drug supply management system in MSD.

Reproductive Health Management Information System

This is the Maternal and Child Health information system in Sri Lanka which is coming under preventive health system. The data flows from the grass root level to the national level. PHM, PHI, SPHM, SPHI, PHNS, MOH, MO-MCH, RDHS and FHB are the main players of this system. It is a long information flow. Data are gathered by the PHM /PHI at field, MCH clinics and schools at the operational level and directed to the MOH level from where they are processed and directed to RDHS at regional level. Finally data are directed to Family Health Bureau at national level. Manual data was not directed to the Provincial level till the establishment of the electronic system (e - RHMIS) in 2016 and now the MCH situation of the province is electronically accessible to the PDHS.

2 | DESCRIPTION

I selected RHMIS for the evaluation and the reflective writing during my attachment at Management, Development & Planning unit at Ministry of Health. Data was collected in November 2017. I first contacted Medical Officers Health Informatics attached to MDPU and discussed about different health information systems established in M.o.H. Thereafter I read several publications on health information and visited FHB. There I had in-depth interviews with

a CCP and a registrar (Com. Med) on the maternal and child health information management system (RHMIS) in a comprehensive manner. The information content, flow, mechanism for monitoring, evaluation and sustainability of RHMIS are as follows:

1. At PHM level, Eligible families are registered by the area PHM in her **Eligible Family Register** (H - 526) where data such as date, address, male/ female, age, pregnancies, children, family planning and any adolescents in the family are entered on family basis. Adolescents not in eligible families in the area are also entered in a separate page of the same eligible family register.

When pregnancy is identified, mother is registered in the **Pregnant Mothers' Register** (H - 513) in which data such as name, age, a.T.d. & rubella vaccination, EDD, previous pregnancies, pregnancy outcome, delivery and post - partum status are entered. Mother is provided with **Pregnant Mothers Record** (H - 512). Same number given to Eligible Family Register is given to Pregnant Mothers Register and Pregnant Mothers' Record. Additionally, PHM maintains **Expected Dates of Delivery Register** (H - 515) to capture all the mothers whose deliveries are due in particular months.

PHM diary (H - 511) is filled up at the field, mentioning all the activities done by PHM, under different categories such as registration of mothers, post partum visits, infants and adolescents, MCH clinic participation, weighting of children, newly married couple education and other activities such as GBV. It is maintained daily at the end of the day and taken into the **PHM daily statement** (H - 523). The summary of daily statement is prepared at the end of the month as **PHM monthly statement** (H - 524).

H - 524 is prepared in 2 copies and one; kept with the PHM and other one; sent to MOH. H - 524 which consists of all the field level activities is computerized by PPOs and enter into e - **RHMIS** at the MOH office.

2. In clinics, **clinic register** is maintained daily and summarized into daily clinic summary. **Daily clinic summary** is taken to prepare **Quarterly Clinic Return** (H - 527) at the end of the quarter. This summary is filled separately for 3 months in 3 columns. It is also computerized to the e - RHMIS by the PPO

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at MOH level.

The data of both H - 524 and H - 527 are added together to prepare **Quarterly MCH and Clinic Return** (H – 509) prepared in 3 copies; one kept with MOH; one; sent to RDHS and one; sent to FHB. H - 509 is auto generated with electronic system. Electronic system was introduced since January 2017. Pass word has been given to MOH and team, RDHS and the MCH team, PD and his CCP and FHB.

3. School health activities are carried out by the PHI. School health survey is carried out by PHI under 9 components such as schools, number, environment, sanitation, latrines, water supply, food & health promotion. SMI is planned and conducted for year 1, 4, 7 and 10 students in all the schools in his area. In schools with students less than 200, all children are examined. PHI's work in the SMI is first entered in his **Pocket note book**.

Defects identified are entered in a summary **Defect sheet** which is prepared in 2 copies; one; kept with the teacher and other; with the PHI, stating the name and the defect. **Monthly summary return** is prepared by each PHI and sent to the MOH which contains data regarding number of schools covered, nutritional programmes, aTt vaccination & HPV vaccination done and defects identified. MOH prepares the **Quarterly school health return** (H - 797) which is sent to RDHS to be sent to FHB. Still, H - 797 is prepared manually and it is expected to be incorporated in to the e – RHMIS from next year.

Review of the MCH services is done at all three levels; MOH, RDHS and Central (FHB) level. Monitoring review at MOH level is done monthly at monthly staff conferences; at RDHS level, monitoring is done monthly at MOH conference and evaluation is done annually at district MCH review meeting and at central level evaluation is done annually by FHB visiting each RDHS at annual central MCH review meetings. Island wide programme evaluation format is available for evaluation.

Feeling

Even before the evaluation I had an understanding that the monitoring & evaluation system functioning in preventive sector was much more advanced than in curative sector. Most of the outcomes related to

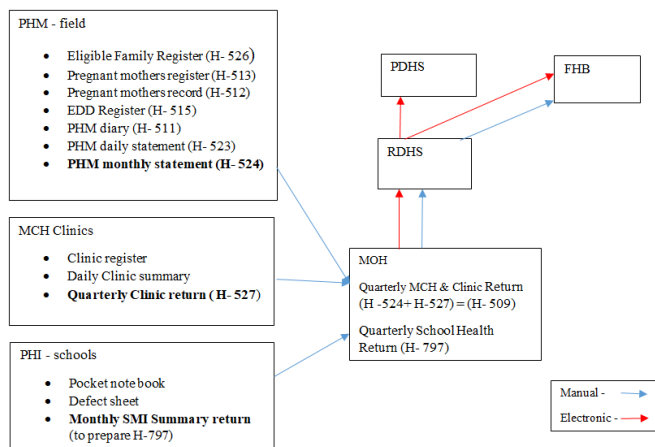


FIGURE 1: Reproductive Health Management Information System

maternal & child health that Sri Lanka has achieved are a result of evidence based planning in the preventive sector. This reliable & quality evidence is obtained by the properly functioning information management system. Compared to curative sector, health staff is more committed to maintain the coverage, quality, timeliness and the sustainability of the health information. The responsible staff is educated, empowered, encouraged and supervised by the authorities at all levels to improve their dedication in record keeping with a similar priority to service delivery.

Evaluation

Resource availability (processes/ procedures, infrastructure, HR, capacity, financing) use of indicators, Information management (governance, sharing, quality), information security/ privacy, confidentiality, ethics and E health/Innovations (ICT solutions, interoperability of subcomponents, storage, security & sustainability) were used to evaluate the system.

Favorable aspects about the RHMIS are as follows:

- RHMIS is a well - organized & a well - established system.
- It capture data in a very wide spectrum of parameters.
- Data is collected island wide from every MOH division.
- There are diaries, advanced programmes, monthly action plans, registers, records and returns to document duties performed to improve accuracy of data.

- Accuracy of data is further assured by cross checking in field supervision by SPHMs, PHNS and SPHIs.
- Targets are given based on national fertility rates and census data which gives a quantifiable target for PHMs and PHIs to achieve.
- There is a proper, regular monitoring system at all levels; divisional, regional and central on monthly, quarterly and annual basis.
- Team work, supervision, training opportunities, performance monitoring and performance appraisal at MOH level is very satisfactory for sustainability.
- Guidance, monitoring and supervision by RDHS, MO-MCH, RSPHNO, CCP and FHB are happening regularly in a satisfactory way.
- Quality and timeliness have been improved with electronic H.I. system from divisional level to regional and to national level.
- With e – RHMIS, PDHS also has an access to MCH data.

Weak areas associated with RHMIS are as follows:

- Manual system has no feedback of performance to PDHS level, as provincial system has been established at a later time. PDHS did not get correct information for evidence based decision making.
- It has given PHMs and PHIs a high work load due to excessive documentation.
- Priority duties of PHMs are interrupted by other activities such as dengue control programmes, flood health camps etc. which can affect accurate and timely documentation.
- There are about 1000 vacancies for PHMs and 250 vacancies for PHIs in the country which could cause delay and less quality in documentation in vacant areas with only covering up duties.
- This system can monitor only service coverage but not the quality of service.
- Poor infrastructure facilities, transport, large geographic areas, no over time allowance have affected the performance of field staff.

Analysis

This well-organized system has been functioning for more than 3 decades in all 343 MOH areas in the

country. With repeated trend analysis, new fields such as adolescent health, gender based violence and well women health have also been introduced to the existing system.

The main reason for smooth functioning of this information system could be the presence of good, regular monitoring system at all levels. Monitoring is done not only via reviewing documents but also via field observations, progress review meetings & monthly conferences at different levels which could motivate responsible staff for accountability.

Targets for service coverage by field staff is prepared by immediate supervising authority on a mathematical basis so that the performance and coverage can be quantified and compared and deficiencies can be identified. Technical and infrastructure support and guidance is provided to address deficiencies.

Inter PHM comparisons, Inter MOH comparisons and inter RDHS comparisons of MCH information and performance appraisal could have positively affected performance of all categories. This system has improved the employee satisfaction towards work and the team building among different categories.

This system has facilitated development of the annual action plan at national level, RDHS level and MOH level based on the results; especially it has enabled outcome based planning at national level.

However, with the growth of population, shortage of field staff, privatization of MCH care for a certain extent, poor attitudes and less commitment of the staff could have led to lesser quality, accuracy and timeliness of this data compared to the early period. Anyway, with the introduction of e – RHMIS the quality and timeliness have been improved significantly according to FHB sources.

New data such as adolescent health, GBV, NCD & reporting adverse events of immunization are not efficiently collected even though the system is established. Reasons could be; time constraints, poor community participation and acceptance, poor health seeking behavior of the community from the PHM/PHI etc. which could lead to underestimation of MCH performance of the country.

The allocated population for one PHM is 3000 and for one PHI, it is 10,000. Accordingly, there are

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approximately 1000 PHM vacancies and 250 PHI vacancies in the country. Further, with the expansion of PHM services beyond MCH, it is planned to increase the cadre to 1500 population to 1 PHM in rural areas and 2500:1 in urban areas to improve the quality of services including documentation. Anyway, the recruitment for the post of PHM is becoming difficult due to low popularity of the post. Therefore, not sufficient number of PHMs are trained to recruit to vacant areas, badly affecting the maintenance of accurate & timely documentation of data at the field level which is still done manually.

This system gathers information mainly regarding the coverage of different variables. Quality of service delivery is measured indirectly by further analyzing. However, patients' expectations, satisfaction and service delivery in their perspective is not collected. There may have many other factors affecting the health of mothers and children which could be incorporated. Anyway FHB has been making all the efforts to capture all the necessary data by repeatedly revising the formats over the whole period.

Manual data is not communicated with the PDHS in the province. Even though the MCH activities are delegated to RDHS, PDHS needs detailed MCH information for planning and allocation of resources for infrastructure development, purchasing equipment and capacity building in the province. This has happened, as provincial government was a newer concept. Any way, with the introduction of electronic information system, PDHS has got the access to this data which will improve transparency, accountability and will facilitate supervision and informed decision making at provincial level.

3 | CONCLUSION

- RHMIS is a well functioning health Information management system in the public preventive sector.
- It is partially automated for better accuracy, timeliness and quality.
- It is a preventive health information system with highly autonomous and independent with poor sharing.
- Contribution from MCH services in curative sector and private sector is poor.

- Human resource at operational level is inadequate.
- Hospitals under the line ministry administration have no accessibility.
- More emphasis is to collect information on service coverage not on the service quality.
- Client Privacy, data security, confidentiality and ethical issues could be raised.

Recommendation

- Automation should be expanded to operational level and to curative sector for efficient capturing and dissemination of information.
- There should be legislation for the private sector to report its MCH performance to the national system.
- Cadre revision and recruitment should be carried out to improve HR availability at operational level.
- PHMs should be freed from burdens external to MCH activities to be fully committed to MCH activities.
- New areas such as adolescent health, services to newly married couples, GBV, child rights violation and NCDs should be strengthened to improve data accuracy on their prevalence.
- Services provided by the preventive sector should be incorporated to the school curriculum to improve relationship of community with health staff to improve utilization and accurate data reporting.
- Indicators to measure service quality should also be included into data collecting formats.

Privacy, confidentiality and data security issues should be attended by fully automating the whole system with necessary technology.

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