

Role of the family physician in reducing deaths due to obstetric hemorrhage

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Abstract

Family Medicine became a registered specialty in 2007. A consensus was reached on the core competencies that were needed for a family physician (FP). These competencies were encapsulated in the 5 unit standards that are exit outcomes for FPs.

The re-engineering of primary health care (PHC) and the introduction of the National Health Insurance by the South African Department of Health has created the opportunity for the FP to work in district clinical specialist teams (DCSTs) and the district health system. The FP is expected to work with ward based teams as a health advocate to ensure essential messages dealing with areas of maternal health are addressed in the municipal ward. Community interventions in dealing with obstetric haemorrhage have to be provided by working with community health workers. Women and their families need to be given advice on the need for ante natal care, delivering in health facility and dealing with haemorrhage if delivery occurs unexpectedly. Clinical guidelines such as the basic ante-natal care package should be correctly and consistently used for all antenatal attendees to primary health care clinics (PHC) clinic.

The FP will ensure that appropriate training of professional midwives and doctors occur at PHC clinics and district hospitals (DH). Recommendations of the 5th Saving Mothers Report must be implemented and monitored in DHs. The FP is expected to audit maternal morbidity and mortality and develop quality improvement plans to ensure that outcomes are optimized. The WHO near miss approach for maternal health needs to be introduced and monitored at all DH.

The roles of the FP are seen as a family medicine expert, a communicator, a collaborator, a manager, a health advocate, a scholar and a professional.

Introduction

Family Medicine (FM) became a registered specialty in 2007. Prior to this the training of Family Physicians (FP) had been based on a modular system which was done on a part time basis. The introduction of the specialist training programme brought with it the added expectation that FM training would encompass experiential training in all the major medical disciplines.¹ One of the core disciplines for a FP is maternal and neonatal health because a FM registrar would have done clinical rotations in obstetrics, gynaecology and paediatrics. A consensus was reached on the core competencies that were needed for FP.² In addition a common portfolio of learning encompassing clinical and non-clinical competencies were agreed to by the eight departments of FM in South Africa and this portfolio was adopted by the College of Family Physicians of South Africa who administer the exit exams in Family Medicine.³ The non-clinical competencies incorporated among others capabilities in clinical governance and community orientated primary care (COPC). These competencies were encapsulated in the 5 unit standards that are exit outcomes for FPs.^{3,4}

Primary Health Care and COPC

The re-engineering of primary health care (PHC) and the introduction of the National Health Insurance by the South African Department of Health has created the opportunity for the FP to work in district clinical specialist teams and the district health system. It is hoped that each district hospital and every community health centre will have a resident family physician. The multi skilled family physician will serve as a mentor for junior medical officers like community service medical officers (CSMO). Evidence exists that having skilled birth attendants and having doctors who are able to administer emergency obstetric care has a positive outcome of maternal morbidity and mortality.⁵

The family physician based at the district hospital or CHC is expected to provide outreach to the primary health care clinics attached to such institutions and also engage with the ward based primary health care teams. Providing teaching and training and ensuring that issues of clinical governance are addressed at the PHC level would be a requirement of the FP.⁶ Central to this is ensuring that clinical guidelines such as the basic ante-natal care package is correctly and consistently applied to all pregnant women presenting to the PHC clinic. Included in this package is identifying women at high risk for obstetric hemorrhage. These include women with anaemia, multiple pregnancies, grand multiparity, polyhydramnios, a previous history of post-partum

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haemorrhage and women who have fetal macrosomia.⁷ These conditions can easily be identified by trained midwives or PHC nurses rendering ante natal care based at PHC clinics. These patients must be referred to the nearest district or regional hospital.

The FP should engage with the PHC practitioners and midwives and ensure that ESMOE (Essential Steps in the Management of Obstetric Emergencies) occurs at the PHC site. ESMOE training has been shown to improve skills and maternal outcomes related to obstetric haemorrhage.^{5,8} The ESMOE training programme encompasses skills needed to manage obstetric haemorrhage and shock. In addition, participants in the course are encouraged to practice fire drills in the workplace to ensure that all members of the team dealing with an emergency such as managing post-partum haemorrhage (PPH). The FP can be the key link in ensuring that all clinics and hospitals staff, within his/her area of practice rendering obstetric services, are fully trained in ESMOE. This links very well with unit standard 4 in the FM portfolio viz. "Facilitate the learning of others regarding the discipline of family medicine, primary health care, and other health-related matters".^{3,4}

Unit standard 3 is meant to "facilitate the health and quality of life of the family and community" The emphasis here is community oriented primary care.³ The FP is expected to work with ward based teams as a health advocate to ensure essential messages dealing with areas of maternal health are addressed in the municipal ward.⁹ Some of the areas that need urgent attention are establishing the profile of maternal deaths in the community. The Fifth Saving Mothers report (2008-2010) states that the institutional maternal mortality ratio (IMMR) for the triennium 2008-2010 was 176.22 deaths per 100 000 live births.¹⁰ However in 2010 the WHO reported the MMR for the country was estimated to be 300/ 100 000 live births.¹¹ This suggests that a significant number of maternal deaths occur outside of institutions. The FP working with community health workers in a ward based team needs to get data on maternal deaths in the community and devise a community intervention plan to address these issues. Education needs to be provided to women in terms of health services available to them, preparing for the birth of a child with a skilled birth attendant and strategies for women and their partners in dealing with bleeding during the ante-partum and post-partum periods can be discussed with families in their homes. The community health worker will serve a crucial role in this regard but the FP needs to be fully aware of what is happening in the community he/she serves.¹² Community interventions in dealing with post-partum haemorrhage will include education on what is considered to be heavy bleeding in a language that a lay person can understand i.e. fast bleeding that is not decreasing or soaks 2 or more pads in less than 30 minutes or slow continuous bleeding. Women and their families may be given advice on managing PPH such as emptying their bladders, breastfeeding their babies, rubbing up the uterus, applying pressure to vaginal tears if the birth occurred at home and teaching women techniques of removing the placenta in home deliveries.¹² Working with non-governmental organisations (NGOs), spiritual organisations, other government departments like social welfare are all part of the process in community oriented primary care. Recognition of the social determinants of health and adopting an inter-sectorial approach in dealing with these issues are inherent in COPC.⁹

The Fifth Saving Mothers Report (2008-2010) also pointed out two associations between obstetric haemorrhage and risk factors. These were anaemia and HIV. Thirty four percent of maternal deaths due to haemorrhage also had anaemia as a risk factor and

57.6% of these deaths had HIV as a risk factor.¹⁰ The FP and his PHC and ward based team needs to be actively involved in educating communities on interventions in preventing and treating anaemia and HIV. Haematinics and highly active anti-retroviral treatment (HAART) should be freely and easily available to pregnant women. Older women who have completed their families should be encouraged to consider tubal ligation as a means of preventing unwanted pregnancies.¹⁰

The role of the FP at the District Hospital (DH)

Whilst community involvement is a core responsibility of the FP, there is also an expectation that the FP be able to deliver services at the district hospital. A FP who is motivated to be a "change agent" must ensure that some of these responsibilities are delegated to the team working in the district health service. The FP's role in the DH will be that of a multi-skilled generalist who is also able to improve the quality of clinical care in the institution. Ensuring that each DH has at least one FP is essential for the plan to work.¹³ The FP will ensure that appropriate training of midwives and doctors occur in the institution. The FP will also serve as the mentor of junior doctors in dealing with obstetric emergencies. There is also the expectation that the institutional FP will provide the link between the DH and the district clinical specialist teams (DCST)⁶ (figure 1).

The DCST has a FP in the team. This FP is an experienced person whose primary role would be to provide support, supervision and ensure that maternal and child health programmes are implemented in the district or sub-district. The district FP has a huge role to play with regard to clinical governance.¹⁴ The FP's role in the DH is to ensure that the recommendations of the 5th Saving Mothers Report are implemented in the hospital. With regards to obstetric haemorrhage the following recommendations are crucial.

1. Emergency blood and theatre facilities are available 24 hours a day.¹⁰
2. Emergency transport can be rapidly accessed to transfer patients to higher levels of care.
3. PPH monographs, ESMOE skills training, PPH drills and early warning monitoring charts are visibly displayed and regularly practiced.¹⁰

Figure 1: Proposed PHC Model⁶

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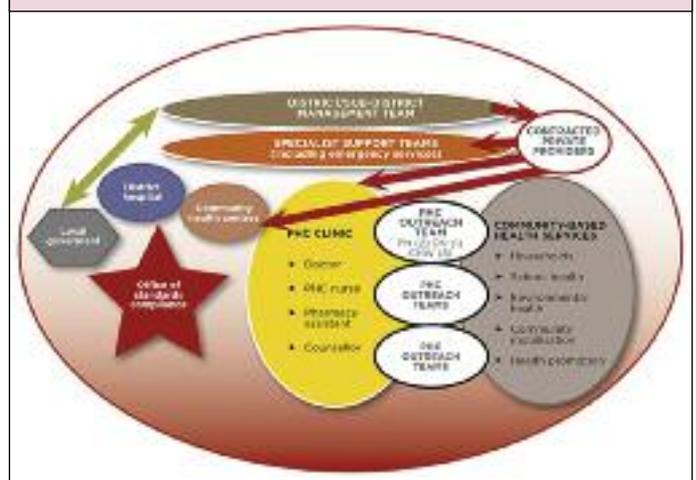
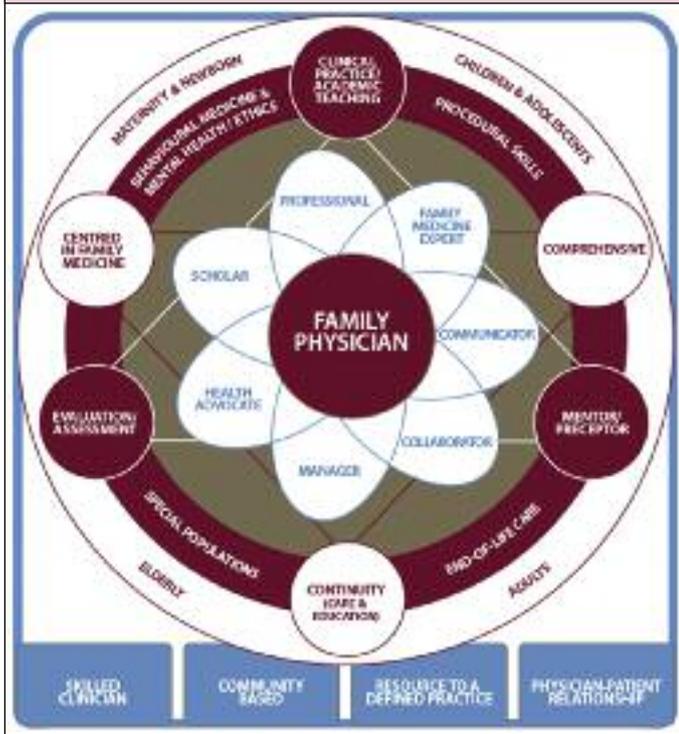


Figure 2: The multiple roles of the Family Physician²⁴

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4. Auditing of all cases that develop severe maternal morbidity. The WHO has released a tool for monitoring such events.^{10,15}
5. Use of uterotonic agents is judiciously practiced and in line with the standard of care. Active management of the third stage of labour is done consistently.^{10,12}
6. Avoiding unnecessary caesarean sections (C/S).¹⁰
7. Improving the monitoring of women during and after delivery.¹⁰
8. Making the C/S a safer operative procedure by ensuring that the anaesthetic and the surgery occur according to international best practice. This includes the use of the WHO Surgical Safety Checklist for Maternity at every C/S.^{10,16-19}

Deaths due to obstetric haemorrhage are on an increase and are now the 2nd leading cause of institutional maternal deaths in South Africa (IMMR due to haemorrhage = 24.9/100 000 live births). Most of these deaths occur at district and regional hospitals. In addition, a significant number of these deaths are due to bleeding after C/S (27.6%).¹⁰ Any FP working at a DH that provides an obstetric service must ensure that s/he has the requisite competencies in managing a patient who presents with obstetric haemorrhage. These competencies include non-pharmacological, pharmacological (use of IVI fluids and uterotonic agents) and surgical skills.^{2,4} Acknowledging one's limitations and being able to refer women who require care at a regional hospital is critical. A good working relationship with the DCST and the medical staff at the regional hospital needs to exist to ensure that patient referral occurs seamlessly.

The FP must also be able to provide a safe anaesthetic at the DH. The training of FPs in the registrar programme does allow for a rotation in anaesthetics. Being able to administer a safe general

and spinal anaesthetic is a core competency in the FM training programme.² Many district hospitals have very few staff who are able to administer a general anaesthetic in a safe manner.²⁰ It is also essential that anaesthetic practices do not further compromise patient care i.e. ensuring that the blood pressure is optimal before closing the abdominal wall during C/S, administering the correct dose of the uterotonic agent and ensuring that the person providing the anaesthetic, the person doing the CS and the floor, scrub and recovery room nurse communicate and work as a team.^{10,16,18,21,22} If the surgeon has difficulty during the C/S i.e. difficulty in extracting the newborn, uncontrolled tears, neighbouring organ injuries, etc.; it is paramount that this is documented and that the recovery room nurse and the ward staff monitoring these patients are informed of these complications. The FP is expected to audit surgical morbidity and develop quality improvement plans to ensure that surgical morbidity during C/S is kept at the lowest possible level. The WHO near miss approach for maternal health needs to be introduced and monitored at all DH. A broad outline of this tool covers the following areas:

1. Determining the frequency of severe maternal complications, maternal near-miss cases and maternal deaths.
2. Evaluating the DH and health system's performance in reducing severe maternal outcomes.
3. Determining the frequency of use of key interventions for the prevention and management of severe complications related to pregnancy and childbirth.
4. Raising the awareness about, and promoting reflection of, quality-of-care issues and foster changes towards the improvement of maternal health care.²³

The tool goes further in defining the criteria used in assessing the quality of care. These are:

1. Severe maternal complications e.g. Severe postpartum haemorrhage, ruptured uterus, severe complications of abortion
2. Critical interventions or intensive care unit use e.g. laparotomy (including hysterectomy but excluding C/S, use of blood products etc.
3. Life-threatening conditions (near-miss criteria)
 - a) Cardiovascular dysfunction e.g. Shock, cardiac arrest, cardiopulmonary resuscitation, severe hypoperfusion, etc.
 - b) Respiratory dysfunction e.g. Acute cyanosis, gasping, severe tachypnea (respiratory rate >40 breaths per minute), intubation and ventilation not related to anaesthesia etc.
 - c) Renal dysfunction e.g. Oliguria non-responsive to fluids or diuretics, severe acute azotemia (creatinine ≥ 300 $\mu\text{mol/ml}$) etc.
 - d) Haematological dysfunction e.g. Failure to form clots, massive transfusion of blood or red cells (≥ 5 units), severe acute thrombocytopenia (<50 000 platelets/ml)
 - e) Hepatic dysfunction e.g. severe acute hyperbilirubinemia etc.
 - f) Neurological dysfunction e.g. Prolonged unconsciousness (lasting ≥ 12 hours) etc.
 - g) Uterine dysfunction e.g. Uterine haemorrhage or infection leading to hysterectomy.
4. Maternal Deaths²³

The FP with competencies in clinical governance (unit standard 1)⁴ is ideally placed in ensuring that this tool is implemented and

monitored at the DH. It is important that a baseline assessment is done at the institution and that ongoing monitoring, evaluation and quality improvement is maintained. A key principle in family medicine is that a FP should "see himself or herself as part of a community-wide network of supportive and healthcare agencies and functions as part of a team".⁴ This is especially important when one is working in resource limited settings. Defining roles and responsibilities for different members of the team will ensure that all members function optimally in dealing with this huge problem of obstetric haemorrhage.

Conclusion

The College of Family Physicians (CFP) also recognises that a FP should be able to function at various levels in the district health system. These roles have been incorporated into the CanMeds outcomes adopted from the College of Family Physicians in Canada. The Health Professions Council of South Africa have also asked undergraduate medical educators to incorporate these outcomes into all South African undergraduate medical syllabi. The outcomes define the role of the family physician as being one of a family medicine expert, a communicator, a collaborator, a manager, a health advocate, a scholar and a professional.²⁴ Maternal and newborn health is recognised as one of the key clinical areas in which family physicians practice. Central to their role in this field is addressing issues like obstetric haemorrhage that affect maternal and newborn outcomes.

Summary

1. Educate communities, community health workers and nursing staff in preventing and treating anaemia. Ensure that women book in the first trimester of pregnancy. Educate women in the community on post-partum haemorrhage.
2. Deal effectively with HIV at a community, PHC and district hospital level by encouraging safe sexual practices in the community. Identify women who are HIV positive and offer HAART from 14 weeks gestation.
3. Ensure that a C/S is done for the correct indication and in a safe and effective manner. Ensure that junior medical staff are appropriately trained and that adequate monitoring is done after C/S.
4. Ensure the availability of blood and blood products.
5. Regularly practice fire drills for ante-partum and post-partum haemorrhage.
6. Ensure that family planning is discussed with eligible women during routine consultation.

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