

Bottom up and top down: a comprehensive approach to improve care and strengthen the health system

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Abstract

Objective: To describe how building and deploying a network of quality assurance teams can strengthen the health system and the quality of care it delivers.

Method: The intervention described consists of a multidisciplinary core team at the national level, trained as trainers, that provides oversight of regional and district quality assurance teams whose purview is to improve the quality of care and operational functions. Quality assurance teams continuously identify and address systemic barriers to the timely delivery of quality services. In parallel, the process involves improving the management capabilities of facility directors and administrators through the use of quality improvement activities that identify and resolve local management and clinical care problems.

Results: A case study of Garissa Province in Kenya shows how this approach was used over a period of several years. National and provincial teams provided systematic oversight, feedback and support. Strong leadership at the district hospital promoted numerous quality improvement strategies that involved local institutional and community problem solving. They achieved greater financial transparency and security, substantially increased utilization of services, decreased response time and raised staff morale and commitment.

Conclusion: Policies and strategies on paper neither improve care nor the health system unless they are implemented and there is a dedicated trained team to provide oversight. Continuous quality improvement processes at facility level and prompt resolution of system problems lead to increased accountability, quality of care and a stronger health system (JPMA 60:927; 2010).

Introduction

In the pursuit of achieving the Millennium Development Goals (MDGs), public health leaders are calling for a renewed focus on the health system.¹ The principal objective of the health system is to improve the health of the population while the chief function of the system is to deliver health services. The World Health Report of 2000 developed a categorization of health system functions that include: service provision, resource generation (human resources and physical capital), financing and stewardship.²

The health system fails when effective and affordable health interventions do not reach the population. This occurs when provider skills are inadequate, drugs and equipment are lacking, salaries are low and qualified human resources are scarce.³ Ample evidence shows that avoidable factors, missed opportunities and sub-standard care contribute to morbidity and mortality.^{4,5} Staff can be indifferent and uncaring and clinical environments can undermine privacy, human dignity and good communication.⁶ Managers often lack skills in basic personnel management, accounting, or the management of drug stocks and stores. Authority is often concentrated or centralized, unhelpful regulations or procedures cause excessive waits and increase costs to both the system and the

beneficiaries of the system, and the lack of transparency coupled with insufficient monitoring or supportive backup system - all contribute to the fragmentation or crippling of the health system.⁷⁻⁹

Health systems consist of institutions at different levels, each with a range of responsibilities, which work towards the same goal of providing quality services to all. Poorly resourced countries often allocate proportionately less to the health sector than it needs. Funding scarcities are then aggravated by inefficiencies in the health sector that are the result of a complex web of factors that affect all levels of the health system.

One of the casualties of a fragmented system is poor quality of care. The Institute of Medicine (IOM) defines quality of care as "the degree to which health care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge."¹⁰ The IOM highlighted six features of quality: effectiveness, safety, timeliness, efficiency, equity and responsiveness to the needs and values of individuals and families.¹¹ These features are often targets of quality improvement activities.

In this paper we describe a comprehensive

approach that not only improves care at the facility level but ultimately strengthens the health system. This approach involves building a core team at national level and a network of health care professionals to support staff in local problem-solving (facility level) and quality improvement activities across different levels of the health system.

Institutional responsibilities and challenges:

Ministries of Health (MoH) are structured to provide curative, preventive and rehabilitation services. Figure-1 provides an overview of the organizational levels of the system and their respective responsibilities (Figure-1).

At the national level the MoH is responsible for

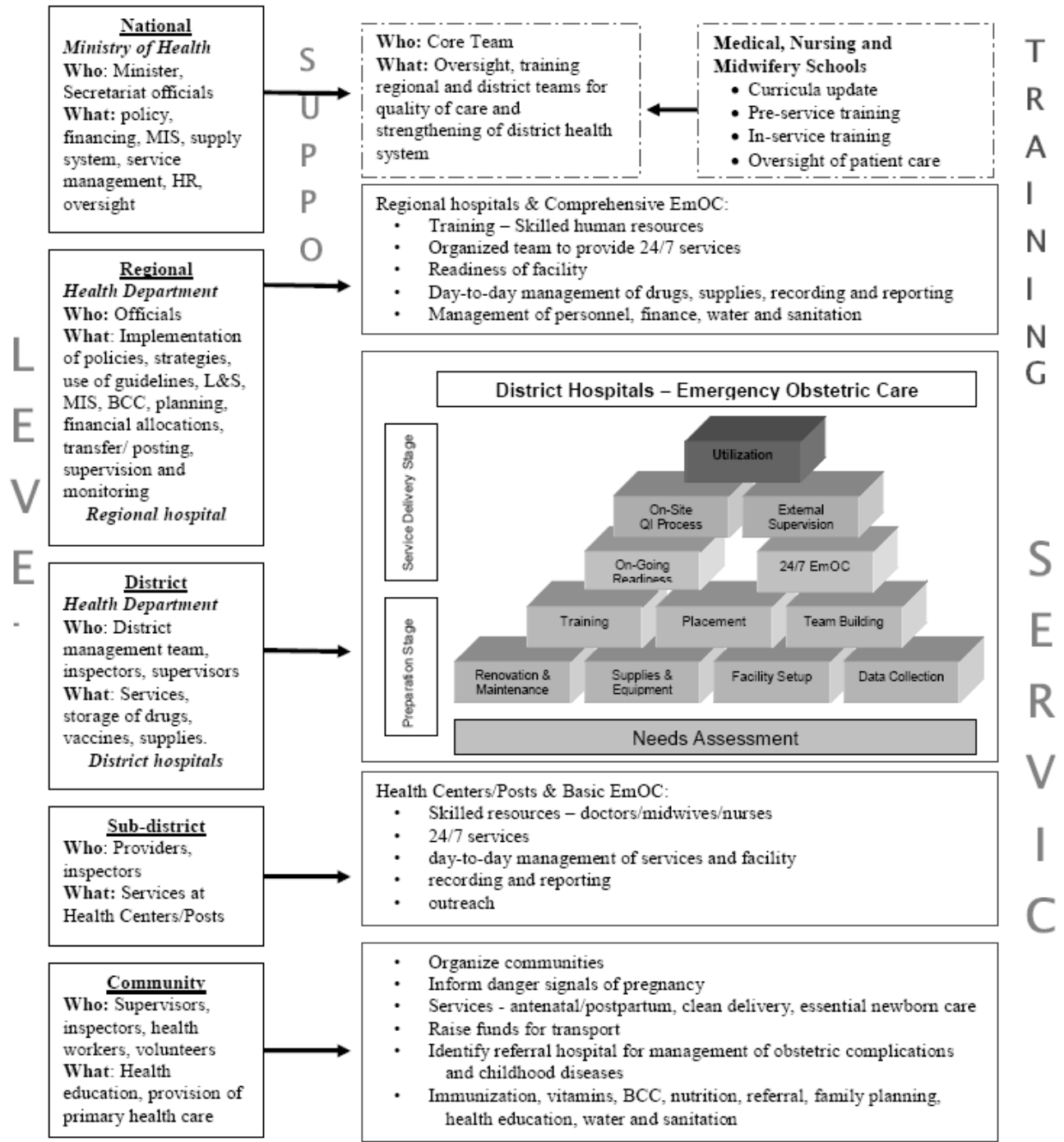


Figure-1: Institutional responsibilities: strengthening the health system and making services available at all levels.

making policies, providing guidelines, planning for human resources, financing, and establishing information and supply systems. The ministry is also responsible for oversight to ensure that systems are fulfilling their obligations. Too often operational problems (see Box 1 for an illustrative list of the complexity and breadth of such problems) and a lack of capacity or interest to resolve them cause the ministry to fall short of its mandate.¹²

Box-1: Operational challenges at all levels.

National

- ◆ Ministries of health have no forum/body to address operational problems in the health system and authorities lack the capacity to create a work environment that motivates staff.
- ◆ Donors insist on remedial capacity building, which often takes place at new facilities or training institutes. On their return, recent trainees lack authority to implement or practice what they have learned.
- ◆ Systems of supportive supervision lack guidelines and supervisors lack the knowledge and skills to improve the performance of those they supervise.
- ◆ Field visits are discouraged because of the lack of transportation and the cost of travel and daily allowances.
- ◆ Frequent transfers and postings slow the progress of initiatives.

Regional/State/Provincial

- ◆ Postings and transfers are politically or personally motivated rather than need-based.
- ◆ Delays in the distribution of drugs and supplies are caused by inefficient ordering and receiving procedures, poorly organized warehouse facilities and staff, insufficient financial allocations and financial leaking.
- ◆ Personnel lack the ability and /or willingness to provide oversight of district health teams.

District

- ◆ Supervision to ensure availability of services is irregular.
- ◆ Technical backstopping for improving management and clinical care is missing.
- ◆ Complete and accurate inventories, recording and reporting are not routine.

Facility

Management

- ◆ Deficiencies in the organization and management of human resources.
- ◆ Poor communication and / supervisory skills.
- ◆ Skilled human resources, drugs/supplies, and emergency funds not available.
- ◆ No mechanism to improve managerial and supervisory skills or quality of care.²⁰

Clinical

- ◆ Delays in providing services due to lack of readiness.
- ◆ Guidelines/protocols either not available or not used.
- ◆ No mechanism to update or promote evidence-based practices.

Rights

- ◆ Personnel can be discourteous and sometimes discriminatory.
- ◆ Privacy and respect not practiced.

Communities

- ◆ The poorest segment of society is neglected.
- ◆ Communication and transport system for emergencies is lacking.

In most countries, health care is decentralized to a regional level that is responsible for planning, budget allocation, implementing policies, information and supply systems, and monitoring and supervision. In addition, officials are responsible for implementing strategies for behaviour change and communication, and the management of human resources including postings and transfers.¹³

At the district level, the management team is responsible for ensuring that there are sufficient drugs and

supplies for the whole district, that providers are posted and attend patients at the facilities, i.e., services are being provided. Moreover, district management teams are expected to provide regular supportive supervision to district facilities and primary health programmes.

At the district or sub-district facility level, the director/manager of the facility is responsible for ensuring that services are provided to all those who need them 24 hours a day, seven days a week.

At the community level, district supervisors/inspectors and community health workers are expected to organize and provide primary health services to all, irrespective of economic conditions and socio-cultural subgroupings.

Each level has its own parallel and complementary set of responsibilities. Each level is also vulnerable to the systemic problems of poor supervision, lack of accountability, weak management and too little attention to the support systems required for the day-to-day management, for example, the repair and maintenance of facility, equipment, information, logistics and supply systems.

Solving operational problems and building institutional, individual and local capacity:

Many approaches (often fragmented) have been designed to build capacity and solve operational problems. During its service delivery phase, the Averting Maternal Death & Disability Program (AMDD) took a comprehensive approach that began at the facility level but ultimately addressed the whole system. We used national quality assurance teams for institutional strengthening and capacity building at all levels of the health system: national, regional, district and facility levels (Figure-1). The role of a core team at national level is oversight of the health system, the training of provincial Quality Assurance Teams (QAT), and assisting in the training of district QAT for providing supportive supervision. The role of the district QAT is to set up mechanisms to provide supportive supervision, to identify system problems and to help develop action plans to resolve them. In addition, district level QAT should initiate quality improvement (QI) processes at the facility level for on-going improvement in management and the quality of patient care. Figure-2 highlights the key areas of concern for EmOC services.

Finally, it is the national core team that develops mechanisms to receive reports of problems identified, the action plans proposed, and whether the plans were successfully implemented at provincial, district and facility levels. The national team must also provide feedback since they oversee the regional QAT and ensure that the district QATs carry out their responsibility of regular visits to facilities and primary health service sites.

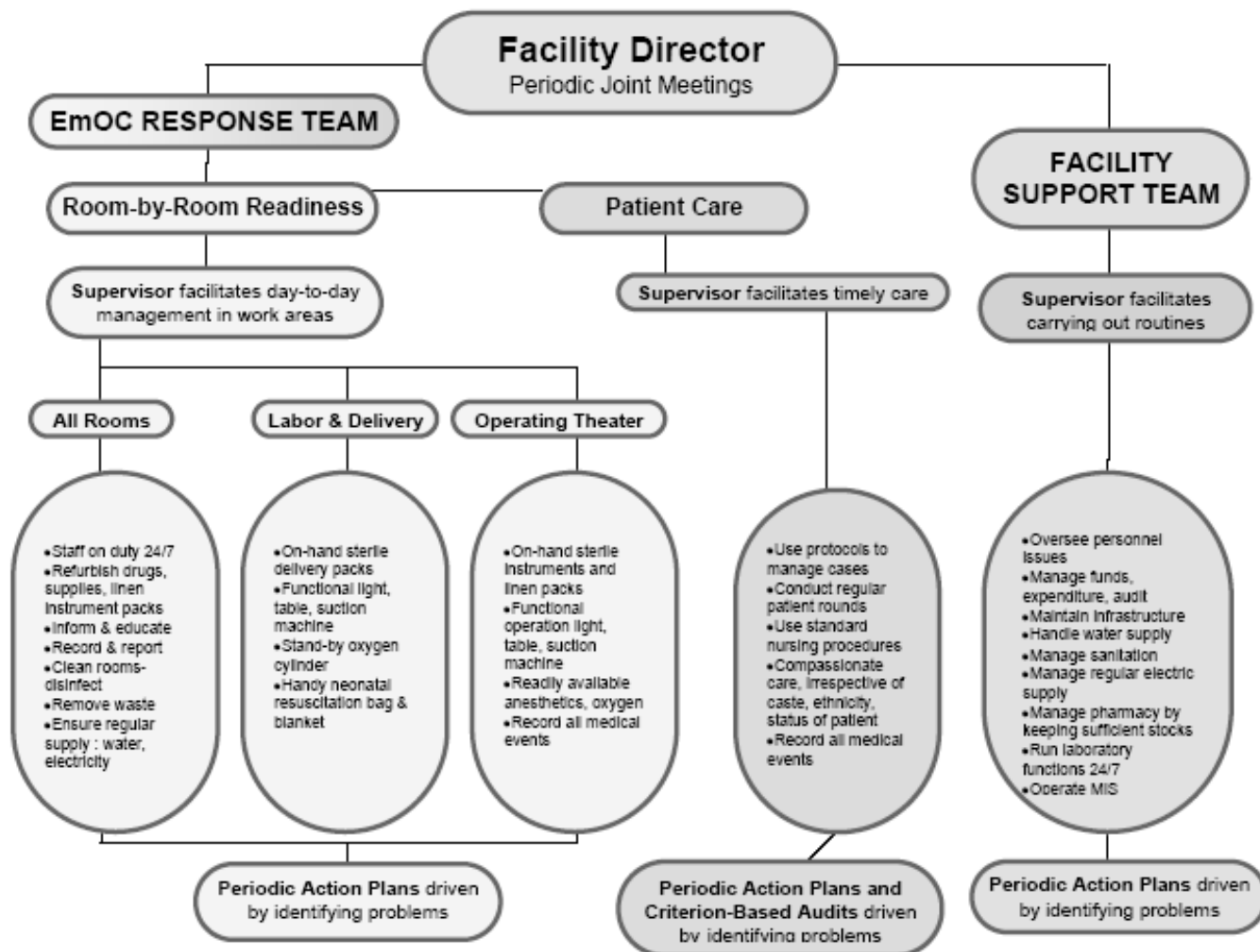


Figure-2: Key areas of concern for the organization of EmOC services.

Steps to building a quality assurance system:

The most important pre-requisite of a well functioning quality assurance system is a true commitment from the ministry of health to improve the health system and quality of care. This commitment can be measured by the allocation of resources and policy changes that include an oversight mechanism formed by the national core team and quality assurance teams throughout the system. To make the concept workable requires consensus building with regional health departments. It also requires the allocation of resources for QAT to travel to each level and for training the national core team on the QI process. For the core team to be effective, senior ministry officials at all levels must understand the role of a core team in the capacity development of a more accountable workforce committed to an on-going improvement process of the health system.

1. Creating and organizing the national quality

assurance core team at national level:

The core team is created from a pool of officials and experts in multiple disciplines. The pool includes personnel from ministries of planning, finance, health (procurement, behaviour change and communication (BCC), human resource development, information system, etc.) and clinical experts from pre-service training (ob/gyn, anaesthesia and nursing/midwifery). The core team performs the following specific roles:

- ◆ Prepares national guidelines and protocols for clinical management and patient care;
- ◆ Develops guidelines for oversight visits that makes clear the role of each level of QAT (roles of capacity building at institutional and individual levels in the resolution of local and system problems);
- ◆ Oversees health system functioning by identifying problems (related to management, allocation of funds,

infrastructure, human resources, clinical care, quality of care, patient rights), and by recommending solutions and policy changes to the MoH, such as the absence of first choice life-saving drugs (magnesium sulfate), the non-performance of critical procedures (active management of third stage of labour), or the potential benefits of using non-specialists for activities traditionally performed only by specialists (nurses providing anaesthesia or surgical technicians performing caesareans); and

- ◆ Trains and oversees the process of supportive supervision with the clear objective of building the capacity of regional and district management quality assurance teams in problem-solving techniques.

2. Hands-on-training of the national quality assurance core team:

Training of the core team starts with hands-on-training at the facility level to assess and identify problems at this level (for example, facility management, day-to-day management of wards/operation theatre, clinical care, laboratory, pharmacy, and infection prevention practices). They learn how to determine what level of responsibility (local, district, regional or national) and support is needed to solve problems. This is done through classroom orientation and practical demonstration; teams practice these steps until they are proficient. Hands-on-training emphasizes on-the-job training, how to solve problems by making action plans at the appropriate level and overseeing the plans until implemented.¹⁴⁻¹⁷ The team can use the format in Box-2 to

Box-2: Action Plan Format.

Problems	Root cause	Solution	Person responsible	By when	On-going monitoring
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formulate action plans.¹⁴

Finally, under the guidance of trainers, trainees must become comfortable meeting with the appropriate staff (district or regional level) to discuss and find solutions to system problems.

3. Working with institutions at different levels:

A national core team might assemble a group of 3-5 officials/experts of different disciplines to work with regional or district level counterparts to update them on departmental guidelines and procedures. This group would encourage and provide supportive supervision on the topic at hand to the regional and district levels of the health system. Thus, the emphasis is creating a work climate that motivates staff, improves performance, and provides on-the-spot training in a mutually respectful way.

The core team makes visits to regional and district health offices to discuss system bottlenecks that have formed

due to a lack of initiative, to procedural delays or to difficulties finding common ground to accelerate the process. They also discuss new system wide concerns that have arisen and work together to dismantle barriers. The regional QATs, in turn, support and develop district level QAT capacity and ensure that they receive supportive supervision and the assistance they need in problem-solving.

4. On-going quality improvement processes at the facility level:

The purpose of QI is to improve services by transforming 'actual practices' into 'desired practices'. The key principles are staff involvement and ownership; prioritizing the patient/client mindset; a focus on systems and processes; efficiency and cost consciousness; and continuous learning, development, and capacity building.¹⁷ To start this process the director or senior management should take the lead in organizing staff and building a shared understanding of what quality services are. For emergency obstetric care, this means providing services based on international standards and guidelines for readiness, response and rights.

For EmOC, this process can take several directions and instruments already exist if staff choose to use them, for example, criterion-based audit, case reviews of adverse events, clinical simulations, client - flow analysis, etc.¹⁷⁻¹⁹ The formation of an emergency response team and a facility support team is helpful in clarifying roles, building morale, and achieving efficiency (Figure-2). Checklists can help these teams identify problems with regard to readiness, clinical care, day-to-day management, the information system, laboratory, pharmacy, and infection prevention.¹⁴ Through discussion, the teams make action plans to address problems that they have identified. Concrete plans encourage facility supervisors to provide special support to the resolution of the identified problems. Teams repeat this cycle periodically (2-3 months) and keep records in a permanent register. This on-going process builds confidence, promotes accountability, and develops the capacity at the facility level to organize itself to find local, low cost solutions to their own problems. Faced with problems they cannot resolve themselves, facility teams should request the input of the district or regional QAT.

5. Rolling out training:

The core team trains regional teams and assists them in the training of district teams, always using the hands-on-training methodology described above. District and regional QAT, with support from the core team, train facility teams to assess facility level functioning, identify problems and make action plans. The objectives are always to: 1) build individual capacity, 2) instill a heightened sense of accountability and responsiveness to system problems, and 3) create a work climate to improve performance, facility management and the quality of care.

6. Oversight visits:

A district level QAT should prepare a 3-month schedule of visits to each facility in the district and provide supportive supervision to the management of the facility and departmental teams. At each visit a QAT performs at least two functions: first, the team identifies problems by using the same checklists that the facility staff use themselves and helps the local team problem solve by providing on-the-job training (on management, clinical, and rights-based issues) and secondly, the team supports the ongoing process of quality improvement in each facility. Regional teams should also make a schedule to visit district offices as well as facilities. Regional offices can use clinical experts from the regional hospitals to perform clinical supervision and mentoring.

7. Feedback:

Facilities, district, regional and national levels should keep records of the problems and action plans that they execute as well as minutes from meetings, particularly as they relate to unresolved system or facility problems. Each level should report to the next higher level and provide copies to the national core team to ensure that problems that are identified get resolved.

Core and QAT at each level should conduct monthly review meetings to monitor which problems have been resolved and to develop action plans for any new or remaining problems found in the field. The core team at national level ensures that the feedback mechanism is functional and constructive, i.e., that it works for the good of the system.

8. Monitoring and Evaluation:

At each level of the system, the national core team follows up to determine whether the process is working as planned, i.e., each level is receiving QAT visits and making progress. The core team reminds district and regional teams by example that their objective is to provide: supportive supervision to managers, service providers and support staff at facility, district and regional levels with an emphasis on solving system problems. Yearly, the core team should assess records at each level to determine if improvements have occurred in the functioning of the system and in quality of care.

The success of this bottom up and top down approach depends upon follow up visits that the quality assurance teams make, encouraging and coaching officials and facility managers to solve their own problems when possible, providing on-the-job training, and keeping records of their problem-solving experiences.

Case Study of Garissa Province in Kenya:

The case study is based on multiple visits to Garissa Province by one of the authors (ZG). It demonstrates how

managers led the way by organizing staff to identify problems, plan, implement decisions taken jointly and to monitor and evaluate progress in meeting plan objectives. The process produced an improved work climate, better management and higher quality of services.

The Kenyan government has taken many positive steps to improve the health system and to advance women's reproductive health and rights. In 1997 the National Reproductive Health Strategy called for reducing maternal mortality to 170 per 100,000 live births and to ensure the presence of a skilled attendant for 90% of deliveries by 2010.⁸ At the time of the strategy development, the maternal mortality ratio was approximately 590/100,000 live births.²⁰

In 2002 the MoH collaborated with various health professional associations including the National Nurses Association of Kenya, the Nursing Council of Kenya, the Kenya Obstetric and Gynecology Society and the Kenya Clinical Officers Association to issue standards for maternal care including protocols.²¹ The medical standards call for every pregnant woman to be attended by a skilled health care provider within 30 minutes; facilities had to produce client flow plans; user fees were to be collected only after a patient is stabilized, and pregnant women were encouraged to have continuous empathetic and physical support during labor and delivery. These standards have been widely distributed to facilities. Ministry officials frequently make oversight visits to the provincial health offices and facilities.

This case study describes the efforts in Garissa Province to improve the quality of care at the regional referral hospital in Garissa district. Garissa is one of four districts in the North Eastern province. The climate is hot and dry throughout the year and the population is nomadic, with livestock the main source of income. The 220 bed Garissa District Hospital was constructed in 1969 by the government of Kenya. It serves three neighboring districts: Wajir, Mandera and Ijara. Multiple operational problems were identified in 2002 when a change in hospital administration occurred (Box-3).

Box-3: Operational problems at Garissa district hospital.

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1. Lack of privacy
 2. Poor quality services (women in the community did not want to deliver there)
 3. Inconsistent supply of drugs
 4. Poor record-keeping: papers loose, key information missing
 5. Misallocation of funding: patients pay but see no improvement in services
 6. Gender norms discourage women from delivering with male providers
 7. No fence around the hospital
 8. No facility autonomy
 9. High staff turnover
 10. Staff unmotivated
 11. No adherence to protocols
 12. No financial or personnel management and planning
 13. Weak infrastructure
 14. Irregular water supply
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Administration staff used several different methods to identify problems (Box-4) including the development of action plans to resolve problems. In January 2005,

Box-4: Methods used to identify problems at Garissa district hospital.

- ◆ Maternal death and near miss audit since 2003
- ◆ Collection of information through suggestion box
- ◆ Supervisory checklist used daily by nursing supervisor
- ◆ Monthly meetings for department and management groups
- ◆ Quality assurance committee meetings using checklist
- ◆ Hospital board invited community leaders and the provincial health chief to join the board and attend quarterly meetings
- ◆ Oversight visits from provincial and ministry officials.

Unicef/Kenya and AMDD sponsored a workshop on Quality Improvement and Strengthening the Health System for ministry and provincial authorities. This hands-on participatory workshop helped the hospital and provincial management teams to critically examine the systems in place and to problem-solve.

The new management team consisted of the medical superintendent, nursing officer and administrator, all of whom were from the area and therefore were particularly sensitive to the needs of local communities. They were determined to improve hospital performance by focusing on management, clinical care and human rights. Specifically they embarked on strategic planning, budgeting, departmental planning, eliminating corruption, improving infrastructure, increasing readiness and responsiveness to emergencies, avoiding stock outs, encouraging staff development through attendance of scientific conferences and seminars, promoting daily morning ward meetings and weekly clinical meetings, changing staff attitudes, and raising revenue through collections and fund raising. Thus, they created a work environment that motivated staff to improve performance.

The hospital management team organized staff into committees and gave them the responsibility to identify and solve problems. Problems that the teams were not able to resolve were taken up by the board of the hospital. The teams took specific actions and they continue to function with on-going activities (Box-5). This quality improvement process was used not only in the ob/gyn department but it became a regular activity across other departments.

Staff has taken the care to document the changes observed since 2002 using indicators of utilization and quality of care based on hospital records and meeting minutes. Both overall inpatient admissions and outpatient attendance increased by over a third while the proportion of patients who prematurely discharged themselves from the hospital dropped by 90% (data not shown). Similar patterns can be seen in maternity services where the number of deliveries doubled and the treatment of complications and the number of caesareans almost tripled (mutually exclusive

Box-5: Changes instituted at Garissa district hospital.

- ◆ Organized staff into committees that meet at regular intervals to identify problems, find solutions, assign responsibilities and keep records.
- ◆ Formalized the system of collecting patient fees, depositing those fees in provincial treasury and releasing funds at request of hospital.
- ◆ For transparency & accountability purposes, a committee of stakeholders established to oversee the use of funds for drugs, supplies, equipment and hospital maintenance.
- ◆ Human rights operationalized to increase privacy (use of screens, curtains) and ensure female providers for deliveries.
- ◆ New record-keeping officer hired and trained to sit at maternity nursing station to collect information, keep patient records, and provide fee receipts and fee waivers (approved by the hospital waiver committee).
- ◆ Initiated a monthly maternal and pediatric audit of the use of protocols and ministry standards of care.
- ◆ Organized emergency obstetric response team with ambulance and radio sets in all district facilities.

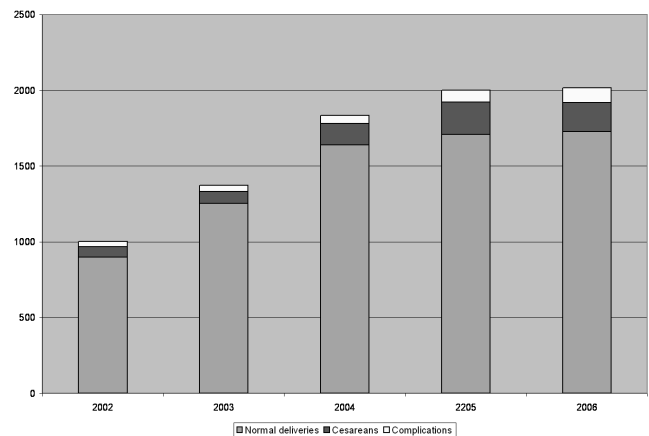


Figure-3: Normal deliveries, Caesareans and obstetric complications, Garissa District Hospital 2002-2006.

groups) (Figure-3). Although a dramatic decline in maternal mortality has not been achieved, newborn deaths have been cut by three-fourths.

In January 2007, the management team began to tackle the delays associated with the emergency response team to take action and the waiting time in the outpatient department. Within 100 days the delay of the emergency response team had been reduced by 30% and the waiting time in the outpatient department by 55% (Table-1).

Since 2000 management has seen an increase in cost sharing based on user fees, from 3.6 million Kenyan shillings to 19.1 million in 2006. Meanwhile, the hospital management team built strategic alliances with UN and donor agencies and received assistance to make capital improvements on hospital infrastructure (Table-2).

In summary, the hospital management team made significant changes in how staff was organized by clarifying their roles, by increasing adherence to obstetric and newborn standards, and by modeling how to work together to make

Table-1: Targets and reduction in waiting time in 100 days.

Waiting time	Baseline (minutes)	Target (minutes)	Result 100 days later (minutes)	% Decrease
Emergency response for surgical procedures	120	60	84	30%
Outpatient department	131	90	59	55%

Table-2: Hospital Development Projects.

Year	Project	Funding agency
2002	Perimeter wall around hospital compound	Govt. of Kenya (GOK)
2003	Internal fencing, terrazzo corridors, construction of incinerator, partial renovation of wards	Cost sharing
2004	Installation of radio sets in ambulance and maternity	Danida
	Renovation of wards, construction of emergency department, oxygen plant, female surgical wards, rehabilitation of sewage line, well construction	Danida
2006	Renovation and expansion of MCH/FP ambulatory services, maternity ward, upgrading traffic pattern for access and car park.	GOK, Cost sharing, Unicef

strategic plans, and identify and solve problems in an on-going fashion. The consequences can be seen in improvements in performance, the quality of care and in staff motivation.

From the top down, national level ministry personnel continues to make oversight visits to assure that maternal care standards are implemented. The office of the chief nursing officer makes quarterly supportive supervision visits and the Nursing Council inspection team also makes visits to ensure that standards of nursing care are maintained in the facilities. The nursing staff of Garissa Hospital find these visits morale boosting.

Change is taking place at the provincial level too. In a report by the Provincial Health Management Team (PHMT) written after visits to more than 30 facilities in 4 districts in 2006 and 2007, frequent references were made to staff absenteeism, over and under stocking of drugs and supplies, new equipment in its original packing, incomplete record-keeping, and poor compliance with standard practices such as partogram completion. But the report also recognized well functioning facilities, actions taken and recommendations made such as the redistribution of overstocked drugs. The PHMT also monitored the frequency of visits of the District Health Management Team (DHMT) based on the findings from their visits, and provided the DHMT with guidelines to follow up.

During each reporting period, the PHMT continues to visit each district headquarters where the team discusses issues such as population coverage, whether they have calculated the target populations for programme planning (children < 1 and <5 years of age, pregnant women and women of reproductive age). They discuss routine performance reports that the district headquarters receives from each facility and how well the feedback mechanism to the facilities works, or not. They monitor whether districts have enough vaccines and supplies and if the cold chain is maintained according to standards. The PHMT also looks for district supervisory plans for peripheral rural health facilities.

The provincial level teams also visit district and rural health facilities to observe whether staff vacancies are filled, and to monitor staff absenteeism, availability of drugs, maintenance and repair of equipment. They also monitor TB, EPI, nutrition program activities, and check records and laboratory work. Their regular visits to the district offices and facilities have improved the performance.

Discussion

Improvements in Garissa Province and particularly at the Garissa District Hospital have been achieved through multiple channels and actors. A key factor is the commitment of the hospital management team to improve services by identifying problems and solving them on a continuous basis while at the same time searching for additional resources.

The hospital management team understands how to solve problems in their community. They have secured local support by including community leaders on the hospital board. The medical superintendent models behaviour in her day-to-day work by fulfilling her medical and governing responsibilities as well as social responsibilities. For example, when her relatives come for treatment and are unable to pay for services, she pays their bill herself. The team has provided each employee of the hospital with a job description and made each one of them accountable. Disciplinary actions are taken irrespective of political connections. Leadership praises people when they accomplish jobs and provide services in a timely manner. The hospital management team also works to provide their employees with an enabling work environment that motivates staff. Proactively they make annual strategic plans that they strive to complete. They successfully advocate for outside funds and receive them, particularly from Unicef and Danida, further boosting morale and providing encouragement. The QATs from the Ministry of Health and the provincial and district levels are actively providing guidance and support.

This case study has shown that different levels of the health system can work together to fulfill their respective functions and reinforce others. Local champions also played a pivotal role in developing strategic alliances, and modeling

the quality improvement processes that are a key component of constructive accountability, where active self examination and correction of deficiencies become part of the organizational culture. Strengthening the health system is a dynamic process as external and internal factors come to play, leaders retire or move on, and new ones appear. But if quality improvement activities can be maintained at the core of support up and down the system, the system will benefit as will the population it serves.

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