Karibuni Macho: Transforming the Eye Department at KCMC to Reach VISION 2020 Goals

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I. Introduction

This is the story of a transformation in the Kilimanjaro Christian Medical Centre (KCMC) Eye Department. The numbers of cataract blind in poor countries are increasing at an alarming rate as populations increase and age, while hospitals fail to keep up. In Kilimanjaro region, we were falling woefully short of meeting the needs of the population. In a survey in late 2002, we discovered that fewer than 10% of people with cataract living within one hour of the hospital had received surgery. We wanted to see if we could reverse this trend and it was our belief that it would take something more than continued injection of money to solve these problems. Over the years there had been ample funding provided by donors to the KCMC Eye Department. There were no shortages of essential supplies or doctors and the Department had some fine equipment.

We needed to change the low numbers of patients and the heavy dependency on donors. Not only did we want to quadruple the number of patients receiving cataract surgery at our hospital, but we wanted to develop a system to do it that would not be entirely dependent on donations from external sources. We wanted a system that had a chance of surviving, even if the inflow of donor money decreased.

There are many who believe that such a possibility is completely unrealistic in Africa. But we were inspired by what we had heard about two hospitals in Asia, namely the Aravind Eye Hospital in India and Lumbini Hospital in Nepal, which both provide large numbers of poor people with high quality eye services without large injections of money and materials from donors. We began to wonder to what extent this might work in Africa. The Kilimanjaro Centre for Community Ophthalmology (KCCO) was a new centre dedicated to eradicating avoidable blindness and was interested in sustainability. The International Eye Foundation (IEF) had experience, and was seeking new partners to support sustainability planning. Several key leaders at the KCMC Hospital voiced their willingness to see the Eye Department serve as a model for change. How should we start? How do institutional makeovers happen?

Table 1 shows some of the changes at KCMC Eye Department since the transformation began. This monograph is a description of the process we went through in making the changes, and the problems and solutions we encountered in trying to transform an organization. We often felt that it would have been simpler to start from scratch, but that was not an option. The process of change is like juggling – it requires several balancing acts to be underway simultaneously. As we started to analyze the information from our baseline assessment, identify specific problems, and prepare to convince others of the need to change, we often felt overwhelmed by the complexity and magnitude of the problems we faced. It required a strong sense of mission, discipline, perseverance, and optimism to keep on track.

We have not yet reached our service delivery goals. We still do not know what proportion of our costs we can eventually recover in the Eye Department, given the circumstances and socio-economic environment in which the hospital works. We have not finished making all the changes we need to make and only time will tell how sustainable the changes will be. However, one important lesson we have learned is that, if we are really successful, we never will be finished. One requirement for a successful institution is the *commitment to change*, the choice to look continually for ways to improve existing systems and to improve the quality of services. This requires monitoring and feedback, and strong leadership dedicated to improvement.

We hope that reading about our experiences may help others.

Table 1

Indicator	2001	2004
# cataract operations at KCMC*	752	2026
# total surgeries at KCMC	1,420	3005
Regional CSR	402	1,124
Cataracts /staff surgeon at KCMC*	188	506*
# department staff	47	58
# trainees	5 residents, 4 cataract surgeons	10 residents, 5 cataract surgeons
Management information system (Patient service statistics)	Yearly reports produced by nurses	Monthly reports from clerks used to monitor progress toward goals
Cost recovery	No system to calculate	Monthly reports of income and running expenses (including stores usage) show approximately 45% recovery

*This includes all adult and paediatric cataracts operated at KCMC. The Eye Department also provides about 750 cataract surgeries/year on surgical outreach, which is not shown in the Table.

II. The Process of Change

In *Leading Change* (Harvard Business School Press 1996), author John P Kotter writes that his study of successful change initiatives in organizations has revealed two important patterns: (1) successful changes are usually associated with a series of steps that "create power and motivation sufficient to overcome all the sources of inertia;" and (2) the process requires high quality leadership to be driven effectively.

With some adaptation, the series of steps he describes is shown in the box.

This is a neat list for a very messy process. As Kotter explains, while each of the steps must occur, more-or-less in this order, they are unlikely to occur in a perfect stepwise fashion. Parts of each step may be occurring at any given time. For example, early in the process, certain key decision makers need to join or support the guiding coalition, but some preliminary suggestions of a better alternative may need to be presented before key people are convinced to support the change. Sometimes the vision is already there and it is a matter of convincing people at all levels that it is realizable, but, in general, the more involved the staff is in developing the vision and the strategies to achieve it, the better its chances of success.

Steps in change

1. Establish a sense of urgency
2. Form a guiding coalition
3. Develop a vision and strategy
4. Communicate the change vision
5. Empower and guide staff to develop an action plan and implement strategies
6. Plan some short-term victories
7. Consolidate gains to produce more change
8. Anchor the changes in the organizational culture

There will almost certainly be a constant but shifting undertow of resistance, which may appear when least expected. Most workers feel threatened by changes, and this is especially so in some cultures. All workers will not understand or "buy in" to the vision at the same time -- and some never will. Some staff who are enthusiastic initially may become skeptical when they begin to see the implications of the vision. With implementation of new procedures, new

problems will arise; if the staff are engaged in the process, they will have ideas for solving problems. This is good, even if some of the solutions they suggest are not. Patience and tact from leadership are critical to ensure that staff feel part of the process while they are being guided gently toward specific goals. It's a mistake to imagine that all the answers and ideas in successful change initiatives come from the leaders. Staff who feel appreciated will propose good ideas and solutions to many specific problems; doing so empowers them, increases their enthusiasm, and makes the process "theirs."

All this pushing and pulling may alter the vision and it will certainly alter details of the strategies selected to achieve the vision. A good vision statement needs to be specific enough to provide guidance, but general enough to accommodate some evolution and flexibility in strategies.

Characteristics of good leaders

- They are risk takers, willing to put themselves out of the comfort zone
- They practice humble self- reflection, honestly assessing their own successes and failures- especially the failures
- They solicit opinions, aggressively collecting information and ideas from others
- They listen carefully to others
- They are open to new ideas

Kotter emphasizes the need for good leadership and lists the characteristics (shown in the box) found in most good leaders. At the head of the messy process of change must be someone with a clear view of where the organization is headed and the skills to keep it going in the right direction.

It is up to leadership to keep the vision alive, remind staff of it, reinforce it at every possible opportunity, and refer back to it to guide staff in a myriad of daily activities and problem solving. Leadership motivates and inspires, and will have a tremendous impact on the attitudes of the staff. Good leadership may not always guarantee successful outcomes but poor leadership will nearly always guarantee failure.

III. Background on the IEF and the transformation project

The International Eye Foundation (IEF) has been involved in prevention of blindness in developing countries since it was established in 1961. Over the years, it has evolved from providing doctors for clinical services and training to helping eye hospitals and departments develop financially and organizationally sustainable systems. In 1999, the IEF was awarded a USAID Cooperative Agreement (grant No.: FAO-A-00-99-00053-00) to support a program called SightReach©Management designed to assist eye hospitals in sustainability planning and the development of related methods and tools for planning, monitoring and evaluation. Seven institutions in six countries (Egypt, Malawi, Tanzania, Guatemala, El Salvador, and India) were selected as partners. The scope of work varied among the sites, but included such activities as assessment of needs, vision building and planning, improving physical infrastructure, clinical training for medical staff, training in administration and management, supporting outreach services and optical shops, and development of monitoring systems.

In January 2002, working through the newly established Kilimanjaro Centre for Community Ophthalmology (KCCO), the IEF began support for "sustainability planning" for the Eye Department at the Kilimanjaro Christian Medical Centre (KCMC) Hospital. The KCCO is dedicated to blindness prevention throughout eastern Africa. Under a memorandum of understanding, KCCO may be requested to serve in a consultative role to the Eye Department at KCMC. Although the KCCO was a new organization and the IEF had not previously worked in Tanzania, both organizations believed that the enthusiasm and commitment to improvement shown by the Head of the Eye Department and the Executive Director of the Good Samaritan Foundation (the GSF, governing body for the KCMC Hospital) justified an investment in the KCMC Eye Department.

The IEF agreed to support Dr. Susan Lewallen, co-Director of the KCCO, to spend 40% of her time on this project. Working closely with the KCMC Hospital and Eye Department, she would be responsible for seeing that objectives were accomplished and for reporting on progress. The original objectives for phase 1 were as follows:

1. Establish a project team
2. Develop a sustainability plan of action with KCMC
3. Establish knowledge sharing mechanism and disseminate information

In retrospect, this was a bold operation for many reasons. The KCCO itself was a completely new organization and its relationship with the KCMC was untested. A baseline assessment of potential for sustainability had not yet been done, so there were a number of important unknowns. Finally, although IEF and the co-Directors of the KCCO had many years of experience in working in Africa, neither had worked in Tanzania before.

Nevertheless, the risk was taken. The baseline survey, completed in year 1 (Appendix A), produced information that allowed us to develop ideas and the skeleton of a work plan for the changes needed in the Eye Department to foster sustainability. Our objectives for phase 2 were:

1. To establish an efficient medical record system, part of a larger computerized management information system in the Eye Department
2. To introduce screening outreach camps to recruit cataract patients in the Kilimanjaro region.
3. To recruit a Department administrator and train him/her at Aravind.
4. To introduce a multi-tiered pricing and cataract service (based on variable level of ward accommodations) and a 'high pay' out patient clinic.

As with most large projects, the stated objectives guided, but did not entirely dictate the scope of the work. Many "sub projects," documented in the appendices, had to be developed. The outcome of the IEF- sponsored transformation project after 3 years is the subject of this monograph.

IV. Financially “sustainable” cataract services- Africa and Asia

The challenge of providing financially sustainable cataract services is a complex one with many aspects to consider. Leaders in prevention of blindness recognize that the numbers of cataract blind are increasing; addressing this problem is a priority of the VISION 2020: The Right to Sight initiative. Donors are encouraging programmes to do more cataract surgery, without always considering the cost. Forward looking organizations, including IEF, are asking how these services will be paid for and sustained over time. They are systematically trying to learn more about the potential for cost recovery through user fees and experimenting with other ways to pay for quality eye care services.

Several principles support the concept that cataract services in poor countries can become financially sustainable from patient fees and services while still managing to serve the poorest. In a well-run system, unit cost decreases as volume increases. Some high-volume eye hospitals have shown that it is possible to decrease the unit cost for adult cataract surgery to a level that most people can afford. This may be combined with a tiered pricing system, where some patients pay above the unit cost of surgery and the profit is used to subsidize the poor who pay below cost. Greater efficiency opens the potential to offer cataract surgery to the poorest patients. Following these principles, two well-known eye hospitals, Aravind Eye Hospitals in India and Lumbini Eye Hospital in Nepal, have documented financial sustainable from user fees. However, it is not clear to what extent this model may be adapted or replicated in sub-Saharan Africa A number of eye units (e.g., the Lions Sight First Eye Hospital in Lilongwe Malawi; the Kwale District Eye Care Programme in Kwale, Kenya; Kikuyu Eye Unit in Kikuyu, Kenya) are monitoring cost recovery from patient fees. Many assumptions and variables in these calculations make it hazardous to compare cost recovery among hospitals, however it is very useful indicator for monitoring year to year within a hospital.

Table 2 shows some reasons we might question the extent to which the Aravind model may be applicable in eastern Africa.

Table 2

Key elements in Aravind model	Considerations in eastern Africa
Through efficient use of resources (both human and material) the unit cost of high quality cataract surgery can be reduced to US$20-25	High quality cataract surgery may cost more in Africa than Asia because manufactured and imported goods cost more; management expertise, work culture and productivity may differ.
A large enough number of patients who pay at or above cost can be generated to subsidize those receiving surgery below cost	There may be a larger middle and wealthy class in Asian countries than in most African countries.
People will be willing to pay about one month's family income for high quality cataract surgery	Asian cataract patients may be more willing to pay because they are younger and have more earning potential than African patients if they regain vision. Purchasing power parity is lower across Africa, leaving Africans effectively "poorer" than Asians with the same household income. Payment for health care is new in many African countries and people may be reluctant to pay for what was free in the past.
The cost of community outreach and screening programs are supported through substantial investment by community service and philanthropic organizations.	Compared to Asia, there are very fewer service and philanthropic organizations outside of the major urban centers with sufficient resources to support charitable causes.
Dense population and a good transportation infrastructure make access to services cheap for large numbers of patients	Distances are greater (population density less) and transportation infrastructure is less developed in most of Africa compared to Asia.

An important component of the cost of cataract surgery is finding more patients and helping them get to the hospital for surgery. It is well recognized that, for a variety of reasons, the majority of poor cataract patients do not present for cataract surgery, free or otherwise. The barriers that lead to underutilization of cataract services in poor countries include patients' lack of knowledge of services, lack of access to services (e.g. due to distance or high price) and unwillingness to use services (for cultural, social or personal reasons). Reducing the number of cataract blind in poor countries requires that we develop programmes in the communities to overcome these barriers. Programmes include education, counseling, and often transportation or reduced price to encourage patients to use the services. Naturally, these add to the overall cost of providing cataract surgery. In the Aravind model, the cost of supporting the community

outreach programme necessary to channel patients to the hospital is heavily supported by service organizations or philanthropic groups in the community, and not exclusively through service fees at Aravind Hospital.

It was clear early on that KCMC cataract services were severely underutilized by the surrounding communities, and that we would have to identify the reasons and address them. Strategies were needed to meet the eye care needs in the community better and to feed KCMC with cataract patients. The Direct Referral Site Programme (DRS) was developed for this purpose; it is described briefly in Part V.

An important part of our vision was to increase financial sustainability in the Eye Department. To us, that meant increasing the extent to which cataract surgery could pay for itself through user fees. There are other ways that funds might be generated to sustain cataract services; for example: selling spectacles or eye drops, community insurance scheme, or even something outside eye care altogether. We have not ruled these out and they might be good options for some facilities. After doing the baseline assessment, however, we chose to concentrate first on determining how much cost recovery we could achieve by lowering cost through increased volume and efficiency and by using a tiered system of charging for cataract surgery.

V. The KCMC Hospital and Eye Department

KCMC Hospital was established by the Good Samaritan Foundation of Tanzania (GSF) in 1971. It serves as a referral hospital for the regions of Kilimanjaro, Tanga, Arusha, Singida, Manyara, Mara and Mwanza, (total population 10 million). It serves the whole nation as a teaching centre in medical, paramedical and nursing education. In 1976, an eye clinic (outpatient department) was opened; in 1980, a 50 bed eye ward and operating theatre opened. These units plus administration now comprises the Eye Department.

Leading change in an eye department that is part of a bigger institution.

Clear lines of authority and decision making processes are important, especially regarding human and financial resources.

- Analyze the organizational structure and identify the lines of authority, and how important decisions are made.
- Keep key members of the central administration informed of all changes or proposed changes; solicit their advice.
- Identify and negotiate for what you need from the central administration by preparing written memorandums/proposals in advance.
- Base arguments on data and present them positively; demonstrate how changes will result in real improvements.

Very shortly after opening in 1971, the Tanzanian Ministry of Health took over the running of KCMC. In 1994, they asked the GSF to resume control, which it did.

From its opening, the Eye Department has received substantial support from Christoffel Blindenmission (CBM). This has included regular annual support for one or more expatriate ophthalmologists, including a Head of Department (HoD); salaries and “top ups” for local eye doctors, nurses and medical officers; equipment for theatre and the out patient department; vehicles; most consumables for surgery; training expenses and allowances for medical officers and residents; and funds to make “outreach”

surgical visits to other hospitals. In addition, CBM has provided a number of "one-time" grants for specific items not in the annual request. SightSavers International (SSI) has also provided some funds for "outreach" surgery. This generous support means shortages of equipment and supplies have rarely occurred in the Eye Department.

The Eye Department is part of the KCMC Hospital and there are limitations to its independence regarding finances, personnel, and structure. The Eye Department depends on the KCMC Hospital for maintenance and upkeep of the building and for most staff salaries (which are provided by both the GSF and the Ministry of Health). Personnel policies (leave, overtime pay, discipline) are determined by the KCMC Hospital. The Hospital itself is subject to many Ministry of Health personnel policies since they receive support from the Ministry. The Head of the Eye Department reports to several Hospital Directors and the busy Executive Director of the GSF. The Eye Department must negotiate and balance a level of authority and decision making acceptable to the larger Hospital; the Department had to balance the need to inform and win approval for changes from the Directors with the need to move ahead in a timely fashion. We often put plans for changes in the form of project proposals to the central administration, which kept them clearly informed and forced us to plan more carefully. Several of the proposals are included in this report as appendices.

In line with health sector reform, in 1993, the KCMC Hospital began to charge patient fees for consultation in the OPD, ward stays, and surgical procedures. By agreement between the Hospital and CBM, the Eye Department set up the "sustainability account." Fifty percent of the fees paid for cataract surgery were given to the central Hospital/GSF and the remaining revenue went into the sustainability fund. The rationale for the proportion is not clear; the actual costs of running the Eye Department or providing cataract surgery were not known. The money in the sustainability account was to be used to support Eye Department work at the discretion of the HoD with approval of the Executive Director of the GSF. However, use of the funds was not tied to a budget nor analyzed according to any plan.

The relationship between KCMC Eye Department and the KCCO

The IEF contracted with KCCO for sustainability planning; thus, it is important to understand better the relationship between the KCCO and the KCMC Eye Department. The KCCO is funded by a number of different donors on a project-by-project basis. KCCO has a memorandum of understanding with the Kilimanjaro Christian Medical College and the Eye Department in which it agrees to assist the Eye Department in assessment and planning services and in training and research, subject to available funding. It is run by two co-Directors and is not administratively a part of the Eye Department, although it is housed within and works very closely with the Eye Department. The HoD, Dr. Anthony Hall, has been committed to the concept of sustainability from the beginning, but due to the many roles he must fill (head of clinical services, head of the training of residents and cataract surgeons, administrative head, and providing vitreoretinal services for much of East Africa) he has limited time for change management. He enthusiastically supported Dr Susan Lewallen to take the role of leading changes in the Eye Department; however, authority over staff in the Eye Department came only through Dr. Hall. The Directors of the KCMC Hospital, to whom Dr. Hall would report, rightly insisted that all initiatives and proposals for changes be channeled through Dr. Hall. This, no doubt, was necessary to prevent misunderstandings about authority within the department. Although it sometimes slowed processes and added an extra burden to Dr. Hall, it was a minor impediment since there was daily communication between Drs. Lewallen and Hall. Nonetheless, when the primary leader of change is a consultant from outside the department, rather than the recognized head of the department, there is potential for conflict or confusion. In this case, there were strong professional and collegial relationships and a shared understanding of what should be accomplished.

About the Direct Referral Sites (community outreach programme) in Kilimanjaro Region

As remarked above, to encourage usage in many African eye hospitals, it is necessary to develop outreach programmes to create a “bridge” between rural communities and the hospital service. The IEF recognized the need for stronger ties between the Eye Department and the

surrounding communities but it was agreed early on that KCCO and the Eye Department would find financial support for building this "bridge" from other sources. After many discussions with community members, patients, and Ministry of Health workers in Kilimanjaro Region the DRS (Direct Referral Sites) programme was developed. Seva Foundation, Seva Canada, Sight Savers International, and local Lions clubs initially supported this. The District Ministries of Health now contribute financial support as well. DRS sites are selected with the Ministry of Health in each District of Kilimanjaro Region based on population centres. A team comprised of organizer, doctor, nurse, and counselor visits the sites on a regular schedule, diagnosing, counseling and treating patients who need medicine. Patients who need surgery are transported back to KCMC for surgery the next day. Patients for cataract surgery pay a flat fee that includes their transport to and from hospital, accommodation and food on the ward, medicine, and surgery. They receive postoperative follow up at the DRS site 2 weeks after surgery. Regardless of the details of the community programme (for which various models have been suggested) we must stress that many *changes made at the hospital occurred only because of the pressure put on the Eye Department by increasing volumes of cataract patients expecting service.*

VI. The baseline assessment

Between December 2001 and February 2002, an initial assessment was completed using the 14-page LAICO (Lions Aravind Institute for Community Ophthalmology) baseline assessment form. This form is designed to be used by any eye department or hospital, so not every question is relevant everywhere. Answering each question in as much detail as possible proved to be an excellent way to become familiar with Eye Department resources and problems. Our original report is in Appendix A with added comments (in boxes) to supplement the findings and describe our experience in obtaining the information. This provides a detailed picture of how the Eye Department ran and what it provided when we started.

Cooperation from the Eye Department staff in gathering the information was generally good although not universal. Lack of understanding by the staff as to the purpose of the assessment was sometimes a hindrance; better communication beforehand could have eased this. Financial information was particularly hard to obtain (even with the authority of the HoD) simply because what we wanted was not collected systematically and was months out of date. Staff were not accustomed to producing reports in a timely fashion or to anyone taking interest in the accuracy of their reports.

> *Recommendation*
>
> *One person should be dedicated to the baseline assessment. It should be someone who can work independently, has enough authority to obtain information, and enough initiative to follow up when information is difficult to obtain.*

Some specific constraints to increased sustainability were identified in the baseline assessment:

- Inconvenience for patients – The system for a patient to be registered for OPD or admission was lengthy and complicated.
- Personnel used inefficiently-Many nurses spent more time on clerical duties than nursing and doctors were responsible for mundane management tasks.
- Procedure inefficiencies – There were no standard clinical protocols for common problems like cataract.

- Monitoring – Basic annual patient service statistics were collected, but these were not discussed with staff.
- Stores and purchasing- There was no system for making stores reports and none were made; there was no system for efficient purchasing
- Lack of financial data – There was no comprehensive accounting system for the Department, many donations were in-kind, and the total cost of running the department was difficult to determine
- Staff motivation – The non-participatory system for staff performance appraisal was ineffective.
- No plans – There were no long-range plans or targets set in the Department.

On the positive side, the assessment demonstrated that the department had ample space, good modern equipment, and high surgical standards. The Eye Department had its own bank account into which were deposited revenues from patient fees, after a proportion was paid to the central hospital.

We spent about three months gathering the baseline information into a draft report and the final version (Appendix A) was presented to the Executive Director of the KCMC, in November 2002.

VII. Establishing a sense of urgency, forming a guiding coalition, building and communicating the vision

Understandably, donor and development agencies like to emphasize how much they have accomplished; unfortunately, this "happy talk" can result in complacency, making it difficult to motivate people to change. We had to start with convincing Eye Department staff and Hospital Directors that there was a problem.

VISION 2020: The Right to Sight initiative has pulled together several useful figures and formulas. These show how far short the world is now and will be by the year 2020 from dealing with cataract blindness unless we make some radical changes in the way we deliver services. Formulas can be used for estimating how many cataract surgeries a hospital needs to provide per million population in order to deal with the backlog or keep up with the new cases of cataract blindness. The simple calculations may require explanation for an audience unfamiliar with them, but the data demonstrate dramatically the need for change.

Why people resist change

- They fear losing their jobs or having more work to do
- They fear their inadequacies will be exposed or they will not be able to learn new skills
- They think the status quo is just fine
- They have low expectations and, with lack of exposure to outside ways, they have no vision of a better way to work
- The "crisis" that will result if the status quo is maintained is too remote to motivate change

Local data is even more convincing. The cataract surgical rate should be around 2000 to halt the in crease in cataract blindness each year. We estimated the cataract surgical rate for Kilimanjaro Region (where KCMC was essentially the only provider of surgery) to demonstrate how far short it was from meeting the needs of the people.

Cataract Surgical Rate Calculation for 2001		
Number of cataracts operated in Kilimanjaro Region	A	750
Proportion of cataract patients who come from Kilimanjaro Region	B	70%
Population of Kilimanjaro Region (mill)	C	1.4
Cataract surgical rate	A x B ¸C	**375**

The KCCO collected and analyzed population-based data on blindness and visual impairment from a large district served by KCMC. This demonstrated the poor usage -- only about 6% of the cataract blind within 50 km of KCMC were using the services. The report was intended to unsettle health workers and management by showing the problem. The natural reaction for staff was to ask, "but why are people not coming to KCMC?" It was not hard to find individual cases of patients who had received unfriendly treatment or suffered indignities and we talked about these cases. We asked an ophthalmology resident in the Eye Department to go into the community and talk to groups of pastors and village leaders to learn what problems the community experienced in using KCMC Eye Department. Focus groups revealed the same information over, and over again - patients feared KCMC and felt they weren't treated kindly. All this information was used to prepare a case that we needed to change the way we took care of patients in the Eye Department, and pay more attention to "customer satisfaction."

It's not enough, however, just to point out the problems. We frequently used the "Aravind model" as an inspirational example of how it is possible to provide a high quality, high volume cataract service at affordable prices in a poor country. We prepared a number of presentations targeted at different groups (e.g., the Directors of the Hospital, senior nursing staff, the regional representative for CBM) showing the unmet need in our population and how we might change this. We had to educate the audiences about unit cost and its relationship to volume and efficiency. We showed theoretical calculations of what we might achieve in terms of cost recovery (Appendix H). We determined that we needed to provide around 3,000 cataract operations each year to meet VISION 2020 goals in the Kilimanjaro Region. This shocked the Eye Department staff, who already felt overworked in providing 750 or fewer cataract surgeries. But it became easier to imagine when it was broken down into how many operations per day had to be done and how many beds we needed to do it. We tried to anticipate the arguments we'd meet from different audiences and we prepared for them. We admitted freely that what worked in India might not work in Tanzania, but maintained a relentless optimism that we must try.

Guest speakers from outside the hospital helped to disrupt complacency. Dynamic presentations to the Eye Department by David Green, John Barrows, and Suzanne Gilbert on successes at Aravind and Lumbini Hospitals, and the work of the IEF and the Seva Foundation helped ex-

pose the staff to new ideas. Of critical importance, was inviting the Executive Director of the GSF to hear these discussions, after which his imagination was fired up, and staff were signaled that change was to be expected.

Creating a common vision for change presented a great challenge because most of the staff had no examples of efficient systems in health care, business, or government and no experience with long range planning for major changes. The idea that cataract surgery could be made affordable to the poor, or that one surgeon and four assistants could perform 40 cataracts in a day was viewed skeptically - lectures and presentations don't convince everyone. Demonstrating the lack of appreciation for the magnitude of the changes needed, after a presentation one day, a senior nurse asked, "Will the programme start next week?" The vision and scope of the changes needed was simply beyond the imagination of many staff.

> *Karibuni Macho*
>
> The Vision: We will increase cataract operations at KCMC to 3000 while increasing organizational and financial sustainability

In July 2002, when we thought that staff were beginning to catch on to the changes needed in the Eye Department, we sponsored a contest. A small prize was offered to whoever could come up with the best name for our transformation. The winner was "Karibuni Macho" which loosely means, "welcome to the Eye Department." Although we intended the contest just to try to raise interest, it turned out that having a name for the overall change initiative made it much easier to discuss and refer to it. As time went on and we won increasing approval for the process, we could even invoke "Karibuni Macho" as the rationale for making more changes.

Recognizing the importance of vision in transforming organizations, IEF encouraged and supported a visit for a team from KCMC to the Aravind Eye Hospital in coordination with the Lions Aravind Institute for Community Ophthalmology (LAICO) in Madurai, India. The team

included the Executive Director of GSF, the HoD, nursing heads of theatre and ward, the new coordinator of the community outreach programme (a KCCO position) and Dr. Susan Lewallen. The trip, in November 2002, was essential in building a vision and fostering a team spirit.

Value of visiting Aravind Hospital

- KCMC staff saw for themselves that Aravind patients were also poor
- KCMC staff saw how nurses bustled around. "You don't see them standing in the hall chatting!" was the comment of an astonished KCMC theatre nurse.
- A link between key personnel and leaders at the two hospitals was established.
- Theatre staff saw the system in action that allows cataract patients to be turned around very quickly
- KCMC staff noticed the pride taken by Aravind workers in their work
- KCMC staff had the opportunity to ask all the questions they wanted and got honest answers-Aravind staff did not pretend that they had answers when they did not
- KCMC began to develop its own action plan

During the team visit to Aravind we were able to develop more specific ideas for how we might change the Eye Department. This rudimentary work plan is shown in Appendix J. The two nurses agreed to try to inspire their colleagues with what they had seen. A few more members of the Eye Department began to feel this was their project.

Although it isn't an option everywhere, the opportunity to see Aravind first hand was a very effective way to inspire a vision for the KCMC. Selecting respected nurses who could be counted on to lead others after the visit was important.

VIII. Planning and implementing the changes

On return from Aravind, there was an increased enthusiasm for the prospect of improvement in the Eye Department, but the hard work of attacking the problems and making real changes loomed ahead.

We held many meetings with each unit in the eye department (out patient department, ward, operating theatre, pharmacy, optical unit) looking for solutions to the constraints identified in the baseline assessment and through discussion at Aravind and LAICO We encouraged the team who had been to Aravind to lead these meetings whenever possible. We asked nurses and doctors who showed some enthusiasm to come up with plans to solve specific problems. Of course, some suggestions were impractical or not in line with the goals we were developing. When it came to human resource problems, "hire more staff" or "raise salaries" were offered as solutions to everything. We had to strike a balance between encouraging openness and participation and encouraging realism, always guiding gently in a particular direction.

The new Eye Department administrator (who underwent a one month training course at Aravind) needed considerable supervision and training to continue building skills and was not in a position to implement major changes. Meetings were scheduled twice weekly between the administrator and Dr. Lewallen to discuss needed actions and progress. The basic strategies we planned and worked on over the next two years are described briefly here.

Implementing a computerized registration system

The baseline assessment clearly identified the need to streamline patient flow, eliminate the bottle necks in patient registration, and collect management data better. Patients typically spent two or three hours to register at the central hospital, obtain a file (patient record), before even entering the Eye Department. Everyone in the Eye Department agreed that there was an advantage in a modern record and registration system independent from the central record system. However, previous attempts to obtain agreement from the central Hospital for a separate system had met with failure. Many Eye Department staff were pessimistic about the chances and there

were many arguments within the central administration against such a system. The proposal that eventually won approval was the implementation of a *computerized* system, supplied and supported by IEF and developed by LAICO. A proposal (Appendix B) was made to the central administration that the Eye Department could pilot test the system and, if it worked well, it could be expanded for use in the rest of the hospital.

A computerized registration system can *drive* efficiency by

- Freeing nurses for patient care
- Streamlining registration and admission
- Generating critical statistics for feedback in a timely fashion

We used the IHMS (Integrated Hospital Management System) programme, developed by LAICO. The computer information system was a project of the LAICO to design an integrated system that can be installed by eye hospitals to improve record keeping and reporting. The KCMC was one of the first hospitals to test this new system. Modifications were necessary to meet our needs, and this required a team from the KCMC Hospital to spend an intense week in India in November 2002. We planned that KCMC Eye Department would get a copy of the software to "practice" and train with for several months before implementation. For various reasons including installation problems and leave-taking by key KCMC staff, this didn't happen. It became clear that we'd need a consultant from LAICO to come to the Eye Department for implementation. Then the date for implementation was postponed several times because the renovations (paid for from the sustainability account) necessary to accommodate the system in the out patient department met with obstacles. Contractors didn't meet deadlines and the pharmacy in the Eye Department refused to exchange rooms. Despite the argument that the pharmacy would get the same floor space plus new counters and cabinets, they didn't share the wider vision for changes and they resisted moving. Considerable energy and time were required to sort this out.

With help from LAICO we started running the new system in June 2003. We invited the press and senior KCMC officials to a grand opening and registered them in the system. Although we had numerous small (not unexpected) problems over the next months, most were gradually solved. For months, doctors and nurses, used to the old system, still clung to patient files who were asked to return within a week, in order to save the patient the trouble of registering again.

A lesson we learned was that we should have involved the medical records department at KCMC early in the process. They could have helped us in several ways if they'd felt they played a larger role in the process. Furthermore, our error created some ill will. Asking the question, "Who will be affected by this change?" is a good way to decide who needs to be brought into the planning process, and may prevent resistance later.

In spite of these difficulties, the implementation of this system was viewed by the entire department as an important victory, winning over more staff to the Karibuni Macho initiative. The new system also resulted in important changes, allowing organizers of the community outreach programme to bring patients into the hospital in the late afternoon, and have them registered and admitted for surgery the next day. Previously, patients had to be at the hospital before 2:00 pm, when the central registration closed, which limited our ability to bring in patients from rural areas. The new registration system cut down on grumbling from patients and allowed nurses in out patient department to spend more time in clinic and less time managing patient files.

By March 2004 we had identified a few consistent problems with the monthly reports from the IHMS system. The head of the computer unit at KCMC went to India for a month's training to learn how to manage problems with the system.

A year and a half after implementation, the system is regularly providing most of the basic statistics we need. The HMIS offers some features that the Department is not able to take advantage of yet, and the Eye Department may need to hire and train its own computer support person rather than relying on the busy central hospital computer unit. Currently, there are two full time clerks running the system. Basic costs of implementation are listed in Appendix C.

Developing an accounting system to monitor income and expenses

Naturally, we couldn't monitor cost recovery unless we had a system to account for all Eye Department income and expenses. In the baseline assessment, we learned that no such system existed. Accounting in the Eye Department was driven by donor requirements, for their purposes, rather than for planning by the Eye Department. To move beyond this we needed help. We

wrote a proposal (Appendix D) to hire an outside consultant with skills in financial management and computerized accounting systems. We proposed that the consultant should advise us on a computerized system, then set it up, and train the Department accountant to use it. This activity was paid for by money in the sustainability account.

Inviting an outsider to come into the hospital to look at finances can be sensitive, and it required several months to get approval from the Directors. Then the activities were slowed by a number of problems including extended leave by key Eye Department personnel, lack of respect for deadlines in performing activities, continued problems with getting information from the registration system, absence of a department system to monitor stock usage, limited basic computer skills in the department, and computer breakdowns, among others. In retrospect, we were unrealistic in estimating the number of hours we would need for this consultancy. Gradually, however, we began to get financial reports. We approached our goal slowly as new problems or issues surfaced with each monthly report.. At one point we were asked by the central hospital administration why the process was taking so long. We carefully prepared a presentation to explain the issues, but, ironically, the central hospital representative did not come for the meeting -- a good example of the very work culture that hindered our progress.

The Eye Department now has a computerized accounting system that can be programmed to produce a variety of reports. We have concentrated on producing two different monthly reports. One is the cost recovery report that lists all earned income and running expenses (see Appendix E). We include salaries of all department personnel (except the HoD) regardless of the source of the financing, the value of all the donated or purchased medical and non medical consumables from a monthly stores usage report (described below), costs of equipment maintenance and repair, and an estimate of costs for accommodation and food on the ward. We plan to review this report with the entire department every quarter so that they will begin to understand better the financial realities of cost recovery. The second report is simply an itemized account of the sustainability fund (the Eye Department checking account), in a format that can be reviewed quickly by the HoD and management team in the department.

Of course, reports from a computerized system are only as accurate and timely as the data that goes into them. The prevailing work culture allows for considerable tardiness and this is still a constraint to more useful reports. Furthermore, Department management staff need to gain skill in analyzing reports (both financial and otherwise) for internal consistency before submitting them to the HoD.

Implementing a tiered pricing system for surgery and outpatients

One of the problems identified in the baseline survey was that patients receiving the same service (consultation in the out patient department) paid different amounts. Private referrals, self referrals and government referrals were charged different amounts to open a file. Cataract patients brought by the community-based-rehabilitation programme paid half the price as "walk-ins." (Appendix A gives details of patient fee schedule.)

new Class C

This created confusion and suspicion among patients on the ward and in the community. The Department also offered phacoemulsification surgery and private rooms for those willing to pay more. We obtained approval in February 2003 from the central hospital to let us standardize the price of ECCE/IOL with basic accommodation at a level we thought most people could afford.

new class B

We decided to establish a high pay appointment clinic for outpatients, Patients who want to see a specific doctor without waiting may telephone and make an appointment, and pay 10,000 Tsh (USD 1 = TZS 1,100 in 2004) for the privilege. Appointments are available in the afternoon, to avoid conflict with busy morning clinic work. The Department hired one person to coordinate this clinic. We posted advertisement signs around town and expected word of mouth to bring in patients. However, only 10% of the number of patients we anticipated has used the clinic (see Appendix F). This small turn out requires that we reevaluate our assumptions regarding this clinic - are there few people willing to pay for this service, or is the problem lack of awareness due to inadequate advertising?

Revenue from phacoemulsification surgery is critical to our cost recovery because patients are willing to pay prices well above the hospital costs for this procedure. This encouraged us to ensure that local staff become proficient in the technique. We have presently started to experiment with a “class B” accommodation service. In order to provide service options to our patients we need to develop a counseling system at the hospital so that all cataract patients are presented with the options for surgery (phacoemulsification vs ECCE), and accommodation level (class A, B, or C). With proper monitoring, the service at KCMC could serve to help us learn more about the amenities that patients are willing to pay for. This knowledge could be used to further the goal of increasing financial sustainability in other eye care programmes.

Implementing better purchasing and stores systems

The lack of an efficient purchasing and stores system was a serious problem that should have been addressed earlier. Long delays with procurement of both common and specialized items were a continuing source of frustration to the HoD; more than once such delays resulted in

poor outcomes for patients. The laborious procedure for purchasing is described in the baseline assessment and was undoubtedly implemented to prevent abuse. However, the process was time consuming and required many steps, any one of which could cause delay. In practice, the system depended on the HoD to remember what was ordered, and to remind the administrator or accountant repeatedly to follow through on the order. Often the HoD had to contact the companies himself. It was clear that we needed a more systematic approach that gave responsibility to an administrator and freed the HoD. After discussion, an interim solution was devised consisting of a simple procurement notebook in which orders are listed, along with a "bring forward" file, which the administrator uses to track progress of each step in the process. The most critical step, however, was that the HoD clearly *delegated* this task to the administrator, *empowered* her to do the job, and *expects* to receive an oral report every week on the status of orders. The system works to the extent that meetings and reports are required and that the administrator is capable of communicating with international companies.

One of the reasons the stores system was not addressed earlier is that several staff in the Eye Department insisted that an adequate stores system already existed. But when we began requesting standard monthly reports that showed inventory stock and balances it became clear that the system didn't function. No such reports had ever been requested or produced. Consumables sat in a closet on the ward, with a manual bin card system, which was not monitored, or checked for accuracy. The vast majority of the supplies were donations from one NGO. The HoD estimated what he would need and made a request for these items once a year; the donations often arrived up to a year after they were requested. No one expected an accounting of how the donated supplies were used nor enquired whether productivity was consistent with consumption. Spare equipment was kept in a dedicated storeroom where we found boxes of instruments that had never been used, stacked among other broken and out-of-date equipment. The only available written documentation was incomplete and had not been updated for over a year.

It is easy to be critical of the disarray in the store rooms. However, it is unlikely that anyone ever actually showed the nurses in-charge what needed to be done, and thus there was no real system or supervision. Why prepare reports if no one ever asks for them or uses them? This

was a clear instance where consistent, supportive supervision was needed to make even the simplest system work.

The solution required help from outside the Department. An external nursing consultant (supported by CBM) spent a few days with nurses in all parts of the department to help them develop lists of the items they used. A visiting volunteer assessed the situation and set up an Excel system to keep track of issues and inventory, including their monetary value. We retained a manual bin card system in the stores room since departmental computer skills are still limited. We spent a number of days doing hands on teaching for relevant staff to use the Excel system and make reports. The system fits the Department needs, and will work as long as the HoD demands regular reports and gives some feedback on these.

Improving human resource management

Human resource management continues to be a great weakness. In the baseline assessment, it became clear that many things did not work well for multiple reasons. Staff were not supervised regularly, there was uncertainty about who was responsible for tasks, policies were impractical or unclear, management did not delegate nor follow up effectively, and doctors and nurses wasted time conducting menial tasks well below their capacity. All of these problems fueled staff dissatisfaction and contributed to low morale. The prevailing organizational culture and government labor laws make it difficult to evaluate employees honestly and constructively or to dismiss employees who do not perform. There are also confusing lines of authority and responsibility for decision making between the Eye Department and the larger KCMC hospital. The nurses, who comprise the largest group of workers in the Department, are responsible to a central hospital matron regarding leave, continuing education, advancement, discipline, or assignment to different departments in the hospital. It is not unusual for one or more nurses to be away from her Eye Department post for one to two weeks for "training" that may not be relevant to Eye Department goals. Their official responsibility to the HoD is not clear, nor has it been tested. Fortunately, there has been sufficient good will between the nursing and medical staff to avoid major disputes in the Eye Department. The current situation remains too dependent on individuals and personalities, rather than a wider supporting system. Although the

current practice of including the head nurse of the Eye Department in the weekly management meetings (see box) is an improvement, more needs to be done to ensure that the goals of Karibuni Macho are considered a priority by nursing staff.

Lack of good quality supervision at all levels remains a critical constraint to increased productivity. The concept of supportive supervision, where a supervisor regularly meets and asks specific questions with a "how-can-I-help-you-do-this-better" attitude was foreign in the work culture of the department. When staff think no one cares about what they do, they lose motivation. Nursing staff had a reasonable supervisory structure among themselves, but there was poor communication among doctors, nurses, and administrative staff. When things went wrong, there was a mixture of anger, fear, attempts to assign blame, sighs of resignation, and above all, crippling frustration.

Better Human Resource Management

- **Regular weekly meetings** impose a structure to help ensure tasks are done. These meetings, among the HoD and three key staff (Eye Department head nurse, accountant, administrator, and KCCO sustainability planner), replaced long quarterly meetings where the complaints of approximately 20 nurses and doctors were recorded. The output of the new briefer meetings is a written list of who will do what and by when.
- **Specific reports** (cost recovery, stores usage, sustainability account, and patient statistics) are expected within the first week of each new month for the previous month. There is follow up if these are not forthcoming.
- **Participatory performance evaluations** were initiated throughout the hospital. Volunteer management consultants spent several weeks in the Eye Department training staff in the system. This is too new to evaluate, but in theory it is a positive first step.
- The administrator was given a **clear guideline** on how much money she can personally authorize to be spent. This allows her to make many minor decisions that used to be referred to HoD

The lack of consistent discipline is a continuing area of concern. There are no effective procedures to discipline staff nor are there effective procedures for dismissing workers with consistently poor performance. The lack of effective policies remains a constraint in how much the Department will be able to increase productivity and cost recovery.

Human resource management requires dedicated time and disciplined follow up. Few doctors are trained to provide this, and it will always be put second in importance to direct patient care or teaching. But poor staff management makes it impossible to provide good patient care or teaching. Doctors must face the fact that they cannot to head departments effectively without professional management support, and this management requires a level of authority that many doctors are unwilling to grant a "mere manager." Some shared system of authority is needed in which doctors take decisions on medical issues while trained managers take other decisions. Good management is essential to put systems (e.g. accounting, patient statistics, staff evaluation, stores etc) into place and keep them working . Good people can't do good work in bad systems.

Improving nursing skills and cooperation

Although nurses comprise the majority of staff, there were numerous problems in their management. The Eye Department was burdened with a number of poorly trained "nurse attendants" who served mostly as cleaners, although a few had real potential to learn more. The trained ophthalmic nurses spent too much time on clerical work and many were not using more than very basic clinical skills. We felt a sense of helplessness about improving this because of the reporting structure of nurses, mentioned above. However, several strategies were used to improve the situation.

- We actively sought ways to involve nurses in more planning and decision making, which resulted in improved attitudes.
- The HoD included the Eye Department head of nursing in his weekly meetings with the accountant and the administrator. Not only did this provide a forum to work out problems, but it increased her confidence to lead the other nurses.
- We won the approval of the matron (proposal in appendix G) to have an external eye nurse come to assess procedures and provide on-the-job upgrade training. This could have backfired, causing resentment, but it worked because it was presented in a non threatening way and the external nurse was tactful and experienced. The report she produced after her first visit led to agreement to train some of the better nurse attendants, and the KCMC Eye Department nurses designed and ran this training themselves. The external nurse returned to

teach specific skills (e.g, biometry, keratometry, phaco maintenance) to senior nurses. The HoD made it clear that he expected nurses to demonstrate these skills after training; for the most part the nurse responded with pride in their new duties.

Streamlining ward and OT procedures

The need to make ward and theatre procedures more efficient became critical only when the community outreach programme started bringing in large numbers of patients, especially late in the day. We decided to make it the responsibility of the counselor (a trained nurse) at the Direct Referral Sites to record vital signs and complete consent forms in the field, as well as educate the patients. Thus, there was less for the ward nurses to do at the time of admission. New forms, designed by the external nurse consultant with the Eye Department nurses, also saved valuable time.

In the Operating Theatre (OT) the task of streamlining procedures fell largely to the HoD and the senior OT nurse, who participated in the joint visit to Aravind Hospital in 2002. Improving efficiency was partly a matter of clearing unnecessary equipment and supplies from the OT so that an extra operating table could be installed. It also required many discussions with the doctors as to how the OT should be run, and the importance of starting on time. Again, the pressure put on the OT by the increased number of cataract patients coming from the community programme provided an incentive to change. As the HoD frequently pointed out to staff, "if we have 20 cataracts we get them done in the day and if we have five cataracts we get them done in the same time!" Led by the nursing coordinator and provided with feedback and praise by the HoD, more nurses began to take pride in their accomplishments; this was another tiny step forward in achieving better attitudes and motivation.

What stimulates change?

Work expands to fill the time available. Why think about efficiency if there are only five patients on the list? Improvements in efficiency frequently need to be driven by pressure - such as a queue of patients bused in from the community programme! Health workers take pride in performing the tasks they are trained in and in serving people in need.

IX. Overcoming resistance to change and motivating staff

Resistance to change is inevitable. In the Eye Department there was an entrenched work force that had worked much the same way for the past decade or more, and most expected that they were hired for life. The concept we wanted to introduce was "continuous quality improvement," a practice of always looking for ways to improve things. Our main ally was the Executive Director of the Good Samaritan Foundation, a man with integrity, drive, and a vision for improving Tanzania and KCMC. Although his support was essential, it was not sufficient to ensure that all changes took place.

In many situations, providing an explanation and negotiation worked, such as convincing nurses that changes in ward procedures would make their work easier and not hurt patient care. Appealing to the better nature of individuals may be helpful; most people want to feel good about the work they do. In the case of the recalcitrant pharmacy that did not want to relocate to a better space, however, these techniques failed and we eventually had to rely on a hospital Director to order the move forward.

Over and over, when we asked staff about the problems they faced in doing their jobs well, they complained that they were underpaid. Salaries of doctors and nurses in Tanzania, as in other poor countries, are low. When we were trying to find solutions for specific problems that caused frustration (for example, procurement of supplies) we sometimes asked staff to imagine that all salaries would be doubled the next day. Would this alone solve the problem? The answer was almost always "no" and this realization often brought rueful grins. Slowly and often unconsciously, staff began to see that there were some things that could be done to improve working conditions besides raising salaries.

We never developed a workable scheme to give monetary rewards for improved productivity, although we discussed it frequently, especially in the beginning. In August 2003, we decided to give a one-time bonus, using some money from the "sustainability account." We expressly stated that this was in celebration of the new records the Department was setting for numbers of cataract surgeries done each month. We asked the department administrator who should get

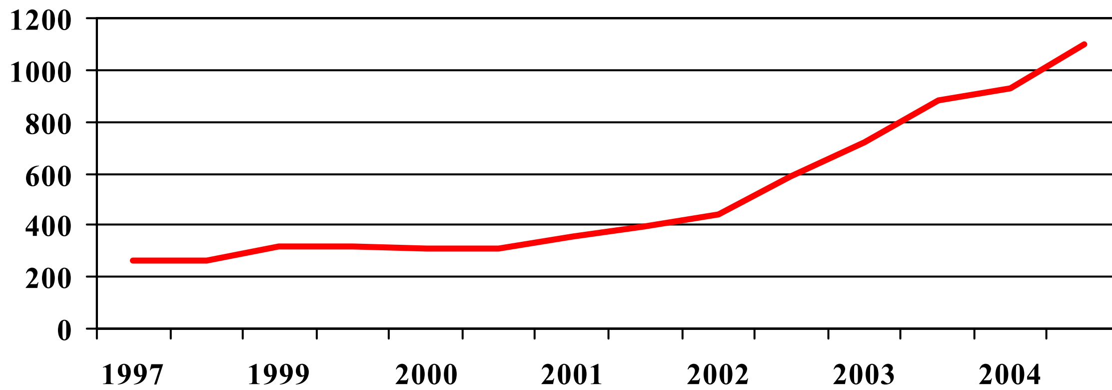
the bonus and how much it should be. She suggested that everyone in the department should get it since singling out good work might imply that others did bad work. Then she named a sum, which, when multiplied by the number of workers in the Eye Department was completely unrealistic, amounting to half a year's payroll. It was a good reminder of how far we still were from a completely shared understanding of our goals. We finally divided the sum we had available by the number of workers and provided that. The administrator hinted that it was paltry, but agreed that something was better than nothing. The HoD gave out the money in a small department ceremony and we never heard much more about it. Was it a good idea? It probably wasn't a bad idea and perhaps it made a few staff feel more appreciated.

The issue of how to motivate staff comes up over and over again in discussions of eye care service delivery in Africa. But it is just as important a management issue in the wealthy, "developed" countries, where many books, lectures, and workshops are dedicated to increasing employee motivation. Perhaps we can learn from the "classic" paper by Frederick Herzberg, published in 1968 and recently reprinted in the Harvard Business Review. The paper is titled: *"One More Time: How Do You Motivate Employees?"* Herzberg discusses the fact that multiple studies have shown that the factors that lead to satisfaction and motivation at work are NOT just the opposite of the factors that create dissatisfaction. For example, although many people may complain that their salaries are too low, evidence shows that "high salary" does not, in the long run, motivate employees. Instead, it is the work itself-- the responsibility taken, the achievement of meaningful goals, the opportunity for personal growth-- that motivates people at work. His data demonstrate that personal achievement on the job, recognition for work done and responsibility are more important (6.6, 5, and 3.3 times, respectively) than salary in determining long term job satisfaction. Now, perhaps this is true in the industrialized countries, but is it equally true in very poor countries where salaries are really low? Our experience indicates that it holds true. In view of the immediately unsolvable problem of low salaries, it was heartening to see staff respond to intangibles such as more concerned follow up from supervisors, recognition and praise, the chance to use new skills in a better-organized less- frustrating environment, and the sense of camaraderie that develops when people work towards a common goal. These intangibles can be provided by good leadership and good management support.

X. Summary

The data on Table 1 (Part 1) and the graph below are real and demonstrate how much has changed in the KCMC Eye Department.

Cataract surgery by 6 months at KCMC



Some people look at the figures and ask, "How did this happen?" as though there is a simple answer. There is not; the process was slow, we made mistakes, it frequently felt like nothing was happening, and we haven't yet achieved the targets. We will venture to offer three caveats.

- The changes we made, over the time we made them, could not have been effected "after hours" by a doctor with a full clinical and teaching load. It was essential to have someone who was dedicated to managing and leading change at a high enough level to make decisions, plan, and enjoy respect from staff even if not officially in charge.

- Change, especially changes in attitudes of staff, is slow and often occurs imperceptibly. A few distinct "victories" along the way (like the new registration system) helped to maintain enthusiasm and show doubters that change was possible. But the drive to push through a major change initiative must come from intelligent committed leadership – and leadership must be supported by good management systems. If they are not in place, then it is the job of leadership to find ways to put them in place.

- It seems to us that, whether in a high or low socio economic environment, the key to better productivity, staff satisfaction and cost recovery is good management. And the key to good management is to realize that much can be achieved by applying time tested, but often ignored basic principles. Simple application of the principles of supportive supervision, good communication, follow up, accountability, praise for good work, and detailed planning *can* work like magic – but they take time and have to be applied consistently.

XI. Acknowledgements

Many individuals and organizations deserve acknowledgement for this work.

The International Eye Foundation has the vision to undertake change initiatives like Karibuni Macho in a systematic way. In 2001, there was no plan on the horizon for the KCMC Eye Department, and it is safe to say that without IEF support the department would not have arrived where it did 2004. IEF experience with "sustainability planning" in other developing countries was essential to KCCO.

The staff at LAICO and Aravind Eye Hospitals in India provided a superb example for the KCMC Eye Department. Their warmth, enthusiasm, and the good advice they dispense so humbly went a long way towards motivating and inspiring us in Tanzania. Mr. Thulasiraj took time to visit personally, answered endless questions, and managed to stay realistic and optimistic at the same time.

Other organizations played important roles. We commented on the necessity of community programmes bringing in larger numbers of patients to drive change at the hospital. Much of the support for the DRS programme came from Seva Foundation, and Seva Canada directly to KCCO. The DRS are also supported directly by the MoH and local Lions Clubs, and indirectly by grants to the Eye Department from Sight Savers International and CBM.

Support from the KCMC Hospital Directors was essential. The KCMC Eye Department is part of a bigger hospital and although it enjoys a certain degree of autonomy it is not an independent unit. With all its advantages and disadvantages, it is likely to remain this way.

Christoffel Blindenmission (CBM) supports the head of the Eye Department and also provides substantial financial support in the form of salaries, supplies, and equipment to the Eye Department for many years. They also supported the external nurse consultant to help the KCMC Eye Department.

Dr Larry Schwab, JoAn and Michelle Maurer, and Mike Lewallen volunteered their time to help with specific tasks. We are grateful to everyone who visited the Eye Department and KCCO and helped with training which, one way or another, contributed to improved quality in the Department during this period.

And of course, it is the nurses, doctors, trainees, and administrative staff in the Eye Department who provide the services. They all supported this initiative in various ways. Their basic good manners, decency, and wish to improve Tanzania for Tanzanians are admirable qualities that many countries could learn from.

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XIII. List of acronyms

CBM	Christoffel Blindenmission
DRS	Direct Referral Site
ECCE	extracapsular cataract extraction
GSF	Good Samaritan Foundation
HoD	head of department
IEF	International Eye Foundation
IHMS	Integrated Health Management System
KCCO	Kilimanjaro Centre for Community Ophthalmology
KCMC	Kilimanjaro Christian Medical Centre
LAICO	Lions Aravind Institute for Community Ophthalmology
OPD	outpatient department
PCIOL	posterior chamber intraocular lens
SSI	SightSavers International