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Alleviation of Maternal Mortality and Morbidity in the New Millennium: Time for Change? - *The First John Bateman Lawson Memorial Oration*

Christopher C. Ekwempu
Retired Professor of Obstetrics & Gynaecology, Ahmadu Bello University, Zaria, Nigeria.

I was very happy and enthused by the invitation to deliver the first John Lawson Memorial Lecture. It provides an excellent opportunity to celebrate the life of this great man and to show our everlasting gratitude to him. I thank and congratulate the Council of the Society of Gynaecology and Obstetrics of Nigeria (SOGON) for instituting this lecture to immortalize the name of this eminent and world-renowned Obstetrician and Gynaecologist. It is indeed most appropriate to honour him for his immense contribution to Reproductive Health. His life will remain a beacon to all those people he served and future generations will learn from his worthy example.

John Lawson has often been called the father of Gynaecology in West Africa, but I believe that is an understatement. He was the father of everything in Reproductive Health in the sub-region; practice, education, training, research and advocacy round the world. He was quick to recognize our appalling maternal mortality and morbidity status early in his tenure here at the University College Hospital, Ibadan (UCH) and the dearth of human resources to tackle the problem. He knew immediately that he had to be a jack-of-all-trades and went on to be master of all!

He was particularly concerned with the plight of our women with obstructed labour and some of its consequences, especially vesico-vaginal fistula and he devoted much of his time to ameliorating these problems. What was most striking was not the innovations he introduced, but the way he empathized with these unfortunate patients. Equally important to him was the need to train a cadre of indigenes to widen the front for tackling these problems. As a result, he organised a very pragmatic postgraduate training programme that attracted students from within and without this country and that also assured easy passage overseas for needed additional training. That is why there is hardly any part of the world one goes, from Africa to Europe, North America, the Middle East, Oceania and the Caribbean that one does not meet with someone who had been under John Lawson's tutelage. Even after he left our shores for the UK, he cleverly got himself into the postgraduate section of the Royal College of Obstetricians and Gynaecologists to ensure a continuous flow of our students overseas. It was after he left that office that we began to have waiting lists of trainees, some four years long.

John Lawson based his research endeavours on the real world, resisting the easy way out of applying hypotheses and strategies from elsewhere that were not relevant to his own environment. He thus worked on such conditions as sickle cell disease, eclampsia, and severe anaemia, which were great killers then. In fact he was so concerned with the high death rate of anaemic patients in labour that he devised the life-saving adult exchange blood transfusion, which obviously must have been the fore runner of today's hi-tech plasmapheresis. Always looking ahead, he was quick to realize that surgery was not the answer to our cervical carcinoma problem and introduced radiotherapy in the form of the safer and more manageable caesium brachytherapy to UCH, the first in West Africa.

By the way he worked and conducted his personal life, John Lawson greatly influenced the work ethic and behaviour of those associated with him and I am happy to say that many of his attibutes can still be seen in many of his proteges scattered round the world. Just before he retired, Professor Ian MacGillivary of University of Aberdeen published his last bok on pre-eclampsia in 1983. He ended the preface of that book as follows: "It is many years ago now since as a young man I took the photograph of the plaque on the wall of the Chicago lying - in hospital, which is still awaiting the name of the discoverer of the cause of eclampsia and pre-eclampsia. Perhaps at that time I had ambitions and hopes like many others, that my name might some day appear there ..... such hopes have receded over the years." I did not have the opportunity to ask John Lawson at retirement how he felt about his earlier hope of reducing maternal mortality in Nigeria. I am almost sure his answer would not have ben different from Ian's - very disappointed. And so are we all, that after so many years of research and investment not much have changed. This is why my lecture this morning has the title, "Alleviation of Maternal Mortality and Morbidity in the New Millennium: Time for Change?"

The First Professor John Bateman Lawson Memorial Lecture was delivered at the Annual General Conference of the Society of Gynaecology and Obstetrics of Nigeria (SOGON) in Abuja, 24 November 2000

It is only reasonable that if an approach that has been used for a reasonable length of time fails to produce the right results, it should be changed. Our maternal mortality ratio has gone from bad to worse over time, and is now thought to lie between 1000 and 1500 per 100,000 live births. The lifetime risk of a Nigerian mother dying is about 1 in 15, compared with 1 in 4000 for a mother in the more developed countries. We make up only 2% of the world's population but account for 10% of the world's maternal deaths.

We have tried many approaches: antenatal care, the risk approach, some forms of referral systems, but none has had a significant impact. Towards the end of the last century, some pundits came up with the concept that nothing would change until our socio-economic and literacy levels improve [1]. But we need not look far to refute these hypotheses. Maternal mortality cannot be considered a direct outcome of poor socio-economic development. Mortality levels very widely between countries at the same level of economic development and many developing countries with low or lower-middle income economy have brought down their maternal mortality to low levels. As for literacy there is a lot of evidence from the past that literacy per se has never reduced maternal mortality rates [2].

It is becoming an imperative that if we are to remove the agony of unabating maternal deaths, we must totally overhaul our programme machinery. This was also the conclusion of two renowned researchers, Deborah Maine and Allan Rosenfield of Columbia University who, after review of events in developing countries, came to the same conclusion in 1985 that the conventional approach as we practice it today would not adequately address the maternal mortality problem [3]. This they argue was simply because it presumes that obstetric complications can be predicted or prevented. The common fatal complications in our environment include: hemorrhage, infection, eclampsia, obstructed labour and complications of unsafe abortion. I am sure that those of us who look after women in pregnancy and childbirth will not dispute that except for unsafe abortion, which can be prevented by providing legal abortion, all the others can neither be predicted nor prevented. But they can all be treated successfully with simple technologies that have ben at our disposal for years. Maine and Rosenfield went on to hypothesise that access to emergency obstetric care (EMOC) was key to the reduction of maternal mortality. By emergency obstetric services, they meant that it should be possible for all women who develop a complication to have access to a facility where staff can safely complete an incomplete abortion, administer a blood transfusion, provide intravenous antibiotics, oxytocics and anticonvulsants and provide an emergency caesarean section.

To test this concept, they applied for and obtained a generous grant from the Carnegie Corporation of New York. Coincidentally this was at a time when a Nigerian, in the person of Professor Adetokunbo Lucas (a distinguished authority in clinical and epidemiological aspects of communicable diseases) had just assumed office as the Chair of Carnegie's Strengthening Human Resources in Developing Countries Unit. Whether it was through his influence or just sheer coincidence, the Columbia team chose West Africa as the theatre to test this concept.

Text Box 1

Emergency Obstetric Care Services (EMOC)

- **Safe Completion of Abortion**
- **Safe Blood Transfusion**
- **Provision of**
  - **Intravenous Antibiotics**
  - **Intravenous Oxytocics**
  - **Effective Anticonvulsants**
- **Provision of Emergency Caesarean Section**

They formed a research network called the Prevention of Maternal Mortality (PMM) network, made up of 11 multidisciplinary teams - seven from Nigeria, two from Ghana and two from Sierra Leone - to examine the operating factors relating to maternal mortality in the sub-region. Members of these multidisciplinary teams, aware of the wrong premises of previous research and interventions, allowed informaton known for decades about maternal mortality to guide their research questions. With this knowledge and with technical assistance from the Columbia team they, so to speak, walked the path of maternal death to identify points at which impediments to utilization of emergency obstetric care could exist in the particular catchment area of their research. They planned this using the three delays model[4]: delay at home in deciding to seek emergency treatment, delay in reaching an institution that can provide emergency obstetric care and delay in receiving effective emergency obstetric care at the referral institution

Text Box 2

The 'Three Delays Model'

- **Delay at home in deciding to seek emergency treatment**
- **Delay in reaching an institution that can provide emergency obstetric care**
- **Delay in receiving effective emergency obstetric care at the referral institution**

They conducted needs assessments using qualitative and quantitative methods at the community, health center and referral hospital levels. Based on the results of the needs assessment, they designed innovative models for intervention to reduce maternal deaths in their respective study areas. It will be impossible for me in this talk to highlight the models of all 11 teams, which were as varied as their number and reseach sites. But wherever they were, their interventions contained all the ingredients required to improve availability, quality and utilization of emergency obstetric care at low cost.

I have gone to this length to give you the background to events leading to this new model that has now turned the approach to prevention of maternal mortality on its legs. The research phase with its technical assistance by Columbia University ended in 1996 - eight years after it began but the PMM network has continued as a regional body, the Regional Prevention of Maternal Mortality (RPMM) with headquarters in Accra. Since the end of the research phase of the programme and its presentation to a world audience in Accra in 1996, a lot has happened. Those who saw in this work a light at the end of the tunnel wasted no time in embracing it.

The government of Ghana using members of the PMM in its country as consultants first applied the model to six health districts. Such was the success that by April his year it had increased the number to ten, four of these jointly with an NGO. In Sierra Leone, the work of the teams from that country was government property from the beginning and the model has since formed its maternal health programme across the nation. This has been particularly useful during the civil unrest that had plagued that country in recent times.

The models have been so attractive that for the first time the language divide between Anglophone and Francophone West Africa disappeared and teams from Senegal, Mali, Cote D'Ivoire, Guinea, Togo, Republic of Benin and Burkina Faso, together with Liberia, have joined the regional network. As at April this year these countries were at various stages of site selection, needs assessment, intervention, monitoring and evaluation in their respective countries. As a result some of the manuals for the project have now been translated into French. East and Central Africa has not been left out; Kenya, Uganda, Tanzania and Zimbabwe are now members and are trying out the model to reduce maternal mortality in some parts of their countries. Even the Lusophones of Angola have seen the merits of this new model and have also come on board. The number of teams has now gone up from the initial 11 to 25. But it does not end there. Bangladesh with one of the most appalling figures for maternal deaths has smelt salvation in this model and is now trying it out in all health districts in the country in collaboration with UNICEF and Columbia University. This model also formed a prominent topic at the pre-conference symposium at the recently concluded FIGO World Congress in Washington at which it was recommended that it be applied worldwide.

I wish I could say that this momentum, this wind of change that is blowing across our neighbouring countries and other distant lands is also visiting our country by way of effective national programmes. Unfortunately this does not seem to be the case. Yet it was here that the plot to embark on this decisive onslaught on maternal mortality in West Africa was hatched; five out of the eight meetings that were held to plan and sharpen skills for this operation research took place here; and we contributed the largest number of teams – seven in all - for the exercise. It should not be allowed to look like the case of, "a prophet is not without honour except in his own land".

It was at a similar meeting of this society 13 years ago, after a very depressing symposium on maternal mortality in Nigeria, that we were challenged by Professor Adetokunbo Lucas to go back to the drawing board. That meeting was the turning point that led to this new initiative. Let us make this, our first meeting in the new millennium, another turning point, this time for the adoption, replication and dissemination of this model to the community, our governments and non-governmental organizations across the country. This model directly addresses the maternal mortality issues, it is replicable, it is adaptable, it shows promise of easy sustainability, it is effective. Where it has been applied properly, there has been increased utilization of facilities, reduction in delays in getting to and using facilities and a fall in case fatality rates for the targeted obstetric complications. Above all, it is low-cost and low-cost must be the name of the game if we ever hope to make significant dents in our maternal death figures. All that is required is the will, the commitment and the determination to utilize the strategies built into this model to entrap our escalating maternal mortality rate and bring it down.

Whenever maternal mortality is being discussed, there is always that appendage, "and many thousands more suffer severe disabilities". Maternal mortality is often regarded as the tip of the iceberg of maternal morbidity. We all know the biblical dictum of the curse of Eve "out of pain and agony shall thou give birth". Labour is still a very painful experience even today. But nowhere was there an extension to that dictum, that long after her delivery Eve would continue to suffer from the effects of childbirth. But this is what we have today. Long after their childbearing days many women still suffer severe disabilities. The World Health Organisation (WHO) recently, in reviewing the lives of women vis-a-vis men, noted that women are now outliving their men by longer intervals, but that they spend the greater part of this longer life span in ill health and disabilities related to their childbearing activities. Some of these are due to errors of omission while most cases can be attributed to errors of commission by the attending professionals.

In this environment one of the disabilities that can be put to errors of commission is obviously that dehumanizing, socially destabilizing, psychologically crippling condition that has been so chronicled that it needs no introduction - the vesico vaginal fistula (VVF). If the new model mentioned earlier for the prevention of maternal mortality is well applied, the incidence of VVF will inevitably fall or cease. But what is worrying are the cases that still remain unrepaired. Nigeria used to share with Ethiopia the distinction of having the largest collection of this condition in Africa, The Ethiopians have worked very hard and have reduced their numbers to the level that now attracts scant notice. But that cannot be said of our country. It is estimated that there are over 200,000 women with this condition in Nigeria and that at the rate they are being repaired, it will take another 40 years to clear, if no new ones occur.

In the past, it had been our expatriate teachers and colleagues who showed interest in this condition. Here I cannot but remember our great and indomitable mentor, John Lawson, who first blew the whistle about this condition and waged a relentless war of repair and advocacy all over the country. There was also the indefatigable Una Lister who, after stepping into Lawson's shoes, carried the battle to the north of the country and, of course there was also the gentle missionary. Ann Ward, whose work in Anua in the then Eastern Region of Nigeria earned her world acclaim. These were all philanthropists whose actions were dictated by humanitarian and altruistic considerations. But in the past decade or so have emerged another set of expatriates who ostensibly were interested in VVF, but whose motives were far from altruistic and whose activities had been at enormous cost to our various governments and NGOs.. I think the time has come for us as gynaecologists in this country to show greater interest in this problem and work out a strategy among us by which this scourge would be eliminated. For a country that boasts of the such a high number of gynaecologists, perhaps second only to South Africa on the continent of Africa, there is no justification to continue to import these so-called experts at great cost to clear our backyard. We must rise to the challenge.

While VVF may be blamed on our imperfect maternity services, the same cannot be said for some equally serious disabilities that are beginning to cause concern. As women become freer and bolder to let the world know how they feel about their reproductive and psychosexual lives, a bit more light has been shed into some morbidities that arise from some of the procedures we perform during the course of treating these women. It has been observed that as women get older they develop some very disturbing pelvic and perineal problems that considerably affect not only their self-confidence and self-esteem, but also their quality of life. And there is now evidence emerging that some of these ailments may not be unrelated to the procedures carried out on these women during childbirth many years earlier. Large trials have been conducted which show that routine episiotomy does not prevent 3rd degree and 4th degree tears or protect the pelvic floor, but is associated with severe maternal morbidity [4,5,6]. Faecal, urinary and flatus incontinence, 3rd and 4th degree perineal tears, a fear of future childbearing, severe sexual problems and blood loss which at times exceeds that at caesarean section are some of the major complications associated with this oft-performed procedure. Routine episiotomies should be critically reviewed. Given the risks associated with it, it should be regarded as a major operation and its repair should no longer be the perk, as is often the practice, for the least experienced member of the team, the new pre-registration House Officer. Similarly there is hardly a place for the forceps where we have the safer and more patient-friendly vacuum extractor.

Most of the work on long-term postpartum morbidity has been in the industrialized world. It is an under researched area in the less developed world, and I feel that the time has come for us to look at our own situation. We should determine the burden of this disease and its nature in our own setting and try to relate it to events during childbirth. Any procedure considered injurious or not cost-effective should be discarded. One practice we must also review is that of sterilizing women who rupture their uterus during the course of childbirth. Such sudden and involuntary invalidation of women from reproductive service leads to serious marital and psychological problems in some cultures. The premise on which this practice is based has never been validated by research. In Ethiopia, for instance, where informed consent is mandatory before any major procedure, most women with ruptured uterus refuse to have tubal ligation or hysterectomy. Many of these go on to have successful pregnancies subsequently [8]. The time has come for us to review some of our policies and methods, especially those not based on good evidence. We should always remember that, "A woman is an individual human being and pregnancy and delivery is an episode in the reproductive woman but the ultimate objective should be toward her health" [9]. We have to learn to adapt to the new roles of women in society if we are to continue to be relevant to their health needs and responsive to their perspectives.

In our practice we must make the right, the best and well-validated choices for women and just like Paul [10] exhorted the Philippians ".....whatsoever things are true, whatsoever things are honest, whatsoever things are just, whatsoever things are of good report", and to this I will add, whatsoever strategies, interventions and procedures are cost effective for reducing maternal mortality and morbidity. "if there be any virtue, and if there be any praise", let us think on these things.