profile

The Bigger Picture

# A Day in the Life of Andrew Prentice and Fatou Sosseh

Prof. Andrew Prentice is Head of MRC Keneba, a rural field station situated in the Kiang West region of The Gambia. He and Chief Midwife Fatou Sosseh discuss their work at the center and its relevance to the nutritional welfare of mothers and babies worldwide.

**Sight and Life (S&L):** *Andrew, you are Head of MRC International Nutrition Group. Could you tell us a little about the history of the MRC and its current activities?*

**Andrew Prentice (AP):** The UK Medical Research Council (MRC), for which I work, has been investing in research in Africa for many decades. Its involvement here in The Gambia goes back to 1948, and research in the Keneba Center was started by Professor Sir Ian McGregor in 1950. Its initial focus was malaria. In 1974, my predecessor here, Roger Whitehead, joined. Roger greatly expanded the center. I started living in Keneba in 1978 and took charge of the center in 1999, and it's been full steam ahead ever since. We run a very broad research portfolio centered on maternal and child health. Our main focus is The Gambia and Sub-Saharan Africa, but we also do a lot of discovery science which we hope will be important world-wide, to high-income as well as low-income countries. We're highly unusual in that we have a state-of-the-art clinic and laboratory situated in the heart of The Gambian bush, which allows us to do some extremely specialized research.

**S&L:** *You were born in Uganda. In what ways does this influence your thinking and work?*

**AP:** I adore Africa. I was born in Uganda, schooled in Kenya, attended university in the UK, and then returned to Africa. I therefore feel an African in everything except the color of my skin. My first exposure to nutrition was in Uganda, working for Roger Whitehead, who was based there at the time. My job was as a baboon trapper for a research colony – quite a risky occupation, but extremely interesting! The role of the baboons was as an animal model to help us explore the nature of extreme protein energy malnutrition.

> "Improving the human capital of Sub-Saharan Africa requires us to pay attention to nutrition throughout the life-cycle"

**S&L:** *How has the problem of nutritional deficiencies in Sub-Saharan Africa evolved during the time you have been involved with MRC?*

**AP:** Understanding the etiology, and treatment, of protein energy malnutrition was the main focus of the center's activities thirty or forty years ago. We still do work in this area, but there have thankfully been few famines in the region in recent decades and health situations are generally improving, and our focus is now on hidden hunger, which generally relates to micronutrient deficiencies. Nutritional deficiencies underlie – whether directly or indirectly – approximately a third of all child deaths in this region. The best metric for infant nutritional well-being is stunting, and so we track this closely so as to be able to understand the nutritional supply here. We also understand today that the nutritional status of the child in the womb has a profound effect on its lifelong health. Improving the human capital of Sub-

① Fatou Sossej, Chief Midwife at the Keneba Center, cradles a newborn baby born at home.

② A mother holds her prematurely born baby in the Edward Francis Small (EFSTH) Teaching Hospital, The Gambia. EFSTH is located in Banjul, the capital of The Gambia and it is the main referral hospital for the country.

③ Three generations side by side: A grandmother, mother and baby in The Gambia.

④ Young girls born in The Gambia. The Keneba Center has done much to improve survival rates for both mothers and newborns.

⑤ Andrew Prentice with a young baby.
"I feel an African in everything except the color of my skin."

⑥ A newborn in Kanong Kunda, The Gambia.

Saharan Africa therefore requires us to pay attention to nutrition throughout the life-cycle, and particularly before a woman conceives. This has a huge influence on our work.

**S&L:** *In what ways, Andrew?*

**AP:** Thankfully we are seeing a huge reduction in infant and child mortality. Infant and child mortality in our region has dropped tenfold in the past forty years due to a range of measures, including vaccination. However, the proportion of stillbirths and neonatal deaths, as well as of disabilities, is growing. We therefore have a major focus now on pregnancy and the newborn. Stillbirths and early neonatal deaths are complex and have multifactorial causes, and we are making a major investment in trying to understand them. There are some simple things that can be done to avoid these early deaths in a rural setting such as this, and these are in place. Traditional birth assistants spend a week with birthing mothers, and give them help with breastfeeding and baby care. But there is much more that we need to understand.

**S&L:** *Fatou, you are Chief Midwife at the Keneba Center. Can you tell us something about the day-to-day life of the center?*

**Fatou Sosseh (FS):** We conduct research here, so activities such as anthropometry and conducting fetal ultrasounds are very important. We also teach study participants the importance of nutrition and of personal and environmental hygiene. We work in 36 villages in the area around the center. Here we provide a free health check service for pregnant women. The local women are often reluctant to disclose that they are pregnant on account of superstitious fears that they may lose their child. We're doing our best to educate women out of this superstition. We also always have a number of research studies running in the center at any one time, and we recruit women from the local villages into these studies. These are some of the best-studied babies in the world, in fact!

**S&L:** *What is the relationship between the Keneba Center and the Gambian government?*

**FS:** We are funded by the UK Medical Research Council, the Bill & Melinda Gates Foundation, and other sources, but we work very closely with the Gambian government. There is a government health center some 23 kilometers from Keneba, and we operate in close liaison with the team there. It's a very fertile relationship that has been sustained over 67 years now.

**S&L:** *What prompted you to become a nurse?*

**FS:** Ever since my girlhood, I have always had a passion for caring for people, especially those who are sick. I was born in the city, but I've been working in this rural area for 21 years now, primarily as a midwife.

**S&L:** *What are the qualities required of a midwife?*

**FS:** It's a very diverse role. You need to care for people. You must listen to their needs, understand their problems, and try to help them. It can be difficult to gain women's confidence in this remote rural area, but it's essential in order to do the job. It's really important to see women as early in the pregnancy as possible, and I'm now seeing them as early as eight weeks. The local tendency is to assume that one or two antenatal visits are sufficient, which is of course not the case. The more antenatal care women receive, the better.

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**S&L:** *Where do the mothers actually give birth?*

**FS:** We have a delivery room in the Keneba Center for the more complicated births, but our core service is antenatal care rather than actual delivery. Most women therefore give birth at home, assisted by a traditional birth assistant, or TBA. The advantage of running antenatal clinics is that we can predict which births might be difficult and can put appropriate measures in place to mitigate the risks for mother and baby.

**S&L:** *Could you tell us more about the TBAs?*

**FS:** The TBAs receive refresher training from MRC Keneba every six months and assist with deliveries in the local community, as well as offering advice on breastfeeding. We oversee them, but they are not part of our team. The vast majority are illiterate, so their training is very basic. They are mostly elderly, and they have a great deal of experience with childbirth.

**S&L:** *What are the major risks to which women giving birth at home are exposed?*

**FS:** One of the major risks is bleeding, which is very common. Another is asphyxiation of the baby. Potential breach births and cases of eclampsia are identified during antenatal screening,

and the women in question do not give birth at home. If a home delivery does become especially difficult, we can be contacted, and we will arrange transfer of the mother to an appropriate health facility. Mobile phones have had a huge impact here. The Gambia is a flat country and mobile reception is very good here, so communications have improved vastly in recent times.

**S&L:** *Do locals generally favor a home birth, or is this the sole option for most women?*

**FS:** Some women might actively prefer a hospital birth, but there are many practical obstacles to this. To give birth in a hospital, they would have to travel to the coast, not knowing the exact day of delivery and not having their family and friends with them. They would also have to incur the expense of living in the city prior to going into labor. And who would look after the other children and the farm while the mother is away? So the case for home birth almost makes itself in many instances. Poverty is a key factor in most decisions.

**S&L:** *What are the key things that mothers preparing to give birth at home need to know about good ante- and postnatal care?*

**FS:** One of the most important things is having antenatal reviews early. If they book in for these in good time, they can be seen at the health clinic four times before giving birth. This allows us to identify any potential problems and give them the information they need to deal with the situation. It's also very important to give the baby the colostrum and not discard it, as used to be the practice. So we encourage new mothers to give the baby the breast as quickly as possible. In the past, a verse from the Koran would be written on wood using charcoal and ink, the verse would be washed off with water and mixed with honey, and the solution was given to the baby as its first nourishment. It was of course full of germs and extremely detrimental to the baby's health. What we now know is that the establishment of the microbiome in the gut after birth – a "signature" mixture of bacterial organisms essential for health – should be based on the bacteria present in the mother's body, and not on the hands of the man who wrote the Koranic verse. This is significant, because the vast majority of the population in The Gambia, and almost 100 per cent here in the countryside, is Muslim.

**S&L:** *Do you run awareness-raising and educational campaigns to support the dissemination of best practice in antenatal and postnatal care? How are these received?*

**FS:** There are health programs on the radio, but we always talk to mothers when we visit them, or when they come into the clinics. We cover subjects such as the importance of hand-washing, how to breastfeed, what types of food to give the infant, the prevention of diarrhea, and generally how to look after the baby at home.

**S&L:** *What can be done to improve the already high standards you uphold here at the Keneba Center, Fatou?*

**FS:** I've always been passionate about midwifery myself, and despite my age, I'm very interested in reading and taking courses to further develop my knowledge and skills. The urban areas of The Gambia exert a considerable gravitational pull of the populations of rural areas, so it's very hard to keep good people here. That's a perennial challenge for us. We are a research center first and foremost, and our motto is "No survey without service". We're not a hospital, however, and are not funded as such, and so we have to strike the best balance we can between serving people's critical health needs here and conducting research that will benefit mothers and babies all around the world, and not just in The Gambia.

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**S&L:** *Is there anything else you'd like our readers to know?*

**FS:** Simply that Andrew has done a terrific job and made enormous improvements to the center since he's been here. I'd like to thank him for his outstanding work.

**AP:** Let me reciprocate and say how greatly Fatou's involvement in the medical aspect of our work has increased during the time she's been here and what a tremendous job she's done. She has, among other things, helped deliver over 10,000 babies! I dread to think how many wouldn't have survived without her assistance.

**S&L:** *Back to you, Andrew. Speaking as someone who knows Africa extremely well, what would you like the rest of the world to understand about the continent and the challenges it faces?*

**FS:** If we turn our attention to South America for a moment, we can see that that continent is going through the so-called economic and nutritional transition. When this happens, a lot of nutrition-related diseases disappear – anemia, stunting and

underweight, for instance, which have gone down very rapidly in the past 20–30 years. Here in Africa, we have what is termed the "remittance economy". Most families have a member living and working abroad and sending money home. Whether their work is legal or illegal, the money they are making available to their families is transforming the nutrition landscape here. The little shops here in Keneba are much better stocked than they were 30 years ago. But we still don't understand the fundamental relationships between cause and effect in nutrition. For instance, we're still struggling with the problem of how to give iron supplementation safely. There's also a vigorous debate among nutritionists at present as to whether the huge efforts that governments and agencies have been putting into vitamin A supplementation should be scaled down. At the same time, we've done a lot of very exciting research – here, in the Gambian bush – into the nutritional status of the baby *in utero*, and especially in the first hours and days of life. The nutrition a mother receives just before and after she conceives can have a very profound effect on the baby in her womb, and on the health of that individual for the rest of his or her life. So if we can engineer an optimal diet for pregnant women, we'll make massive gains in the reduction of pregnancy-related defects. So we are living in very exciting times, able to apply the big science of Europe and America to the issues of the developing world so as to create solutions that will benefit the developed and the developing world alike. That's what really excites me about the work we're doing here in Keneba.

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**S&L:** *Andrew, Fatou: Many thanks for your time, and the best of luck with your endeavors!*

**AP:** Thank you.
**FS:** Thank you.

***Andrew Prentice and Fatou Sosseh*** *were interviewed by Jonathan Steffen*

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### The MRC International Nutrition Group

Nutritional deficiencies in low-income countries impair the growth and development of children, reduce their resistance to infections, and contribute to almost half of all child deaths worldwide.

Maternal malnutrition during pregnancy and lactation harms the fetus and infant with both short- and long-term consequences for their health. Future generations are also affected. The MRC International Nutrition Group (ING) works to reduce this burden with a focus on the world's poorest populations, especially in Sub-Saharan Africa.

### Our mission

Our mission is to gain novel insights into the basic mechanisms linking diet and disease in order to develop more effective community and clinical interventions.

The MRC International Nutrition Group is based at the London School of Hygiene & Tropical Medicine and has a major research center at MRC Keneba in The Gambia, West Africa.

We also work in Kenya and Tanzania, with additional collaborative studies in other low-income countries, especially Bangladesh. Our primary collaborative center in the UK is MRC Human Nutrition Research in Cambridge, through which we also run comparative studies in China.

MRC Keneba is embedded within the MRC Unit, The Gambia, and works with its other themes on Vaccines & Immunity and Disease Control & Elimination. We work with the Ministry of Health and Social Welfare through close collaborations with The Gambian National Nutrition Agency (NaNA).

**Source:** www.ing.mrc.ac.uk/, accessed March 2015.