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VOICES OF SURGERY

SAFETY FIRST

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PHOTO BY KAI PILGER ON UNSPLASH

5.8 MILLION PEOPLE DIE EACH YEAR AS A RESULT OF INJURIES. THIS ACCOUNTS FOR 10% OF THE WORLD'S DEATHS, 32% MORE THAN THE NUMBER OF FATALITIES THAT RESULT FROM MALARIA, TUBERCULOSIS, AND HIV/AIDS COMBINED.

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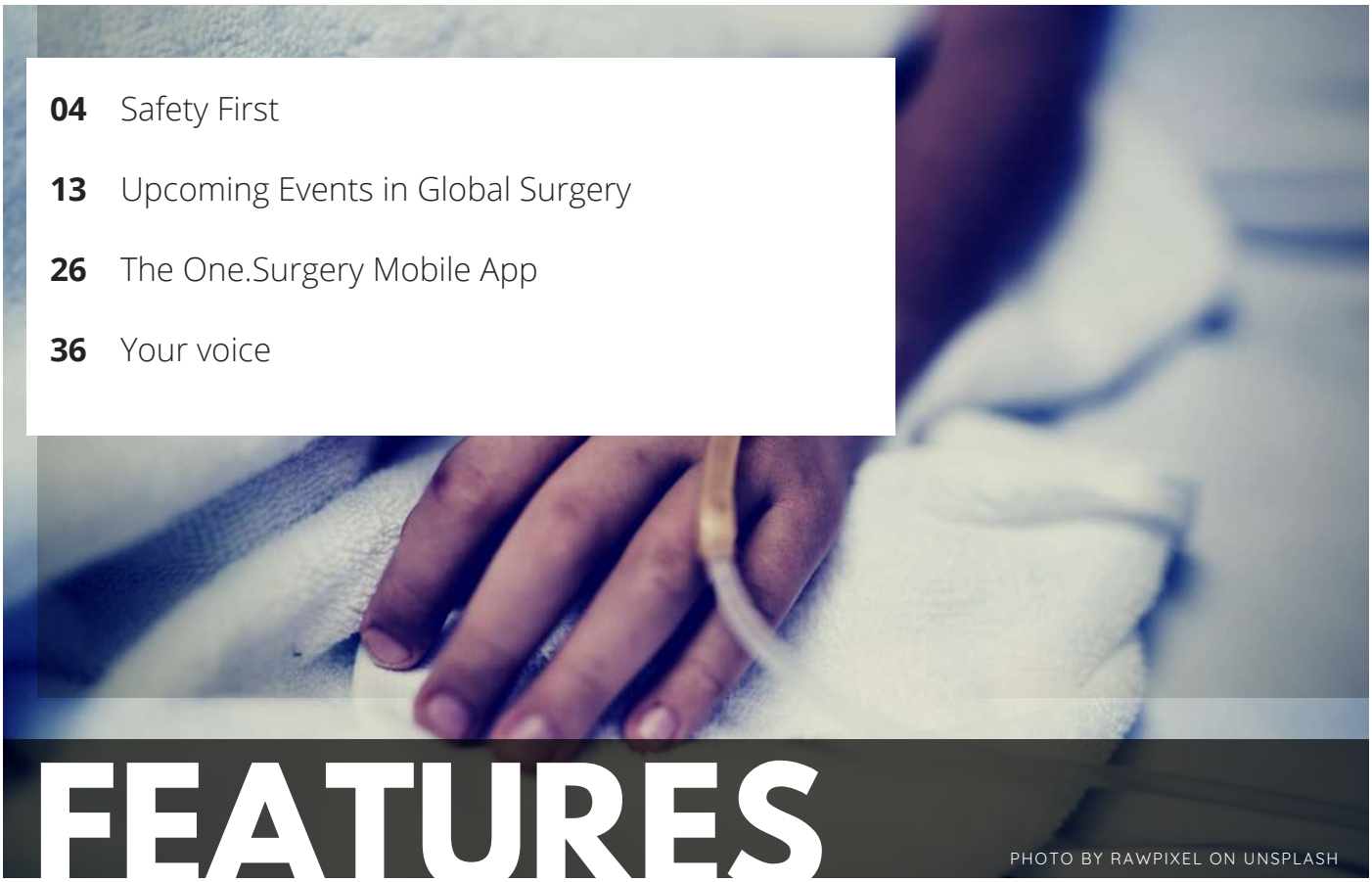

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SAFETY FIRST

December 2018

Dearest Readers,

From the late 19th century, when surgical infections, gangrene and sepsis were almost always fatal, to the current century and the astounding advances of regenerative and robotic surgery, providing safe surgery still remains a fundamental requirement to achieve successful patient outcomes.

Safe surgery is not just the physical act of performing surgery but the establishment of a sacred bond between healthcare professionals and the patient, both before and after the surgical procedure. Optimising the physical and psychological well-being of the patient pre and post surgery requires not only a functional healthcare system but the compassion, dedication and teamwork of the guardians of safe surgery.

However, providing safe surgery is no simple task. To navigate surgery safely, healthcare providers must be vigilantly aware of the many dangers that exist as patients are shepherded through their surgical journey.

Whilst lack of access to surgery is widespread throughout the world, when and where surgery is available, preventable heartache needs to be avoided at all costs. From complications during anesthesia to management of surgical site infections, many surgery led threats are imminently preventable.

As we celebrate 10 years of the launch of the World Health Organisation Surgical Safety Checklist and the success it gave, we should also recognise the many challenges that still exist today.

As you read our fourth issue of the Voices of One Surgery, please support us in the hope that every patient receives the safest possible surgery, wherever they are in the world.

With love always,

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&

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PHOTO BY FXXU ON PIXABAY

STRIVING TOWARDS SAFETY

The climb towards safe surgery in lower income countries involves overcoming a number of obstacles, from immature healthcare systems to a lack of medical equipment and insufficient human resources.

In such circumstances, healthcare professionals must shepherd each patient through their surgical journey as safely as possible, from pre-operative management, through to a successful post-operative recovery.

One.Surgery is proud to publish two studies, from West Africa and East Africa, assessing various aspects of this hazardous surgical pathway. We hope these articles stimulate debate in the concepts of this safe surgical journey and inspire others towards similar clinical improvements and research projects.

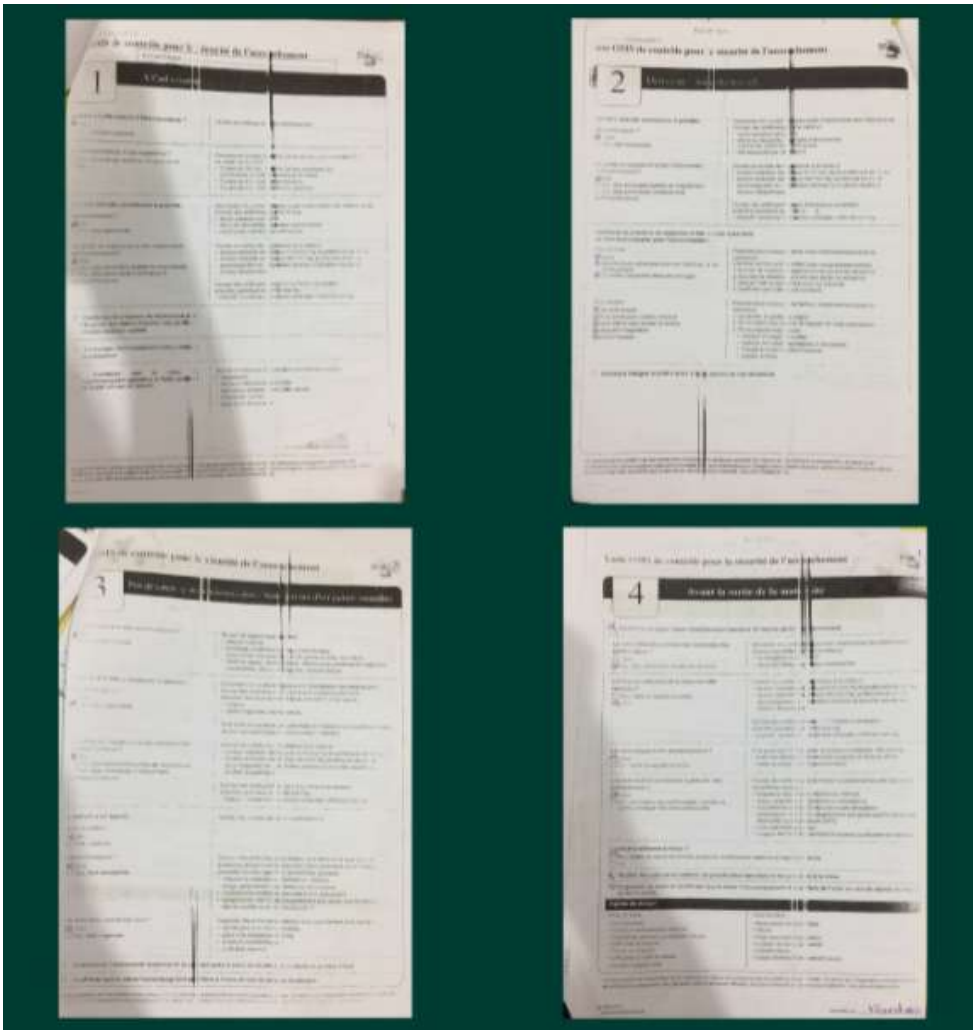
The growing use of the WHO Safe Childbirth Checklist: Lessons learned at HGOPY, Cameroon

In Cameroon, survey evidence suggests that maternal mortality is unacceptably high, estimated at 782 per 100,000 live births (DHS 2011). This is partially related to the fact that childbirth is a complex process and it is often difficult to remember everything needed to provide the safest care possible to the mother and the newborn. Many of these deaths can be prevented by the performance of evidence-based high impact practices done regularly, timely and according to prescribed standards.

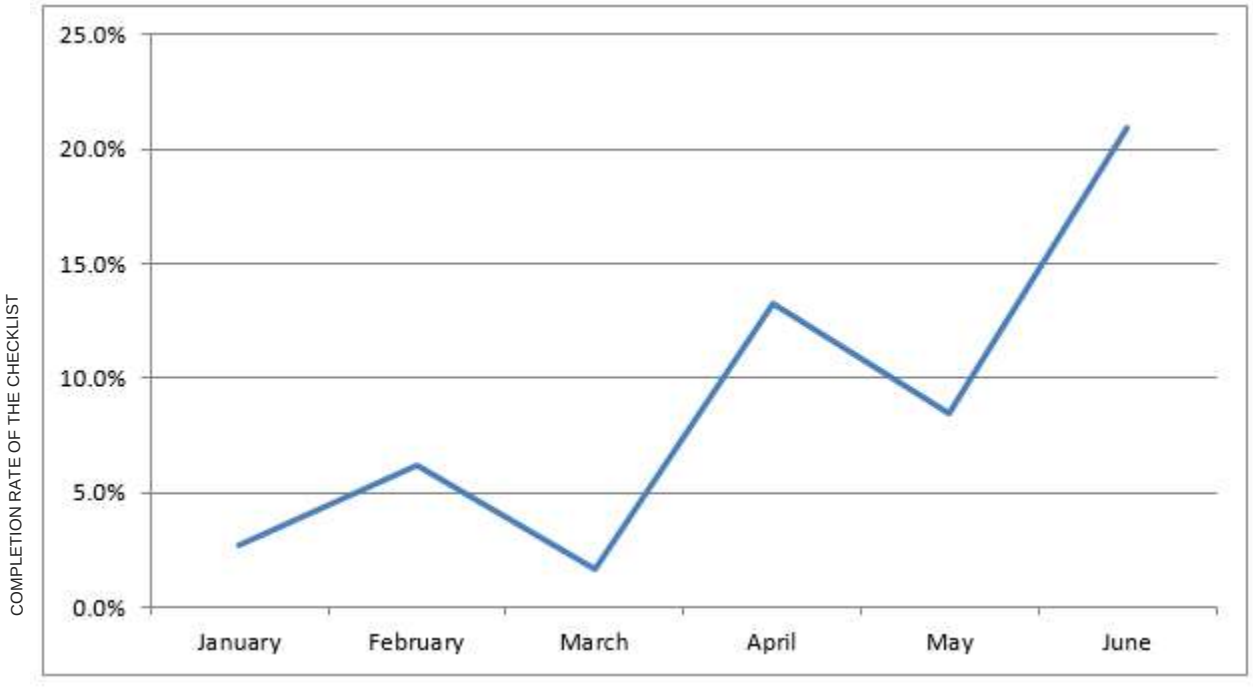
The World Health Organization (WHO) Safe Childbirth Checklist is a 28-item, 4-page list of scientifically-proven safe delivery practices designed to ensure delivery of best quality maternal and child care. The Yaoundé Gyneco-Obstetric and Pediatric Hospital (HGOPY) is a tertiary care centre in Cameroon open to innovative changes, especially those with strong recommendations engaged in routine use of the WHO Safe Childbirth Checklist.

We discovered how exciting this journey was after assessing the outcomes of deliveries performed in HGOPY during the 6-month period of implementation of the checklist.

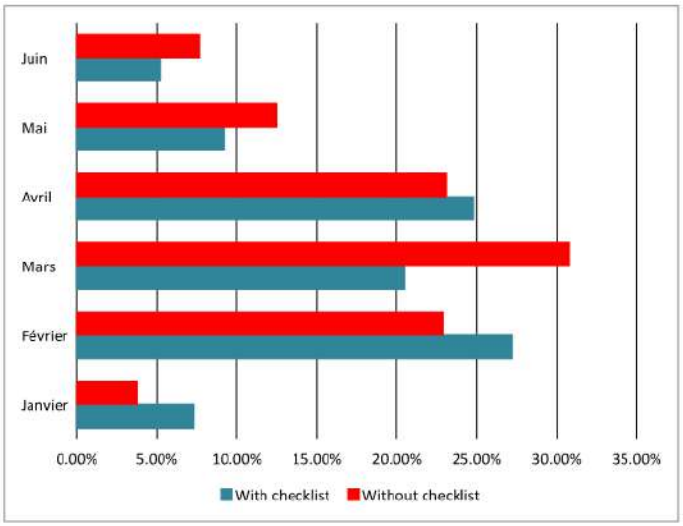
Adherence to the use of the checklist improved progressively and a simultaneous decrease in obstetric complications was noted over time. Nine hundred and seventy-six (976) files were retrieved from the hospital archives. Of these, 828 files had checklists while 148 did not. We observed an increasing trend in the use of the checklist overtime, moving from about 30% files void of checklists during the first two months to roughly 5% during the latter months. It is important to emphasize that the official launching of the checklist was only done at the beginning of its third month of implementation. An overall improvement in the completion of checklists was recorded from this point onward.



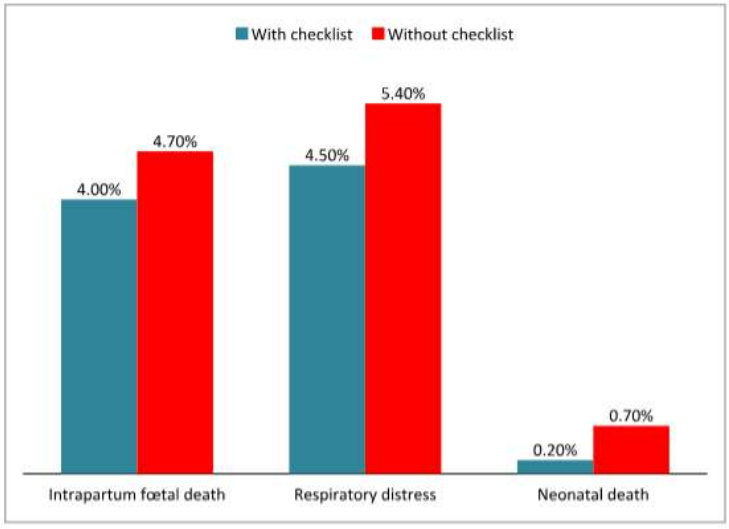
SAMPLE FILLED SAFE CHILDBIRTH CHECKLIST



EVOLUTION OF THE COMPLETION RATE OF THE CHECKLIST OVER TIME



EVOLUTION OF OBSTETRICAL COMPLICATIONS PER MONTH



IMPACT OF THE CHECKLIST ON NEONATAL COMPLICATIONS

After detailed analysis, we observed that fewer obstetric complications) especially pre-eclampsia/eclampsia) was seen in clients with checklists during the latter third of the study period compared to those without checklists (6.9% Vs 9.5%).

What did we make of this?

First, fully implementing the checklist was not an easy process. The official training session played a core role, teaching many caregivers (about 90%) how to use the checklist effectively and establishing the importance of using it. Second, the act of simply attaching a checklist to the client's file seemed not to suffice to reduce complications. A decrease in obstetric complications was mostly observed when these paper tools attached were properly completed. Therefore, we recognize that proper launching of the WHO Safe childbirth checklist leads to progressive improved adherence to its use and subsequent decreased obstetric and neonatal complications.

About the author:

Namanou Ines Emma Woks is a medical doctor and research assistant at the Gyneco-Obstetric and Pediatric Hospital, Yaoundé (HGOPY). She recently graduated from the Faculty of Medicine and Biomedical Sciences, Yaoundé, Cameroon. She is passionate about research and improving maternal and child health.

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PHOTO BY KHALID ELSIR, CONSENT FOR PUBLICATION GIVEN

Informed Consent: Exploring the patient-surgeon relationship in Sudan

Sara A.M.Alam Eldeen.
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Definition of consent:

Consent to treatment is among the most complex ethical issues a doctor faces. It is important to understand what is involved. Consent must be freely and voluntarily given by a patient with capacity that has been given all the information he or she needs to reach a decision.

Consent may be given orally, or it may be implied - as when a patient comes to our care and offers a history about his/her illness. For more complicated procedures, we must obtain the patient's express consent, and this will usually be in writing, by signing a consent form. It is vital that we give the patient all the information they need about the procedure and clearly document the information that has been given to the patient [1].

Capacity is defined in the Mental Capacity Act 2005, section 3 [2]. A person has the capacity to make a decision for themselves if they can:

1. Understand the information relevant to the decision,
2. Retain that information,
3. Use or weigh that information as part of the process of making the decision, and
4. Communicate their decision (whether by talking, using sign language or any other means).

If any one of the four criteria is not met, the patient will be considered to lack capacity. If we have any doubt about the patient's capacity, one should not proceed but instead seek the advice of colleagues, refer to his/her guard and the law of the land.

To be valid, consent must be freely and voluntarily given by a patient with capacity and the patient must have been given all the information he or she needs to reach a decision. Patients should not be subjected to undue pressure or influence by medical staff or their family or friends. We should consider taking consent from the patient as a process; rather than as a single act.

We must ensure that we have given the patient all the information he or she requires to decide whether to undergo the treatment - otherwise the consent we have obtained will not be valid, even if the patient has signed the consent form. There are also limitations to consent. Consent cannot create opportunities for autonomous choice when such choices are absent in reality. Furthermore, consent may not fit perfectly in the context of certain societies or cultures [3].

Consent to research, in contrast, has its basis in ethical codes, statutes, and administrative regulations, with the courts playing a lesser role [1]. Obtaining consent from research subjects differs in important ways from obtaining consent to ordinary clinical care [4]

Why is it important?

Consent represents the ethical and legal expression of a person's right to have their autonomy and self-determination respected. Furthermore, it may well be unlawful for doctors to treat patients in the absence of consent or other authority, and those doing so could commit both the crime of battery and the tort of trespass to the person. Sometimes, a doctor may treat without consent in a patient's best interests as a matter of necessity in an emergency, where the patient lacks capacity.

"If the patient has capacity, it is no defense to argue that treatment without consent was in the patient's best interests."

In other words, touching a patient without proper consent could leave you vulnerable to a civil or criminal charge of battery and, if the patient suffers harm as a result of the treatment, a claim in negligence.

Experiences of consent in Sudan:

Sudan was the largest country in Africa until July 2011 when the South Sudan people voted and separated into an independent country. Sudan now is the third largest country in Africa (after Algeria and the Democratic Republic of the Congo). It is situated in northern Africa at a crossroads between the Horn of Africa and the Middle East. Its 853 km long coastline in the east borders the Red Sea and it has land borders with Egypt, Eritrea, Ethiopia, South Sudan, the Central African Republic, Chad, and Libya. The total population was estimated in 2012 to be 37,195,000, and the total expenditure on health as a percentage of gross domestic products (GDP) was estimated to be 7.3% [5, 6].

As one of Africa's largest countries, Sudan includes many religious, ethnic and socio-economic groups. Prevailing issues of access to resources, economic opportunity and power against the background of such diversity has unfortunately resulted in differing medical practice and doctor-patient relationship within the country. Unfortunately a big gap exists between the theoretical/legal best practice and the daily practice of informed consent [7].

Some surgeons view consent only as a legal prerequisite that often is delegate to junior colleagues [8].

Sudan started an ethical review process as follows:

- 1968: historically the first committee for ethics was established in order to formulate ethics for the medical professions.
- 1969: the act of the ethics of the medical professions.
- 1979: A committee was formed on the ethics of the health research under the Directorate of Federal Laboratories and Health Research.
- 1980: the research ethics committee was established in the Fac. of Med. (University of Khartoum),
- 1998: The Undersecretary of the Federal Ministry of Health issued Decree No. 60/1998 for forming a committee to review health research ethics.
- 1999: the committee for review of health research ethics was set up by the Decree No. 31 / 1999

Based on an unpublished study, in 2009, informed consent was taken in surgical operations by 75.8% of doctors. Of those cases, it was written in 93.6%, and verbal in 6.4%. Also most consent forms were filled by the doctors and no one explained the surgical procedure to 81.0% of the patients.

We conducted a further study in 2015 to assess the knowledge, attitude and practice of informed consent among doctors and patients in Khartoum States private hospitals.

We found that, 54.3% of doctors in the study had moderate knowledge about informed consent and 48.6% had unfavourable attitudes towards the consent.

In regard to patients, there was an equal male to female ratio with an average age of 40 years. More than 24 (32.0%) of the participants had attained at least primary school education, while 14 (18%) had secondary education, and about 10 (13.3%) were illiterate.

The majority of patients were satisfied with the information given to them but a few patients were unsatisfied due to time limitation and not given adequate chance for questions. Sixty patients (80%) had heard about informed consent but many lacked understanding of the process. Women overall appeared to have less awareness about the consent process.

The satisfaction of the patients however did not relate to the degree of informed consent implementation, their gender, age, the level of education or any other research parameters. There was a significant relation between the patient's age and their knowledge of informed consent, knowledge increased with younger age. Also there is significant relation between knowledge and the patient’s level of education.

In conclusion, the barriers from obtaining full informed consent were similar to those found in the previous study in 2009, including a lack of awareness about informed consent amongst patients, especially in the older age groups. Gender prejudices were also evident.

Moreover, the consent discussion improved with increasing level of education of the patients, and their awareness about their rights. Although it is ultimately the responsibility of the doctor carrying out the procedure to ensure that the patient has given valid consent, this is a task which is routinely delegated to junior doctors.

Juniors often have a limited ability to explain and to identify adequate understanding of details of surgical procedures.

Rather, the procedure of obtaining consent was prescribed only in general terms and the implementation was left to the doctors' own knowledge and conscience. In spite of this, there is universal form for consent provided by the Sudan Medical Council. Lastly, the time pressure on the surgical staff in many hospitals and the lack of significant oversight or regulation of the process make obtaining surgical informed consent less than optimal.

Positive ways consent can be improved in Sudan:

A procedure-based consent form must be developed to facilitate patient discussion. Validation of this process can be achieved by surveying the patients regarding the elements of the consent process using an independent evaluator and assessing patient recall in the post procedure period.

The guidelines should be clear for doctors about elements of informed consent that have to be covered with each patient booked for a surgical procedure and furthermore, documentation of time spent with each patient should be made.

A systemic approach to education and training at the national level is needed to improve the informed consent process nationally. Updates and improvements of doctor's knowledge can be achieved through the attendance of biomedical ethics courses. Furthermore, to improve awareness in the general public, a health education program for the population is required, with media support.

Finally, shared decision-making can be burdensome to patients, and that education is needed to help medical staff understand the experience of the patient, and apply this understanding in providing improved care.

Further studies must be done to observe the process and the implementation of it.

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Sara Adam Musa Alam El-deen completed her MBBS degree from the University of Khartoum Faculty of Medicine. Currently, she is enrolled in an internship programme in Sudan. She is interested in surgery, bioethics, public health and research.

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upcoming global surgery events

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DECEMBER

05 COSECSA Meeting - Kigali, Rwanda

11 G4 Alliance Permanent Council Meeting - Virginia Beach, VA, USA

JANUARY

24 144th Session of the WHO EB Meeting - Geneva, Switzerland

MARCH

07 The Consortium of Universities for Global Health's (CUGH) 10th annual conference - Chicago, USA

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PHOTO BY MIGUEL BRUNA ON UNSPLASH

THE SURGICAL BATTLES OF A SICKLE CELL WARRIOR

SAMIRA HARUNA SANUSI

SAMIRA IS A NIGERIAN WRITER, MOTIVATIONAL SPEAKER AND SICKLE CELL AWARENESS ADVOCATE. THIS IS HER LIVED EXPERIENCE OF GLOBAL SURGERY.

My name is Samira and I was born with sickle cell anaemia. I've undergone 29 surgeries in the 30 years I've been on the earth. A lot of Sickle Cell Warriors, that's how we call ourselves because our life is a battlefield, experience pain crisis when the deformed blood cells get stuck in blood vessels. It's a cycle: crisis begins, pop pain killers, wait for pain to subside and resume living. Occasionally, our body breaks the cycle and complications occur: acute chest syndrome, osteoporosis, stroke, infection and iron overload. The list is endless. All of these complications are managed differently and sometimes surgery is needed. I have had surgeries in several countries: Nigeria, Saudi Arabia, Austria, United Kingdom and Israel, which makes me qualified enough to compare procedures and techniques.

A surgical procedure can be successful in the O.R. but a completely different story in the ward. As an example, one orthopaedic surgeon can perform a successful hip replacement but if there are no physiotherapists waiting for the patient upon recovery, the outcomes are compromised. Or if a surgeon performs a gallbladder removal but improper wound care afterwards leads to an infection, resulting in a prolonged healing time and extended recovery time. A surgeon relies on a team of other surgeons, assistants, O.R. nurses and anaesthetists during the procedure to pass the scalpel, suction, monitor blood pressure and oxygen.

The same surgeon also needs nurses, ward doctors and other caregivers to ensure that we don't have to begin all over again.

All this raises the question, is a gallbladder surgery still successful if the wound isn't properly managed in the ward, leading to an infection and complications that require the patient to be opened again? Is a hip replacement surgery successful if there isn't a physiotherapist afterwards who helps the patient move and exercise the joint to avoid stiffness and immobility?

All of these things can make a difference when it comes to successful surgery. But Nigerian hospitals still struggle with these things. It is especially hard for Sickle Cell Warriors who must deal with painful crisis and surgical interventions on a usual basis. When it comes to operating on a Sickle Cell Warrior special measures must be taken, is the patient's blood profile stable enough for the procedure? Will the procedure trigger a crisis episode during recovery? Will the hospital need to call a consultant haematologist to manage symptoms that are blood related?

My experiences have taught me to go the extra mile and do my own research when undergoing a surgery in Nigeria. Here, the system does not have the resources to cater for your nerves, concerns or any questions you may have such as how many types of anaesthesia options there are? Will I be on oxygen? Can you use absorbable sutures?

Even the scars spread all over my body are a testament to the battles well fought and can tell their own stories. The scars from exactly the same procedures performed in two different countries look nothing alike, you can call them fraternal twins. One is a thin and straight line, the Austrian one. The other one is wide with jagged edges and side marks, the Nigerian one.

Access to safe surgery, funding, possible complications and post-op care are factors that one must consider when undergoing surgery anywhere. Lack of funding remains a major issue for many patients. A hip replacement, for example, costs roughly 1.5 million Nigarian Naira (approximately $4,125 USD) and some patients need two hip replacements. After the surgery they will have to undergo intensive physical therapy to improve their walking and mobility. Due to the high price of the surgery and post-op care, many people end up bedridden or wheelchair dependent. Especially in orthopaedic cases, physiotherapy can make all the difference even when your surgery was successful. I know because I have had all sorts of therapies: physiotherapy, hydrotherapy, ergotherapy, electrotherapy, virtual reality therapy, light therapy and many others I can no longer remember. These therapies are designed to improve mobility, relieve stiffness, strengthen the muscles, return of lost bodily functions and help the patient to be less dependent. Not having access to these and other forms of post-op care can threaten the long-term success of a surgical procedure.

Patients are left with tough questions: Do I have the surgery in Nigeria and receive post-op care from an independent medical facility or do I have the surgery in India and stay another 3-5 months for the physiotherapy? Can I save costs and still turn out okay if I have the surgery in another country and return home for recovery and post-op care?

At the end of the day, all a patient truly wants is to be surrounded by a team they can trust. A team that answers their questions, addresses concerns and assures us when we worry.

Above all, what is most important is that a patient leaves the O.R. and hospital in a better state than when they first went in.

Samira Haruna Sanusi is a Nigerian writer, motivational speaker and Sickle Cell Awareness advocate. Samira is a member of the Crans Montana Forum - New Leaders for Tomorrow, the President of Samira Sanusi Sickle Cell Foundation, an Abuja based NGO. She is also the author of S is for Survivor, a memoir about her personal experiences with Sickle Cell Anemia and getting cured, as well as I Wrote This For you, a collection of prose, poetry, philosophical quotes and short essays which was published in August 2017. She can be contacted via e-mail :
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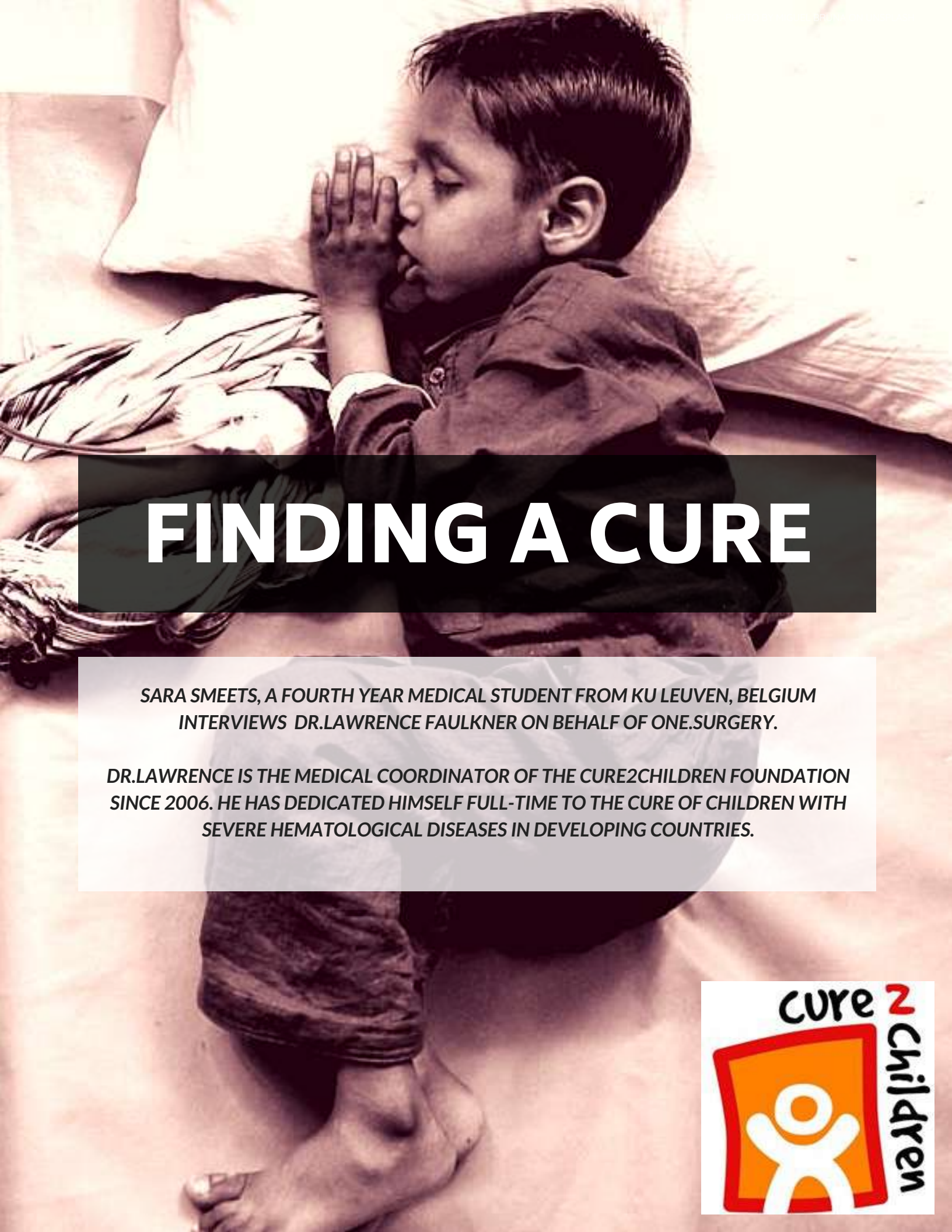

FINDING A CURE

SARA SMEETS, A FOURTH YEAR MEDICAL STUDENT FROM KU LEUVEN, BELGIUM INTERVIEWS DR.LAWRENCE FAULKNER ON BEHALF OF ONE.SURGERY.

DR.LAWRENCE IS THE MEDICAL COORDINATOR OF THE CURE2CHILDREN FOUNDATION SINCE 2006. HE HAS DEDICATED HIMSELF FULL-TIME TO THE CURE OF CHILDREN WITH SEVERE HEMATOLOGICAL DISEASES IN DEVELOPING COUNTRIES.

cure 2 children

All over the world, there are children who have to deal with cancer, leukemia, thalassemia or sickle cell disease. Although many of them are curable, lack of access to life-saving medical care is a problem that many patients have to face. The Cure2Children Foundation aims to provide affordable and reliable care for these children by founding local, sustainable medical centers and by conducting research on sustainable tertiary healthcare for children in lower income countries. Dr.Lawrence Faulkner, medical coordinator of the Cure2Children Foundation since 2006, has dedicated himself full-time to the cure of children with severe hematological diseases in developing countries.

Dr. Faulkner, thank you for joining us at One Surgery. For more than 20 years you worked as a pediatric hematologist-oncologist and stem cell transplantation specialist all over the world. How did you come up with the idea to start the Cure2Children Foundation?

The idea of curing children with severe disorders directly in low-income regions was inspired by the work of Giuseppe Masera from the University of Milan-Italy, and both Raul Ribeiro and Scott Howard from the St. Jude Children Cancer Research Hospital in Memphis, USA. My opportunity came when a group of parents who lost their child to neuroblastoma asked me how to best employ their time, energy and funds for the benefit of children with cancer. We created Cure2Children (C2C) which, as the name implies, aims to bring the cure to children and families in need (more at www.cure2children.org).

C2C tried to push things further by implementing simplified, safe and accessible bone marrow transplantation (BMT) programs in underserved areas with a high prevalence of severe hemoglobinopathies like thalassemia or sickle cell disease. These regions are often amongst the areas with the highest children populations, i.e. South-East Asia and Africa. With several hundred thousand affected children, hemoglobinopathies are the most frequent paediatric life-threatening Non-Communicable Diseases (NCD) world-wide.

Sustainability is a very important value of the Cure2Children Foundation. How do you obtain and ensure this sustainability at the local centers and which sustainable projects have you already achieved?

The network model of C2C puts our partner centers in a position which enables them to ensure families that they can receive the best possible care. As a network, we probably have the largest current experience in BMT for hemogobinopathies which is their only established definitive cure. This provides the reassurance families need. In fact, in our partner centers in India and Pakistan , transplantation can be done as safely as in developed countries but at a fraction of the cost, i.e. 10.000-20.000 USD as opposed to at least 10 times more in Western centers which generally have much less experience.

Lastly, BMT for thalassemia is quite cost-effective compared to long-term supportive care. It can normalize life expectancy as well as health-related quality of life. Our four partner centers in Pakistan and India are essentially self-sufficient and quite active. The key to success has been meeting the right people with the proper passion and commitment operating independently in private settings but on a non-profit and cost-conscious basis. This has allowed us to provide high value delivery to families by combining expertise from large transplant volumes with low costs.
Another important factor has been the extensive use of information and communication technology allowing all the C2C partner centers to be connected and avail each other's experience as well as to promote continuing quality improvement strategies.

What are the most common problems that you experience with the foundation of projects in developing countries? How do you face those challenges?

There are many issues to be faced both in the start up phase and on the long run to ensure long-term professional and financial sustainability. Remarkably, most start up problems are not necessarily related to financial or technical constraints but rather to scepticism, territorialism and personal agendas of potential local stakeholders. The most critical initial step is to find people with the right vision and motivation who have local significant influence and who strongly believe in the project. The second step is probably to build local support by involving key constituencies. Initially it's probably a good idea to keep a low profile, avoiding media exposure which often results in negative attention.

Of course there are also technical issues which are mostly related to laboratory support quality and professional staff. For BMT services nurses are probably more critical than doctors. i.e. many management decisions can be shared with local physicians by online tools but you need to rely on proper drug administration, central venous line management, vital sign and patient assessment as well as proper hygienic precautions.

A BMT unit can be safely managed by doctors in-training with limited transplant experience aided by experts online but not by very inexperienced nurses. It can be difficult, and probably unfair, to involve and retain the right nurses and physicians without a proper salary and professional development plan. In terms of long-term sustainability the challenges have been largely restricted to government hospitals or private institutions not seeing value in having a non-profit transplant center.

Can you tell us an inspirational story about a patient or a local caregiver that illustrates the importance of the Cure2Children's projects?

I will mention the story of an 8 year old boy with thalassemia from East Timor, a relatively remote Pacific island. The boy could not receive proper care either in his own country, because of lack of expertise and facilities nor in Australia, the closest option, because of prohibitive costs. As a result of chronic undertransfusion his liver and spleen were very enlarged and his survival prospects very poor. The mother, a midwife, eventually contacted C2C for help. We sent buccal swabs for HLA typing and suggested her to consider coming to our Islamabad center for supportive care and transplantation.

The family was able to collect 10,000 USD which the center accepted with C2C commitment to cover extra expenses. The child has now been in Islamabad for almost 6 months with much reduced liver and spleen size so that soon he can undergo transplantation, possibly using the mother as donor. This story is very important to C2C because it gives hope to every child irrespective of home country and level of available medical care. Even if C2C cannot realistically set up a center in East Timor were the number of cases is small we can still provide a solution.

What do you feel are the most important values of the Cure2Children Foundation?

I always like to cite Bill Drayton, founder of Ashoka: "If you really want to help communities in developing countries is not enough to give fish or fishing rods, you should help them develop a competitive fishing industry". I am proud to say that after 10 years of activity C2C has achieved some results in that direction. In fact, C2C partner centers have obtained transplant outcomes at par with international standards which have been validated in peer-reviewed medical literature but at a fraction of the cost.

What plans does the Cure2Children Foundation have for the future?

As mentioned C2C was developed by parents who lost their child to neuroblastoma, a childhood malignancy which in its high-risk form tops the list of childhood cancer mortality causes.

C2C is trying to use financial and professional resources generated by relatively common and highly curable hemoglobinopathies to cross-subsidize medical care for children with high-risk neurobastoma whom are much rarer and less curable. In our 6-bedded BMT unit in Islamabad we have a child with neuroblastoma whose family does not have to worry about hospital charges or medical personnel costs which are covered by thalassemia transplants. The other issue C2C is planning to work on is to partner up with one or more reputed universities, possibly in Europe, willing to consider a formal training program involving nurses and physicians from developing countries rotating in both low- and high-resource clinical settings and leading to an internationally recognized degree.

Your international commitment to the cure of children with cancer and severe haematological disorders is an inspiring example for (para)medical students and caregivers all over the world. What advice and concrete tips would you give to students and (para)medics who want to get involved in improving global access to appropriate and reliable care for children?

I am convinced that nowadays any health care professional should spend some of his training in a low-resource setting. This will most likely be a very rewarding personal and professional experience.

Moreover, as mentioned above, in many so called developing countries there is more technology than one would think, and the sheer numbers of cases offers major learning as well as employment opportunities. I personally feel much more professionally and scientifically productive working in an emerging country scenario than I ever did in my home European country.

Further information can be found at
http://www.cure2children.org/
Facebook: Cure2Children Foundation- US
Twitter: Cure2Children

Samraksha Thal center first 10 children cured, 11 May 2016

PHOTO BY MELANIE WASSER ON UNSPLASH

Ending Fistula Within A Generation

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After two days of painful contractions, Amina stopped feeling her baby move. She realized the baby was not coming and she would not deliver at home like her mother and grandmother had done. Ali, her husband pulled out all of their savings from under the mattress. They would need it to pay for the four-hour journey to the nearest hospital. After a long and painful journey on dirt tracks and potholed roads, sitting on the back of a truck, Amina arrived to the hospital. Dozens of women were on the line, waiting to be seen. When she finally made the top of the queue, the nurse was unable to find the baby's heartbeat.

The baby had died. After delivery, Amina returned home to bury her stillborn baby and restart her journey to motherhood. Within days, she started leaking urine and feces that prevented her from leaving the house. A few months later Ali divorced her upon learning that Amina would not be able to have more babies. If only Amina had timely access to safe and affordable Cesarean section surgery, she would not have lost her child, her husband, her fertility, her livelihood and her dignity. Unfortunately, Amina is not alone. Every year thousands of women in low- and middle-income countries (LMIC) join the ranks of women already affected by obstetric fistula [Adler et al].

More than 100 years after the risk of obstetric fistula was eliminated from North America, the majority of the world's women living in low- and middle-income countries continue to live at risk of obstetric fistula with each and every pregnancy. In LMIC, prolonged/obstructed labor (POL) is a top cause of both maternal mortality and stillborn infants. For women surviving POL, obstetric fistula is one of many morbidities resulting from the soft tissue trauma of POL that typically lasts for two or more days. Obstetric fistula is caused by maternal soft tissue ischemia and necrosis resulting from compression of the maternal tissues between the fetal skull and maternal pelvic bones during POL. Full thickness necrosis results in an abnormal opening between the genital tract and the bladder, or between the genital tract and the rectum, resulting in leaking of urine or feces, or both. The 2015 Global Burden of Disease study estimated that obstetrical fistula might affect as many as 988,000 women with estimated years lived with disability (DALY) at approximately 324,000, potentially the highest DALY rank for all maternal disorders [GBD 2015].

For maternal and newborn survivors of POL, many disabilities may result. In fact, it is believed uncommon for either the surviving mother or the live-born infant to avoid suffering a mix of life-long POL disabilities [FC+/MHTF, Benova et al]. In addition to fistula, POL may also cause other co-morbidities, including but not limited to vaginal stenosis, urinary and fecal incontinence without fistula, infertility, dyspareunia, sepsis, diastasis pubis, osteomyelitis, foot drop, chronic pain, depression, anxiety, stigma, divorce and abandonment [Arrowsmith et al]. The consequences for surviving infants include hypoxic encephalopathy, cerebral palsy, paralysis and cognitive developmental delays [Arrowsmith et al]. Despite the unmeasured DALY-based impact of this expanded POL burden of disease framework, the incidence and prevalence of non-fatal, non-fistula POL co-morbidities are not fully recognized by global health stakeholders [Drew et al].

As a result of anesthesia and obstetric surgical intervention advances in the early 20th century, most POL complications are prevented in today's high-income countries by providing women with access to timely and safe obstetric care interventions, the most common surgical of these being Cesarean delivery [Goodwin et al]. However, in many low- and middle-income countries (LMIC), POL complications continue to impact lives [Drew et al]. The preventable nature of maternal and neonatal POL morbidity and mortality sequelae are of urgent priority for global stakeholders if we expect to achieve the Sustainable Development Goals for health, survival, equity and empowerment of women and children [United Nations]. One new pathway to eliminate POL complications lies within untapped collaborations between maternal health and global surgery public health communities to most efficiently and effectively improve safe, quality-based and affordable maternal surgical intervention policies in sub-Saharan Africa and Asia [Anastasi et al, PGSSC].

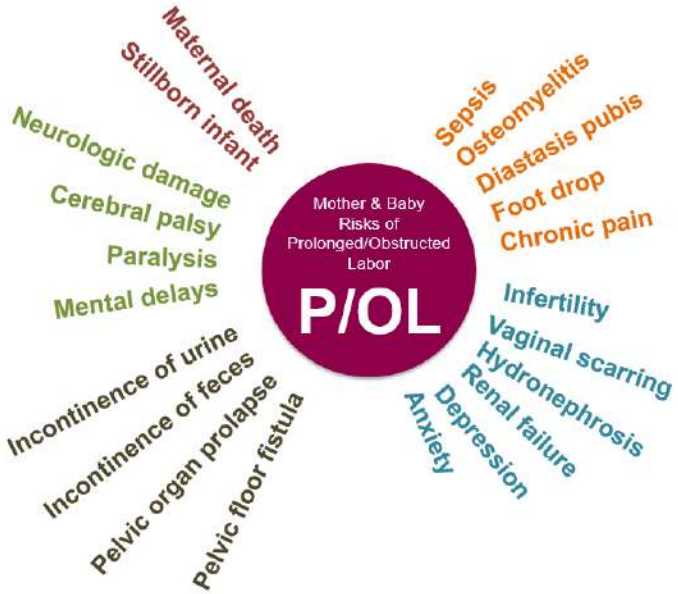
The Lancet Commission on Global Surgery (LCoGS) recommended measuring six indicators to strengthen surgical systems and ensure accessible, timely and affordable surgical care, including obstetric surgery, worldwide by 2030 [Meara et al, LCoGS]. One of the targets is for 80% of the population to have access within 2 hours to a surgical facility that provides the three Bellwether procedures: Cesarean section, laparotomy and repair of open fracture.

Several of the factors that contribute delayed access to care have been described in the three delays in the Thaddeus and Maine model [Thaddeus, LCoGS]. Another of the LCoGS targets that would further increase access to care framework is to increase the LMIC health workforce density to 20 surgeons, obstetricians and anesthesiologists per 100,000 population [LCoGS]. Specialized surgical workforce is necessary not only to ensure access to care but also service provision that meets or exceeds a minimum acceptable standard of care. This is particularly relevant to fistula care as evidence mounts for a sharp increase in iatrogenic (caused by surgical errors) fistulas sustained in regions where Cesarean and other women's health surgical capacity has increased without concurrent health systems strengthening for implementing surgical quality of care, including adequate conditions of the surgical workplace [FC+/MHTF, FC+, Raassen et al]. As the global community scales up the surgical workforce, efforts to measure and improve quality of surgical care will likely expand the maternal health community's efforts to include capacity building and systems strengthening for Cesarean delivery. Ideally, these should be fully integrated into national health policy on surgical, anesthesia and obstetric care standards designed for the entire population, including pregnant women [PGSSC]. The 3rd edition of the Diseases Control Priorities, published by the World Bank in 2015, identified 44 essential surgeries, of which 10 are women's health procedures and surgeries [Mock et al]. The Essential Surgery framework includes procedures that would prevent fistula such as operative vaginal delivery, Cesarean delivery, hysterectomy for post-partum hemorrhage and tubal ligation, in addition to repair of obstetrical fistula. It also includes reproductive health procedures such as treatment for precancerous cervical lesions [Mock et al.].

FISTULA PATIENT WITH FOOTDROP AND WALKING STICK, NIGER 2003 © ROMANZI

By joining forces to strengthen surgical within maternal healthcare, the global community can prevent POL death and disability, improving the global health equity of women, newborns, their families, and their communities. Much of the LCoGS 3-delay framework was inspired by Thaddeus and Maine's 1994 three-delay model that illustrates historical public health considerations on pregnant women's barriers to healthcare access [Thaddeus and Maine]. The first delay is in seeking care; many women live in remote communities where delivering at home is the norm. They may have received no or minimal prenatal care and thereby not benefited from education on maternal and newborn safety benefits from skilled birth attendant (SBA) delivery. Other factors may include distrust of the health system, lack of awareness of normal labor duration, or awareness of the lack of reliable staffing, equipment, supplies or other systems gaps in childbirth facilities.

The second delay is in reaching care; transportation may be unavailable or unaffordable. Even with adequate funding, most transport is private and transport staff are public transport drivers, not medically trained professionals. Further, most LMICs do not have the appropriate roadway infrastructure or full geographic ambulance network coverage to facilitate urgent access to care for remote-living women. The third delay is receiving timely, safe, quality care upon arrival to the health facility. From basic emergency obstetric and newborn care (BEmONC) facilities to comprehensive emergency obstetric and newborn care (CEmONC), far too many BEmONC and CEmONC facilities function without adequate staff density, power, water, equipment, supplies, and facility transfer linkages [FC+/MHTF]. Anesthesia clinicians are often not available 24 hours per day and clinicians providing Cesarean services, similarly, may have gaps in providing reliable, 24-hour coverage for safe, effective interventions for every woman or baby at risk of POL complications [FC+/MHTF]. One of the many impacts of these three healthcare access delays is the global persistence of preventable, catastrophic POL mortality and morbidity.



It is becoming clear that eliminating obstetric fistula is within our grasp if we commit to a global health mandate for accessible, timely, affordable, quality-driven obstetric surgical intervention health systems strengthening. In this era of commitment to the Sustainable Development Goals that include reducing maternal and newborn mortality, achieving gender equality and empowering women and girls, the time has come to commit to a near future in which no woman or infant suffers preventable death or disability caused by POL [United Nations, Amodu et al]. This goal calls for a new vision and re-engineered, integrated, cross-sector effort that fully commits to the UN Secretary General, Ban Ki-Moon's 2016 call to action to "End fistula within a generation" [UNFPA, Anastasi et al, Amodu et al].

We know how to make the urgent public health and human rights issue of ending obstetric fistula a reality [Anastasi et al]. History documents that obstetric fistula has already been eliminated in high-income countries (HIC) by providing access to voluntary family planning that prevents unintended pregnancy, combined with high quality, accessible and affordable obstetric care for all pregnant women. A transition from funding focused on fistula treatment to funding geared to achieve global equity for obstetrics-based fistula prevention is a much-anticipated outcome expected to develop from inclusion of fistula strategy within regional maternal/surgical/preventive health policies and national integrated health plans. The traditional maternal-newborn public health community now has an opportunity to mentor and engage the emerging global surgery community's acceleration of multi-disciplinary, integrated national health systems strengthening that ensures every woman and newborn has access to life-saving, properly implemented Cesarean delivery.

The LCoGS supports an adaptable National Surgical, Obstetric and Anesthesia Plans (NSOAP) platform that comprehensively addresses the global surgical burden of disease across all population demographics, inclusive of maternal surgical interventions [Meara et al, PGSSC]. By assuring quality surgical services, NSOAP may well be the key to not only ending obstetric fistula, but also the growing threat of iatrogenic fistula resulting from poorly implemented Cesarean delivery, hysterectomy and other pelvic surgery [Mock, FC+, LCoGS, Raassen et al]. In addition to revitalized maternity care strategy and LCoGS priority on safe anesthesia and surgery, contemporary frameworks for health systems strengthening are expected to converge safe and respectful maternity care implementation during this SDG era [Kruk et al]. These quality-based health system templates are designed to identify and respond to population needs by providing patient centered care, positive user experience, health sector governance, universal health coverage, targeted partnerships, adequate workforce numbers, necessary workforce skills, cost-efficient workforce retention and evidence-based healthcare delivery [Kruk et al].

For HIC mothers, the day they give birth is typically one of the happiest. For Amina and too many others in resource-constrained LMICs, lack of affordable, accessible, quality SBA care means that childbirth is, for women across Africa and Asia, among the most dangerous events in their lives. In the SDG era, the persistence of obstetric fistula is a sentinel indicator of maternal health priorities in dire need of transformative political will across the global, national and local stakeholder landscape. For all eradicable diseases, prevention is the key. Now three years into the SDG era, let us both open our minds and sharpen our focus so that, together, we achieve a worldwide fistula-free generation by 2030.

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Fistula Care Plus

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Harvard Medical School

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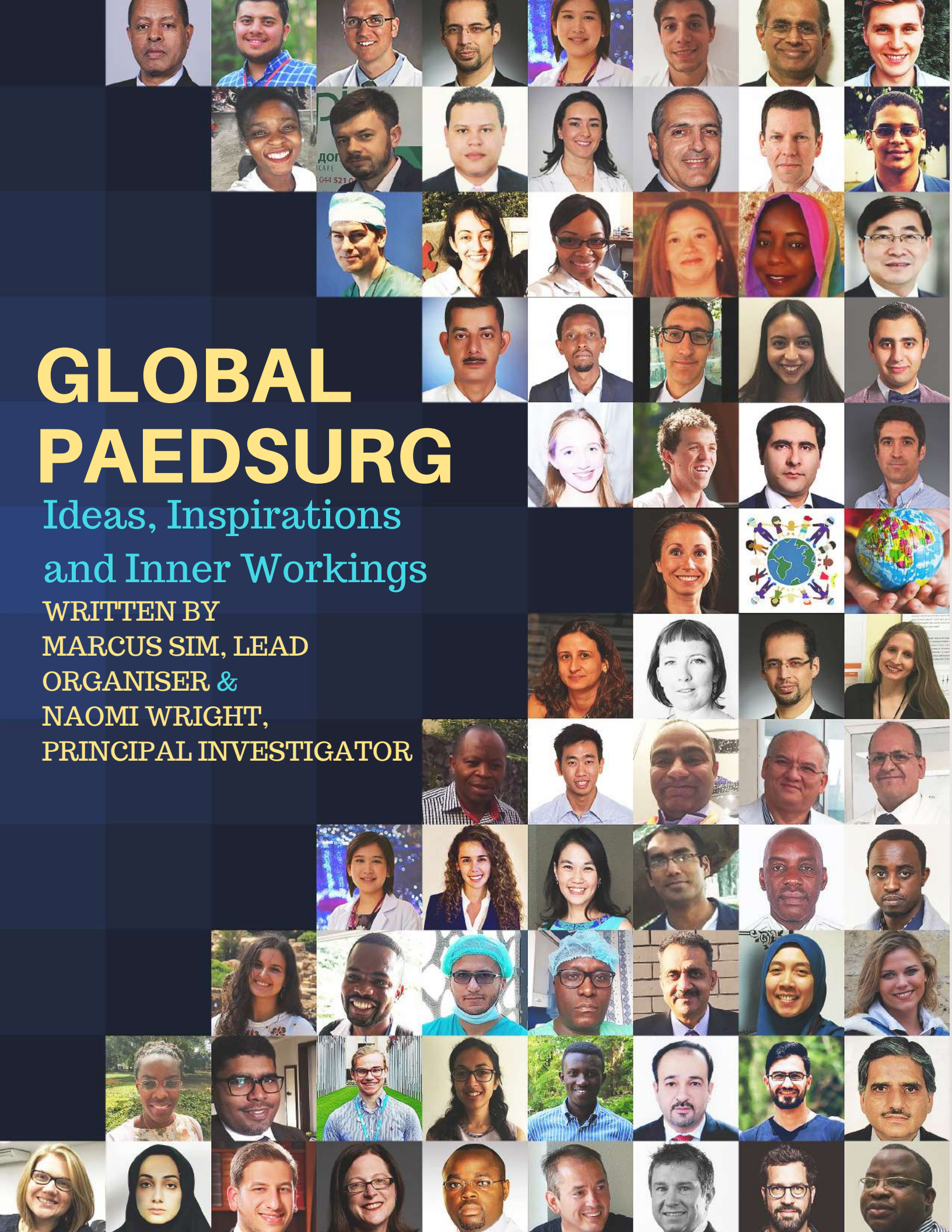


GLOBAL PAEDSURG

Ideas, Inspirations and Inner Workings

WRITTEN BY
MARCUS SIM, LEAD ORGANISER &
NAOMI WRIGHT, PRINCIPAL INVESTIGATOR

A Case For Global Paediatric Surgery

The call for global access to safe and affordable surgical care continues to gather momentum. Long deemed too costly or difficult to scale-up at a global level, accessible surgical care often took to the sidelines in the global health movement - but in recent years, all of that is changing.

In 2015, landmark events such as the Lancet Commission on Global Surgery 2030 Report (1) and the World Health Assembly Resolution 68.15 (2) propelled global surgery to the forefront, emphasising the overwhelming need for access to surgical care worldwide. With surgical conditions making up an estimated 11 to 30 percent of the global burden of disease (3,4), the case for making accessible surgical care the priority is stronger than ever.

However, amidst a growing emphasis on strengthening surgical systems worldwide, we must ensure the inclusion of children's surgery. The Sustainable Development Goals (5) call for the end of preventable deaths of newborns and children under 5 years of age. If we are to even come close to achieving that target, paediatric surgical care cannot be neglected.

Global PaedSurg

Enter the Global PaedSurg Research Collaboration - a multi-centre research collaboration of surgeons, anaesthetists and allied healthcare professionals caring for neonates and children requiring surgery across the globe.

Building on the work by PaedSurg Africa (a multi-centre research study on paediatric surgery throughout Sub-Saharan Africa), Global PaedSurg seeks to extend this collaboration worldwide, focusing on a long-neglected group of conditions: congenital anomalies.

Congenital anomalies (also known as birth defects) are a diverse group of disorders of prenatal origin that may be caused by genetic defects, environmental teratogens or micronutrient deficiencies. They may be classified as being either functional or structural, with the latter greatly benefiting from timely surgical intervention.

Why congenital anomalies?

The Global Burden of Disease Study (2015) (6) reported that congenital anomalies had risen to become the 5th leading cause of death in under 5-year olds globally, greater than either malaria or neonatal sepsis. This amounts to almost half a million deaths annually, equivalent to two 747 jumbo jets crashing fatally into the ground every day for a year. A greater injustice still, is that 97% of those deaths occur in low- and middle-income countries (LMICs).

Congenital anomalies also contribute significant morbidity, being responsible for a staggering 57.7 million disability-adjusted life years (DALYs) lost worldwide (7). Perhaps what's even more staggering is that this figure is likely to be an underestimation, as issues such as social exclusion, cultural stigma, educational disruption and socio-economic stunting continue to be poorly represented in traditional health metrics.

In spite of this, only a small body of literature exists to evaluate the potential of surgical interventions in addressing this global burden. It is estimated that paediatric surgery has the potential to avert more than 67 percent of the disease burden associated with congenital anomalies (7) .

What's more is that paediatric surgical care is cost-effective. This is especially the case for birth defects in which the condition is surgically curative or the associated disability substantially improved. For example, a 2015 study on birth defects in Uganda (8) saw paediatric inguinal hernia repairs costing only US$12.41 per DALY averted compared with the US$41 per DALY averted by insecticide-treated bednets for malaria prevention. Treatment for congenital anomalies such as congenital diaphragmatic hernias (9) and anorectal malformations (10) have also been shown to have favourable cost-effectiveness.

The crucial role of paediatric surgery is especially needed in LMICs, where the greatest burden lies, with 94 percent of severe congenital anomalies occurring there. Despite this, there is a stark scarcity of studies from LMICs, with the majority of research originating from high-income countries.

Why GlobalPaedSurg?

The inspiration behind Global PaedSurg was simple: to address the vacuous deficiencies in paediatric surgical research in LMICs, beginning with congenital anomalies. Data from high-income countries would be used as direct comparisons whilst encouraging the involvement of more children's surgical care providers in the growing force that is global surgical research. Indeed, large-scale data from high-income countries may also provide useful insights in these regions too.

However, the aims of Global PaedSurg are not to just shed light on the present issues, but to also lay the trajectory for future global paediatric surgical studies.

Our objectives are thus threefold:

1. To define the current management and outcomes of congenital anomalies in low-,middle-, and high-income countries globally and to identify factors affecting outcomes that can be modified to improve care. This information will be used to advocate for much needed resources for neonatal surgical care in LMICs, in addition to establishing congenital anomalies as a priority on the global health agenda.

2. To enhance the research capacity amongst collaborators through participation in the study and the associated research training fellowship, which is running alongside the main study. We hope that this will help to combat the disparity in research outputs between the global north and global south at present. Mitigating the paucity of global paediatric surgical research is an ambitious undertaking necessitating international collaboration.

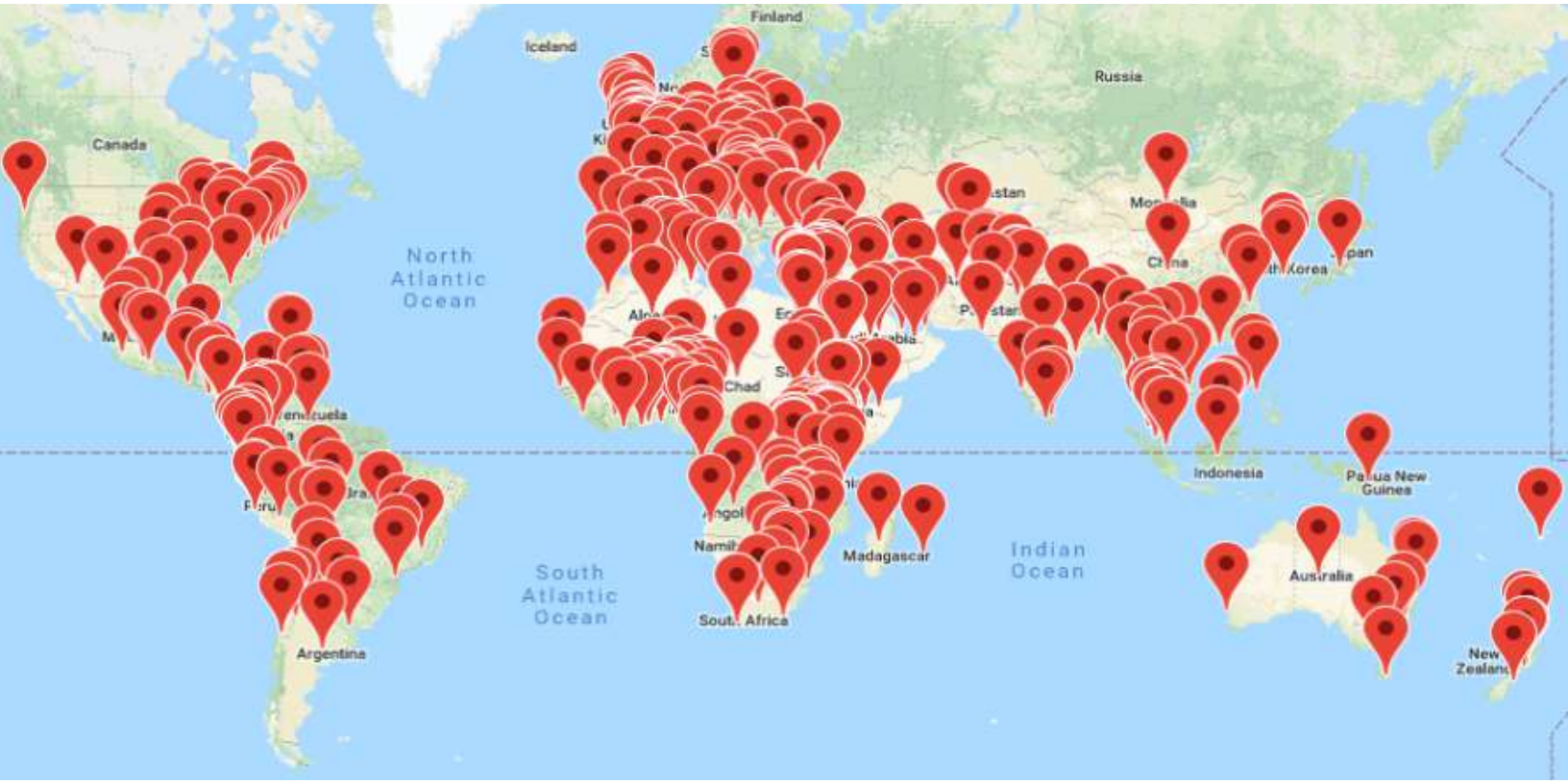
3. To form a global paediatric surgical research collaboration, enabling future large-scale research and interventional studies to improve outcomes of congenital anomalies. After all, collaboration begets further collaboration. Already, data from the pioneering collaborative PaedSurg Africa study is being used to develop a multi-centre interventional study across seven tertiary paediatric centres in Sub-Saharan Africa, aimed at reducing mortality from gastroschisis. Global PaedSurg will continue to build on this.

The Strategy Behind Global PaedSurg

Global PaedSurg aims to be the first large-scale, geographically comprehensive prospective cohort study on the management and outcomes of anomalies in low-, middle (LMICs), and high-income countries (HICs) across the globe. To do this, we need to create a comprehensive dataset on congenital anomalies, a feat dependent on having collaborators from across the globe working together.

The first step was the formation of the Global PaedSurg Research Collaboration, consisting of children's surgical care providers from around the world. Participation is open to any healthcare professional involved in the care of infants presenting primarily with congenital anomalies e.g. surgeons, anaesthetists, neonatologists, paediatricians, trainees, medical students and nurses.

Currently, Global PaedSurg stands at over 1300 collaborators, drawn from 408 hospitals across 110 different countries, with all collaborators to be listed as co-authors of the resulting presentations and publications. Unbelievably (and excitingly), that number only continues to grow - a process streamlined by our invaluable Steering and Organising Committees as well as a dedicated group of Regional, Continent and Country Leads.



Global PaedSurg Collaborator Map

Data will be collected on patients presenting primarily with one or more of the seven study conditions (oesophageal atresia, congenital diaphragmatic hernia, intestinal atresia, gastroschisis, exomphalos, anorectal malformation and Hirschsprung disease) for a minimum of one month between October 2018 - April 2019.

Data collection for longer than one month is preferred if possible since the more patients we have in the study the more meaningful the results and greater the impact. If you are coming across this study for the first time whilst reading this there is still an opportunity to participate – you can start collecting data on the 1 st of any month up to and including April 2019. Participation requires local study approval. All details and the full protocol (in multiple languages) can be found on our website: www.globalpaedsurg.com. Contact paedsurg.research@gmail.com to register for the study.

The anonymous data collected will include information on patient demographics, antenatal care and delivery, clinical condition, interventions, and outcomes - all captured using the secure, online data collection tool REDCap. An additional REDCap survey will also be used to collect data on resources available for neonatal surgery at participating institutions.

Comparisons will then be made between LMICs and HICs using chi-squared analysis with multilevel, multivariate logistic regression being undertaken to identify patient- and hospital-level factors affecting outcomes with adjustment for confounders.

The primary outcome will be all-cause in-hospital mortality with the secondary outcomes being the occurrence of post-operative complications.

The Future of Global Paediatric Research

Global PaedSurg is just the beginning. The development of large population prospective data on congenital anomalies will be foundational in the design of future interventional studies aimed at improving outcomes. Furthermore, our findings hope to also inform future advocacy efforts and global health prioritisation - ensuring paediatric surgery does not continue to get left behind in the global surgery movement.

However, we hope that Global PaedSurg will not just produce much needed research, but also the much needed researchers of tomorrow. The study offers collaborators the opportunity to develop a variety of research skills including application for study approval, patient identification, protocol application, data collection, and the use of REDcap for data upload and analysis. Collaborators may also develop their presentation skills by applying to present the study locally, nationally, regionally and internationally.

A Research Training Fellowship is also available to all collaborators, giving them the option of undertaking their own local research project alongside the main study, guided by an allocated academic mentor. The fellowship will include monthly webinars that work through the stages of developing and undertaking a research project. There is an opportunity for those interested in education to volunteer as a Global PaedSurg Mentor or to lead one of the research webinars. Moreover, following publication, all collaborators may request access to the full (anonymised) dataset, or their own country-dataset to undertake further sub-analysis of their own, generating further research opportunity.

Finally, formation of the Global PaedSurg Research Collaboration also serves as a call to arms, establishing a growing network of healthcare professionals across the world.

Through this network, Global PaedSurg hopes to serve as a springboard for future collaborative projects in this defining age of international research and multi-centre studies. Improving neonatal and paediatric surgical access worldwide cannot be done without global effort, and for that we must ensure research outputs from both LMICs and HICs. The future of global surgical research is bright and brimming with promise – we must seize every opportunity to ensure that neonates and children are at the forefront of this global movement.

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Honey: A sweet alternative to surgical site infections?

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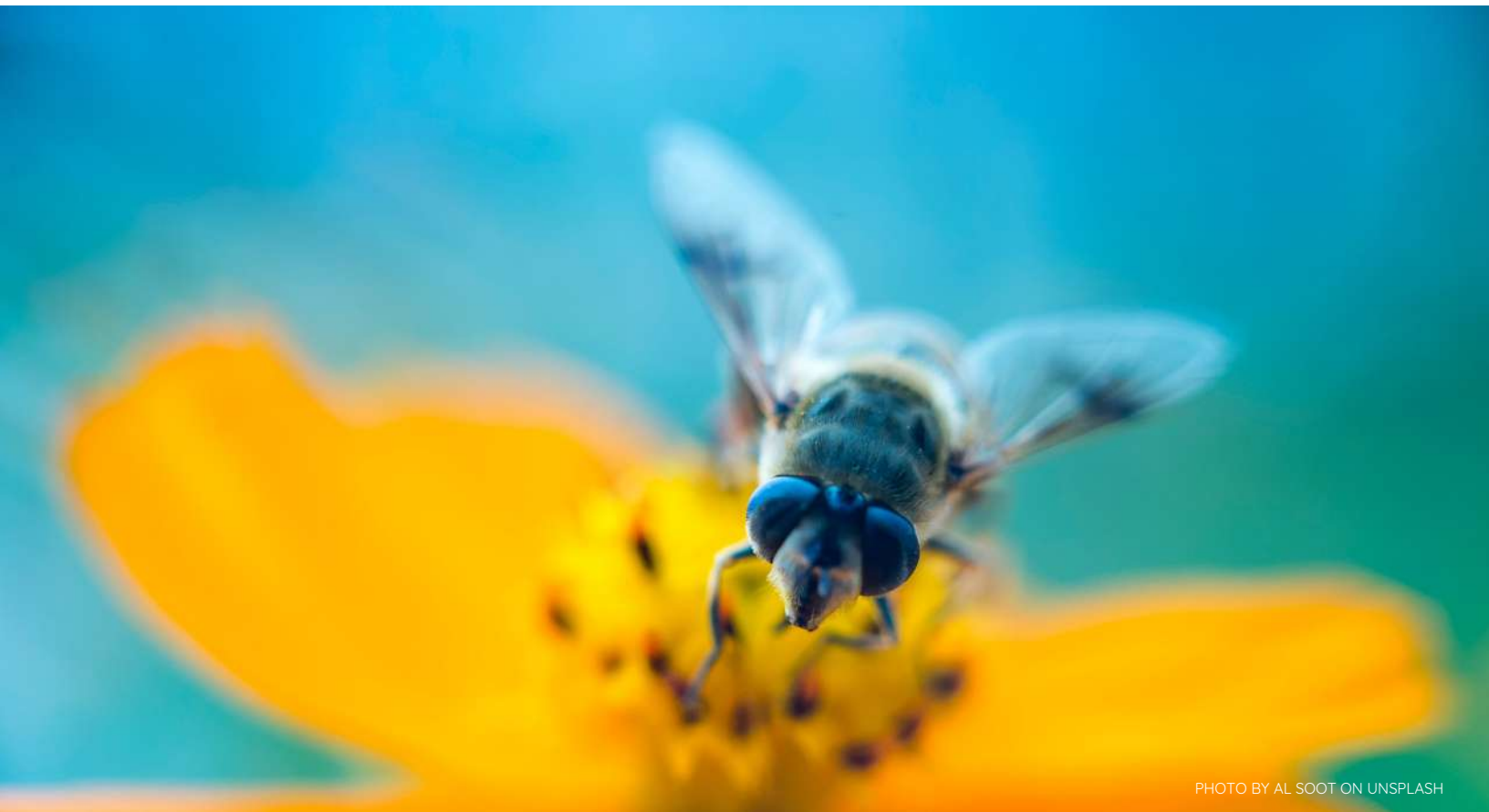
Charlene is a third year medical student in Hong Kong, passionate about global surgery. She previously studied the antimicrobial effect of various floral honeys on normal skin flora in an attempt to find alternative treatments for surgical site infections. In this article, she highlights the potential impact of honey on safer surgery and antibiotic stewardship.

The delivery of safe surgical care is contingent on various factors in the surgical timeline, from pre-operative preparation, surgical intervention, to post-operative care, such as human and physical resources, as well as environment. Particularly for low-income and middle-income countries (LMICs) with scarce resources and poor infrastructure, addressing all barriers to safe surgery proves to be challenging. Instead, improving existing standards of surgical safety with the universal implementation of checklists and evidence-based international guidelines was deemed the most effective initial intervention [1].

Surgical site infection (SSI), one of the ten essential objectives highlighted in the WHO safe surgery guidelines, has garnered increasing attention. SSI is an infection, often by patients' normal flora, that occurs at the site of surgical operation which could either involve the area of incision or involved organ/space [1]. These nosocomial infections are preventable, yet remain a substantial cause of morbidity and mortality, and associated with an enormous economic burden [1-3].

A recent prospective, international, multicentre cohort study on the burden of SSIs after gastrointestinal surgery illustrates the urgent need to further reduce SSIs in the global surgery agenda. However, what is equally alarming, is the administration of prophylactic and post-operative antibiotics, which is higher in LMICs with a longer course of treatment [3]. Exacerbating the issue further is the fact that the causative organisms are often resistant to the antibiotics given, hinting at the wider problem of antimicrobial resistance and overuse [3,4]. This certainly does not preclude antimicrobial use in the prevention and treatment of SSIs, since mortality from lack of or delayed access to antibiotics is still greater that due to antibiotic-resistance bacteria, but the limited high-quality evidence recommending usage may make changing local practice and culture more difficult [3,5,6].



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Considerable effort has been devoted to antibiotic stewardship (ABS), which refers to the optimal use of antimicrobials to yield the best clinical outcome for the patient, and to ensure sustainable use for future generations [7,8]. Nonetheless, outstanding challenges before ABS can be achieved at a global scale prevail. These, especially pertinent to LMICs, include limited diagnostic testing to enable accurate pathogen and resistance profiles identification, low level of knowledge and awareness to antibiotic resistance among healthcare workers and vendors in private drugstores, as well as the lack of regulatory framework to ensure sustainable distribution of antimicrobials [8]. The lattermost has been key to antimicrobial overuse, since the unbalanced antimicrobial supply and patient demand has incentivised drug providers to sell over the counter with no prescriptions needed [9]. In LMICs where infectious diseases are leading causes of mortality and disability-adjusted life years, the reason for the high demand for antibiotics is clear [10]. Yet, if there are other substances that are equally effective against infections, is it possible to curb demand, thus aiding efforts on ABS?

Honey for clinical use is not a new concept. Its antibacterial activity has been noted extensively in literature, contributed by several factors – its high sugar content that leads to bacterial dehydration due to an osmotic effect, its high concentration of hydrogen peroxide introduced into honey during nectar harvesting by bees, and its methylglyoxal content that restricts bacterial adherence and motility [11-15]. In addition, its low pH that promotes wound healing by increasing oxygen release from haemoglobin makes honey an ideal candidate for wound dressing [16]. Its potential role in SSI prevention and treatment is compelling based on sound physiological reasoning, but the existing evidence is insufficient to guide clinical practice [17,18].

Given the global health crisis of antibacterial resistance, and the unmet need for treatment and prevention of SSIs, honey, the relatively inexpensive alternative to antibiotics, may be a possible solution [19]. In order to turn potential into reality, more research in this area is crucial. Meanwhile, endeavours should also be equally focused on other measures to limit the risk of SSIs, such as effective wound surveillance, shortened operating times, and reducing patient risk factors (diabetes, obesity etc).

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