Long distance orthopaedic trauma relief in Africa – an odyssey

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My professor of surgical anatomy once asked me to comment on the course of the 6th Cranial Nerve, and after a careful thought I said, "it runs a long tortuous course and hence has high potential for being caught up in some pathology or injury". "Long tortuous course!" he repeated emphatically. Perhaps I was being given foresight of my own future ambitions.

Then, I was a young man and the future, as it is today, was not so clear in my vision.

In August 2006, I invited a doctor friend, Eddie to my house from Stourbridge. Eddie also trained in the same medical school as myself between 1979 and 1986, and worked briefly as a medical officer at Cape Coast General Hospital. He left the shores of Ghana for Europe on self-sponsorship training in early 1989 even before I set off for Europe. He is currently employed as a Consultant Anaesthetist at the Robert Jones and Agnes Hunt Orthopaedic Hospital, Oswestry, in England.

I offered Eddie a cup of tea or coffee, even bluffed him with an offer of palm wine (which is a Ghanaian local wine tapped from the palm tree) knowing very well that I had nothing of that sort. 'Go on, serve it now!' he gesticulated. In a matter of minutes the coffee, tea bags and hot water were ready on the table. He took a moment to recover from the prospect of drinking palm wine in Hemel Hempstead in England, and then said a few words that encouraged me to introduce my hidden agenda.

The subject of my invitation to Eddie was described as social but I certainly had something else up my sleeve. In spite of the services I had already rendered to Ghana and the troubles of a turbulent self export for training in Great Britain, one would imagine that the feeling would be that one had paid back to Ghana enough of everything and there would be no feeling of indebtedness… Wrong! There is a natural attraction to one's birth country. I felt that my seven years post qualification work was probably insufficient on moral grounds. Every now and then, I got an eruption of feeling almost volcanic in magnitude, to help my country of birth by direct debit - through my red blood, cold but presumed golden sweat, living on the pastures denied of its green sometimes by the wintry snow. Not how I would like to remember the colours of my birth country's flag, an African in the centre of a red-gold-green endurance adventure evolving around the juggling of family commitments and the unending search for surgical training posts. Supposedly, the desire to solve problems back in Ghana through mobilisation of help from abroad had probably always been part of the Ghanaian national fabric. I look back and tell myself that by given myself an opportunity to train abroad, Ghana's good turn was probably progressing to deserve better.

This brings me back to the point of the meeting with my friend, Eddie. I introduced the topic gently. I had visited Ghana in July of the same year, met my medical schoolmates who were in various hospitals including, believe it or not, Lister Hospital (in Accra, not Stevenage in England!) During this visit, I felt moved by the gravity of orthopaedic and trauma care. For instance, there were only two orthopaedic surgeons at Koforidua St Joseph's Orthopaedic Hospital, both nearing retirement (Dr Cassals, Spanish and Dr Oware-Mensah, Ghanaian) who were working their hearts out, and even by the time I finished scripting my story, the information came through that the Ghanaian surgeon had quietly died in the early hours of 11th November, 2006. My sympathy goes to his immediate family, and what a devastating blow to the hospital and the orthopaedic community this will be.

So this meant that the wards at Koforidua would continue to be filled with 'chronic' trauma cases, fracture mal-unions, non-unions and orthopaedic conditions of the hip and knee waiting for surgery and that within the constrains of finance, the choice of surgery would continue to be based on the scanty implants available. The affordability of the implants by the patients

would continue to feature prominently and only those who could make the mark would receive 'special' treatment.

For surgical neck of femur, patients will be lucky to get anything done until they self discharged after several months when union or non-union would have been established. For those with chronic hip pain from degenerative arthritis and secondary osteoarthritis as may occur in avascular necrosis in sickle cell disease, the procedure of choice for most patients would be Girdlestone Arthroplasty (removal of the femoral head and eventually ending up with the usual half-moon shaped cave of the waist bone filled up with a tuft of scar and a false non-congruent joint resulting in disjointed bicycle pedal type of hip movement with walking that would make one feel short and tall in one single phase of gait, originally described for treatment for infected hip joint - tuberculosis). It is a good operation in some hip conditions today but a cruel one for patients to beg for when it is not primarily indicated. In the Western World, this operation is performed for infected artificial joints as an initial phase of a staged management but for a majority of these patients a final stage full restoration of the artificial joint would be carried out. I however noticed that it was the cheaper operation that the patients could afford and reluctantly carried out by the surgeon in large numbers with scanty resources. It was obvious that the procedure for many patients was a relatively better option than to grin and bear the pain of hip arthritis.

So against these background, surgeons would continue to operate within financial limitations, and that the prescription for surgery would be guided by choices considered not on professional merit but by skilled cost cutting and manpower saving procedures which would put an apology of a smile back on the faces of many. To be truthful to myself, as a western trained orthopaedic surgeon, I see it as an apology of a smile. These patients however only see what they have gained---pain relief, not how else they could have been better treated. Other patient socio-economic factors may however appear to justify the procedure. The use of Girdlestone procedure for hip pain relief, driven by financial constrains, had regrettably reached unquestionable gold standard practice. So Eddie kept listening to my dissertation

In some circles in Ghana, operating on old patients could be considered a taboo especially if it is a major surgery, understandably considering the risks of anaesthesia. I was also acutely aware that the local senior orthopaedic surgeon at Koforidua, Dr Cassals, believed that total knee replacement would be the ideal surgical option for the treatment of most knee arthritis, but was compelled to offer fusion with intra-medullary unlocked nails or Charnley's compression clamps to the local population and that more than likely the skills for knee replacement were never developed or maintained. By this time, I had giving Eddie the background of Orthopaedic Trauma care in Ghana, particularly based on my observations at the Koforidua Orthopaedic Hospital, arguably one of the main Orthopaedic hospitals in the country. The gravity of the problem was even further compounded by the fact that this hospital remained one of the main orthopaedic hospitals, which many people across the West African subcontinent were reliant on.

"So, Eddie, Ghana needs us!" I exclaimed. My own idea was that returning to Ghana immediately for good would increase the number of orthopaedic surgeons significantly, but the real impact of my services on the ground, with the lack of facilities and appropriate implants and equipment, and my understanding of the principles of orthopaedic trauma practice at the frontiers of knowledge, would make me feel defective and chronically negligent. I revealed to Eddie my idea of a charitable organisation - MOTEC-life-UK - which I had formed a month earlier after my return from Ghana in July 2006 and had already recruited some health care professionals in my hospital and the private sector. Motec-life stood for motion/musculoskeletal technology as it occurs in life, in the living limb. Eddie willingly embraced it and joined as the then only consultant anaesthetist in my organisation.

I have always believed that the best way to improve any system is to learn about it well and that there was no better way than working in that environment, and then together with the locals identify the problems, find solutions to them, educate and offer training. The alternative of imposing changes from outside could lead to the rapid collapse of the hospital based

services. Whichever way one looked at it, the local hospital have also acquired some experience that visitors like us could benefit from. Like the resilience, the management of local pathologies such as sickle cell bone disease and complicated fractures with minimal resources. Other patient dynamics could motivate and enrich the experience of the Western trained visitor upon return to his or her country of practice, a mutually beneficial association.

Looking back at my visit to Ghana in July, yes, I knew of the Teaching Hospitals with reputable Orthopaedic Trauma Departments at Korle-Bu in Accra, Kumasi and elsewhere all working at perhaps full throttle. I had the impression that the Teaching Hospitals' orthopaedic trauma catchment area was broad, however improving the services at Koforidua was more than likely to benefit a broader community.

I think Eddie was shocked about the extent of the problems. If he was motivated to help anybody professionally, there was none stronger than the plight of these patients. Mixed with the element of patriotism and love of his job and probably the quality of life for the injured elderly in Ghana, having agreed with humility to get on board with MOTEC-life-UK, he must have left Hemel Hempstead for home in Stourbridge full of thoughts and ideas to help the push for Ghana. We used to sing at school 'Ghana oseh yieeh!!!! Yie ayeh! Ghana ooooh! Yieeh Ghana oooh! Yie ayeeh!'- rough translation…'come on Ghana'. Just to boost our spirit of patriotism. I wondered how many times he sang these on his way back home.

To evolve a system in which we availed ourselves the opportunity of working in it, getting a firmer feel of the difficulties encountered locally and letting the system drive itself for self improvement instead of creating the impression of an imposition of manna from abroad was a thought that seemed to have caught on well with every volunteer member of my multi-national /multicultural association. Remembering that the Greenwich Meridian linked Ghana with the U.K with English as the lingua franca, and that historically Ghana is a former British colony, everything seemed well lined up for a natural link between the two nations. My father was named Guggisberg after one of the last British Governors (Gordon) in Ghana. When he joined his uncle to attend college at Koforidua, he had to drop that name because his uncle did not like it. So his uncle changed it to George, after the patron St of England. Besides, King George V knighted my paternal grand father, the King and therefore they called him *Sir* Ofori Atta.

During my last operating sessions in Scotland as a registrar, my anaesthetist was a white Scottish young lady doctor called Akosua because she was born on a Sunday in Kumasi, the capital of the enterprising Ashanti region of Ghana, and my 84-year-old patient on the table was a Scottish agriculturist who worked for over 15 years at Bunso Cocoa Research Centre 20 miles away from my home town who knew my parents. So for me the link between Ghana and U.K was everywhere and I saw the opportunity to cement the spirit of co-operation. After all, my father used to say 'reconciliation comes through suffering' and it was clear that on this occasion 'orthopaedic trauma patients' in Ghana were suffering. We could offer assistance to improve the local health care delivery to a standard that could attract any of the skilled health professionals to Koforidua on a long-term basis. We could establish reliable and affordable medical equipment and implant supply chain, but I dared not say that we could move mountains.

In my travels and enquiries, I had learnt that there was a commendable link between four U.K hospitals and health service institutions in Ghana supporting the training of medical assistants, psychiatric nurses and others, and that the efforts were being coordinated by The Tropical Health and Education Trust (THET) based in London. So I contacted THET in London and met with a favourable response from the Trust's Director of Strategy, Dr David Percy. "You will be registered as one of our link groups working in Ghana", he said at a meeting with my association in Hemel Hempstead on the 18th of September, which was graced by the attendance of my Clinical Director and many consultant colleagues of mine.

The Steering Executive Trustee Committee of my organisation (CHORE) was firmly set up following the meeting with David. I was introduced to a charitable organisation called MEDAID by a member of my organisation. I was very appreciative of the support and indeed was very

pleased with the items received on our behalf as donation to Koforidua, but nothing prepared me for the bill that I was to pay for the freight.

The second half of September saw me packing boxes of donated material of mainly gauzes, sutures, plates and screws, intra-medullary nails plus jigs, hand gloves and theatre drapes. Corin stands out as one of the few companies who went to incredible lengths to support the charity work in Ghana with free donation of hemi-arthroplasty implants and even had their engineers help solve anticipated orthopaedic instrument problems for the work in Ghana. Amazing! The positive contributions were later to be felt in Ghana. The air ticket for the group of five had to be paid for from my family account. Visa applications for some members of the team were submitted and members were encouraged to arrange with their General Practitioner anti-malaria and immunization against yellow fever.

Until now, the cost of total knee replacement was prohibitive and the local orthopaedic surgeon at Koforidua was compelled to offer alternative treatments. As a result of this there were no facilities for knee replacement at Koforidua. Fortunately my medical school mate and Medical Director of the Lister Hospital in Accra, Dr Edem Hiadzi, a British-trained obstetrician/Gynaecologist, agreed to sponsor implants, equipment and place his first class theatre at our disposal for knee replacements in Accra at a total price of about £3500 per case until further notice. All his equipment and implants were to be purchased from the U.K at standard prices. I was co-ordinating that project between Lister hospital and Depuy / Johnson and Johnson U.K. Dr Hiadzi had promised to put in place the necessary tools to support artificial hip and knee rehabilitation including Zimmer frames, crutches, commodes, walking sticks which patients could also acquire and take home.

By the end of September it seemed that everything was in place for our work in Ghana. The pre-departure meeting on the 30th September at Hemel Hempstead went well with all the CHORE members attending. Dr Edward Acquah (consultant anaesthetist, Oswestry), Dr George Akintunde (Orthopaedic Specialist, Somerset), Miss Rosie Doogan (Senior Theatre Scrub Sister and Manager, Harpenden), Mr Stephen Townsend (Surgical Assistant/Scrub Nurse), myself and an additional new member, Dr. Fiifi Amu-Darko, a General Practitioner from Birmingham with legal credentials also acting as a legal advisor to my organisation. That evening Medaid Director Mr Tim Beacon collected sixteen boxes of items from my home for delivery to KHS Freight International. My first team for Ghana would be everybody at the meeting except Fiifi.

Sooner than I thought, the time came for the first giant step to be taken. This was not without turbulence. The cost of the freight was high and the news came through that the arrangement for the airfreight to arrive in Ghana on the 8th of October had 'faltered'. Little did I know that this was just our initiation to inter-continental freight bottlenecks. For me it was my first experience and a shattering one. I comforted myself that I had most of the donated vital equipment (non dangerous) packed in my bags. I was to arrive in Accra first on Friday the 13th October 2006 to ensure that working and accommodation arrangements were safe for the group and that the rest of the group would follow a few days later on the 15th. I arrived in Accra on a warm humid Friday evening at about 6:30 in the evening. The temperature was about 26 degrees, perhaps not as bad as it could be and I comforted myself that the English visitors in the group would not feel roasted in Ghana if the temperature remained at that level.

The night was good. I managed to get to the airport hills in Accra for my scheduled orthopaedic clinic at the Lister Hospital at 10:00 the following day. For a humble beginning, in spite of large numbers, I selected only two patients for total knee replacements to be performed in Accra in the course of our two week visit to Ghana. Clinic finished at 18:00. The next day I had an appointment to meet the Director of Koforidua St Joseph's hospital, Rev. Father John Oppong, some 70 kilometres northwest of Accra at 12mid-day on Sunday. I left home at 10:00, drove to Koforidua for the appointment about 45minutes ahead of schedule, making fresh coconut-drinking pit stops on my way. I knew that in emergency, coconut fluid could be safely administered intravenously provided careful antiseptic techniques are used and the basic rules of gravity are respected - Professor Baidoe would tell you from his work on body fluids.

The meeting with reverend father was informal and in a very relaxed mood. We spoke about a lot that we had discussed on numerous occasions on phone prior to my arrival in Ghana, re-drawing working programmes and looking for ways to maximise the working visit. That evening, Father was to arrange for his hospital minibus to pick up the other four members of my team who were arriving at the national airport in Accra.

So I left Koforidua for the airport. Before I could get anywhere near the meeting place, I heard someone call my name in an unfamiliar very distant voice. "Paul Paul!". I thank my God that I knew that I was a sinner otherwise I would have sang the familiar words-- "speak, speak, for thy servant heareth!". But I was in Ghana to do some good and the Bible was my Rock. Wouldn't be bad to get a call from God or the Angel at this time of my changed heart! So slowly I turned thinking that the call was certainly meant for some other Paul holier than me.

Ashamed, confused, apologetic, childish, you name it. It was my team already out of the airport actually waiting to welcome me, a complete reverse of my day's dream. I welcomed them to Ghana and contacted the minibus driver..

After a good nights sleep, we met for breakfast the next morning. We seemed to have planned individually that the dress code would be casual - no other choice for the English members who were on their first ever trip to hot Africa. Everything around them had to be viewed with interest and trepidation. We decided at the breakfast meeting with the hospital administrator, Reverend Father John Oppong, that the day would be introductory. So we strolled towards the hospital with him and met Dr Oware Mensah, the Medical Superintendent of the Hospital and one of the two orthopaedic surgeons, in the main reception area. It was our first contact. He asked how long we were going to stay. "Two weeks," we said. "Two years," he suggested and we would later understand exactly what this old surgeon meant by two years. Father planned to check on our medical freight, which we presumed, was delivered to our agent at the Accra airport the night before, so he left us with another doctor to take us on round. From one patient to the other, we began to realise the daunting tasks ahead. We had planned to run clinics and then arrange for surgery in the course of our two week visit, but in the next ten minutes I saw almost more difficult cases than I would have seen at the case conferences in my UK hospital in a year. I cherished the challenge as we went along and as the leader of the team I dared not say much immediately as my team observed pensively. I did quick assessment of the patients to establish a few clinical facts. When I was ready to speak to my team, I could only say, "I think we do not have to consult in the clinics for the entire two weeks". They nodded in complete agreement with me. The wards were fully occupied by patients with mal-united/ un-united painful fractures of the limbs. Displaced limb fractures that were six weeks old were described as fresh injuries. I was touched by two young mothers with non union of humeral fractures who presented with 'painful frail arm'. Anytime these particular mothers wanted to move their arms forwards the elbow would move paradoxically, in reverse and these humeral fractures were between twelve and 18 months old. No need for clinics when neck of femur fractures in reasonably fit patients were waiting in bed for weeks, not when young patients in their teens and beyond were awaiting girdlestone hip arthroplasty operations as a primary procedure for symptom relief. And they had all been in hospital waiting for their turn for surgery for several weeks.

So all in pensive mood, we strolled to the theatre to meet the theatre staff, the two orthopaedic surgeons who were operating and also to inspect the theatre. We were greeted at the door by the nurse anaesthetist. Little did we know that in spite of several months of planning with the hospital through their co-ordinating doctor and reverend father, the 'egos' of the local arthropods were dominant. "Nobody knew your group was coming", says Julius. "Let's see Father again and rediscover why we have come so far" I said in a calm controlled voice. So there was a truce and father probably carried out some diplomacy. It would become clear to us that some other groups from Europe had been visiting the hospital and that previous working visits had apparently left distasteful memories and naturally they were on a collision course with any group trying to get into the theatres, against the wishes of the hospital administration.

Whatever father did, he got results as the message soon came out loud and clear that the older surgeon Dr Cassals would love it if we could take his afternoon theatre session to operate on some of the patients waiting for that afternoon's list. As if by pure luck as well, he had sweated to almost severe dehydration as he performed cementless total hip replacement on a lady with a narrow femoral canal. The gas powered instruments ruptured and had to be repaired twice in the course of the operation. So perhaps, was it all part of a greater plan for us to get in and get a proper welcome to a theatre in Africa? Drama theatre, I hoped not?

So we were invited into action and the relief was almost felt across Europe as text messaging became a frantic activity from group members who were initially taken aback and naturally so. We went to the female ward and confirmed to the ward staff that we would operate on two patients waiting for girdlestone arthroplasty, and proposed instead total hip replacements. The patients were thrilled about the luck that had brought this opportunity for them. The decision was discussed on the phone with Dr Cassals and all seemed to have gone down well - after all, we had our own implants and bone cement and patients did not have to pay for them, so we thought.

We inspected the theatres at about 2pm. At first it appeared impressive - clean, things arranged in orderly fashion, a good array of old and new orthopaedic instruments. There was however a number of open bowls of hip and knee implants probably from all over Europe and America. I called them 'the strawberry farm pick your own fruit store' as I was told that the surgeon of the day made his choice of implants and then got them sterilised for the operation. Not even a single set of compatible knee implants was seen. There were some intra medullary femoral and tibial nails with no locking jigs and some Orthofix external fixators in excellent condition. If this was going to be our regular working theatre and hospital, then I must say something encouraging to the team. So after the inspection, I turned and said, "lady and gentlemen, motec citizens, welcome to our base hospital in Africa!" What a smile I got back from them. Everybody felt the weight of the burden lift instantly and I could see the determination on the faces of the group to help 'our chosen home' move out of slumber. We gave our instruments to the staff to sterilise and we strolled pensively towards the dining room in the monastry and hurriedly lunched together. The food was gorgeous. Maybe we shouldn't have rushed. Besides, it was not until 3:30pm that the theatre was ready.

Soon we were back in theatre and after a quick but effective spinal by Eddie, we were performing our first artificial hip replacement in Ghana. It was a total hip arthroplasty in a lady in her late 50's who had been listed for a girdlestone procedure. Make no mistake about this: don't go to Africa calling yourself a hip surgeon if you haven't dealt with narrow femoral canals with femoral cortices that diamond would even beg to cut. So after a humbling one and a three quarter hours, a cemented total hip Charnley monoblock arthroplasty was done and there was not enough time and staff to carry out the second operation. That was something that as NHS professionals we were familiar with!

We were delighted that in spite of the occasional failure of the power tools, it seemed we had something up our sleeves to solve most problems. For some moments, I thought quietly that the local theatre staff would be wondering whether we were British Surgical Marines or Commandos. We had the very technical Steve who would come up with solutions in an instant, Rosie who would have secretly selected back up equipment for sterilisation prior to the operation, and George the academic who would direct the locals to add skilled manpower to the jobs, and photograph events.

Heads up, we strolled together through the wards and welcomed the news left for us by the local orthopaedic surgeons that we could have the theatre for ourselves all day on Tuesday. So late evening on Monday, we assessed patients already in beds on the wards for the Tuesday theatre list. Boy oh boy! Who do we pick when everybody shouts in an obvious plea to 'get me out of here'? We were certainly not interested in numbers working in such an environment for the first time. There was simply nowhere else close by that these patients could be referred for quick and better treatment. Perhaps South Africa, U.S.A. or England? I was informed by my doctor colleagues of a philanthropist who had put up new facilities in Ghana for

orthopaedic practice but was stalling on skilled personnel and direction. I carefully selected my cases:

> **Case 1**: 58-year-old male patient: physiologically older; non union displaced fractured mid shaft of femur with ipsi-lateral displaced sub capital femoral neck fracture non union, 18 months old. Originally treated with intramedullary nailing ignoring femoral neck, considering that girdlestone arthroplasty is an acceptable option within the constraints of the local orthopaedic practice and principles compounded by the laid down rules that everybody with a femoral nail had to have the nail removed by a costly operation at 16 months? So we learnt that this young man's nail was removed about three months prior to our visit and he never left the hospital since the extraction. We were aware that the local surgeons were planning re-nailing with bone graft leaving the hip joint untouched.
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> **Case 2**: Mother in her mid thirties; involved in road traffic accident 2 years history sustained distal humeral fracture of her dominant arm which was managed elsewhere in the hospital initially, but largely treated by a traditional medicine man, which ended up as a painful non-union with paradoxical movements of the arm; We learnt that as the fracture was low, multiple k-wiring was planned by the local surgeon.
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> **Case 3**: Young man in mid thirties with 6-week-old fractured shaft of both forearm bones in his dominant arm through a farm accident; fortunately no open wound but his arm was dirty as the place he fell; well wrapped up in a plaster back slab.

I could have continued the selection of more patients but then pondered over the choice of suitable implants available in our bags and the freight from London. So when we went back for dinner and we met Father Oppong we were hoping for the news that our main medical back up had been collected from Accra Airport. "Agent says items not in yet" says Father Oppong. My face dropped. A couple of phone calls will have to be made in the morning to find out what was happening. We went back to the theatre to deliver some of our instruments for sterilisation.

For the first case I elected to perform a bipolar hemiarthroplasty, plating and bone grafting the ipsilateral femoral shaft non-union, which is essentially using the best option available to us instead of the local surgeons plan of unlocked femoral nailing. So with Corin's implants, a three-hour operation was successfully performed under spinal between 9:00 and 12:30.

The second patient would require open reduction, double plating of the distal humeral fracture with bone grafting and that was done with regional block and sedation in Eddie's way. Surgery on an 18-month non-union of humeral fracture is a feat for any orthopaedic surgeon's curriculum vitae. This was difficult surgery and in spite of protecting the radial nerve I was expecting the nerve to have a long sleep afterwards and so it did (expected wrist drop, though recovery expected in view of protection during surgery). Then the third case was done.

I learnt that our freight from London had 'faltered' again and an arrangement with KLM had been made to deliver in the future at the airport in Accra within forty-eight hours. I was also reassured by the Johnson and Johnson representative in Accra that the knee implants would be cleared for our work in Accra the following day.

We had a good early dinner, packed a few items and left on the minibus for Lister hospital in Accra. By now we knew the implant delivery in Accra was in trouble and our host in Accra had organised an orthopaedic clinic in the morning. That evening, we had arranged a general hospital staff education programme, with audio-visual presentations on total knee replacement. It was well attended.

The morning clinic at the Lister Hospital was light and minor operations were done that afternoon. The waiting game and frustration with freight arrangements by DePuy/Johnson and Johnson for Lister Hospital and MEDAID for Koforidua medical supplies grew and grew. As a leader, the team did not spare me any agony, asking me questions about the airport cargo

delivery progress when they knew for sure that the items hadn't even arrived in Accra and that I was helpless in the whole saga. The peak of my stress was yet to come when the two daughters of one of the patients confronted me on Thursday about the two day delay of surgery saying "we thought you brought your British standards of prompt service here". I explained the situation and peace was restored. During that long wait, the team performed surgical procedures like removal of a femoral nail, caudal epidural injections, and manipulation of the spine in the afternoon after a morning clinic and the same on Friday morning. At about 3pm on Friday, at a time when I felt that the group were just short of mutiny, the news came through that the knee implants had been delivered to the operating theatre in Lister. By then all the instrumentation had been sterilised, and the patients had been kept hydrated after light breakfast with intra-venous fluids. The relief on the faces of the team should have been captured on film for posterity. The energy reserved after enforced rest was bearing dividend. Acclimatisation had been achieved through relative inactivity, gently paced outpatient and surgical work, punctuated by sea breezing breaks and good food. "Folks, let's go for it," I said. So the first squadron of Motec in Accra suddenly rose for action .

Our first patient was on the table at 4:30pm under spinal and after 1 hour 10 minutes of surgery, perhaps the first PFC (type) total knee replacement had been done in Accra. It was all smiles - patient and entire theatre staff. History had been made in Lister and the atmosphere was euphoric. We had to wait for two hours or more to get the instrumentation to be re-sterilised for the second knee replacement. By 9 p.m. we were done and the beer was ordered ahead of time at the hospital restaurant for the team, (excluding myself – after all , Friday nights could be rebellious). I had already arranged a surgical list on Saturday at Koforidua and the minibus driver had been waiting for nearly two hours. So the bus took the team to Koforidua late at night and I stayed at Lister hospital all night to supervise the immediate post-operative care of the knee replacement patients and joined the rest at Koforidua at about 7 am after my rounds on Saturday morning.

Theatre was ready on time and a few problems with power tools were not enough to break our spirits. So a hemi-arthroplasty, total hip replacement, double plating of humerus, caudal epidural injection is about all we could do before we called it a day, stopping for lunch in between cases. The evening was casual and largely spent reflecting on the weeks work with our host. We declared Sunday a social day. The church was close by for some members, with breakfast after church for some and a long lie-in for others before food.

After going through many options, I agreed with Father Oppong to release a driver for sight seeing trip within 80 kilometre radius of Koforidua. Our first stop was the Boti water falls about twenty kilometres from Koforidua. Other places we visited included Akim Tafo Cocoa Research Centre and the Kwahu Mountain. We had lunch at a sister mission hospital at Nkawkaw (Holy Family). We returned for dinner at Koforidua late evening, and got prepared for another cycle of work.

Monday was a public holiday, yet the theatre staff came along for work. During our pre-op assessment ward rounds we were touched by the plight of two very slim young ladies, sixteen and twenty year olds that the local surgeon had listed for girdlestone arthroplasty. The team promised to discuss with Corin in the U.K for a cement-free thrust plate type of total hip arthroplasty or hemi or total hip resurfacing. These young patients had sickle cell homozygous disease (SS) with well preserved acetabulum and they were comfortable with the idea of waiting for our next visit in the New Year. We rewarded them with a group dinner in the town in the evening. We had learnt from the local surgeons that in view of the threat of ischemia from the bone cement, the dangers of relative ischemia in sickle cell disease as well the increased incidence of osteomyelitis (more common in SC disease), it was not ideal to perform cemented arthroplasty in these patients. Surgery on old fractures were done successfully and together with the theatre staff we organised a get-together dinner in the town centre after surgery. Work continued on Tuesday, Wednesday and Thursday, with post op reviews and surgery mingling very well with the local medical and nursing staff, educating on the job and at the same time learning about the local system.

Surgery included desperate patients with hip fractures, treated with hemiarthroplasties, degenerative arthritis with total hip arthroplasties, fracture non-unions with plating and bone grafting, and treating back pain with caudal epidural injection.

The most shocking late revelation was the fact that I never seemed to think for a moment that there was a children's ward somewhere behind the female ward. This was two days before the end of our Koforidua working visit. I probably would not have known about it had Father not introduced to me the problem of a thirteen-year-old patient following surgery by a visiting orthopaedic surgical group from Europe. The patient had undergone an operation on his proximal tibia to correct deformity and the list of complications was everywhere on the leg. I was moved by the plight of the patient especially when I met with his mother who, out of natural bond with her son and ignorance, would not listen to medical advice, instead preferring traditional herbal treatment and castigating Western Medicine. Who would blame her! Apart from this, I saw that the paediatric ward was full of limb deformities. I wished we had planned a longer stay just for the sake of the children.

On socio-business front, on Tuesday, we shared our thoughts with the hospital management in a type of summer hut. Wednesday evening, we were taken by the senior orthopaedic surgeon, Dr Cassals to his home where every drink you could ever think of was offered. Great news - he was prepared to come over to England to re-learn procedures.

On Thursday evening we had a goodbye dinner and left for Accra. One could sense the deep hopes of the staff and management to have us back again, which we promised to do. In Accra, we had a light Friday clinic, a few minor surgical procedures. Only then did the news come through that the freight for Koforidua had been delivered to Accra by KLM. Not good enough for us at the end of our working visit and even then nobody could clear any goods from the ports over the week end. So we resigned ourselves to the idea of returning to the U.K without seeing the true bulk of the medical supplies we had worked hard to deliver. Anyway, we were relieved to discharge our happy total knee replacement patients. They had excellent mobility. One short scare of ill health, with one of them on the second post operative day, which was diagnosed and treated as malaria by the local doctors. Saturday was a shopping day for all. I was invited to the Lister Hospital by my colleague and director of the hospital Dr Hiadzi, who much to my relief and joy offered to refund the cost of the flight that I had paid for the members and he did it honourably.

The team got split at the airport. I was going through Amsterdam to Prague for a three day course. Rosie, Stephen and George were returning to U.K. but Eddie wanted a bit more of Ghana and was staying three more days.

So when I returned finally to the U.K three days later, the odyssey was being talked about everywhere in the local hospitals - Hemel Hempstead, BUPA Harpenden, St Albans City and in the family homes of the members. The commando's had returned home with flying colours. Reptiles and lions stayed away from them and they had time to treat real people with orthopaedic trauma problems. Pictures tell stories and sooner than I had thought, people were talking about the difficulties and the achievement of the group. An invitation to the Ghana High Commission in London and a news item on the Ghana national television about our visit capped everything, and set the tone for the next visit to Koforidua at the end of January 2007, for which arrangements have already been made with a group of six. The non-Ghanaian membership was even larger. A new Re-United Nations of Kofi Annan, all for Ghana? Visits to Koforidua have been planned for January, February, April, June, and October.

All told, based on the observations of my working visit to Ghana in October, I have come to the conclusion that patients stay much longer than necessary, especially where appropriate equipment and implants are not available or not affordable. As a consequence a significant proportion are subjected to inappropriate surgical procedures such as for pain relief instead of artificial joint replacement, which left patients (especially bread winning young patients) pain free but with a debilitating limp. It is also a practical problem that the working and hygiene practices like the squatting positions for the use of traditional pit toilet facilities, farming

practices which may involve tree climbing, and facilities for rehabilitation, would also influence the choice of operation for the young African bread winner. There is however a significant proportion of patients who have enough financial and structural resources to meet the cost of modern surgery and rehabilitation. It is the greater majority of those who cannot afford sometimes basic and other times specialised surgery that our attention must be focused on. I also believe that as we try to help the patients, we should leave a legacy of knowledge, surgical and nursing skills and equipment that would move orthopaedic care to a better level.

Motec-life-uk would prefer to be bold enough to plead on behalf of these patients, health care workers and St Joseph's hospital for help to make equipment and implants available as cheaply as possible to effect a more appropriate management of these patients for long term benefits to many. There has been no doubt that the challenges ahead are daunting. The hospital based healthcare services need to be revamped. The alternative of "shutting" the system to await improvement is neither safe nor sound. Others have suggested the construction of new hospital complexes, which may be commendable, but education and training of the current work force in the hospital should remain a priority if new structures and facilities are intended to make a difference to the patients.

There are today well meaning individuals sitting over beautifully crafted structured facilities struggling to elevate the standard of care, chasing skilled staff from abroad that are "unwilling to be marooned" by unskilled supporting staff and outdated equipment. Koforidua is lucky to have a working system that can be improved to provide first class treatment, but only if a workable strategy is carefully planned by people, resident or visitor, Ghanaian or foreign, who understand patient dynamics in Africa and who would learn from the history of progress of scientific medical practice in the developed world, and look at the cause of failures of new hospital facilities in the Ghanaian Health care system. They should be people prepared to carefully and constructively upgrade existing practices to a new and better level through a symbiotically positive working co-operation with current staff, without diminishing achievements made in difficult circumstances by the local healthcare workers.

These hopes have led Motec-life-uk to the following summary of a wish list prepared in our report, which are as follows:

- Revamp of the operating theatres/ better orthopaedic power tools/recovery ward monitors, and an elective orthopaedic ward.
- Pelvic and limb supports (hip, knee and arm) and clamps for the operating table
- Hip and knee implants for fracture and elective orthopaedic surgery and an affordable supply chain.
- Theatre drapes and gowns/ wheel chairs/crutches/plaster of paris.
- New theatre sterilisation set up.
- Audio-visual educational material in orthopaedic nursing and physiotherapy.
- Review and establishment of clinical waste disposal system /pneumatic tourniquet
- Instrumentation for hip and knee arthroplasty
- Laminar flow system.
- Physiotherapy facilities.
- Occupational therapy /rehabilitation facility suitable for the local population.
- Sponsorship of the local surgeon and theatre scrub nurses for observational attachment to a reputable orthopaedic unit in the U.K.
- Philanthropists who would move the service on to a better level through a carefully thought out strategy

The future needs of the hospital include the following:

- Orthopaedic surgeons, anaesthetist, and other skilled staff in all aspects of orthopaedic trauma care.
- Reputable and Benevolent Orthopaedic Trauma implant manufacturing Company to help establish a supply line and others especially kind hearted individuals.
- Volunteers and funds to support the work, and continued support of the Government of Ghana.
- Proper co-ordination of volunteer groups, and perhaps a board of reputable

professionals with local and foreign orthopaedic trauma care experience plus patient groups to evaluate the services of all foreign volunteers with a Ghana Medical and Dental Council Representative.

The best cannot be achieved single-mindedly. It is my hope that philanthropists would be attracted to this noble idea of faithfully supporting the existing facilities to improve the service rather than move mountains. History will not forgive us.

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