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Completing the Maternal Care Team: OB/GYN Expertise at Rural District Hospitals in Ghana, a Qualitative Study

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Abstract

Introduction To provide a qualitative perspective on the changes that occurred after newly placed OB/GYNs began working at district hospitals in Ashanti, Ghana. *Methods* Structured interviews of healthcare professionals were conducted at eight district hospitals located throughout the Ashanti district of Ghana, four with and four without a full-time OB/GYN on staff. Individuals interviewed include: medical superintendents, medical officers, district hospital administrators, OB/GYNs (where applicable), and nurse-midwives. Interviews were transcribed verbatim and content analysis was performed to identify common themes. Characteristics quotes were identified to illustrate principal interview themes. Quotes were verified in context by researchers for accuracy. *Results* Interviews with providers revealed four areas most impacted by an OB/GYN's leadership and expertise at district hospitals: patient referral patterns, obstetric protocol and training, facility management and organization, and hospital reputation. *Discussion* OB/GYNs are uniquely positioned to add clinical capacity and care quality to established maternal care teams at district hospitals–empowering district hospitals as reliable care centers throughout rural Ghana for women's health. Coordinated efforts between government, donors and OBGYN training institutions to provide complete obstetric teams is the next step to achieve the global goal of eliminating preventable maternal mortality by 2030.

Keywords Maternal mortality · Obstetrics · Midwives · Obstetrics and gynecology · Sub-Saharan Africa · Ghana · Capacity building · Sustainable development goals · Human resources for health

Significance

Current care teams of midwives and general physicians are the mainstay of pregnancy care in many Ghanaian hospitals. However, they are limited in their capacity to provide curative treatment for severe obstetric complications. This study highlights the unique contributions that obstetrician/gynecologists can add when staffed at rural district hospitals. Beyond increasing the capacity to care for pregnant women and managing emergency obstetric complications, this study

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demonstrates that obstetrician/gynecologists are uniquely positioned to empower district hospitals to become reliable women's health care centers through leadership efforts that improve facility management and hospital reputation.

Introduction

Improving access to high quality, evidenced based maternal care is a key factor in achieving further reductions in maternal mortality (Campbell and Graham 2006). Presently, community health workers, midwives, and general physicians provide the majority of maternal health care in low resource settings. While considerable progress has been made since the 1990s, in order to achieve the WHO Sustainable Development Goal (SDG) health target of reducing global maternal mortality ratio to less than 70 per 100,000 by 2030, interventions that provide women with timely and comprehensive obstetric care must be prioritized (World Health Organization 2009). Both the creation of and access to comprehensive obstetric care is limited in many Sub-Saharan African countries (Paxton et al. 2005; Anderson and Johnson 2015).

Ghana is unique in that it has two well-established post-graduate obstetrics and gynecology (OB/GYN) training programs. The Ghana training programs were created in 1989 in response to the low repatriation rate of Ghanaian physicians sent to Great Britain for training (Anderson et al. 2014). Over 140 OB/GYNs have been certified and retained in Ghana since the program began in 1989 (Anderson et al. 2014). Whereas access to specialist care was previously limited to Ghana's urban centers, as the number of trained graduates has grown, OB/GYNs are now taking staff and faculty positions at district hospitals and new medical schools in peri-urban and rural areas (Anderson et al. 2014).

This phenomenon of increased obstetric capacity in rural areas offers the opportunity to study the changes introduced by newly placed OB/GYNs in the districts they serve. The objective of this qualitative study is to determine the clinical and administrative changes and potential impacts that occur when the leadership and expertise of an OB/GYN is added to the maternal care team at facilities in rural Ghana, and compare the obstetric care climate with district hospitals that do not currently employ obstetricians.

Methods

The study was conducted in the Ashanti region of Ghana, a region that includes the Komfo Anokye Teaching Hospital (KATH), one of Ghana's largest referral hospitals and sites for post-graduate OB/GYN training. A convenience sample of eight district hospitals was selected: four facilities with and four without a full-time OB/GYN on staff. Medical superintendents, district hospital administrators, as well as the Ghana Health Services (GHS) district directorates were contacted directly via mailed invitation. Authorities at all eight hospitals agreed to participate in the study. This human study was approved by the GHS Ethics Review Committee and by the University of Michigan IRB, and therefore has been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments. All survey questions and participant consent forms were reviewed and approved by the GHS Ethics Review Committee. Each participant voluntarily provided informed consent.

Interview subjects were selected to represent a diversity of professional perspectives. At each facility, interviews were conducted with a medical superintendent, hospital administrator, nurse-midwife, medical officer, and, where available, an OB/GYN. At two hospitals, administrators were unable to meet due to scheduling conflicts. The position of medical superintendent and medical officer are unique to the GHS and refer to general practitioners with surgical capabilities who are responsible for the care of pregnant women.

A semi-structured interview format was utilized to obtain a comprehensive understanding of respondents' experiences. Prior studies identified 3 major themes seen by OBGYNs as the changes that occurred when he or she began working in a hospital environment (Anderson et al. 2014). An interview guide was developed to more deeply explore these themes amongst OBGYNs, as well as midwives, medical officers and administrators. In hospitals without OBGYNs, the guide was designed to identify areas where OBGYN expertise could improve care. In each interview, individuals were asked a set of predetermined open-ended questions regarding the nature of obstetric services at their hospital, their roles and responsibilities, and changes that have occurred at the hospital since the arrival of an OB/GYN. For hospitals without OB/GYNs, questions focused on anticipated changes if an OB/GYN were to be placed there. To capture the breadth of change an OB/GYN can influence, specific areas of inquiry included: staff, facilities, clinical processes, technology and equipment, patient admissions, referrals into and out of the hospital, documentation, technical skills, management of obstetric emergencies, team structure, and department and hospital meetings. Participants were also asked about their opinions of the changes. Each participant was also specifically asked if they would recommend that an OB/GYN be placed at every district hospital. All interviews were conducted onsite in English and were audiotaped to ensure accuracy in review. Each interview lasted between 30 and 40 min.

E. L. transcribed the interviews verbatim and reviewed each transcript for accuracy. Content analysis was then performed using NVivo (Doncaster, Victoria, Australia) and

all transcripts coded for common themes. E. L. and F. A. met to review and discuss emergent themes, and to identify characteristic quotes to illustrate these themes. A codebook was developed with quotes assigned to each theme. A third researcher (T. P.) reviewed transcripts to confirm saturation of identified themes and consistency of content analysis. Final results were adjusted, where necessary, to reflect this independent review and to mitigate potential sources of bias. Final quotations were selected for write-up and reviewed in the original transcript by E. L. and T. P. to verify that final coding designations accurately reflected individuals' responses in context. No statistical analysis was employed given the qualitative nature of the data.

Results

In total, 27 face to face interviews were conducted with healthcare professionals; 15 from hospitals with and 12 from hospitals without OB/GYNs. Across both types of facilities four major themes emerged that demonstrated the impact of an OB/GYN at district hospitals. These included: patient referral patterns, obstetric protocols and training, facility management and organization, and the link between obstetric capacity and hospital reputation. Themes one through three were related to specific topics discussed in the interview and the fourth theme emerged through the analysis.

Theme 1: Patient Referrals Patterns

Respondents discussed the impact of OB/GYNs on patient referral patterns: both referrals-in from village based health centers and referrals-out to the urban teaching hospitals. At hospitals without OB/GYNs on staff, interviewees reported frequently referring-out obstetric patients to the nearest teaching hospitals.

> And if it is beyond our capacity, and we cannot handle, then we will refer to KATH or Sunyani. So, in terms of the others, they are helping. But on the surgical side, it all comes to me. So, I take the decision whether I can handle it or if I cannot handle it and then I refer.—Medical Superintendent, Non-OB/GYN Facility.

In addition, providers at hospitals without an OB/GYN reported referring patients out due to lack of time and human capacity at their hospital:

> Severe complications that I think I'm not able to handle, then I refer. Last time, I referred a ruptured uterus case. Yes, I referred because it's even difficult for me to handle in the [operating] theatre… So, I had to refer… Also sometimes some normal cases leave here because I'm not available or it's in the middle of the night. I am one man machine, only one person. So, sometimes normal caesarean sections of obstructive labor, we just refer.—Medical Superintendent, Non-OB/GYN Facility.

At facilities with an OB/GYN, interviewees noted a significant reduction in referrals-out. One nurse-midwife compared her experience before and after the arrival of an OB/GYN:

> But we were referring more cases. Yes, cases that couldn't be managed by the doctors who were here, we refer. But when he came we don't refer cases.—Nurse-Midwife, OB/GYN Facility.

A second midwife echoed this sentiment:

> The general maternal care—that we treat. Those that are beyond, we refer to KATH. But since he came, everything is done here.—Nurse-Midwife, OB/GYN Facility.

Moreover, hospitals with OB/GYNs also reported experiencing an increase in the numbers of referrals-in at their facilities:

> Because they heard that the gynecologist is here. He has been treating infertility case and it works. So people are giving the info here and there, so people are coming in plenty.—Medical Superintendent, OB/GYN Facility.

An OB/GYN noted:

> First, I've seen that, since I've come here, the attendance has increased so much…there are some cases which they should have referred if I wasn't here. … And another change is the referrals has gone down drastically… because we don't refer most cases.—OB/GYN, OB/GYN Facility.

Theme 2: Clinical Protocol and Training

Providing guidance and training on obstetric procedures was identified as a key role of OB/GYNs. In interviews at district hospitals without an OB/GYN this theme was often highlighted in discussion about the gaps in current obstetric procedures:

> Even areas of ANC, stillbirth, and all those, [a gynecologist] will be able to diagnose. That this particular pregnancy at this stage may cause one or two problems….Then, they will put in measures to stop it, either to prevent it or forestall its occurrence. And also, I think, it will also increase ….the quality of our maternal services because the person is a specialist

> and will have confidence.—Administrator, Non-OB/GYN Facility.

A midwife explained how she imagined an OB/GYN could provide an opportunity to receive training on clinical procedures:

> When the gynecologist is here, we will be having training from him…those who are at the sub-districts too. So if you make them know the stages of labor more and other things, it isn't all cases that [patients will] go to [a different hospital]. Maybe some [we] can manage on [our] own.—Nurse-Midwife, Non-OB/GYN Facility.

Another midwife explained how she felt that an OB/GYN could confidently treat severe obstetric complications:

> When they come with this eclampsia, sometimes we give the person treatment: The MgSO4 (magnesium sulfate) and others. But still [they] will fit, continual fitting… When it's continuous and the client doesn't stabilize with the fitting, we refer. But if a gynecologist was here, he knows more. So, you know, what's next or what drug we use to give apart from the MgSO4. So, it will help. It will change the system.—Nurse-Midwife, Non-OB/GYN Facility.

At facilities with an OB/GYN, interviewees noted that OB/GYNs had offered guidance on updating and implementing clinical protocols.

> When he came, he has enlightened us, he has taught us how to give the, the MgSO4, and signs we should observe when and when not to give the MgSO4. And … PROM (premature rupture of membrane), he has [taught] us, he has add[ed] some protocol for it. Every patient who comes with PROM, we put the protocol, on this thing… But when he wasn't here, we were not doing all this.—Nurse-Midwife, OB/GYN Facility

Medical officers and medical superintendents reported that working with OB/GYNs improved their surgical technique and skill set:

> He helped me polish my cesarean section skills, and I'm now learning hysterectomies. So, I'm learning. It's a good learning opportunity for most of us, especially the younger ones who just came out. So, it's good that he's here.—Medical officer, OB/GYN Facility

In addition to offering training on intervention techniques, an OB/GYN also reported training his colleagues on when not to perform surgical intervention:

> One thing I noticed is that when a patient came with preeclampsia, they wanted to do cesarean section. And I said, well, unless there is an obstetrical indication for this, unless there is an absolute indication for this—preeclampsia is not an absolute indication for cesarean section.—OB/GYN, OB/GYN Facility

Theme 3: Facility Management and Organization

Beyond clinical management, respondents tied the role of OB/GYNs with general management roles at district hospitals.

At hospitals without an OB/GYN, respondents reported that managing and organizing clinical care with one physician was a frequent operational challenge. A medical superintendent in a hospital without an OB/GYN described how obstetric emergencies limited his time to work in other clinical capacities:

> Today, I have been moving around and I didn't even have time to sit. Lately, as soon as I come they call me—I haven't even finished doing my rounds because of emergencies. Immediately before I was talking to you, I was in theatre, handling emergency cases….I have a hard time here to solve all of the problems…. Now there are still people who knock on my door waiting to see me, all because of the hospital work. So, if there is a specialist over there who is taking time and has time for those cases, then I will have time for other things.—Medical Superintendent, Non-OB/GYN Facility

Midwives at hospitals without an OB/GYN similarly reported concerns about clinical management under just one physician. In particular, they described issues which arose from being unable to access clinical oversight from a senior physician:

> ….At times, you see, the doctor is only one man. And now he is going to the theatre. Now what if there is an emergency case now? Whom do you call? You can't get anybody. Unless we use our discretion and treat and he finishes in the theatre and comes. But, when there is a gynecologist, it will help.—Nurse-Midwife, Non-OB/GYN Facility
> Most of the cases we refer at times [when] maybe doctor has gone to meeting at Kumasi. There is nobody to perform the cesarean section…So, we have to refer. But, if the gynecologist is here and [the] doctor is here, I don't think they will all leave their station at the same time…at least one will always be around.—Nurse-Midwife, Non-OB/GYN Facility

In the above quote, the Medical Superintendent emphasizes that he has taken on management of obstetric staff that extends beyond his role as a general practitioner. These types of leadership and organizational roles were often cited as functions that OB/GYNs had assumed and elevated at

their facilities. In the following quote, a Medical Officer describes how the OB/GYN has impacted the organization at the hospital:

> He has standardized meetings on quality of care to discuss more formally maternal mortality and other complications. Because since he's been here. He, he usually organizes. If he sees something which is going on bad, especially with the midwives. He call the meeting and straight away addresses it. I think, I find them more professional at work.—Medical officer, OB/GYN Facility

A midwife described how formality and structure had been added following the arrival of an OB/GYN:

> Today, now we are going to begin antenatal on Mondays, Wednesdays, and Fridays. So, they are booking time for everything. So, it's making us—the work has to be flowing systematically.—Nurse-Midwife, OB/GYN Facility.

Theme 4: Hospital Reputation

Across both types of facilities, interviewees often linked discussions about the organization and hospital capacity to feelings about their professionalism and reputation in their community. One nurse-midwife described her sadness about having to refer patients away who have struggled to get to the hospital:

> When you see somebody… they walk from that place and come to town before they will get a car to come here. It isn't easy. And then they will be here and then you tell them to continue to and go to some place. Oh, and at times, how the patient will be lamenting, and when you see it and you cry, you yourself will cry. You will feel pity about yourself. That you are at a place working and then the service is not adequate.—Nurse-Midwife, Non-OB/GYN Facility

An administrator echoed this sentiment:

> They will come here. However, because there is no specialist, when they are [in bad] condition, when they come and they still have to be referred to Kumasi. Why should I bother to come here? You understand?—Administrator, Non-OB/GYN Facility

An administrator at a different hospital highlighted how he felt having an OB/GYN would bring added trust and confidence to the district hospital:

> If we have a specialist gynecologist that it will bring… It will have increase in attendance, patient confidence will increase, confidence of staff will increase, reduce the referrals, and it will also go a long way to reduce pregnancy complications because he will know what is happening. But here, it is a midwife and a doctor who attends to them and most of the things they are not able to detect. And because the community, they have, to the community much is needed.—Administrator, Non-OB/GYN Facility

At hospitals with an OB/GYN, interviewees described changes in the professional atmosphere following the arrival of the OB/GYN:

> Yes, there is good teamwork and commitment…So then there's more unity among the staff. In his unit. Especially among nurses. Because now they have a leader who will back them.—Administrator, OB/GYN Facility

A medical superintendent described how he believed his hospital's image had been impacted by their increased capacity and ability to take complicated cases following the arrival of an OB/GYN:

> I think there are one or two cases that we couldn't have handled [before]. [Now] he is taking care of them. I mean those cases, we possibly could have sent down to KATH, but here he's taking care of those cases. So, I think these are some good things that are happening all around and it's good for the image of the hospital.—Medical Superintendent, OB/GYN Facility

A medical officer noted that changes in referral-out patterns were recognized by colleagues at KATH:

> Oh, the outcome is good. It has put the hospitals in a good, good limelight. It's good because referrals to KATH have reduced tremendously and they are, they are always applauding us. Very happy that they always speak good about us.—Medical Officer, OB/GYN Facility.

Discussion

This qualitative study strongly suggests that adding an Obstetrician to the district hospital team improves access and quality in four areas: referrals in and out, clinical protocols and training, facility management and organization, and hospital reputation. Interviewing a range of health care workers occupytin varying roles yielded robust insights into the unique position an OB/GYN fills in empowering the district hospitals to become high quality women's health centers by acting as a clinician, leader and educator and most importantly a strategic member of the obstetric care team.

As in many West African countries, Ghana faces a shortage of trained physicians. The significant burden that obstetric complications add to district hospitals' clinical load, as

illustrated in the interviews, suggest the potential for OB/GYNs to significantly add to the physician and overall clinical capacity of the facility. While midwives are a mainstay of pregnancy care in all Ghanaian hospitals (Fauveau et al. 2008), OB/GYNs can complete the care offered at a district hospital through the ability to diagnose, treat and manage and ultimately solve any level and severity of obstetric complication, eliminating the need to transport unstable women over long distances to tertiary centers.

The interviews also demonstrated that adding an OB/GYN created an organized clinical team. OB/GYNs were not just skilled providers, but clinical leaders and educators by providing mentorship and training the midwives and other physicians at the facility. Previous studies have made the case that building obstetric capacity in low resource settings results in increased use of evidence-based maternal health practices and improved health outcomes (Moyer et al. 2014; Der et al. 2013). As demonstrated in this study, with an OB/GYN leading the clinical team, it also introduces a new expectation for equitable high quality care at the rural district hospitals.

There is a significant body of literature dedicated to understanding the health seeking behaviors of women in developing settings who choose not to seek hospital-based care when pregnancy complications arise (Oiyemhonlan et al. 2013; D'Ambruoso et al. 2005; Yakong et al. 2010). A noted factor in the West-African context is a central fear of being mistreated or turned away from clinics when in need of help (Oiyemhonlan et al. 2013; D'Ambruoso et al. 2005; Yakong et al. 2010). Though this study did not include the patient perspective, the interviews included discussion of the hospital's relationship to its district. Hospitals with and without OB/GYNs contrasted starkly in this regard. Providers at hospitals without an OB/GYN made direct mention of patients' mistrust, and their frustration in not being able to adequately treat severe obstetric complications. Conversely, providers at hospitals with an OB/GYN described how gaining a specialist had improved their "image" or put the hospital in "a good limelight". Such statements were often linked with discussions of the reduced need to refer-out critical cases, and the added benefit of an OB/GYN's expertise to address a wider range of women's health issues. That these providers also noted increased patient attendance may be indicative of early patient behavior changes that demonstrate the potential clinical impact an OB/GYN can have at the district hospitals.

Limitations

At the time of the study, there were a low number of district facilities in Ghana with OB/GYNs. Though participants were selected to represent a diverse range of perspectives, a potential participant bias exists amongst this cadre of early adopters.

The eight study sites were district-level hospitals, which serve as first referral points for their surrounding communities, yet differed in their institutional affiliation and funding. Most notably, three of the four facilities with a recently hired OB/GYN were part of the Christian Hospital Association of Ghana (CHAG). CHAG hospitals function with different administrative arrangements than governmental hospitals that may suggest different organizational cultures that may influence the role of an OB/GYN as a change agent. Yet, clinically, both types of facilities care for a large number of highly complicated pregnancies (Ghana Health Service 2011).

Additionally, each of the OB/GYNs had been employed at the hospital for less than three years prior to the study; the shortest time employed was six months. A longer period of service could provide a more robust accounting of effects, both positive and negative. A quantitative comparison of outcomes would allow a more objective assessment of the effects of an OB/GYN on clinical outcomes. The qualitative findings of the present study suggest that, if available, longitudinal clinical data, including rates of referral and utilization of evidence-based clinical practices, could offer quantitative evidence of OB/GYNs' impacts at district facilities and suggest areas for future intervention.

Conclusion

A consensus statement from the World Health Organization (WHO) has called for an end to preventable maternal mortality by 2030 (The World Health Organization (WHO) 2014). Persistent disparities along both dimensions of spatial access and availability of appropriate care continue to be one of the biggest challenges stalling a more rapid achievement of this goal (Koblinsky et al. 2006; Nesbitt et al. 2014; Penchansky and Thomas 1981). Based on the experiences of the healthcare providers and administrators in this study, the addition of an OB/GYN as a member of the maternal care team at a district hospital is a singular intervention that can improve care along several dimensions.

To meet the goals of the WHO consensus statement, each country will require national policies that place an OB/GYN at every district hospital. Each country must develop the national capacity to train, certify, and retain a large number of OB/GYNS (Anderson et al. 2014). The infrastructure to support the practice of obstetrics and gynecology must be ensured so that women with the most severe complications can be treated on site at the district level, without being referred in unstable condition to tertiary hospital hours away.

There must be a conscious effort in the global SDG agenda to include the training and deployment of OB/GYN

physicians to support midwives and other members of the health care team (Anderson and Johnson 2015). Comprehensive and effective obstetric care must be provided by a team of health care providers who can identify, treat, and resolve every pregnancy complication. Coordinated efforts between government, donors and OBGYN training institutions to provide complete obstetric teams is the next step to achieve the global goal of eliminating preventable maternal mortality by 2030.

Author Contributions EL and FA developed the initial research question and protocol structure. HO-A, JA, and KD helped in development of the questionnaire, interview methodology, and site selection in Ghana. EL and TP contributed to the majority of the writing and editing of the manuscript. All authors contributed to the final editing process and identification of research themes and characteristic quotes for inclusion in the manuscript.

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Compliance with Ethical Standards

Conflict of interest The authors have no conflict of interest.

Ethical Approval This IRB was approved through the university of Michigan IRB committee and the Ghana Ethics Review Committee (ERC) in 2009. A notice of study closure/intent to publish was provided to the ERC on 02, July, 2014.

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