Original Article

Countdown to 2015: A case study of maternal and child health service delivery challenges in five districts of Punjab

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Abstract

Objective: To identify the challenges confronting the Pakistan province of Punjab in delivering maternal and child health services at the district level.

Methods: The qualitative assessment was done from May 15 to June 15, 2010, comprising 5 focus group discussions, 5 in-depth interviews with district managers, 49 in-depth interviews with providers, and direct observation of 19 facilities providing comprehensive emergency obstetric care in the districts of Multan, Muzaffargarh, Bahawalpur, Khanewal and Jhelum. Using skilled birth attendance coverage as an indicator, Punjab districts were stratified into three socio-economic strata, and from these the five districts were selected.

Results: Distribution of basic emergency obstetric care facilities by population size was found to be inadequate in all districts. Quality of care was compromised by lack of staff and equipment. No anaesthetist was available in majority of the district hospitals and tehsil facilities. Half of the teshil headquarter hospitals were devoid of staff nurses. Vital medicines used in obstetric care were not available. Partograph was not being used in any of the tehsil-level facilities. Chlorine solution was not present in any of the facilities. Governance issues included multiplicity of command channels, delays in receipt of medicines and political interference.

Conclusion: If the province has to achieve the related Millennium Development Goals (MDGs), related to maternal and child health, the existing facilities are not adequate. To achieve progress, proven and innovative approaches will have to be put in place that may influence the continuum of care from the household to the health facility.

Keywords: MDGs, FGDs, Maternal health, Punjab. (JPMA 62: 1308; 2012)

Introduction

In September 2000, the world, including Pakistan, adopted the United Nations Millennium Declaration, committing to reduce extreme poverty and setting out targets known as the Millennium Development Goals (MDGs) that are to be achieved by 2015. Three of the eight MDGs are health-related. Goal 4 aims at reducing under-5 child mortality rate by two-third; Goal 5 aims at reducing maternal mortality ratio by three-quarter; and Goal 6 aims at combating Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome (HIV/AIDS), malaria and other diseases.[1]

Pakistan stands committed to achieving the MDGs by the deadline. Recent evidence, however, indicates that Pakistan has as yet made insufficient progress, especially in meeting the health-related goals. On the special instructions of the Chief Minister of Punjab, the Population Council with the financial support of the United Nations Population Fund (UNFPA) has carried out an assessment to see whether or not the province is on track with respect to MDGs 4 and 5. The aim is to guide the development of future provincial strategies. The maternal mortality ratio for Punjab estimated by the 2006-07 Pakistan Demographic and Health Survey[2] was 227 maternal deaths per 100,000 live births, while the infant mortality rate was 81, and neonatal mortality rate was 58 per 1000 live births. The total fertility rate (TFR) for Punjab remains exceptionally high at 3.9, with current use of any contraceptive method at 33.2 percent.

Keeping in view these statistics, improving maternal health outcomes is a tremendous challenge for the government. The existing quality of care available at the public health facilities is often poor, compromising the capacity of these facilities to meet the reproductive health needs of women.

A study carried out earlier in Multan clearly highlighted that primary and secondary care facilities were poorly equipped in terms of supplies and equipment to deal with obstetrical emergencies. For instance, it was found that magnesium sulphate, a drug for the management of eclampsia, was available only in tertiary care facilities. Besides, there was also shortage of some basic medicines like iron, folic acid, broad-spectrum antibiotics and uterotonics.[3] A study carried out in rural Sindh also showed that the quality of care in tertiary care facilities still needs improvement.[4] It reported that in a three-year period, 48.6% mothers delivering at a tertiary hospital in district Matiari died of complications.

In this paper, results of a qualitative appraisal are discussed that brings to forefront the challenges and issues that confront the health system in delivering maternal and child health services at the district level which is the lowest administrative tier of government.

Subjects and Methods

Districts in Punjab vary considerably on the basis of economic status, literacy levels, population density and distribution, availability of health facilities and health indicators. To be able to obtain a representative picture of the province, using the skilled birth attendance rate as a proxy indicator for access to healthcare, we stratified the districts into 'high' 'medium' and 'low' categories. Proportionate to size, we purposively selected five districts: Jhelum and Multan to represent the 'high' strata; Khanewal as 'medium'; and Muzaffargarh and Bahawalpur representing the 'low' strata. The assessment comprised a qualitative approach that included 5 Focus Group Discussions (FGDs) with 29 health managers, 5 in depth interviews with district managers, and 49 open-ended semi-structured interviews with service providers at 19 health facilities. Direct observation of facilities was also carried out. Information was obtained on existing activities being undertaken to improve maternal, neo-natal and child health outcomes as well as to identify the existing constraints and obstacles faced at the district in the delivery of services. The assessment included site visits to all facilities offering comprehensive obstetric care within the five districts. During these visits, physical verification of equipment, supplies and records required for maternal and newborn care was carried out. The field assessment was done from May 15 to June 15, 2010. The field team comprised of two medical doctors and one social scientist. Among the facilities visited were 14 tehsil headquarter (THQ) hospitals, 4 district headquarter (DHQ) hospitals, and one teaching hospital.

Informed consent was obtained from all the participants after providing an in-depth briefing on the study and its objectives. The structured questionnaires were conducted in while maintaining auditory privacy. Participation was voluntary and the respondents were not compensated in any way.

Results

The 'UN Process Indicators' developed to monitor the availability, utilisation and quality of Emergency Obstetric Care (EmOC) services recommend that in order to provide adequate maternal health coverage there should be at least one comprehensive and 4 basic EmOC facilities for a population of 500,000. The criterion was not being met anywhere except Jhelum (Table-1). As far as basic EmOC is concerned, it was not being met in any of the five districts implying limited access to a sizeable proportion of the population. The skilled birth attendance coverage by community midwives (CMWs) was less than 35 percent in

Table-1: Number of Basic and Comprehensive EmONC against Total Population.

Name of District		Status		
	Total Population*	Existing	Recommended	Discrepancy
Jhelum	885162			
Number of Basic EmONC		5	7	2
Number of Comprehensive EmONC		3	2	1 Additional
Khanewal	2898231			
Number of Basic EmONC		4	23	19
Number of Comprehensive EmONC		4	6	2
Multan	4219537			
Number of Basic EmONC		7	34	27
Number of Comprehensive EmONC		3	8	5
Muzaffargarh	4273074			
Number of Basic EmONC		12	34	22
Number of Comprehensive EmONC		4	9	5
Bahawalpur	3491293			
Number of Basic EmONC		10	28	18
Number of Comprehensive EmONC		5	7	2

*Population figures obtained from District Population Welfare Offices.
EmONC: Emergency Obstetric and Neo-natal Care.

Table-2: Availability of supplied equipment at Comprehensive EmONC facilities.

Description of Services	Number of Health facilities visited									
	Jhelum=03* Functional		Khanewal=04* Functional		Multan=03* Functional		Muzaffargarh=04* Functional		Bahawalpur=05* Functional	
	Number	%	Number	%	Number	%	Number	%	Number	%
Blood bank	2	66.6	1	25	2	66.6	2	50	1	20
Incubator	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
ICU neonate	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Description of Services	**Available**		**Available**		**Available**		**Available**		**Available**	
	Number	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**
Nutrition counseling	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Family planning services	**Available**		**Available**		**Available**		**Available**		**Available**	
	Number	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**
Implants	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Male sterilization	Nil	Nil	1	25	1	33.3	Nil	Nil	Nil	Nil
Female sterilization	2	66.6	2	50	2	66.6	1	25	2	20
Medicines	**Available**		**Available**		**Available**		**Available**		**Available**	
	Number	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**
Magnesium sulphate	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Benzyl penicillin	1	33.3	2	50	2	66.6	3	75	3	60
Calcium	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Ferrous sulphate	1	33.3	2	50	1	33.3	Nil	Nil	4	80
Folic acid	Nil	Nil	3	75	1	33.3	3	75	Nil	Nil
Insulin	1	33.3	Nil	Nil	1	33.3	Nil	Nil	2	40
Plasma expanders	Nil	Nil	1	25	1	33.3	3	75	4	80
Equipment/Supplies	**Available**		**Available**		**Available**		**Available**		**Available**	
	Number	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**
Gloves	1	33.33	1	25	1	33.3	3	75	4	80
Disposable urinary catheter	1	33.33	2	25	1	33.3	3	75	2	40
Partograph	1	33.33	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Ventilator	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

*Number of public-sector facilities providing comprehensive EmONC services in the district.
EmONC: Emergency Obstetric and Neo-natal Care.

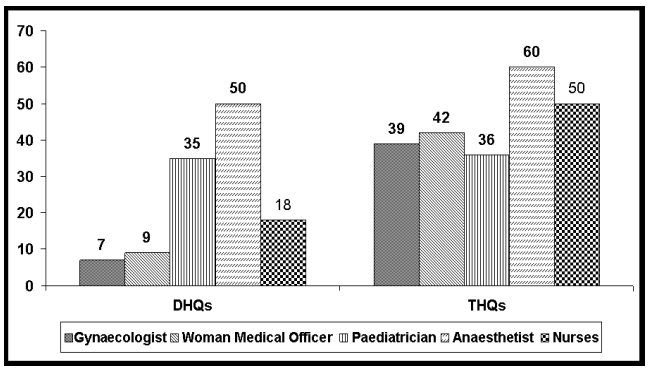

Figure: Proportion of vacant staff positions in comprehensive EmONC facilities. (EmONC: Emergency Obstetric and Neo-natal Care).

Jhelum, Multan, Bahawalpur and Muzaffargarh, while it was 41 percent in Khanewal. One CMW is recommended for a population of 10,000.

The functionality of a comprehensive EmOC facility is dependent upon the 24-hour availability of specialists, including gynaecologists, anaesthetists and paediatricians, but, above all, paramedics, including operation theatre assistants, adequate number of nurses especially trained in neonatal paediatric care, blood transfusion officers and midwives who together form an integrated and functional obstetric and neonatal care team.

Essential staff was not available at both the district and tehsil levels (Figure). No anaesthetist was available in 2 of the 4 (50%) district hospitals and 8 of the 14 (57%) tehsil facilities. Seven (50%) THQs were without staff nurses. In THQ Jalalpur Pirwala (District Multan) all the nine posts of specialists were lying vacant. The hospital had 14 sanctioned posts of charge nurses, out of which only 3 (21.4%) were filled.

The blood banks were not functional in 12 (80%) of the facilities of Bahawalpur, 8 (50%) facilities of Muzzafargarh, 6 (75%) in Khanewal and 4 (37%) in Jhelum. Main reasons included the absence of blood transfusion officers and assistants and absence of essential equipment and supplies.

Vital medicines used for antenatal care and managing obstetric complications that were not available at any of the facilities included calcium tablets and magnesium sulfate injections (Table-2). Similarly, zinc suspension and low osmolarity Oral Rehydration Salt (ORS), for the management of childhood diarrhoea, was not available at any of the facilities. Neonatal ventilators were also not available anywhere. Partograph was not being used in any of the facilities at the tehsil level and only in one facility in Jhelum at the district level. While incubators have been provided through donor-assisted programmes at some of the facilities, none were in use owing to the absence of full-time trained staff.

Insufficient contraceptive supply was also reported as a frequent problem. Except Multan, in all other districts adequate number of contraceptives (as per demand) had not been received in the preceding months. For instance, in district Bahawalpur 200 copper-T intrauterine contraceptive devices had been received in the preceding quarter for onward supply to 71 Basic Health Units (BHUs), 10 Rural Health Centres (RHCs), 10 Maternal and Child Health (MCH) Centres, 4 THQs and 5 dispensaries; on an average 2 Intra Uterine Contraceptive Devices (IUCDs) per facility. Vasectomy services were not available in Jhelum, Muzaffargarh and Bahawalpur districts.

While autoclaves were present at all facilities for sterilisation, initial disinfection was weak in almost all facilities. In some facilities, however, pyodine was being used inappropriately. Except for the tertiary hospital in Bahawalpur, incinerators were not available in any facility and hospital waste, including syringes, was being buried. In four facilities, disposal of syringes was found to be highly inappropriate and they were seen scattered on the hospital premises.

At the grassroots level, three types of care providers were working: CMWs, Lady Health Workers (LHWs) and the Traditional Birth Attendants (TBAs). To ensure the proper provision of care, grassroot providers at both basic and comprehensive emergency obstetric and neo-natal care (EmONC) facilities must be linked through a functional referral system which was lacking in all the five districts.

District managers acknowledged that a large proportion of CMWs who had been trained, had not been able to qualify their final examination and only few had been deployed. According to the District Maternal, Neonatal and Child Health (MNCH) coordinators, the CMWs had no defined parameters to follow. The supervisory mechanism had not been developed and each district was following its own system. Provision of equipment was also patchy. For instance, in district Bahawalpur, none of the deployed CMWs had been provided with a delivery table, while in Muzaffargarh CMWs had yet to establish their midwifery homes.

Except for a few facilities in district Multan, no other facility was maintaining a record of cases referred to them by LHWs or lower facilities such as RHCs or BHUs. According to the providers, very few cases were referred to the THQ hospitals and were directly sent to the tertiary care facilities. Surprisingly, none of the facilities at the tehsil level in all the five districts reported any maternal death in the preceding year, as most complicated cases were referred to the tertiary care hospitals.

After devolution in 2001, administrative powers

were devolved from the provinces to the districts. However, some administrative control was retained by the provinces. At present, district health officials are frustrated as they feel they are accountable to the administrative head of the district, the District Coordination Officer (DCO), who is a bureaucrat, the erstwhile Nazim, as well as to the provincial Health Department. The district and provincial priorities at times are not in agreement. At the district, a number of vertical programmes administered by the provinces are also functioning independently that have as yet not been decentralised and, hence, coordination with these is limited. Drug procurement that had been initially decentralised has been again recentralized, resulting in delays in the supply of drugs that are not demand-based and, as many managers pointed out, of poor quality.

Political interference was singled out as a major reason for staff absenteeism, negligence to duties and inability of the managers to take disciplinary action against influential staff members. All district managers complained of insufficient budget for vehicular fuel that was adversely compromising the field-based supervisory process. Managers complained that in-service training opportunities were far and few. Except for having received postgraduate training in public health, none of the managers had received comprehensive trainings in public administration or new advances in the management sciences. Coordination between the Health and Population Welfare departments was also found to be weak.

Discussion

It has been well established that health outcomes are dependent upon the household-to-hospital continuum that is influenced by the accessibility, affordability and quality of care offered by the health system. Findings from the recent Pakistan Demographic and Health Survey shows that 65 percent of women in Punjab delivered at home and only 10 percent delivered at a public-sector facility compared to 24 percent within a private-sector facility. The World Bank has estimated that 74 percent of maternal deaths could be averted if all women had access to interventions that address complications of pregnancy and childbirth, especially EmOC.[5] The quality of care being offered by the health system is critically linked to access and utilisation of services.

To increase access to skilled birth attendants, the government introduced a new cadre of CMWs. Presently, their numbers are limited and their linkage to the health system is not well established. It will take time for these workers to establish themselves within the communities. Till then an interim strategy must be in place which could include strengthening the capacity of TBAs. There is now adequate evidence to support that training TBAs for basic newborn care and referrals to health facilities can lower both infant and maternal mortality. Through a cluster randomised controlled trial in rural Sindh, a significant reduction was observed in perinatal and maternal deaths in clusters where TBAs had been trained.[6] Population Council's research in Dera Ghazi Khan[7] has shown that it is possible to train TBAs despite their age, if they are willing to learn. Three things can be done to make their practice safe. First is to ensure that they always use clean delivery kits; second is to encourage them to prophylactically administer misoprostol for preventing postpartum haemorrhage (PPH) after delivery; and, third, they are made competent to recognise danger signs and facilitate early referrals. There is now sufficient data available which shows that in resource-constrained areas where it is not possible to use injectable oxytocin, health workers in home-based settings can be trained to use oral misoprostol and save women's lives by preventing PPH.[8-10]

Cost-effective measures, such as the use of partograph, during labour is widely recommended, especially in under-resourced settings, as a simple and affordable tool to monitor labour. The partograph identifies women in need of an obstetric intervention.[11] It was, therefore, surprising that partograph was not being used in any of the tehsil-level facilities assessed, which could be attributed either due to a lack of training of the providers or a lack of realisation of its importance. Evidence shows that women with less than 6 months interval between pregnancies are at a an increased risk of maternal death, third trimester bleeding, premature rupture of membranes, puerperal endometritis, and anaemia.[12] Birth spacing should, therefore, be considered as a life-saving health intervention.

Though the generalisation of these findings are limited, this appraisal has clearly highlighted some of the core challenges confronting the health system. These include difficulty in recruitment and retention of female staff and specialists at the tehsil level due to lack of incentives and provision of facilities such as staff residential facilities; lack of essential medicines and supplies due to the absence of a well-defined drug and contraceptive logistic system; poorly trained managers and providers due to insufficient in-service training opportunities and the disconnect between the community-based health workers and the health facilities due to a non-functional referral system.

In some countries, to overcome the non-availability of specialists at peripheral facilities, technicians have been trained in performing certain surgical procedures[13] such as cesarean sections which is an option that can be also tried out in Pakistan.

Being a cross-sectional study, it provides only a snapshot of the situation at the time of the visit, though the governance and management issues are endemic. For

Pakistan to achieve the MDGs by the 2015 deadline, it would require introducing a number of innovative initiatives that can yield short-term results. To achieve this, the following recommendations may be considered:

There is a strong need for both the LHWs and CMWs to be actively engaged in delivering-specific preventive interventions that include identifying and treating maternal anaemia, pregnancy-induced hypertension and prevention of pre-eclampsia by the provision of supplements, prophylactic use of misoprostol, early wrapping of newborn, encouraging kangaroo care and counselling on birth-spacing.

Provider performance can be much improved if the health system introduces a comprehensive audit system, provides incentives for working in rural areas, and regular refresher and in-service training opportunities to its staff.

Till such time that an adequate number of CMWs have been trained, deployed and have gained acceptability in their respective communities, an interim strategy must be considered, such as working with TBAs to train them to recognise, stabilise and refer high-risk cases.

Conclusion

The public-sector health system in Punjab seems to be not fully geared towards attaining the health-related MDGs. The health facilities are not well distributed, are underperforming and, as a result, a sizeable proportion of women are unable to receive appropriate obstetric care, including the management of complications. Managerial issues hampering service delivery need to be rectified. Community mobilisation to improve obstetric care seeking behaviour, enhancing safety of community delivery system, and improving the quality of care of the public health system are prerequisites for improving maternal and child health outcomes.

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References

1. World Wide Web page. United Nations Millennium Development Goals Background. (Online). (Cited 2011 December 19). Available from URL: http://www.un.org/millenniumgoals/bkgd.shtml.
2. Pakistan Demographic and Health Survey 2006-07. National Institute of Population Studies, Government of Pakistan.
3. Fikree FF, Mir AM, Haq IU. She may reach a facility but will still die! An analysis of quality of public sector maternal health services, District Multan, Pakistan. J Pak Med Assoc 2006; 56: 156-63.
4. Nisar N, Sohoo NA. Maternal mortality in rural community: a challenge for achieving millennium development goal. J Pak Med Assoc 2010; 60: 20-4.
5. Wagstaff A and Claeson M. The Millennium Development Goals for Health: Rising to the Challenges. Washington DC: World Bank, 2004.
6. Jokhio AH, Winter HR, Cheng KK. An intervention involving traditional birth attendants and perinatal and maternal mortality in Pakistan. N Engl J Med 2005; 352: 2091-9.
7. Knowledge and Behaviours of Service Providers; Safe Motherhood Applied Research and Training Project (SMART) 2007. Population Council, Islamabad
8. Sanghvi H, Ansari N, Prata N, Gibson H, Ehsan AT, Smith JM. Prevention of postpartum hemorrhage at home birth in Afghanistan. Int J Gynecol Obstet 2010; 108: 276-81.
9. Derman RJ, Kodkany BS, Goudar SS, Geller SE, Naik VA, Bellad MB et al. Oral misoporostol in preventing postpartum haemorrhage in resource-poor communities: a randomized controlled trial. Lancet 2006; 368: 1248-53.
10. Mir AM, Wajid A, Gull S. Assessing the Feasibility of Home Administration of Misoprostol in the Prevention of Postpartum Hemorrhage in Rural Pakistan. Population Council 2010.
11. Bosse G, Massawe S, Jahn A. The partograph in daily practice: it's quality that matters. Int J Gynaecol Obstet 2002; 77: 243-4.
12. Conde-Agudelo A, Belizán JM. Maternal morbidity and mortality associated with interpregnancy interval: a cross sectional study. Br Med J 2000; 321: 1255-9.
13. Cumbi A, Pereira C, Malalane R, Vaz F, McCord C, Bacci A, Berqstrom S. Major surgery delegation to mid-level health practitioners in Mozambique: health professional's perceptions. Hum Resour Health 2007; 5: 27.