



**GHANA HEALTH SERVICE
SWISS RED CROSS
GHANA RED CROSS SOCIETY**

QUALITY IMPROVEMENT IN EYE CARE

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Acronyms

QI	Quality Improvement
QA	Quality Assurance
GHS	Ghana Health Service
GRCS	Ghana Red Cross Society
SRC	Swiss Red Cross
WHO	World Health Organisation

1. Introduction

Improving the quality of care is not an easy task. It has nevertheless been seen as a great incentive both for staff and patients. High-quality health services attract more clients and improve staff motivation. Improving quality means giving more initiative to health staff and authorising better involvement of patients in health service delivery. This may not be always possible when accountability lines and administrative procedures are complex and unclear. Comprehensive quality improvement processes can nevertheless facilitate relationships between health professionals and community members.

The objective of the present document is to describe an appropriate strategy for improving the quality of care in eye care services in Ghana. The document will serve as a guide for all eye care professionals involved in the Vision First Programme. A comprehensive literature review of public health and eye care literature was carried out covering diverse aspects such as the definitions of quality of care, quality assurance strategies and the perceptions of patients on quality. Quality monitoring tools were also collected from various websites (World Health Organisation, Vision 2020, Eye Care Hospitals and International Non-Governmental Organisations).

Quality Improvement (QI) or Quality Assurance (QA) is a strategy that has been developed to improve the quality of care. QI is a systematic and planned approach to assessing, monitoring and improving the quality of health services on a continuous basis.

In Ghana, QA started in 1990. The Ghana Health Service (GHS) developed in 2002 a Quality Assurance policy¹. The policy defines directions for establishing and implementing quality assurance processes. The objective is to ensure that quality assurance becomes a routine activity for all health staff.

As stated in the GHS Quality Assurance policy, “the vision of the Ghana Health Service is to provide the best quality health care within available resources to the satisfaction of all clients and providers.”

The following box summarises the four basic principles of QI.

¹ Ghana Health Services, *Ghana Health Service Quality Assurance Policy and Implementation Strategies*, 2002, Ghana.

The four principles of Quality Improvement

- **QI is client-focused:** QI aims to meet the needs and expectations of clients and communities
- **QI focuses on systems and processes:** Providers need to understand how processes work in order to improve them.
- **QI is team-focused:** QI reinforces teamwork to solve problems and improve quality
- **QI tests changes and uses data:** QI is a change process based on the analysis of information, the identification of problems and the effects of changes on quality improvement

2. What is quality?

The simplest definition of quality is “Doing the right thing right, right away”. Quality of care is at the intersection between providers’ performance and patients’ expectations.

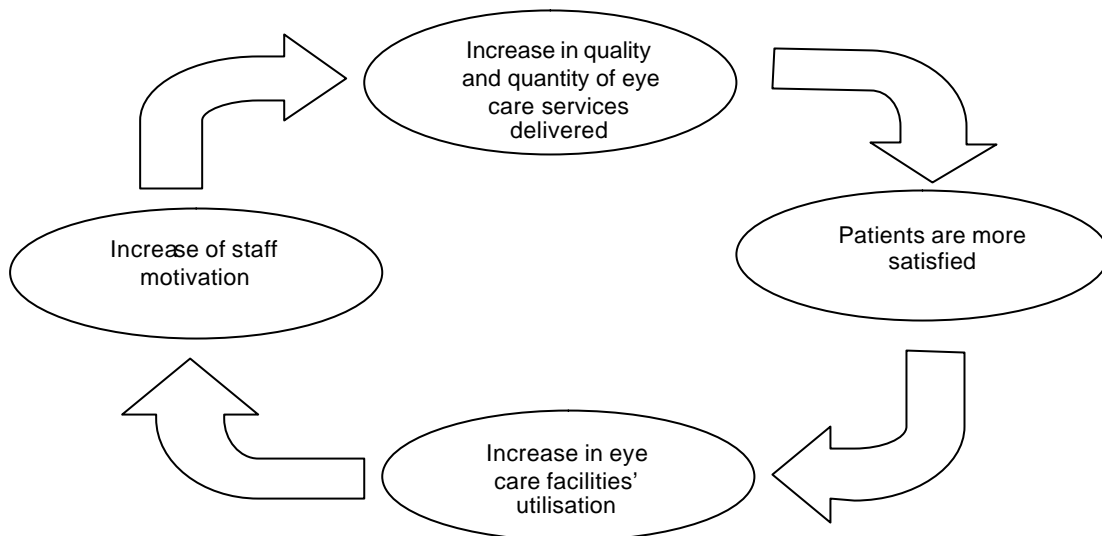
Why does the Vision First Programme aim to improve the quality of care? The Vision First Programme has been mainly focused on the reduction of the backlog of cataracts in Ghana. The programme was primarily designed as an output-oriented intervention. In 2004, the main partners identified the need for improving the quality of care. The main problem was that no information was available about the level of quality of eye care in the three regions of intervention: Upper West, Northern Region and Brong Ahafo.

The Quality Improvement strategy elaborated by the Vision First Programme is based on the following assumption: the increase of the quality of eye care services delivered will increase patients’ satisfaction². Clients will then better utilise eye care services. The positive feedback from clients will motivate health staff for maintaining and improving the level and quality of outputs.

The following figure illustrates how better quality of care is supposed to generate more satisfaction amongst patients. The recognition gained by eye care staff for their good services may contribute to enhance the motivation of eye care teams.

² Mathew J., Mathen M.M., *Clinical practice module: Quality Assurance in cataract surgery*, Aravind Eye Hospitals.

The virtuous Quality Circle



A. Definition of Quality

Quality is a multidimensional and subjective concept. Quality means different things to different people. We have adopted a comprehensive definition of quality that has been based on literature and extensive consultation with health experts. This definition has been developed and tested by the *Quality Assurance Project*³ in various fields and contexts in developing countries.

The Quality Assurance Project defines eight dimensions of quality⁴. Their importance varies from one context to another.

The eight dimensions are described as follows:

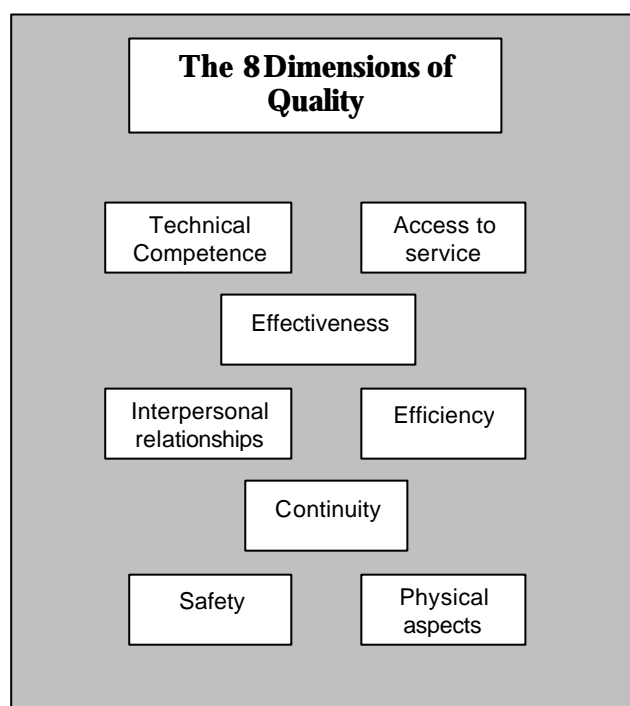
- Technical competence
- Access to services
- Effectiveness
- Interpersonal relations
- Efficiency
- Continuity
- Safety
- Amenities

³ See The Quality Assurance Project: <http://www.qaproject.org/>

⁴ Massoud, R., K. Askov, J. Reinke, L. M. Franco, T. Bornstein, E. Knebel, and C. MacAulay, A Modern Paradigm for Improving Healthcare Quality. *QA Monograph Series* 1(1) Bethesda, MD: Published for the U.S. Agency for International Development (USAID) by the Quality Assurance Project, 2001.

Defining quality in several dimensions presents the advantage of encompassing diverse areas of intervention.

The multidimensional definition of quality also provides flexibility and choice for health professionals. The importance of each dimension varies in function of the context and the type of health intervention. Indeed, this definition requires from the actors to select the most important and appropriate dimensions of quality that will fit with programme conditions.



We now propose to explore the different dimensions of quality.

1. Technical Competence

In healthcare, the technical competence of medical and non-medical staff is probably the first key priority from a patient point of view. A lack of competence of health professionals will lead to higher mortality and morbidity. Technical competence relates to the level of skills and performance of health staff. This dimension also refers to the capacity of medical staff to respect clinical guidelines and procedures in terms of prevention, diagnosis, treatment and health education. It also concerns non medical staff and non clinical competences such as management and relationships with patients.

2. Access to Services

Access issues refer to the capacity of the population to benefit from the services offered by health facilities. Obstacles to access may be due to geographic, economic, social, cultural or

linguistic barriers. The geographic barriers may be the long distance between the health centre and the residence or the unavailability of transportation. High prices will restrain patients to attend health services and will constitute economic barriers. Social, cultural and linguistic access is determined by the level of acceptability of services in function of people's values, beliefs and dialects.

3. Effectiveness

The effectiveness of health services is defined as the capacity of staff to give the right diagnosis and cure people. It also relates to the compliance with existing norms and guidelines.

4. Interpersonal Relations

Patients have the right to be treated with respect by health staff. Good interpersonal relationships between staff and clients will also improve patient attendance and health seeking behaviour.

5. Efficiency

The efficiency of health services determines the availability and utilisation of health care resources necessary for patients' care. Efficient health services are the ones that maximise the production of benefits within the given volume of resources available.

6. Continuity

The patient has the right to get access to continuous and complete treatment. This encompasses preventive care, treatment and follow-up care. Continuity is also ensured by the existence and good management of medical records.

7. Safety

Preventing and minimising the risks of infection, side effects and injury is fully part of quality of care systems.

8. Physical aspects

Physical aspects refer to the general conditions of the building, the state of the waiting room and any other resource that could be used to affect patients' satisfaction: comfort, cleanliness and intimacy.

The Dimensions of Quality of Care⁵

Dimensions	Description
<i>Effectiveness</i>	The degree to which desired results of care are achieved through appropriate diagnosis and treatment
<i>Efficiency</i>	The ratio of the outputs of services to the associated costs of producing those services
<i>Technical competence</i>	The degree to which tasks carried out by health workers and facilities meet explanations of technical quality
<i>Interpersonal relationships</i>	Level of respect, responsiveness, empathy, effective listening, and communication between clinic personnel and patients
<i>Access to service</i>	The degree to which healthcare services are unrestricted by geographic, economic, social, organisational or linguistic barriers
<i>Safety</i>	The level of trust, confidentiality, and privacy in the services and the degree to which the risks of injury, infection are minimised
<i>Continuity</i>	The degree to which consistent and constant care is provided, including the value of visiting the same provider and continuing treatment
<i>Physical aspects</i>	The physical appearance of the facility and the level of cleanliness, comfort and amenities offered

B. Perspectives on the Meaning of Quality

The dimensions of quality described in the previous chapter are very comprehensive and encompass various aspects of health system performance. It is now important to define the

⁵ Santillán, D., and M. E. Figueroa. 2001. Implementing a client feedback system to improve the quality of NGO healthcare services in Peru. *Operations Research Results (2)*2. Bethesda, MD: Published for the United States Agency for International Development (USAID) by the Quality Assurance Project (QA Project).

concept of quality of care in a specific context. The meaning of quality varies from one group to another: the patient, medical staff and health service managers. Let's explore how quality of care is perceived by each group.

The Patient

The client's perspective is of great importance as it affects health service attendance and the success of treatment. Indeed, satisfied clients are more likely to comply with treatment and trust health staff.

Community members perceive quality as the capacity of health services to respond on time to their perceived needs and be treated with respect. In other words, clients want to receive the right treatment at the right time and to be relieved from pain and illness.

Patients often focus on the following dimensions: effectiveness, accessibility, interpersonal relations, continuity, and physical aspects.

Medical Staff

From the medical professional's perspective, quality of care is linked to his/her competences to cure people with available resources and agreed clinical guidelines. Therefore, providers tend to focus on technical competence, effectiveness, and safety as concerns the dimensions of quality.

The Health Care Manager

The multidimensional concept of quality presented here is particularly helpful to managers who tend to feel that access, effectiveness, technical competence, and efficiency are the most important dimensions of quality.

C. Proven Strategies

Lessons can be learned from a certain number of studies on how to implement effective quality improvement systems⁶. It is essential to note that quality improvement systems are more effective if both demand and supply are affected by specific measures.

The first lesson is that providers and patients should communicate with each other in a way that facilitates mutual understanding of their needs and perceptions. Patients will understand challenges and constraints faced by health staff and providers will be more attentive to clients' needs and expectations.

High quality services do not only require clinical skills. They are also based on the quality of counselling and psychological support provided by medical and non medical staff. Training in counselling can make a significant difference in the way health staff behaves with patients.

⁶ Heerey M., Merritt A.P., Kols A.J., *Improving the Quality of Care*, Center publication No.101, 2003, Center for communication Programs, The John Hopkins University.

High quality services need to be recognised as such by professionals. This means that performance in terms of quality needs to be regularly assessed and publicised. Quality labels or certification can also be introduced.

3. How to set up a Quality Improvement system?

Quality is a multidimensional and subjective concept. It can only be defined by people who are concerned by health services:

- Health service managers/administrators
- Health staff
- Patients

The Vision First Programme has adopted a step by step process to define all the elements constituting an appropriate QI system.

Step 1: Identify the key quality dimensions

The first step consists in gaining consensus on the meaning of quality of care and defining the key priorities for the Vision First Programme in Ghana. The authors interviewed eye care staff and patients. An exit questionnaire was tested with patients at the Sunyani Regional Hospital (Brong Ahafo Region). Further consultations took place through the organisation of a meeting with all key players in eye care with representatives of the community. The first draft strategy was presented, discussed and reviewed by all members of the group.

Step 2: Define quality standards

Rather than develop new standards, the authors identified existing standards mentioned in health or eye care literature or in use in Ghana.

A standard is an expected level of quality or an acceptable performance that can be written and documented (explicit) or agreed by all and based on the experience of professionals (implicit).

Explicit standards can be clinical protocols, procedures or ethical rules. In the case of the Vision First Programme and eye care in Ghana, standards have been developed by the Ministry of Health, the World Health Organization⁷ and some hospitals and international organisations. For example, WHO has developed quality standards in terms of cataract surgery outcomes that have been tested and applied in a few hospitals in India.

⁷ WHO, *Consultation on development of standards for characterisation of vision loss and visual functioning*, WHO/PBL/03.92, Geneva, 4-5 September 2003, WHO.

Implicit standards applied by eye care staff in Ghana was transformed into explicit ones in order to ensure that all eye clinics will uniformly adopt the same standards of quality. Harmonising QI systems in all three regions of Northern Ghana is part of the overall strategy of the Vision First Programme. This will enable cross-comparisons between health facilities and regions and facilitate monitoring processes.

The choice for the standards of quality was based on evidence, mainly provided by WHO, and on experience. Standards need to be realistic and achievable. This explains why the selection of standards can only be done by people who will apply them. Nurses and doctors taking part in the Vision First Programme were invited to contribute to the elaboration of the standards of quality for eye care through a wide consultation process.

Step 3: Define indicators of quality

An indicator of quality is used to measure the degree of adherence of a standard. Indicators help the monitoring team evaluate the level of performance of health staff compared to standards. Indicators usually are quantitative data such as ratio, proportion or number: i.e. the proportion of patients who are satisfied.

The success of the present QI system is based on the feasibility of collecting data and capacity of analysing it. Therefore, a selection of appropriate indicators was carried out by a team of people who has been closely involved in the Vision First Programme (ophthalmologists, nurses, Quality Assurance coordinators at GHS, Ghana Red Cross coordinators, Swiss Red Cross managers). (See Appendix: The Quality Monitoring Table).

Step 4: Planning Monitoring Processes

Defining standards and indicators would be pointless if they were not regularly measured. Monitoring processes are really part of routine work as they enable teams to learn and progress. Monitoring will highlight which standards have not been met and help managers make decisions for improving the system.

Monitoring processes are defined by the types of tools and techniques that will be used to collect information and measure the indicators. A certain number of methods are popular. The Vision First Programme has selected the following methodologies considered as the most appropriate for the context of the project.

a. Direct observation and inspection

The evaluator observes the attitude, cleanliness and activities of the eye care team and checks the degree of adherence to the standard.

b. Exit interviews

An interviewer meets patients when they have completed the whole process at the hospital and asks them a series of questions. Patient's views on the quality of the service are an

essential source of information⁸. A sample of patients will be randomly selected during a week. A questionnaire was elaborated based on the *In-patient Feedback Form* designed by the Aravind Eye Hospital in India⁹. (See appendix III). Questions focus on the relationships between medical staff and patients, counselling and information, cleanliness and waiting time.

By assessing clients' satisfaction, patients become the core of eye care services. They take part in the management of eye care services and thus can influence the level of quality offered at the health facility level. Their views will be analysed and taken into account for the future orientations of the service.

c. Review of records

Medical records archived at the health facility level provide information about the diagnosis, the treatment and the outcomes. In the three regions where the Vision First Programme intervenes, information about patients' history varies from one facility to another. Forms and contents are not uniform. Through the quality improvement process, it is recommended to generalise the utilisation of the *Tally Sheet* and the *Cataract Surgery Record Form* in all eye care clinics (See appendix I and II). The Tally Sheet helps surgeons and programme managers assess the quality and outcomes of cataract surgeries¹⁰. Forms, tables and guidelines will be distributed to all eye care staff and explained in details during a one-day training session.

As described in the quality monitoring table, most indicators will be measured every quarter or every semester. A wide range of people will contribute to the collection of data: surgeons and nurses (for cataract outcomes), Ghana Red Cross volunteers (exit interviews) and Swiss Red Cross Coordinators. Teams will be constituted in every region combining different institutions (Ghana Health Services, Ghana Red Cross and Swiss Red Cross), skills and background. Most teams will be composed of three members.

Step 5: Compile and Analyze the Data

Information must be analyzed. Data need to be presented in a convenient format that will help project managers make decisions for the future¹¹. Information can be displayed with graphs, figures and charts. Chronological and geographical comparisons can be made to identify strengths and weaknesses in each situation.

The following table (Quality Monitoring Table) presents the standards of quality, indicators and monitoring tools that have been selected by the Vision First Programme through a multiple step consultation.

⁸ Cox I., The Patient's View: How can we improve patient care?, *Community Eye Health*, 2002, Vol.15 No.41.

⁹ Muralikrishnan R., Sivakumar A.K., Patients' Perspective: An Important Factor in Assessing Patient Satisfaction, *Community Eye Health*, 2002, Vol.15 No.41

¹⁰ Limburg H., Monitoring Cataract Surgical Outcomes: Methods and Tools, *Community Eye Health Journal*, 2002, 15 (44): 51-53.

¹¹ Rubin H.R., Pronovost P., Diette G.B., From a process of care to a measure: the development and testing of a quality indicator, *International Journal for Quality of Health Care*, 2001, 13(6): 489-496.

The Quality Monitoring Table

Dimension	Site	Staff involved	Indicator	Standard	Monitoring tool	Frequency	Monitoring team
Technical Competence and effectiveness	Regional hospitals, District hospitals	Ophthalmologists	Cataract outcome	- The posterior capsule rupture rate is less than 10%. - The vitreous loss rate is less than 10%. - The presenting Visual Acuity at discharge is more than 6/60 in more than 90% of cases - 100% surgeries with IOL - A cataract record form for every patient	Tally sheet system;	carried out for every patient and analysed every quarter + external annual evaluation	GHS Surgical team: doctors and nurses + external evaluator every year
	Regional hospitals, District hospitals	Equipment manager and ONs	Equipment available and maintained (type and quantity)	- Minimum list required for each theatre - 100% surgical tools are maintained for each surgery	Checklist for regional hospital; Checklist for District hospital; observation	Every 6 months	GHS SRC
access to services	Regional hospitals, District hospitals	Health service managers; ophthalmologists; ophthalmic nurses; optometrist	- Patient satisfaction rate - Drop out rate	- 80% of patients are satisfied - less than 4 hours for the whole process (screening, consultation, pharmacist) - Patient drop out rate less than 20%	Questionnaire; observation	Every quarter	GHS SRC and GRCS
interpersonal relations	Regional hospitals, District hospitals	Ophthalmologists and Ophthalmic nurses; optometrist	Patient satisfaction rate	- 80% of patients are satisfied with doctors, optometrists' and nurses' attitude - 80% of patients were informed about their condition	Questionnaire		GHS GRCS and SRC
efficiency	Regional hospitals, District hospitals	Ophthalmologists	Number of surgeries per day per doctor	500-700 surgeries per year per doctor (depending on the region)	statistics	Every semester	GHS Doctor and SRC

Dimension	Site	Staff involved	Indicator	Standard	Monitoring tool	Frequency	Monitoring team
Continuity	Regional hospitals, District hospitals	Ophthalmologists and Ophthalmic nurses; GRCS volunteers	Number of patients coming back for follow-up	- 90% of cataract patients referred by volunteers for surgery are visited by volunteers - 70% of referred patients go back to hospital for follow-up	Medical records	Ongoing and analysed every quarter	GHS ONs, GRCS and SRC
Safety	Regional hospitals, District hospitals	Ophthalmic Nurses	adherence to asepsis	- Proper use of new gloves for every new patient - Autoclaving of surgical instruments after every surgery	observation	Every quarter in regional and district hospitals	GHS Doctor and SRC
Physical Aspects	Regional hospitals, District hospitals	Hospital administrator and Ophthalmic nurses	Cleanliness and comfort	Comfortable and very clean	Checklist; Observation	Every quarter	GHS SRC

4. The Monitoring Process

Let's describe dimension per dimension which tools need to be developed to ensure appropriate and valid data collection.

Technical competence and effectiveness

Cataract surgery outcomes will be self-assessed by surgical teams (surgeons and nurses) and externally evaluated once a year. All eye care teams will adopt the new Patient Record Form and the Tally Sheet. Guidelines and forms will be available at all levels and the regional ophthalmologists will train all people involved in reporting. The same standard forms will be used in every facility.

Cataract outcomes will be assessed for every surgery undertaken in the three regions at all levels; regional hospitals, the districts hospitals or eye camps. Data will be analysed every quarter by the monitoring team.

Another indicator for measuring effectiveness is the availability of equipment. The Swiss Red Cross and the ophthalmologists will agree on a standard list of equipment that is required in district hospitals and regional hospitals. These lists will ensure that the standard equipment is available at all levels to enhance quality of care.

Access to services

Access to services can be perceived in different ways. The programme has decided to focus on a limited number of priority issues:

- Satisfaction of patients regarding waiting time and price: This information will be extracted for questions 3 and 5 of the exit questionnaire.
- Waiting time: the evaluator will observe the total amount of time patients spend at the clinics to complete the whole process. This will be carried out every quarter for 10 patients randomly selected in every clinic.
- The patient drop out rate is the rate at which patients do not come back for follow-up after an initial visit, or do not respond for surgery after they have been asked to come for surgery. This will be checked through medical records.

Interpersonal relations

Interpersonal relations will be assessed through exit interviews and the analysis of answers to questions 1 and 2 of the exit questionnaire. Ghana Red Cross volunteers will administer the questionnaires every quarter. Twenty patients will be interviewed in each eye care facility by means of structured questionnaire.

Efficiency

The team came out with the number of 500-700 surgeries that should be performed every year by each ophthalmologist. This figure has been evaluated by taking into account the

current existence of facilities, equipment and consumables. Statistics will be used to check the total number of surgeries performed in each region.

Continuity

Follow up visits of patients performed by Ghana Red Cross volunteers will be assessed on an ongoing basis and analysed every quarter. Follow-up visit forms available at the regional coordination of the Ghana Red Cross will be checked and analysed.

Safety

Safety measures can be assessed in various ways. The team selected two indicators that can easily be measured. Every quarter, the monitoring team will spend half a day with the surgical team and observe if standards of quality are met.

Physical Aspects

Two criteria will be used for the Vision First Programme: cleanliness and comfort. These concepts are obviously very subjective. This is the reason why the working group decided to explain what they meant.

These two criteria will be specifically applied to two places: The waiting room and the consultation room.

	Very comfortable	Comfortable	Not comfortable
Comfort	<ul style="list-style-type: none"> - padded chairs - Information available (TV, leaflet, newspapers) - Well ventilated - Drinking water - No direct sunlight - Clean toilets 	<ul style="list-style-type: none"> - Benches - Well ventilated - No direct sunlight - Clean toilets 	<ul style="list-style-type: none"> - No bench - Not well ventilated - Exposed to sunlight - No clean toilet

	Very clean	Clean	Not clean
Cleanliness	<ul style="list-style-type: none"> - No dust on furniture - No litter 	<ul style="list-style-type: none"> - No litter 	<ul style="list-style-type: none"> - litter - dust

Comfort and cleanliness of waiting rooms and consultation rooms will be checked every quarter by the monitoring team. This will take place in every regional and district hospital.

5. Implementing Change

The Vision First Programme has introduced in March 2005 a performance-based management that encourages eye care staff to introduce changes based on evidence and lessons learned. The Quality Improvement system is at the core of the strategy. Monitoring processes will allow staff and eye care service managers to get access to data, analyse information and make informed decisions. The stake is to turn public health information into management information for eye care services¹².

The Quality Improvement system facilitates the use of scientific data and valid information for decisions. Communication between managers and eye care staff is essential to ensure the implementation and acceptance of change. For training purposes, a power point presentation has been made available to eye care managers¹³. Innovations will be accepted if staff recognises a need for change and builds new measures. Sense of ownership has been identified as a key factor to attenuating resistance to change¹⁴.

Improving quality of eye care in Ghana is a new initiative that requires the existence of a support and incentive system.

Support teams are constituted in each of the three regions. The regional QI team is composed of:

- The Ophthalmologist
- The Quality Assurance Coordinator that has already been identified by GHS
- The Swiss or Ghana Red Cross Representative

The role of the three regional QI teams shall be:

1. Monitoring quality and conduct support supervision
2. Organising regional Training Programmes on quality
3. Developing and reviewing Quality Standard reflecting Regional Priorities
4. Disseminating policies, guidelines and QI learning materials
5. Co-ordinating, guiding and coaching District eye units in QI
6. Promoting best practice

The regional QI team will provide support to the District Action Team. At the district level, the team is limited to:

- Ophthalmic Nurse
- Head of District Hospital

The district action team will:

1. See daily Quality Assurance issues

¹² Rubin H., Pronovost P., Diette G.B., the advantages and disadvantages of process-based measures of health care quality, *International Journal for Quality in Health Care*, 2001, 13(6): 469-474.

¹³ Blanchet K., *Quality Improvement in Eye Care*, Power Point presentation, Swiss Red Cross, Switzerland.

¹⁴ Scott T., Mannion R., Davies H.T.O., Marshall M.N., Implementing culture change in health care: theory and practice, *International Journal for Quality in Health Care*, 2003, 15(2): 111-118.

2. Implement Quality Assurance Policies
3. Establish client complaints and counselling desk
4. Facilitate monitoring exercises
5. Analyse monitoring data

Second, quality is promoted through the implementation of a financial incentive scheme¹⁵. Team-based financial incentives have been introduced to encourage better performance in eye care. Quality Improvement is one of the major indicators of performance in the Vision First Programme. Eye care staff will receive financial bonuses in function of their performance in terms of quality.

¹⁵ Blanchet K., Hagan M., Osei-Bonsu P., Addae-Kyereme S., *The right incentive for the right performance in eye care*, 2005, Vision First Programme, Ghana Health Service, The Swiss Red Cross, Ghana.

Appendix I

CATARACT SURGERY OUTCOME TALLY SHEET¹⁶

Hospital:

Period:

Personal & Surgery					Discharge					> 4 weeks post-op								
Serial number	Patient Number or Patient name	Surgeon	IOL Y/N	Surgical Compl	Good 6/6-6/18	Borderline 6/24-6/60	Poor <6/60	Cause of poor outcome (<6/60)			No of wks post-op	Good 6/6-6/18	Borderline 6/24-6/60	Poor <6/60	Cause of poor outcome (<6/60)			
								Selection	Surgery	Spec's					Selection	Surgery	Spec's	Sequelae
N=total			Y	C	G		P	D1	D2	D3	G1		P1	F1	F2	F3	F4	

Excluded: age < 20, trauma, combined procedures

Abbreviations:

Surgery:

- CR** Capsule Rupture
- VL** Vitreous Loss
- BL** Bleeding(> 1/3 hyphaema)
- CE** Corneal Edema
- OT** Others (specify)

Selection:

- CO** Corneal Opacity
- OI** Old Iritis
- RD** Retinal Disease
- GL** Glaucoma
- OT** Others (specify)

Spec's:

Tick if VA improves to 6/60 or better with pinhole or spectacles

Sequelae:

- UV** Uveitis
- RD** Retinal Detachment
- CME** Cystoid Macular Edema
- PCO** Posterior Capsule Opacification
- OT** Others (specify)

¹⁶ WHO, *Developing an action plan to prevent blindness at national, provincial and district levels*, World Health Organisation, International Agency for Prevention of Blindness, 2004.

Appendix II¹⁷

Annex 2. CATARACT SURGERY RECORD																																																																			
A. PATIENT name: _____				Hosp. Reg. <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>																																																															
Address (optional): _____				Serial No: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>																																																															
Sex: <input type="radio"/> (1) Male <input type="radio"/> (2) Female				Age: <input type="text"/> <input type="text"/> years																																																															
B. PRE-OPERATIVE EXAMINATION:				KEY for VA:																																																															
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"></td> <td style="width: 10%; text-align: center;">Right</td> <td style="width: 10%; text-align: center;">Key</td> <td style="width: 10%; text-align: center;">Left</td> <td style="width: 10%; text-align: center;">Key</td> <td colspan="3"></td> </tr> <tr> <td>Visual Acuity: Presenting</td> <td style="text-align: center;">VA</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;">VA</td> <td style="text-align: center;"><input type="text"/></td> <td colspan="3"></td> </tr> <tr> <td> 'Best' or pinhole</td> <td style="text-align: center;">VA</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;">VA</td> <td style="text-align: center;"><input type="text"/></td> <td colspan="3"></td> </tr> </table>					Right	Key	Left	Key				Visual Acuity: Presenting	VA	<input type="text"/>	VA	<input type="text"/>				'Best' or pinhole	VA	<input type="text"/>	VA	<input type="text"/>				<table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4" style="text-align: center;">Category of Visual Acuity</td> </tr> <tr> <td style="width: 5%;">1</td> <td style="width: 20%;">6/6</td> <td style="width: 5%;">9</td> <td style="width: 70%;">1/60</td> </tr> <tr> <td>2</td> <td>6/9</td> <td>10</td> <td>PL+</td> </tr> <tr> <td>3</td> <td>6/12</td> <td>11</td> <td>NPL</td> </tr> <tr> <td>4</td> <td>6/18</td> <td>12</td> <td>Cannot examine, believed <6/60</td> </tr> <tr> <td>5</td> <td>6/24</td> <td>13</td> <td>Cannot examine, believed >6/60</td> </tr> <tr> <td>6</td> <td>6/36</td> <td></td> <td></td> </tr> <tr> <td>7</td> <td>6/60</td> <td></td> <td></td> </tr> <tr> <td>8</td> <td>3/60</td> <td></td> <td></td> </tr> </table>				Category of Visual Acuity				1	6/6	9	1/60	2	6/9	10	PL+	3	6/12	11	NPL	4	6/18	12	Cannot examine, believed <6/60	5	6/24	13	Cannot examine, believed >6/60	6	6/36			7	6/60			8	3/60		
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C. SURGERY:																																																																			
Date (dd/mm/yy): <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/>																																																																			
Place: Base hospital <input type="radio"/> (1) Other hospital <input type="radio"/> (2) Out of hospital <input type="radio"/> (3)				Training: Qualified / consultant <input type="radio"/> (1) Resident / trainee <input type="radio"/> (2) Cataract surgeon <input type="radio"/> (3)																																																															
Biometry: Yes: <input type="radio"/> (1) No: <input type="radio"/> (2)				Centre ID _____																																																															
Eye operated: Right: <input type="radio"/> (1) Left: <input type="radio"/> (2)				Surgeon ID _____																																																															
Type of surgery: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">ICCE <input type="radio"/> (1)</td> <td style="width: 10%; text-align: center;">IOL:</td> <td style="width: 10%; text-align: center;">PC IOL <input type="radio"/> (1)</td> <td colspan="3"></td> </tr> <tr> <td>ECCE <input type="radio"/> (2)</td> <td style="text-align: center;">AC IOL <input type="radio"/> (2)</td> <td colspan="3"></td> </tr> <tr> <td>SICS <input type="radio"/> (3)</td> <td style="text-align: center;">No IOL <input type="radio"/> (3)</td> <td colspan="3"></td> </tr> <tr> <td>Phaco <input type="radio"/> (4)</td> <td colspan="4"></td> </tr> </table>				ICCE <input type="radio"/> (1)	IOL:	PC IOL <input type="radio"/> (1)				ECCE <input type="radio"/> (2)	AC IOL <input type="radio"/> (2)				SICS <input type="radio"/> (3)	No IOL <input type="radio"/> (3)				Phaco <input type="radio"/> (4)					Operative complications in operated eye: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">None <input type="radio"/> (1)</td> <td style="width: 10%; text-align: center;">Wound leak <input type="radio"/> (6)</td> </tr> <tr> <td>Capsule rupture w/o vitr. loss <input type="radio"/> (2)</td> <td style="text-align: center;">Striate <input type="radio"/> (7)</td> </tr> <tr> <td>Vitreous loss <input type="radio"/> (3)</td> <td style="text-align: center;">Endophthalmitis <input type="radio"/> (8)</td> </tr> <tr> <td>Zonular dehiscence <input type="radio"/> (4)</td> <td style="text-align: center;">Others <input type="radio"/> (9)</td> </tr> <tr> <td>Retained lens matter <input type="radio"/> (5)</td> <td colspan="1"></td> </tr> </table>				None <input type="radio"/> (1)	Wound leak <input type="radio"/> (6)	Capsule rupture w/o vitr. loss <input type="radio"/> (2)	Striate <input type="radio"/> (7)	Vitreous loss <input type="radio"/> (3)	Endophthalmitis <input type="radio"/> (8)	Zonular dehiscence <input type="radio"/> (4)	Others <input type="radio"/> (9)	Retained lens matter <input type="radio"/> (5)																														
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D. VISUAL ACUITY OF OPERATED EYE POST-OP.				Cause of presenting vision <6/60 (Key 8, 9, 10, 11,12)																																																															
Follow-up visits		Presenting VA		'Best' VA		Selection		Surgery		Spectacles		Sequelae		Entered on																																																					
At discharge, <input type="text"/> days post-op.		VA <input type="text"/> <input type="text"/>		VA <input type="text"/> <input type="text"/>		<input type="radio"/> (1) <input type="radio"/> (2)		<input type="radio"/> (3)																																																											
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¹⁷ WHO, *Developing an action plan to prevent blindness at national, provincial and district levels*, World Health Organisation, International Agency for Prevention of Blindness, 2004.

**Exit Questionnaire
Quality of Eye Care**

Hello, My name is..... I am working foras a..... We are currently doing a survey on eye care services. Would you accept to answer a few questions? It should not take more than a few minutes. The questionnaire is anonymous.

Thank you very much.

Circle the number you feel to be appropriate. If you would like to add any comments or make suggestions, please use the box at the end.

Excellent = 1; Good = 2; Average = 3; Poor = 4; don't know = 5

1. Your opinion about doctor(s) and medical care:	1	2	3	4	5
Doctors' Attitude and Behaviour <i>Smiling face / polite / friendly</i>	1	2	3	4	5
The doctor listened to my problems	1	2	3	4	5
Explanation about my health and treatment	1	2	3	4	5
2. Your opinion about nurses/optometrists and nursing care:	1	2	3	4	5
Smiling face / polite / friendly	1	2	3	4	5
Promptness in meeting your needs	1	2	3	4	5
Explanation about treatment & progress	1	2	3	4	5
Provision of psychological support and counselling	1	2	3	4	5
(in wards) Enquiries about food/night rest/discomfort/etc.	1	2	3	4	5
Provision of advice and health education	1	2	3	4	5
3. How would you rate the charges and costs of services at the eye clinic?	1	2	3	4	5
Low/Reasonable/High/Unaffordable /Don't know	1	2	3	4	5
<i>1 /2 /3 /4 /5</i>					
4. How do you rate the general cleanliness of the eye clinic?	1	2	3	4	5
5. How would you rate the general facilities in the clinic (space, furniture, etc.)?	1	2	3	4	5
6. Did you experience long waiting times?	1	2	3	4	5
Not at all/Reasonable/Long/Very long/No opinion	1	2	3	4	5
<i>1 /2 /3 /4 /5</i>					
7. Would you recommend this eye clinic to friends and relatives?	1	2	3	4	5
Strongly/As a second choice/Hesitantly/Will Not/Don't Know	1	2	3	4	5
<i>1 /2 /3 /4 /5</i>					
8. Overall, how would you rate the services offered at the eye clinic?	1	2	3	4	5
Please add any further comments or suggestions you would like to make.					

THANK YOU FOR YOUR VALUABLE FEEDBACK!

¹⁸ Aravind Eye Hospitals, *Management Principles and Practices for high quality and large volume, sustainable cataract surgery programmes*, 2001.