

Chapter 7

Research, Monitoring, Evaluation, and Quality Assessment

Speakers:

Blair Wylie, Joseph Ngonzi, Adeline Boatin; Mbarara – Harvard/MGH
Alex Ocampo; University of Michigan; OpenMRS
Maria Small; Human Resources for Health Team, Rwanda
Susan Raine; Baylor University
Frank Anderson; University of Michigan

Frank Anderson: We are running fairly far behind right now to break out at 3:30. But we do have five speakers for the next series. We added two, so I am going to ask everyone to please keep their comments to ten minutes or less and we will call people to the front. Blair and Joseph are giving a talk. We are going to have the Rwanda Team discuss their monitoring. I am going to give you brief view of what we have done in Ghana working on a register project. I've asked Alex Ocampo to talk about some open access MNE software. Susan Raine is going to briefly describe her project, her maternal monitoring evaluation system in Malawi. So do you want to stand up and stretch for minute? I'll have everyone stand up and get some water from outside of the room.

Kwabena Danso: Hello, now we are going to have the panel discussion on research, monitoring, evaluation, and quality assessments. To begin, Blair Wylie, Joseph Ngonzi, and Adelin Boatin from the Mbarara – Harvard team.

Joseph Ngonzi: Thank you; we want to do our presentation in less than ten minutes. I'm called Joseph Ngonzi, and I am the acting chair of the department of OBGYN at Mbarara University of Science and Technology. My director of the hospital was presenting data to our parliament at one time. Many questions were asked to him and he unfortunately did not seem to have all of the figures on hand. When he came back, we set into a process of trying to get validated data at the end of every year. We have two gentlemen who are very charismatic; one of them is Stephen Tandu who is the chief of anesthesia and the other is Jared Tomosime who is a general surgeon. They had started doing retrospective data collection and they were seeing quite a few results. There is already an existing MGH Mbarara collaboration, and this was supported on both sides from a little bit of financial support from the MGH side. When the little work that was already in existence by Jared and Stephen was seen, it was discovered that this was really a good piece of work to be able to track all of the surgical data within this regional referral and teaching facility. And this was way back in 2011.

Learning lessons from the anesthesia and surgical retrospective data collection, the obstetrics and gynecology department joined the trail and we managed to discuss together with our partners from Harvard MGH a way of trying to fast-track data collection and also data validation, so we could be able to inform resource allocation within our facility and possibly be able to roll these out to the bigger public depending on the resources that came through. We called this project SSQAD; SSQAD is Surgical Services Quality Assurance Database. The mission was to characterize the surgical anesthetic and critical care disease pattern and outcomes. Patient data was computerized. This is a move away from the bulk of the papers that characterized our data collection. It came in more as a pilot project and it is running onwards towards January 2015.

We had joint discussions and we discovered that there were many areas that were discovered, so we

delved into a little bit of diplomacy so as to be able to convince the powers that be that sensitive information such as mortality and morbidity would be protected. We proposed this is a tool for monitoring and evaluation and also as a quality improvement process. We hoped that at the end of the road it would be able to inform health our mega resources would be located according to where the imbalances are. So we brought on board the hospital leadership. This was not just a one off. They assured us that they had understood the vision and that they were going to give us all the support.

We started this surgical database and employed four data clerks, one project coordinator, and one statistician. We were also able to buy desk equipment, like laptops and computer servers. Initially, because we did not have a lot of money to have this whole process go through, we employed the data clerks at 50% but when a little more funding came in, we are looking to raise their effort to 75%. There is a team that monitors what is happened and this is constituted on both sides, there is a team at MGH and a team at Mbarara University. So this just the background of what has been able to come out of a collaboration with Harvard, and we hope for the very best as we track outcomes.

Let me invite my colleague, Boatin, to take us to follow a bit of the technicalities.

Adeline Boatin: Good afternoon, my name is Adeline Boatin. I am a visiting OBGYN faculty in Mbarara in Uganda and that helps me really understand the processes that are going on a help facilitate the improvements in some of the data. We wanted to develop a software that would be easily applied, easily modified, easily scalable, and transferable to situations within the country and perhaps within the continent. Initially, the thought was to use an access database, but then eventually we went with open MRS. Some of you might know this program; it is an open source project which has the mission of developing software to support healthcare delivery in low-resource settings. We ended up deciding on this because it was more scalable, it is actually already being used in a hospital in the HIV clinics, which is part of the inspiration for the open source project. Our goal was really to capture a streamlined set of data. We were ambitious and we realized that we wanted to maximize information, but at the same time be realistic. In terms of developing the actual fields that went into the database, this is primarily driven by the Ugandan departments of surgery, anesthesia, and obstetrics and gynecology. We also look to existing databases in ICU and trauma surgery to sort of make sure that we were correct in collecting the right type of epidemiological data.

In terms of the actual flow of how the database works, in this initial pilot phase we haven't actually change anything about the flow of information collection and clinical care. The database is a little bit superimposed on it so the patient still get admitted in the traditional way there in that their names are written in handwritten logbooks whether that is for admission or, if they have a surgery, and operative register that you can see in that picture. They get charts; clinical care happens; it is documented, all handwritten; and then the charts go to medical records.

Basically SSQAD is superimposed on this after the patients are discharged. Before the charts go to the medical records, they go to the SSQAD office where the data clerks enter information by reading through the charts and gaining that information. We try to do this as close a discharge as possible so that if there is missing information or uncertainties you can approach clinical staff and collect that information and input it. There are a couple of methods to try to make sure the we are capturing all the data that we want, and part of that is going into the logbooks to see which patients were in admission and admitted, and then using that list in crosschecking that all the charts we want have actually been collected.

We have been collecting data since August 2013, and just at the end of January we had six months of data. In that time we have collected over 8000 database entries, and that translates into around 300 to 400 chart entries per week, and, if you, remember there are four data clerks that are doing this.

What is pretty interesting and perhaps pertinent to our mission here is that the majority of the entries are in women, 82%. Granted this does not include pediatrics and internal medicine, but of all the surgery cases, 82% are women. The vast majority are in obstetrics: 61%, 12% in gynecology. Already in these six months we have information that we can retrieve on basic social demographics. The administration can look at where people are coming from, which districts they are coming from to this particular hospital, which referral centers are coming from, what the age distribution is of the patients in the hospital and also their ethnic distribution. We also have several process indicators. We can look at the average time for C-section for example, what percentage of patients getting surgery receive appropriate prophylactic antibiotics and things like that. And then there is the outcome indicators such as the mortality and morbidity as well.

That said we have definitely had some challenges, starting with the way documentation happens in the first place; that still has not been addressed by this database. Once you get the charts, there is still incompletely filled sheets; there are missing pages; there are simply some parts of critical care that are not documented. So it is a little bit up to the interpretation of the data clerks. Also in the process is the fact that we don't always get the charts, particularly charts that are of interest, for example the maternal deaths won't go straight to medical records, they may be audited by the department, by the administration, by the ministry, so this database doesn't automatically get them. Even at the level of data entry, can you imagine putting in 100 charts per week? There has to be some human error in that. Here is definitely illegible writing; it seems like doctors across the board have poor handwriting. There also interpretation errors. So there are four data clerks that are interpreting from what is written in the chart. Three of the data clerks do have some background, but they're not necessarily obstetricians or clinicians. Some of the data that they are gathering is open to interpretation, which is one thing that we are working on. And then infrastructure issues like electricity outages means that on Friday for example, no data entry could occur.

Moving forward to the things that we are going to do, one of them is to make sure that this is actually valid data that we are collecting. That can be used then as a monitoring and evaluation tool, incorporated formation into the departmental activities so that the departments can actually use this to change practices, change systems and to improve outcomes. It allows a hospital to follow trends and it allows us to test interventions and policy improvement measures. For example, if we add five residents, does it actually change any outcomes? This should be a good way of monitoring some of our ambitions here.

Also, in terms of research, this was created more as a monitoring and evaluation tool and not exclusively for research, and, because it is a collaboration, some of the issues that we have to think about are who gets to use the data, who gets to publish from it, who gets first author, and things like that. One of the things that we want to work on developing is an MOU on accessing the data from both sides, but making sure it is fair and equal. Ideally it would be nice to roll this out to other departments – internal medicine, pediatrics – and then think about the sustainability of it. Right now we only have funding that takes us through to January 2015. If we can make that sustainable, then we can think about rolling this out to other parts of the country and then perhaps to the continent as well.

So that is all we have for you. Thank you.

Open MRS Presentation

Frank Anderson: Alex was a student working for me at the Center for Plant Medicine in Mampong, Ghana. He applied for a Fulbright scholarship and was awarded that to work in Mampong and help them start an electronic medical record system. It was the same open access data that we use, so I asked him to introduce that to us. I think that is an incredible system what you have in Uganda and

is a great example. Maybe Alex give us all a bit more of the bare-bones for that quickly.

Alex Ocampo: I could not have asked for a better segue than from our friends at Uganda and Harvard for my presentation because this is a software that is completely revolutionize the way that our clinic here in Ghana does things. As Frank said, I was one of his former students. I had my degree in statistics and I'm here for nine months in Ghana, implementing this electronic medical records system for the Center for Scientific Research into Plant Medicine in Mampong, Ghana, just about an hour north from here in Accra.

These rooms of course are all too common. This was my first day of work in Ghana. This is a little video that you can see. I was taken to the medical records room and just realized what my nine months were going to be here. You know, it is a system that works. It has worked for years. But of course as digital technology came on, there are more efficient ways to handle medical data that allows us to provide better care to patients. I was met by these 40,000 paper folders, but also by these notebooks of reports that have been generated that need to be delivered to the Ministry of Health.

Of course, my colleagues in Ghana and I knew that there are better way to do things. And that is what led us to OpenMRS. And as they have already touched on, OpenMRS stands for Open Medical Records System. It is not an out-of-the-box, ready to use EMR, but it requires almost no programming experience. I'll say a little programming experience to customize your own EMR for your clinic, whether it be a small outpatient clinic or a big hospital. The best part is that it is a 100% free, open-source software developed by Partners in Health, and I'm sure this audience is quite familiar with Paul Farmer and his organization.

Them in collaboration with the Regenstrief Institute, which is an institute in Indiana and are experts in data management and are closely affiliated with the University of Indiana Medical School. They have developed the software and it has a proven track record in some of the most challenging environments on the planet. I'll show you a map of the different implementations where it has taken place in. Actually, we checked this morning and of the African countries represented at this conference, 12 of the 14 had at least one documented implementation, so it is being used probably somewhere near to you.

Some of the features of OpenMRS, as we just saw in the last presentation, our data entry forms that you can customize to your clinical workflow. They are formatted through either custom HTML forms. It is very simple HTML; most people have no coding knowledge can easily generate forms. But there is also the option to use Microsoft InfoPath, which is almost as simple as designing a Microsoft Word document with blanks where you can insert data. The main thing is that it has a flexible concept dictionary, and this is something that you can define the concept that you want and then you can add it to the dictionary and created data entry form with that piece of data can be collected. So even if you're using social behavioral data like if you want to know the number of people and somebody's household, you simply defined that piece of data as a numeric value and then something that you can add to your clinical work flow forms. And of course there are patient dashboards or you can see all of the information for one patient in one place.

This picture on the left is an implementation in Kenya. This pictures implementation Uganda. And this one on the top right is from our clinic in Mampong, Ghana. A few more of the features, of course it has most of the essential features of any electronic medical record system, so the ability to generate reports is super important. What used to take my friends and colleagues three days to tally from the paper records can now be done with the push of a button. You can imagine that not only does it make things more efficient, but it allows them to focus on the real important things: doing research, tracking patient outcomes, and seeing how our clinics are doing in providing care to patients.

It allows us to move our efforts from these monotonous tasks towards actually making sure that we are providing better care. Security passwords and customized roles, so that certain people can use certain data. Of course somebody just collecting demographic data at the registry doesn't need to know diagnosis and lab test results. It can operate off-line but also has the ability to sync data between different centers once Internet connection has been established. It also works across all systems and devices, so it is not limited to Windows or Mac or Linux, it can work on anything, including tablets. I have even connected to it from my smart phone before. So this idea synchronization across multiple centers and the ability develop your own specific features if you care to do so are two of the main benefits.

What I think is the most powerful thing about software is that there is an online community in manual available to anyone who need support. This is from the implementer's meeting in Kenya where people who are implementing this across the world came together to discuss best practices and how they are using OpenMRS to solve their needs. One example that I will tell you from this community is simply this email address: implementers@openmrs.org, which is an online community where anybody can pose a question. The example provided that our clinic wanted to automatically generate patient ID numbers when a patient came to a clinic. We are struggling on how to do it with the specific ID number that we used. So I had one of my staff email this listserv and ask this question, and I think within about two hours somebody from Rwanda responded and said that, "Yeah, we had that same problem and this is how we did it." Maybe in the US there are some companies where you hire someone from the EMR company to come to you and service or system, but and some of the areas were reworked that is just not a reality. This community is so supportive and so interested in getting the system out there so that we can all provide better care to our patients and our clinics. They also provide documentation online beside the community where you can go and learn more about how the system works.

In summary, OpenMRS is a simple and free solution to paper medical records, which has a proven track record around the world. It has basically all of the essential EMR tools that you need. It has a supportive community that you can always rely on. At the end of the day, this is all about enabling us to provide better care to our patients. That is really what these systems are all about. If you have any questions, anything on the technical details or how to get it, "openmrs.org" is where you can find all of the information. Of course you can talk to people in the audience who are using it. I actually have everything you need to start it up on a USB drive right now, so if you want the files, I can just give them to you. But of course it is free online, so feel free to approach me throughout the conference if you have any questions.

Frank Anderson: Alex lives in Mampong, and we called him down to volunteer for us and he has helped create copies for us and everything. He'll be starting his PhD in epidemiology at Harvard next September.

Human Resources for Health, Rwanda Curriculum Presentation

Kwabena Danso: Now we move on to the next presentation from Rwanda, the Human Resource for Health team.

Maria Small: First thing is I am going to thank you all for allowing us to present this information about HRH. Secondly, I'll issue an apology because we prepared a 20-minute talk and I'm going to cut it down to 10 minutes, so after five minutes someone can raise their hand for me.

I am Maria Small, and I am a Maternal and Fetal Medicine specialist from Duke University School of Medicine. But as you have heard already, there are many of us involved from different academic

institutions in this program. I'm not going to rush this slide though. This is the reason for our presence here and the reason for this program in terms of the OB/GYN part of this HRH program. That is Millennium Development Goal number 5, which is a reduction of maternal mortality. This is the map, and Rwanda is located in central Africa. You have heard some of the demographics already, I'm not going to emphasize those again. The population is 11 million and is fairly densely located. Eighty percent of individuals live in rural areas. This slide is just a highlight what many of you know in this audience and that is that we practice healthcare and a social and political context. 1994 was a time of the genocide. Many of the clinicians fled the country or were killed and this led to some of the lowest life expectancies of any country in the world during the time period around the genocide. Most of those deaths were due to unsafe births and infectious disease.

Against that backdrop, Rwanda still has a critical shortage of physicians. For a population of over 10 million people there are about 600 physicians. The root causes we have identified as a group: inadequate faculty and few trained subspecialists. Despite those challenges, however, Rwanda has come very close to meeting targets in maternal mortality reduction, HIV, TB, and malaria. All Rwandans have health insurance and the life expectancy has risen from 48 to 63 years of age over the last decade. I'm going to just highlight the Demographic and Health Survey; this is a survey conducted every five years with a sample of the population aged 15 to 49, men and women, and the response rates are actually very high at around 99%. I think Dr. Merkatz already highlighted something about these numbers, the majority of women do deliver at a healthcare facility or in a public sector facility, and 69% of those do have a skilled provider. Like many places around the world, 80% do not have any postnatal checkup.

We have talked about unmet family planning needs, and of women who do receive family planning, the majority of those use injectable methods. Antenatal care is widely available, about 98% of women receive some form of antenatal care but the majority do not receive the recommended three maternal visits. I think Dr. Merkatz had a lovely slide with bar graphs showing the decline in maternal mortality over the five-year ratios since the surveillance surveys were performed. Similar to the declines in maternal mortality, infant and child mortality have also decreased over the last thirty years.

The HRH program, as you've heard, is a new paradigm for cooperation among US institutions and academic institutions in Rwanda. Instead of small-scale cooperative efforts between individual academic institutions, this is a consortium of institutions and the idea is to increase medical and nursing professions according to the Rwandan government's plan. The funds actually come to the US institutions directly from the Rwandan government instead of from the US government. The responsibility for this program is all within the hands of the Rwandan government and the expectation is that after the seven years of the program, it will be independent and self-sustainable.

This is a diagram of the funding stream. The Ministry of Health of Rwanda receives the funds. Those go into academic institutions and Rwandan academic institutions and teaching hospitals. In terms of the initiation of the project, the Rwandan Ministry of Health approached the Clinton Health Access Initiative, and then they made invitations to universities across the United States. Of those we have the 16 medical schools that are involved in the program, many of them are represented here, and we also have schools of nursing, public health, and dentistry. The funding, in terms of the administrative cost, the US institutions agreed to a 7% administrative cost and no overhead cost for the conduct of the program. The US government channeled funds from PEPFAR, the CDC, the Global Fund, and approximately \$27 million has been allocated to this program without a disruption in the central services.

This is the stream of process. The National University of Rwanda determines the needs, and then the extra candidates who may be interested in the program submit applications. Then the US

institutions will vet and interview those candidates, and those candidate names are then presented to the Rwandan subcommittee. Then they are either selected or declined, and letters are issued from the Ministry of Health. The process, in general, for a generalist physician, the expectation is that they will stay in country for one year and then for subspecialists, the expectation is that they will commit to at least two months in country. The average is 2 to 3 months.

This is something that we have already discussed. These are the training targets, so that we can see at the top the goal is to increase the number of physicians from the baseline of 600 in 2011 to approximately 1,100 by the end of the program. The program started in 2012, so this is year two, and the goal is for 100 faculty members to go from the US to Rwanda each year, have full-time faculty members there for one year as generalists, and subspecialists will rotate throughout the year for 2 to 3 month periods.

The twinning model that we discussed earlier is a partnership with a Rwandan faculty colleague and a US colleague to go through clinical curriculum development, research, and bedside teaching. This is the structure, just a sample of the structure – morning teaching rounds, weekly M&M's, weekly journal clubs, daily lectures, and monthly resident research presentations. There is a high emphasis on consistency throughout the two medical center teaching sites, and that is primarily assessed by their evaluations and exams at the end of the year. The residents receive uniform evaluations and also skill assessment evaluations. This is in terms of evaluation and monitoring. We have a baseline evaluation in which twins do a quarterly survey together, so that each twin evaluates the other. There are annual evaluations of the program, then also a midterm evaluation in 2015, and an evaluation at the end of the program there will be a final evaluation. In 2012, when the program started, there were four senior residents in OB/GYN. The first year, twelve interns or first-year residents started, and this year, sixteen OB/GYN residents started.

Again to emphasize the fact that we practice in a social and political context, I think many people are familiar with this quote, “Women are not dying because of a disease we cannot treat, they are dying because society has yet to make the decision that their lives are worth saving.” That is part of this emphasis of this program, is that you have to have government partners, government support, and a political will for this to work. Thank you.

University of Malawi, MMED Program Monitoring and Evaluation

Kwabena Danso: Let's now invite Susan. Frank prefers to be the last speaker, so we will put him to the last spot.

Susan Raine: Thank you for offering me the opportunity to speak to you today about the monitoring and evaluation program that we are instituting for our new MMED program that we just launched a few months ago in Malawi. Because we are a large group of cooperating institutions, as you can see from my slide, we decided that it would probably be very helpful if at the creation of a new MA program, we put into place some formal monitoring and evaluation of our program and that we do it together rather than have any one institution develop something, implement it, and then have another institution replicate or try to do something on their own. We thought to be much simpler if we just did it together. That is a bit of a theme of our collaboration in Malawi I am proud to say.

The program focus obviously for our MMED program is capacity building. We initially wanted to sit down and outline what the goals of this MMED program were. The first is obviously the training of registrars for Malawi, which included such things as curriculum development, didactic teaching, shoulder-to-shoulder teaching in the hospitals and clinics, preparing our registrars for the certifying

exams and ensuring that they are able to find post-training employment. In addition to that, we also wanted to tackle development and implementation of best practices in Malawi. It is really helpful, I think, that the vast majority of obstetricians and gynecologists who are actually practicing in Malawi are part of this group that is training in our MMED program. So essentially we decide that something is best practices, then de facto it is best practices. So that is helpful.

In addition, we have a society in Malawi of obstetricians and gynecologists that we will also be able to utilize as a vehicle for vetting our best practices. We also want to strengthen our research capacity. When you have new trainees and you want to fully educate them and have them do research and be able to successfully have a dissertation, that is a very important concept for our program. And then obviously we want to perform monitoring and evaluation.

The purpose of this MNE framework was to ensure that we actually achieve our planned results. It was to improve and support the management of our program; it was to generate a shared understanding among all the partners; it was to motivate the stakeholders; it was to ensure accountability for all the partners; and it was to foster public and political support.

In terms of internal MNE reporting, we wanted to generate key data for our program managers on an ongoing basis and allow us to continuously assess our progress and make sure that we are meeting our pre-established program objectives. In addition we wanted to be able to institute appropriate quality improvement in a timely fashion and hopefully in a preventative fashion. Externally, we wanted to also be able to prepare custom data analyses to present to funders and other key stakeholders. So while we are all internally reporting to ourselves, for instance as the Baylor representatives, internally I want to know what's happening with our program. I also have a larger responsibility to my home institution in Houston and I need to report back. The same is true for each and every one of us. We need to be able to report back to our supporters and our funders of this program.

One of the things that we did was that we developed sort of the logical model and we looked at it in terms of what inputs we were going to put towards a program, what activities we were going to perform with those inputs, what outputs did we anticipate, and then from the outputs, what actual outcomes did we want to achieve, and then finally what impacts we hoped to have.

As you can see our impacts are very lofty but are also few. We started out by choosing to simply decrease neonatal and maternal mortality. Obviously, it is one of the very lofty impacts that we hope to have, but we try not to over-complicate the situation. In terms of inputs, you can see that they are the normal things: it is money, it is personnel, it is the basics. Activities that we are going to perform are things along the lines of implementing the curriculum: deploying our personnel, ensuring that we're providing critical care and treatment, and the like. In terms of outputs, they are again really quite simple. We want to have a comprehensive training curriculum; we want to ensure that our trainees are receiving high-quality education; we want to develop comprehensive practice guidelines; improve our patient care; and be able to implement research studies. We hope that if we are able to do all of that successfully, then we will have our outcomes, which include increasing the number of licensed and certified providers in Malawi that will improve all of our adherence to practice guidelines, that will have improved clinical outcomes, and that we will be able to have everyone participating and engaged in publication of research.

We have basically four project goals for our program: the first is education, the second being care and treatment, the third is research, and the fourth is program management. I think that is probably a pretty consistent theme from what I'm hearing, sort of in the order from all of you and all of the participants here today. We know that goal one and goal two frequently go hand-in-hand; you can't really educate and train with the clinical care and treatment. That was our desire to place those

hierarchically as a most important. Research would be key to us understanding the health care situation in Malawi better for women and being able to make improvements as well. As well we want to maximize performance in our program and manage our costs, and that is part of what this MNE framework is about.

Just as illustrative examples, I just decided to pull a couple of things to show you where we are headed with this. For goal number one of education, one of our objectives is objective four: to teach and train the registrars to increase the local healthcare providers with expertise in OB/GYN. I think that is a common theme in a common objective that we have among a lot of us. Some of the indicators that we have chosen to use are things such as student-teacher ratios, a number of trainees, passing national certifying and licensing examinations, and the percent attrition of students. Hopefully that will be zero.

In goal number two, which is our care and treatment goal, our third objective is to diagnose, treat, and monitor patients to improve maternal health outcomes and you can see that we have picked many of the common indicators that we monitor, particularly in the MDG goals, including the number of antenatal care visits women attend for uptake of ART and the like.

In a third goal, our research goal, our second objective is actually to develop collaborative research programs and increase the knowledge base for maternal healthcare delivery. Some of the indicators there are going to be the number of trainees that we have completing formal good clinical practice training and completed training and research methodologies. I'm actually happy to say that as of today our first four registrars actually completed their formal training in research methodology. Even though almost all of us are here, we have a couple of people back in Malawi stoking home fires who completed the process today – for instance, the percentage of studies that are resulting in peer-reviewed publications for the trainees in the faculty.

One of the really important things that we need to do as a program – it is great to write all this down and come up with a really comprehensive MNE framework – is realistically to have someone implement it for us and keep the process going. None of us, with only a few faculty teaching in both cities in which we're running this training program; no one has a bandwidth to do this. So we plan to hire a fulltime MNE officer who will actually be based in Lilongwe, which is the capital. We have our training sites both in Lilongwe and in Blantyre.

It is very important because we have our registrars in both cities. It is important for us to have parity between the programs. We can't treat either one of them as more or less important. The idea is that we would hire this individual to act as the custodian of this framework, conduct any training that needs to happen for any personnel that collects the data, they can enforce the internal process, conduct the data review, disseminate the results to all of us, and begin investigations when we pick up irregularities. That person is going to have a tough job, because they are going to have to do this in two different cities and they will need to travel. They will be dealing with very, very busy hospitals and different systems in different hospitals, though they are under the same umbrella. It is quite a challenge, but we are optimistic as we begin the recruitment process that will find the appropriate person for this job.

All of this is because we have these four wonderful people, our inaugural cohort of trainees who began this past September. Of course, out of four people we would wind up with two Priscillas because that is not at all confusing. But they are really a stellar group of people and we are really honored to be a part of their training. Thank you for giving me the opportunity to participate in this meeting.

Ghana District Hospital Presentation

Kwabena Danso: Thank you. We were commenting that the logic model is a very pleasant tool. I think that we would all adopt it. We now call on Frank to give his presentation.

Frank Anderson: Well, who would have thought that all of this is going on out there? It is incredible. I am going to just give you a brief presentation on the data that one of the students who visited some of the district hospitals gained. I am interested in the impact that OBGYNs have when they arrive at a district hospital. So this kind of data that we are talking about is a little bit different. When the original Carnegie Program was established, their main outcome was looking at the number of physicians that then became certified by the West African College of Surgeons. Looking for outcome data was difficult.

The first thing that we did was to go to some rural district hospitals to do some qualitative research. We did interviews with physicians, nurses, administrators, and obstetricians and gynecologists. In summary, all of the interviewers recommended OBGYN placement at rural district hospitals. There was a real sense that people needed to have that. OBGYNs introduced a wide range of positive improvements. They noticed an increased number of referrals into the hospital, decreased referrals out, introduction of new drugs such as misoprostol, new equipment, updated clinical protocols, new availability of gynecological services, greater confidence from the supporting nurse midwives, and increased training opportunities for house officers and medical students.

When we think about this idea of sending obstetricians to the district hospitals, it actually transforms those hospitals. When we talk about emergency obstetric facilities, when an obstetrician goes to a facility, they say I need oxytocin; I need misoprostol; I need to do what I can do as an obstetrician and so that is another level of concept to consider as we move towards this effort. These are just some of the comments:

“If left alone, I would say that every district hospital should have a gynecologist. It is sad if your wife, sister or mother, because she is pregnant, dies. It is very sad. So I would recommend that every district hospital have at least one gynecologist.”

I won't read all of them, but these slides will be made available to you online. But you get the sense that there is a clear interest in having an obstetrician at the facility.

We also did some quantitative data collection. We did some register issue. In district hospitals in rural areas of Ghana, you have a referral book, an admission and discharge book, and you have a labor and delivery book that are all sitting there next to one another. But if you wanted to follow, you know, Mrs. Tetteh who got referred from her village and then was admitted, then needed to know what her procedure and outcome were, then you would need to find her name in all three books. We worked with these facilities to create a larger registry that had all of the indicators in one book (which fills up pretty quickly), but it gives us a chance to compare places that had an obstetrician with those that did not have an obstetrician. What I am going to show you today is not the final answer, but it is my struggle with trying to find quality indicators to show the effect of obstetricians. It is something to think about, when looking at rates of obstetric referrals in and out of facilities, rates of complications in each hospital, rates of retention of obstetric patients, and case fatality rates.

Just from the retrospective data, we looked at places that had newly placed obstetricians compared to those that didn't, and we saw a reduction in fresh stillbirths, in post neonatal deaths, a large increase in the treatment of malaria and pregnancy, and also an increase in the number of births at a hospital. It is not great, but it suggests some things.

We tried to do some statistical analysis on some of the other issues in maternal mortality ratios. When you add an obstetrician to a facility, you may have increased complicated cases and have increased rates of maternal mortality. I don't necessarily think that outcomes will be better when you have an obstetrician. There are still huge problems in fresh stillbirths, lack of fetal monitoring, lack of assessing inter-uterine conditions, and we will have other problems. Just looking at the indicators – fresh stillbirths rate, master rate in stillbirth ratio per 100 deliveries, C-Section rate, SPD rate per 100 deliveries, antenatal care rate per admission, delivery per admission, and low birth weight per 100 deliveries. These are just some of the indicators that we are working with. We also looked at reasons why patients were referred out, and it was mostly because of a doctor's absence.

We found that when an obstetrician's district hospital, where you have two doctors. You have a medical officer who used to all of the obstetrics as well. When he had a complicated obstetric case, he sent it to the referral hospital. They had to doctors there in the medical officer can do what he knows how to do in the obstetrician can take care of the obstetric patients without sending them three hours away to the hospital. I'm still interested in looking at the effects of placing obstetricians and district facilities. I think it gives us some data to support our efforts, although we all kind of know that when obstetricians are doing hemorrhages in the middle of the night, lives are being saved. Otherwise those people would be traveling another three hours. Babies are being saved. How can we measure that?

We are not at a place, from what I can tell, where nurses that are working those facilities are ready to use computer systems, I'd be interested in seeing how that gets adopted by some of the different types of health workers. It could be challenging. I also think that the data collection indicators should be in harmony with the Ministry of Health. Now some of the data we hearing is internal monitoring data and hospital data, which is interesting, but I think that if the Ministry of Health were involved, at least some of the indicators would be looked at across the country, giving them a sense of the maternal morbidity in the country. I think we have an opportunity to help them think about what things to measure.

I also think that the idea of quality of care monitoring is going to be the next phase. Once we have enough obstetricians in place, the next step is the quality of care, what is the outcome, and what types of interventions do we need to improve those outcomes. That is when we start talking about intervention research and health systems research. We are on the verge of all of this. Right now we are breaking bread. We are creating the workforce, the group of experts in obstetrics and gynecology who can then move on to do these types of studies for us. So that concludes my presentation, and it is time now to go to the breakout sessions.

Kwabena Danso: We are a little bit behind time, so immediately after the feedback, we will go to the breakout sessions and work in our groups.

Frank Anderson: So what time is it now? 4:15? We have dinner at 6:00 and your rooms are waiting for you to do your worksheets. I've been asked about the worksheets and I want to encourage you to put in actionable items in your worksheet. We have done a needs assessment, so we know a lot of the problems. But I encourage you to put the how-to's and what-to's on your needs assessment sheet, because those are going to be the types of things we are going to look at to have some actionable items for your own funding sources and how we might approach this as a larger group as well.

When you are filling out your forms, it is important that you have clear next steps and how-to's. Today you may have learned about implementing a monitoring and evaluation system. You may have learned about Ministry of Health policies to have an obstetrician in every district hospital.

Things like this. Think about those things and put them in your form so we can move ahead with those brilliant ideas that we have heard today.