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My name is Rajabo Issufo and I am an anaesthetist in the Chicuque Hospital in Maxixe, a town in Mozambique about 250 miles north of the capital, Maputo. I recently had a visit from Dr Teresa Schwalbach, who had been my anaesthesia teacher in Maputo more than ten years ago. She was so pleased with the progress we have made in the anaesthetic service at this hospital that she suggested that I should write an article as it might give encouragement to others.

My story is typical of those providing the anaesthetic service in my country and probably throughout much of Africa.

After I left school at the age of 18 I trained as a general nurse at Maputo Health Science Institute qualifying in 1977. I then moved to the hospital in Chimoio in the centre of the country where I had my first experience of working in the operating theatre. When I became more experienced, as part of my duties, I was occasionally required to help the anaesthetist. He would give me instructions such as ‘find a vein’, ‘put up a drip’, ‘take the blood pressure and record the heart rate’ etc.

I began to appreciate that this was an important job, and although it was not a popular specialty at the time, I enrolled in the school of anaesthesia at the Central Hospital in Maputo in 1996, under the supervision of Dr Teresa Schwalbach. The 18-month training course consisted of 6 hours of theoretical teaching and 30 hours practical each week. I was successful in the final examination and returned to the Chicuque Hospital in the year 1998.

For the next seven years I was the only trained anaesthetist in the entire hospital. It is a very busy hospital with 154 beds serving a population of over 100,000 and performing more than 2000 operations annually. I had several assistants who also gave some of the routine anaesthetics but I had to be present at every difficult operation and I was on call every night because there was no one else. If I wanted to be away I had to arrange for a colleague from the provincial hospital to deputise for me.

Chicuque is a general hospital where the range of surgical operations performed is wide. Since it is close to the main road linking the north and south of the country, trauma from road accidents produces a large percentage of the workload. General surgery, gynaecology and obstetrics are also very busy (approximately 1800 deliveries per year). Paediatric surgery is also performed but smaller children and infants are generally referred to the provincial hospital where there is a physician anaesthetist.

When I first began working in Chicuque as an anaesthetist most of the operations were performed under general anaesthesia using a face mask and spontaneous respiration. Initially we used an old Boyle’s anaesthetic machine with cylinders of oxygen and halothane as the volatile agent. There was no nitrous oxide. When muscle relaxation was required we used succinyl choline for intubation and for short procedures, and pancuronium for longer procedures. Analgesia was usually provided by fentanyl. Patients were ventilated manually because there was no ventilator. There was no recovery unit or intensive care ward so if there were problems postoperatively we had to stay with patients until they had completely recovered from their anaesthetic.

Ketamine was used in shocked patients and spinal anaesthesia was also used, especially for caesarean sections, with bupivacaine as the anaesthetic agent.

A brand new anaesthetic machine had previously been donated to the hospital by an aid agency but it was completely unsatisfactory. It seemed very complicated, there were no clear instructions and on the rare occasions it was used it broke down rapidly because of voltage fluctuations and frequent power cuts. There was no one to show us how to use it or how to service and maintain it so it was transferred to a storeroom and has never been used since. No one from the manufacturers or the donors has ever contacted us or offered to help us.

At that time all our oxygen was supplied in cylinders, which were delivered by road from Maputo. Occasionally, especially during the rainy season we ran out of oxygen completely and operations frequently had to be cancelled.
In 2002 it was announced that Mozambique was to receive six anaesthetic machines of a new type as part of a trial being carried out in several countries in southern Africa. The machines, called Glostavents, were donated by the Department of International Development (DFID) in the UK. We were all very excited when we were selected as one of the hospitals to receive the Glostavent.

As we had not seen this type of machine before, a five-day course in Maputo was organized by Dr Schwalbach. During the course we were shown how to use this new type of anaesthetic machine, how to look after it ourselves and how to provide basic servicing and maintenance. With the instructions I had already received on the training course in Maputo I soon became confident in its use. All of us found the Glostavent to be easy to understand and operate especially with the aid of the manual and check list provided.

The Glostavent has the advantage of having a mechanical ventilator, which I found very useful as it enables the anaesthetist to be ‘hands free’ when working alone. There are several other advantages. One is that by using the oxygen concentrator, our requirement for oxygen cylinders has decreased dramatically, and we have saved a great deal of money. The only time we use the cylinders now is when the electricity fails, which is once or twice per week. The oxygen cylinder on the Glostavent then automatically takes over and there is nothing more I have to do. The surgeons are also very pleased with the new system because it means that operations rarely have to be cancelled.

With the improved equipment the administration of anaesthesia has become much less stressful and more enjoyable in our hospital and we are beginning to attract new recruits. I now have two colleagues to share the workload and hope for more.

We have now been using the Glostavent for nearly ten years in our hospital. It has been completely reliable and we have been able to maintain and service it ourselves without having to call for help from outside. I have spoken to anaesthetists from other hospitals that are using it and they also like it.

During her recent visit here I thanked Dr Schwalbach for making the Glostavent available to our hospital and I asked if they could be available in the rest of the country where many of my colleagues are still experiencing the same old problems that we faced.

Dr Schwalbach congratulated us on our work saying it was an example to others. While we were talking about the Glostavents she asked if there was anything we didn’t like about the current model which we would like to see changed in future. My colleagues and I listed three changes we would like to see.

1. We would like the oxygen concentrator to have a higher output. The present maximum of 5 l/min is not enough for satisfactory pre-oxygenation
2. We would like a method of scavenging of expired gases as at present the anaesthetist has to inhale much of the anaesthetic himself and it makes us feel dizzy and tired
3. We would like a shelf on top of the machine to support the monitors and get them out of the way

I would like to express my thanks to Dr Schwalbach for her help and encouragement in the preparation of this paper, to DFID for supplying such a good machine, and to Diamedica for listening to the opinions of African anaesthetists as we frequently feel alone and isolated.

Footnote
This report has been shown to DFID with a request that further Glostavents are made available and a recommendation that every hospital in Mozambique should have them. It has also been shown to Diamedica who manufacture the Glostavent. They responded to the comments by thanking the anaesthetists for their suggestions, which have already been taken on board as follows:

The basic design of the Glostavent has remained unchanged but a new model is now available with an oxygen concentrator capable of delivering 8 l/min of oxygen, a new valve to facilitate effective scavenging and a shelf above the Glostavent to accommodate monitors.