PREPARATORY SURVEY ON
THE PROGRAM OF
QUALITY IMPROVEMENT
OF HEALTH SERVICES
BY 5S-KAIZEN-TQM

FINAL REPORT

MARCH 2013

JAPAN INTERNATIONAL COOPERATION AGENCY

FUJITA PLANNING CO., LTD.

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Summary

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1. Introduction and Background

Development assistance cooperation aims to achieve the Millennium Development Goals (MDGs) compiled in response to the Milleminum Declaration adopted in UN Millennium Summit in 2000, so that large fund invested and support programs were conducted.

As most of these activities are implemented through expanding the outreach and health center functions to directly support the targets, assistance fund flow is not sufficient for the healthcare facilities (hospitals) which are core functions in the health system in the relevant countries.

For these circumstance, the development of the platform (horizontal development) has come to be hit by a focus in as addition to the direct intervention for each issue (vertical expansion).

The management, how the limited resources should be utilized to maximize the effect is required to improve health services in Africa. Since 2007, JICA has implemented, a program called "Program of TQM for Better Hospital Services", introducing '5S-KAIZEN-TQM' approach, which introduces Japanese-style business method in stepwise approach, in healthcare facilities in 15 African countries to address this issue.

2. Preparatory Survey

(1) Purpose

The former preparatory survey was implemented from December 2009 to March 2011, to review the activities and outputs under the program and to systematize the results of the review. The preparatory survey has been continued to March 2013 to put in practice of the recommendations in the survey; to systematize the program including KAIZEN process. Expected outcome of this preparatory survey are followings.

a. Cooperative results in "Program of TQM for Better Hospital Services" so far is reviewed(including Review of KAIZEN introduction phase in Group 1 target countries)
b. Information is sorted out and transmitted towards systematization of knowledge such as results and actual records in "Program of TQM for Better Hospital Services" (transmitting the information through creating collection of examples of KAIZEN practices and web page)
c. Directions and activities of cooperation utilizing the results of "Program of TQM for Better Hospital Services" are compiled and concrete strategies are formulated.
d. With strategies formulated in above c, implementation support and monitoring are carried out for the pilot activities in each country, and future activity deployment is reviewed such as in project formation based on these strategies.

(2) Activities

Main activities for the survey are supports of the trainings and field survey.

1) Supporting training courses

    Attend the training course in Japan, Sri Lanka and African regions conducted by JICA Tokyo International Center, and support the workshops to prepare Action Plans

2) Field Survey

    a. Conducting supervisory trips with resource persons in the target countries

    b. Conducting baseline review of the "program of TQM for Better Hospital Service" and survey on the existing policy framework and implementation system of the quality of health care services in target countries

    c. Collecting information on the related activities of international institutes and other assistance institutes

3. Contents of research and implementation of activities

(1) Supporting trainings courses

The purpose of this training is as follows.

1) Prepare for the transition to phase KAIZEN in hospitals is promoted.

2) Under the framework of 5S-KAIZEN-TQM, pilot hospital of target countries learn the process to strengthen the ability of workers and the "organization" for the transition from S4/S5 stage to KAIZEN.

Training each time has been improved based on the recommendations of the training of the previous, both to clarify and skills pathway to KAIZEN, derived from the 5S, to enhance the independence of the participants, and exercises Q & A adopted the method of progression of participants divided form and presentation.

It seems as far as the training evaluation, participants have reached the above target enough, countries have started activities KAIZEN is, at the time of the survey guidance tour for the year 2012, Benin, Democratic Republic of Congo, Kenya, Madagascar was only eight countries Mali, Nigeria, Tanzania, and Uganda.

(2) Field survey

In field survey, check the status of implementing the action plan in the strategy paper that "guidance tour" by the committee support a different issue areas to help promote national and 5S implementation of the 5S-KAIZEN was developed by training and regional Survey, was carried out in conjunction with international organizations as well as the "Survey Performance Review."

1) Check the state of implementation of the Action Plan

   15 countries will participate in this program, the status of implementation of the Action Plan Strategy Paper was developed in regional training, the function of the attitude of the leader and QIT had a significant impact.

2) Check the state of implementation of 5S-KAIZEN

   Due to demand of the other party, the evaluation using the check sheet has been carried out in different ways by the research team and the tour leaders target countries.

   It is desirable to become the number is "Leadership> 3S (organized, tidy, clean)> S4, S5" and of the evaluation results, facilities There are many get the same results, 5S activities in an environment that is fostering leadership Implementation of that I was able to be confirmed.

3) the collection of medical information and hospital management

   Summary of the data collected from each hospital is as follows.

   - In terms of the number of patients, the facility staff strike has occurred to the downward trend of the number of patients. The increasing facilities are believed to be due to natural increase.
   - In terms of Laboratory test, increasing trend has occurred in lower score country of the evaluation results, decreasing trend is often the group with the highest evaluation results. Causal relationship is not clear as possible is considered the influence due to the effect of reduction in the number of patients or improvement of inspection appropriately by 5S-KAIZEN-TQM.
   - The number of referrals had shown a downward trend in the hospital's high evaluation results. The number of upper referral has been declined in particular. it means that the hospital can cure the patients more than before.
   - With regards to cause of death, while diseases specific to developing countries in Africa such as malaria, HIV, malnutrition, diarrhea, and anemia were listed for both adult and children alike, lifestyle disease such as high blood pressure and diabetes were reported as that of adult.

4) Collection of information on trends in the Ministry of Health

   With regards to the activity plans formulated by Ministries of Health in each country and its implementation status, activities relatively progressed according to the plans in the countries where implementation systems of the quality improvement were established in the Ministries of Health through this program. On the other hand, the activities did not progress very much in the countries where implementation system establishment within the Ministries was delayed.

5) Extraction of good practice

   Activities taken as good practices are roughly divided into a) improvement of budget and number of services, b) information and document management method, c) controlling and reducing waiting time for patients, d) inventory management, and e) improvement of patient care

6) Situation of the national expansion

5S activity has already been implemented in more than 200 hospitals, and that KAIZEN activity has started in 16 hospitals.

7) Activities of international organizations

In this field survey, visit was made to personnel of international institutes and other assistance organizations that are taking quality improvement approach in health services in the target countries and WHO headquarter to introduce the approach and to collect the information regarding related programs. It was defined that the approach has a potential to corroborate to the programs by the other donors or international organizations..

8) Number of participants of the training under the program

In the period from December 2012 to April 2010, the number of participants of the trainings, which was conducted in conjunction with this program was 7,663 (4,991 of English-speaking, 2,672 of French-speaking).

(3) Other

As parts of its support of this program, we have carried out A) issuing newsletter, B) the assistance to revise text 5S-KAIZEN-TQM

4. Analysis of the success factors of the program

Based on the results of the survey, level of achievement of each courtiers were categorized as a) Introduction of 5S, b) Attainment of 3S, c) Attainment of 5S, d) Introduction of KAIZEN and e) Implementation of KAIZEN, and also analyzed the factors influenced to the progress of the activities in the pilot hospitals.

Of the 15 countries targeting the KAIZEN level attainment, the two countries of Tanzania and Madagascar succeeded, with a total of 3 facilities. At Nianankoro and Fonba hospitals in Mali and the Lagune Maternal and Child Hospital in Benin, the steady promotion of activities have seen them reach 5S level. Seven facilities of Ngaliema Clinic in the Democratic Republic of Congo, Lagos island maternity hospital in Nigeria, Orotta in Eritrea, Halibet Hospital, Dowa in Malawi, Mzimba Hospital, Banfora in Burkina Faso, hospitals in 5 countries have reached 3S level, while future tasks involve focusing on Standardizing and Sustaining. Four facilities in four countries, namely Kenya Coast Province General Hospital, Tambacounda Provincial Hospital in Senegal, Tororo District Hospital in Uganda and Burundi's Prince Regent and Charles Hospital all achieved S1-S3 level.

In terms of the speed of the progress, In Tanzania (Mbeya Hospital), CHUM, CHUF, Mali, Benin and so on, following the introduction of 5S, progress to implement S1-S3 and achieve 3S and 5S continued smoothly and the transition to KAIZEN was also observed. In Kenya (CPGH), Burkina Faso and the

Democratic Republic of Congo and so on, although the process from the introduction of 5S to the implementation of S1-S3, 3S is on track, the time required has far exceeded with the course of activities in these facilities

Countries where the activities have progressed are synonymous with exceptional leadership. In addition, through program activities allowing the Hospital Director or top management to determine the effectiveness of the proposed method or the need for hospital reform, activity could be promoted.

With correct understanding of the gist of this technique and a change in mindset accomplished, its effect was reflected in action like a case where all parties involved were assembled at the start of the supervisory trip survey. Countries where activities have progressed, are steady learning through this activity, which will eventually lead to behavioral change.

Excluding Tanzania, in many countries where 5S-KAIZEN activities were advanced, support from Ministry of Health extended to monitoring and supervision and fell short of providing guidelines or policy support. It is also suggested that support from JICA offices has also influenced the progress of pilot hospitals. Even though related projects for the 5S-KAIZEN activities in pilot hospitals are implemented, the contributions from the project were less impressive in Eritrea, Burundi, and Senegal and so on.

5. Evaluation of this program

(1) The purpose of the evaluation
The purpose of the evaluation is to define what kind of impact has been occurred and what kind of factor is effective through 5S-KAIZEN-TQM, which purpose is to improve the quality of health services and function of the health facility under limited resources in Africa, and to identify the preconditions for further strategy for the improvement of function of health facilities in Africa through the approach.

(2) Assessment Framework
It is the character of the approach to introduce different methods step by step. In the pilot hospital, it is better to consider the process of the activities in three steps, such as "5S stage", "KAIZEN stage" and "TQM stage", and also the process of the activities in two steps in the health administration such as "5S-KAIZEN-TQM in the pilot hospital" and "National rollout of the approach". Then the survey points were considered based on the above situation.

Because there is no clear goal or indicator as a program, it is desired that the objective of the training in Japan be the central component. The overall goal of the training in Japan is that 5S-KAIZEN-TQM is used at quality hospitals to provide health and medical services in the target country and the

objectives are that the KAIZEN activities are carried out based on the strategy plan formulated during the training in Japan and the work contents are improved at pilot hospitals and that the pilot hospitals are used as a showcase and the strategy plan clearly states that efforts for improving quality and safety of health and medical services by using 5S at the national level in cooperation with health ministries of each country.

The evaluation targets are outputs by December 2012. On December 2012, KAIZEN is promoted in the hospitals and 5S is developed across the nation to some degree in English-speaking countries that introduced the approach in 2007 (Group 1), and KAIZEN is introduced in the hospital and 5S is beginning to be developed across the nation in French-speaking countries that introduced the approach in 2009 (Group 2).

(3) Evaluation Results

The only countries to actually achieve their expected stage thus far are Tanzania (English-speaking) and Democratic Republic of Congo (French-speaking). The keys to progress in stages of transition from 3S to S4 or S5 as well as from S4 or S5 to KAIZEN should lie in decisions of a country's Ministry of Health on establishing quality-oriented departments, guidelines, and plans for expansion.

Though the domestic and supplementary overseas training, instructional visits, and assistance by way of small-scale grant were by no means sizeable, we have successfully established 3S in the pilot hospitals of each country. We have thus successfully improved their work environments, at least superficially.

Meanwhile at the transition stage from S4 and S5 to KAIZEN, domestic and supplementary overseas trainings were conducted regardless of differences of countries' progresses to provide knowledge necessary for the transition. It can be said that the goal has been achieved by effective support which targeted each country's conditions, utilized supervisory trip surveys and small-scale grant, and corresponded to conditions and demands of each country and pilot facilities. There were some countries which provided supplementary support utilizing relevant other projects (e.g. support for JOCV activity).

By its very nature, the establishment of a showcase in a country allows its Ministry of Health officials to better understand the significance and effectiveness of 5S activities. Even after nationwide expansion had been assumed, Ministry of Health participants were able to understand the significance and effectiveness of the techniques through the showcases of other countries referenced during training and tie them to their own country's nationwide expansion efforts.

In terms of transition into the KAIZEN stage at pilot hospitals, no countries were able to begin KAIZEN activities soon after the KAIZEN training course for English-speaking countries in 2009, not even the Mbeya Consultant Hospital (Tanzania's pilot hospital). This suggests that domestic training alone may be inadequate when it comes to introducing KAIZEN.

(4) Promoting and Inhibitting Factors of this Program

All authorities must properly understand the factors involved in the effective expression of this approach and scheme technical aspects. This means that they must understand that stepwise progression, team-oriented activities, and the changing of mindsets are what comprise the core of what is required to properly enact this program. Program progress depends on whether or not instructional visits, small-scale grant, and other support projects can be effectively utilized. Additionally, staff and project in-charge at local JICA offices, Ministry of Health advisors, and specialists from related projects influence the effective utilization of each kind of support. The level of achievement of this program is high in target countries that possess the personnel required to lead its implementation in a timely and precise manner. Thus, effective use of regional resources through South-South cooperation should increase effectiveness and efficiency of this approach

In addition to this program's core support, Ministry of Health advisors and other personnel able to support the decision-making process are essential to ministry creation of guidelines and expansion plans. The actual goal of this approach requires authorities to adequately work together to identify possible organizational and service-oriented improvements and to figure out how to utilize this approach to achieve those aims.

(5) Changes in Management and Clinical Indicators and Program Impact

It is typically difficult to influence clinical indicators at the 5S stage. The results that can be expected from 5S include improvements to work-related indicators such as reduced inventory. At the KAIZEN stage, improvements to indicators of elevated hospital performance like productivity, cost, quality, and safety become possible. The establishment of a system of identifying the indicators for each KAIZEN process and periodically collecting data on them will be sought for the KAIZEN stage in the future.

(6) Roles and Contribution of the Collaboration Preparatory Study

For smooth implementation of the program, the preparatory survey contributes to a) Standardization of Instructional Visits, b) Introduction of a Standardized Data Collection Method, and c) Improvements to Domestic and Supplementary Overseas Training.

(7) Conclusions

It is better that as the gradual implementation from building a 5S-KAIZEN-TQM approach-based foundation for improvements in healthcare services and the organization of healthcare facilities working under resource constraints to the implementation of those approaches are sustainable techniques and allow them to also be effectively applied to other projects will continue and help promote the introduction of 5S-KAIZEN-TQM.

Still, the framework of the Program for better service Hospital must be reconsidered to allow for support that is in line with the level of progress exhibited by each individual country. To achieve this, 5S-KAIZEN-TQM approaches that base their support on the requests of each country's government

and offer uniform (standardized) support in line with what is required at the time should be promoted in favor of the approach of training, instructional visits, and small-scale grant that has been promoted as the core of the Japanese side up until now.

(8) Challenges of this program

- Support that does not properly understand this approach impedes the progress of the program.
- Countries that have not systemically implemented nationwide expansion of the program have not established strategies/indicators for nationwide expansion in the form of implementation guidelines.
- Following KAIZEN training, hospitals introducing KAIZEN on their own require external support from bodies able to offer support for KAIZEN techniques during the trial stages.
- Activities cannot be continued if the individuals who have received training and the authorities in charge of the approach are transferred.
- The level of each country's support is at the discretion of the authorities in charge of the program in each of the countries concerned.
- Information sharing of progress made by countries and support details is inadequate.

Abbreviations

AAKCP	Asia-Africa Knowledge Co-Creation Program
ACHEST	African Centre for Global Health and Social Transformation
AFD	(French) Agence Française de Développement
AfHEA	African Health Economics and Policy Association
AFRO	Regional Office for Africa
APPS	African Partnership for Patient Safety
AU	African Union
CEMAC	(French) Commission de la Communaute Economique et Monetaire de l'Afrique Centrale.
CHU	(French) Centre Hospitalier Universitaire
CHUF	(French) Centre Hospitalier Universitaire Fianarantsoa
CHUM	(French) Centre Hospitalier Universitaire Mahajanga
CISS	(French) Cellule d'inspection des services de santé
CPGH	Coast Provincial General Hospital
CTB	(French)Agence belge de développement
DMAT	Department of Medical Administration and Training
DES	(French) La Direction des établissements de Santé
DS	(French) La Direction de Santé
DFID	Department for International Development
EAC	East African Community
EAHRC	East African Health Research Commission
ECHO	European Commission's Humanitarian Aid Office
ECOWAS	Economic Community of West African States
EMRO	Eastern Mediterranean Regional Office
E/N	Exchange of Notes
EU	European Union
FHI	Family Health International
GAVI	The Global Alliance for Vaccines and Immunization
GFATM	The Global Fund to fight AIDS, Tuberculosis and Malaria
GHWA	Global Health Workforce Alliance
GIZ	(German) Deutshe Gesellschaft fur Internationale Zusammenarbeit
HIV	Human Immunodeficiency Virus
HOMEL	(French) Hôpital de la Mere et l'Enfant Lagune
HPRC	(French) Hôpital Prince Régent Charles
HSSP	Health Sector Strategic Plan
ICU	Intensive Care Unit
IEC	Information Education Communication
IFC	International Finance Corporation
IHP+	International Health Partnership and Related Initiatives
IP	Infection Prevention

ISO	International Organization for Standardization
IST	Inter Country Support Team
JICA	Japan International Cooperation Agency
JOCV	Japan Overseas Cooperation Volunteers
KQMH	Kenya Quality Model for Health
KYT	Kiken Yochi Training
MDGs	Millennium Development Goals
MGHP	Malawi-German Health Program
NEPAD	New Partnership for Africa's Development
NGO	Non Governmental Organization
NHIF	National Hospital Insurance Fund
OCEAC	(French) Organisation de Coordination et de Coopération pour la lutte contre les Grandes Endémies en Afrique Centrale
OJT	On the job training
PBF	Performance-Based Finance
PDCA	Plan-Do-Check-Act
PEPFAR	The U.S. President's Emergency Plan for AIDS Relief
PMAC	Prince Mahidol Award Conference
PNDS	Plan National de Développement Sanitaire
PPP	Public-Private Partnership
PRESSMN	(French) Project de reforcement des soins de santé maternelle et néonatale
QA	Quality Assurance
QATWG	Quality Assurance Technical Working Group
QAU	Quality Assurance Unit
QC	Quality Control
QI	Quality Improvement
QIF	Quality Improvement Framework
QIST	Quality Improvement Support Team
QIT	Quality Improvement Team
QSC	Quality Assurance Steering Committee
QSIT	Quality and Safety Improvement Team
RCQHC	Regional Center for Quality of Health Care
REACH	The Regional East African Community Health Policy Initiative
RECs	Regional Economic Communities
RIPAQS	(French) Réseau international pour la planification et l'amélioration de la qualité et de la sécurité dans les systèmes de santé en Afrique
SQI	Systematic and Continuous Quality Improvement
SOP	Standard Operating Procedure
SSHDP	State Strategic Health Development Plan
TE	Transformative Scale up of Health Professional Education
TICAD	Tokyo International Conference on African Development

TOR	Terms of Reference
TOT	Training of Trainers
TQM	Total Quality Management
UNAIDS	The Joint United Nations Programme on HIV/AIDS
UNFPA	The United Nations Population Fund
UNICEF	The United Nations Children's Fund
USAID	United States Agency for International Development
WAHO	West African Health Organization
WHO	World Health Organization
WIT	Work Improvement Team
WPRO	Western and Pacific Regional Office
WS	Workshop

Indexes

Annex: Trends in other aid agencies and international organizations

Chapter 1   Introduction and Background

Chapter 1   Introduction and Background

1-1   Current status of health services in developing countries

1-1-1   Current trend of development assistance and current status of international health cooperation

Development assistance cooperation aims to achieve the Millennium Development Goals (MDGs) compiled in response to the Milleminum Declaration adopted in UN Millennium Summit in 2000, so that large fund invested and support programs were conducted, and various international frameworks were formed to target to improve the effect of those programs.

As most of these activities are implemented through expanding the outreach and health center functions to directly support the targets, and staff hired by programs and NGOs, assistance fund flow is not sufficient for the healthcare facilities (hospitals) which are core functions in the health system in the relevant countries that facilities and equipments degraded. Africa in particular, the number of healthcare facilities is overwhelmingly low (refer to Table 1-1).

Table 1-1   Healthcare Infrastructure Density per 100,000 population (2010)

	Primary level		Secondary level		Tertiary level
	Health posts	Health centers	District/rural hospitals	Provincial hospitals	Regional/specialized/ research hospitals
Africa	**12.07**	**5.32**	**1.44**	**0.18**	**1.19**
Americas	24.33	4.89	0.93	1.05	9.93
Eastern Mediterranean	10.17	1.84	0.96	0.69	0.20
Europe	24.97	2.52	1.18	1.40	0.45
South-East Asia	45.11	7.17	2.11	0.33	0.08
Western Pacific	39.71	34.09	1.61	1.38	0.20
Global	**23.11**	**7.77**	**1.30**	**0.90**	**2.50**

Sources: Prepared based on WHO (Global Health Observatory Data Repository)

With this condition, WHO: World Health Organization raised the importance of health system in the small booklet called 'Everybody Business' in 2007 as well as taking up the issues surrounding 'health workforce' in 2006 World Health Report. In the booklet, 1.Service delivery, 2.Health workforce, 3.Information, 4.Technologies (Facility, Equipment, Medical products), 5. Financing and Medical Safety, 6.Government and Administrative Monitoring (Governance) are listed as 6 frameworks of health system. Also the importance of improving the access of health service utilizing the health system budget such as health insurance was raised in 2010 World Health Report (Universal Health Coverage).
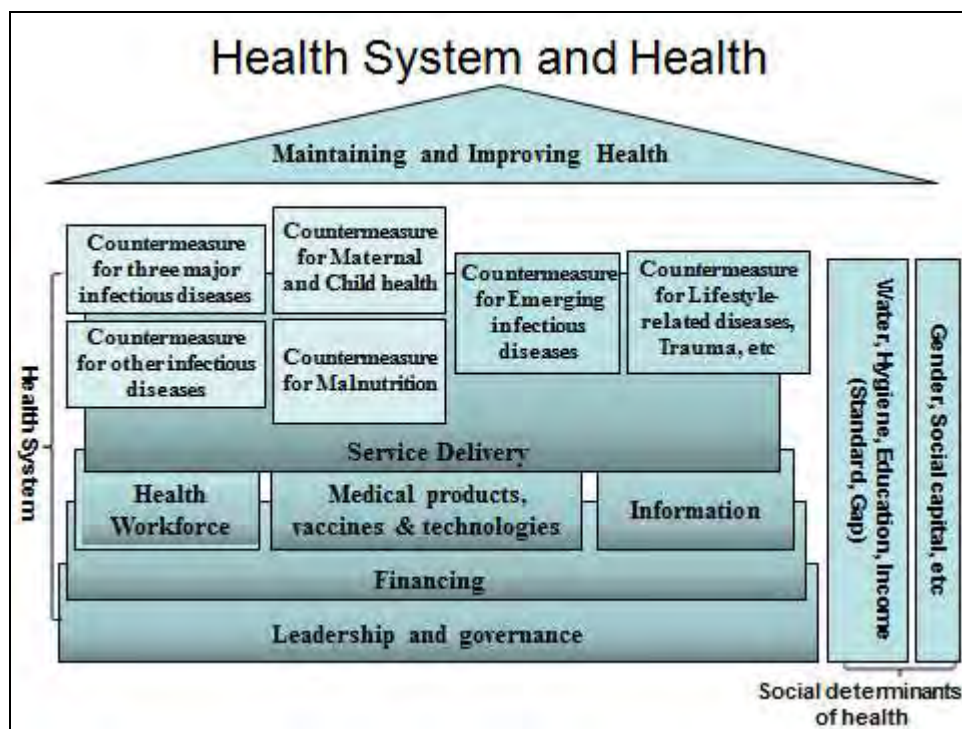
Figure 1-1　Health systems and health
Sources: Everybody's business (WHO, 2007):
Created by JICA based on the WHO health system framework

Furthermore, The Global Health Work Alliance (GHWA) was established in 2006 as the part of strengthening the health system. Lowering the quality in health services was noted because of global drainage of health workforce; particularly the shortage of health workforce in Africa was in a serious condition that GHWA took this as the important issue to secure the health workforce in Africa.

GHWA held '1st Health workforce Global Forum' in Ugand capital Kampala in March 2008. And JICA co hosted '2nd Health workforce Global Forum' held in Bangkok Thailand in January2011, The Declaration, 'From Kampala to Bangkok: Reviewing Progress, Renewing Commitments' was adopted.

In this statement, the main gaps to be addressed were mentioned as follows; "consolidation and staffing health", "accountability and mutual cooperation", "leadership", "supply of human health", "reliability information has been updated high", "quality and performance" and "the rules that are valid and comply". It indicates the necessity of further investment for health human resources.

2

Table 1-2　Health Workforce Density per 100,000 population

Region / Year	Physicians		Nursing and midwifery personnel	
	2000	2008	2000	2008
Africa	**0.05**	**0.11**	**1.84**	**0.59**
Americas	1.25	2.67	4.57	2.98
Eastern Mediterranean	0.98	1.05	1.75	2.38
Europe	3.22	3.45	7.95	7.58
South-East Asia	0.40	0.46	1.20	0.80
Western Pacific	0.74	1.03	6.26	3.26
Global	**1.06**	**1.72**	**4.02**	**4.07**

Sources: Prepared based on WHO (Global Health Observatory Data Repository)

Additionally, "Health System Finance" was taken up in the Annual Report of the World Health Organization (WHO, 2010), and in addition to the direct intervention for each issue (vertical expansion), the development of the platform (horizontal development) have come to be hit by a focus as well.

1-1-2　Current status of healthcare in the target countries of this program

In this program, 15 countries in African continent are the target. In this program, 15 countries in African continent are the target. As mentioned in the above section, after the year 2000, Africa is a region with limited assistance funds for healthcare facilities having a significant healthcare funds shortage such as healthcare facilities and equipments; and healthcare workforce while assistance funds coming in for the infectious disease prevention and treatment. Furthermore, fragility of management in healthcare facilities also produces the situation of unable to utilize the limited resources in an effective manner.

Firstly, difference is recognized from region to region in the values from the MDGs indexes of 15 target countries even though maternal child health index showing the progress of overall improvement. In concrete, values are relatively low in eastern African countries while western African countries excluding Senegal and Morocco still showing high scores (Refer to Table 1-3).

Table 1-3   Situation of Health Satus in the Target Countries (1)

Country / Year	Under-five Mortality Rate (per 1000 live births)			Infant Mortality Rate (per 1000 live births)			Maternal Mortality Rate (100,000 live births)		
	1990	2000	2010	1990	2000	2010	1990	2000	2010
Benin	177	140	109	107	87	70	770	530	350
Burkina Faso	208	182	149	105	95	82	700	450	300
Burundi	183	165	142	110	100	88	1100	1000	800
Democratic Republic of the Congo*	181	181	170	117	117	112	930	770	540
Eritrea	138	98	70	86	64	47	880	390	240
Kenya	98	113	76	64	70	50	400	490	360
Madagascar	161	104	64	98	67	44	640	400	240
Malawi	227	164	89	134	98	56	1100	840	460
Mali	257	214	179	132	114	100	1100	740	540
Morocco	81	53	34	64	44	29	300	170	100
Niger	314	216	131	133	97	69	1200	870	590
Nigeria	214	188	129	127	113	81	1100	970	630
Senegal	136	130	69	69	67	48	670	500	370
Uganda	178	141	94	106	86	60	600	530	310
Tanzania	158	126	73	97	78	48	870	730	460
Africa[1]	**175**	**153**	**110**	**106**	**93**	**70**	**820**	**720**	**480**

Sources: Prepared based on WHO (Global Health Observatory Data Repository)

* Hereafter, indicated as 'DR Congo'.

In infectious disease indexes, HIV tends to be high in eastern Africa, and low in western Africa, Malaria is low in the countries located in relatively high land and high latitude such as Burundi, Eritrea, Kenya, Madagascar and Morocco. Tuberculosis is high in DR Congo, Kenya, Madagascar, Malawi and Uganda. All 15 countries have burdens with HIV/AIDS, Malaria and Tuberculosis (Refer to Table 1-4).

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[1] Morocco is not included in African regions in the chart because it belongs to Middle East and Mediterranean offices.

Table 1-4   Situation of Health Satus in the Target Countries (2)

	Prevalence of HIV (adults aged 15 to 49)	Mortality Rate due to Malaria (per 100,000 population)	Prevalence of Tuberculosis (per 100,000 population)
Country / Year	2009	2008	2011
Benin	1.2	105	70
Burkina Faso	1.2	221	57
Burundi	3.3	39	139
DR Congo	...	193	327
Eritrea	0.8	0.7	97
Kenya	6.3	12	288
Madagascar	0.2	8.5	238
Malawi	11	87	191
Mali	1	131	62
Morocco	0.1	0.0	103
Niger	0.8	184	108
Nigeria	3.6	146	118
Senegal	0.9	76	136
Uganda	6.5	103	193
Tanzania	5.6	87	169
Africa	**4.7**	**94**	**262**

Sources: Prepared based on WHO (Global Health Observatory Data Repository)

With indexes of health professionals who support health services, there are many doctors in Madagascar, Morocco and Nigeria while its number is small in Malawi, Niger and Tanzania although data were taken in different years that indicate definite shortage of health workforce.

Although data of nurses and midwives data was not entered in five countries and data were taken in different years, there are many nurses and midwives in Morocco, Nigeria, Uganda, while those number is small in Malawi, Mali, Niger and Tanzania. It indicates absolute lack of medical personnel in Malawi, Niger and Tanzania (Refer to Table 1-5).

Table 1-5   Health Workforce Density per 100,000 population in the Target Countries

Country	Physicians	Year	Nursing and midwifery personnel	Year
Benin	0.059	2008	0.771	2008
Burkina Faso	0.064	2008	0.729	2008
Burundi	0.030	2004	—	—
DR Congo	0.110	2004	—	—
Eritrea	0.050	2004	—	—
Kenya	0.140	2002	—	—
Madagascar	0.290	2004	—	—
Malawi	0.019	2008	0.283	2008
Mali	0.049	2008	0.297	2008
Morocco	0.620	2009	0.890	2009
Niger	0.019	2008	0.137	2008
Nigeria	0.395	2008	1.605	2008
Senegal	0.059	2008	0.420	2008
Uganda	0.117	2005	1.306	2005
Tanzania	0.008	2006	0.242	2006
Africa	**0.110**	**2008**	**0.590**	**2008**

Sources: Prepared based on WHO (Global Health Observatory Data Repository)

With health facility number, there were no data in Morocco, Nigeria and Tanzania (with Morocco, they entered '0'); some data were missing in Benin, Burkina Faso, DR Congo, Mali and Senegal. High percentage of health post in Madagascar and Niger, same can be said with health center of Burkina Faso.   Kenya slightly exceeds the average of other African regions with the provincial hospitals, but with state, regional, special and educational hospitals, number is below the average of African regions in all 11 countries that have data (Refer to Table1-6).

Table 1-6   Healthcare Infrastructure density per 100,000 population in the Target Countries (2010)

Country	Primary level		Secondary level		Tertiary level
	Health posts	Health centers	District/rural hospitals	Provincial hospitals	Regional/Specialized /Research hospitals
Benin	−	6.36	0.29	0.06	0.12
Burkina Faso	−	10.35	0.98	0.1	0.02
Burundi	0	6.07	0.39	0.18	0.04
DR Congo	−	−	0.44	0.02	−
Eritrea	3.52	1.07	0.3	0.11	0.02
Kenya	8.27	6.55	1.55	0.04	0.02
Madagascar	14.35	0.3	0.37	0.12	0.03
Malawi	0.49	2.53	0.25	0.15	0.03
Mali	−	5.68	0.38	0.05	0.03
Morocco	−	−	−	−	−
Niger	16.07	5.71	0.5	0.07	0.06
Nigeria	−	−	−	−	−
Senegal	7.81	0.61	0.18	−	−
Uganda	8.99	3.77	0.34	0.04	0.01
Tanzania	−	−	−	−	−
Africa	**12.07**	**5.32**	**1.44**	**0.18**	**1.19**

Sources: Prepared based on WHO (Global Health Observatory Data Repository)

Various international institutes and between two countries support institutes and NGOs also provide support to the 15 target countries in this program.   However, it is observed that even the adequate health services were provided during the support period, things went back to the previous conditions after the support period. This comes from the fragility of health system in the relevant countries, and low motivation of relevant countries, ownership of health facilities, and health professionals is considered as its factor.

Of course, it is obvious that healthcare funds shortage gave the impact to the lowering of the health indexes, however, when comparing maternal and child health and infectious disease indexes with medical worker and health facilities indexes, it suggests that it is not only reason as in Malawi and Tanzania.

Mr. Onawa, CEO of ACHEST (African Centre for Global Health and Social Transformation) also describes that 'Low ownership in the relevant countries produces the delay in support, that individuals and institutions in each and every country become active Change Agent and individuals needs to acquire "Can do Attitude" to break away this condition.'

Managing how the limited resources should be utilized to maximize the effect is required to improve health services in Africa. JICA has implemented since 2007, a program introducing '5S-KAIZEN-TQM' approach, which introduces Japanese-style business method in steps, in healthcare facilities in 15 African countries to address this issue.

1-2　5S-KAIZEN-TQM approach
1-2-1　What is 5S-KAIZEN-TQM approach?

5S, KAIZEN and Total Quality Management (TQM) originally developed in the industries, particularly in Japan that is individual management improvement method or approach, and it can be defined as follows.

5S: It is to implement Sort (S1): to eliminate what is unnecessary, Set (S2): to align in the position easy to use, Shine (S3): to make things clean without trash or dust, and Standardize (S4): to maintain S1 to S3, and Sustain (S5): to voluntarily continue S1 to S4. Its original purpose is to delete the defect from finished goods with defect or dirt, and later utilized in the various purposes such as improving the work environment, organizational revitalization and management system improvement.

KAIZEN: In most cases, indicating Continuous Quality Improvement activities by QC circles[2], but it also includes Continuous Quality Improvement recommendations and field improvement activities. It is generally conducted through PDCA cycle, so that it can be called problem-solving through participation by service providers. Toyota production method (such as automation and Kanban-placard method, etc.) fits in this category.

TQM: It is sometimes defined as the implementation of QC circle activities across the organization; it is essentially approach aiming to comprehensive quality management that utilizes capacity throughout the organization at maximum (aggregation of systemized methods). Constraint theory and Six Sigma are one of TQM approaches, and the International Organization for Standardization (ISO) 9000 family implementation is one example of its practice.

'Implementing' these three management methods 'in phases' is a characteristic of '5S-KAIZEN-TQM approach', and within this approach, each step is defined as follows.

- Step1, '5S': improvement of work environment, rethinking of the staff, understanding the business process
- Step2, 'KAIZEN': constructive understanding of the problem and systematic resolution, business process improvement
- Step3, 'TQM': independently managing the organization, realizing value co-creative organization, reliable organization in the region

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[2] A small group implementing KAIZEN activities in Japanese manufacturing industry. It is a group of field staff in charge of continuous quality improvement of their own products and services, which in this program, 5S activity implementing group, WIT (mentioned later) is equivalent.

In the first 5S activities, the efforts will be focused onto improving the environment of the work place as a preliminary stage for ensuring the improvement of the productivities (Working process) as the hospital and various departments (Step 1). Once the 5S activities are thoroughly ensured, the target will gradually shift to solving the problems regarding quality and safety (Step 2), and finally, will shift to realizing and maintaining the organizational TQM (Step 3). In Japan, these 3 approaches are often implemented independently. This approach will not start directly from KAIZEN, but will start from implementing 5S. The reasons are that; 1) all staff members will be able to easily understand 5S, 2) the achievements for 5S can be visually confirmed, 3) the activities for improving the environment of the work place will brew the positive mind and relationship of mutual trust among the work place, and 4) the intermediate management members and staff members at the sites can be fully utilized. Implementing this step would require "positive mindset" and "strong leadership". In the developing countries, it is important to start from ensuring improvement for the staff members (internal customers) in order to develop such "positive mindset" and "strong leadership".

The origin of this approach is the Japanese-style management method which had been implemented in the Japanese industrial community (such as Toyota and other companies); whose very roots lie within the Japanese traditional culture, the art of "tea ceremony", and the concept of "warm hospitality". This step-wise method was developed due to the implementation of the method originally utilized in the industrial community to the Castle Street Hospital for Women in Colombo, the capital city of Sri Lanka by its Director, Dr. Karandagoda in 2000. Director Karandagoda succeeded in implementing the 5S activities, and then expanded the activities to the entire hospital, and then established the structure for this approach where the entire process would be to implement 5S first, then KAIZEN, and finally TQM.

In recent years, many donors such as European Union (EU), United States Agency for International Development, and Deutshe Gesellschaft fur Internationale Zusammenarbeit (GIZ), etc. are assisting Quality Improvement (QI), Quality Assurance (QA) programs as the part of health system improvement, and most of them are mainly motivated by money or material incentive leaving issues for independent development.   On the other hand, 5S-KAIZEN-TQM approach has its incentive in forming the team to work together on-site to promote changing the activities in a positive manner through activities which can enhance the continuity.   That is to say, the approach is promoting spontaneous development rather than extrinsic.

1-2-2   5S-KAIZEN-TQM approach implementation method

In Step 1, the 5S approach, in order to firmly ensure the acts for improving the environment of the work site, an organization for promoting the 5S activities within the hospital (the organization later referred to as Quality Improvement Team: QIT) would have to be established. Establishment of Work Improvement Team: WIT within each department needs to be ordered in a top-down approach. WIT is a small group consisted of the volunteer staff members within each department, and is

expected to promote the 5S activities for each individual work site in order to reduce the inconveniences at each department. At the initial stage of the implementation of this approach, WIT does not need to be approved as an official organization within the hospital; the volunteer members can form the WIT first, and be trained for the basic techniques for 5S.

In 5S Phase, each health professional captures his/her business process by understanding the difference between the improved conditions in the pleasant work place and status in the past with problems. That is to say, each improves the sensitivity to the problems. If progress into KAIZEN Phase carried out without having improvement of sensitivity, KAIZEN activities will be stalled.

Once 5S are firmly established within each department in the hospital and all staff understands their work process and enhances sensitivity against problems, the next stage would be KAIZEN. In the KAIZEN stage, the training targets would shift to enhancing the abilities of the WIT members and intermediate managers such as the top managers of the diagnosis and treatment departments, the inspection managers, and chief nurses, additionally to having the 5S activities continued by WIT, which therefore would strengthen each individual department.

In the TQM stage, the achievements gained during the KAIZEN stage would have to be accumulated in order to improvement entire management of the hospital, additionally to solving various different problems. In TQM, it would be necessary to enhance the management abilities of the hospital top management such as the hospital director and the top officers of the hospital.

And then all the staff, as Internal Entrepreneur, should become hospital management creators from the service providers to aim for realizing 'value co-creative organization'. Patients not only hold the currency resource as compensation, but understand their symptoms very well, and have disease information, that is to say, important information resource. Hospitals hold knowledge, human resource, facilities, that is to say, information resource and physical resource to alleviate their symptoms and treat the disease. When both parties form a team, enables integration of all the resource. And at the same time, 'value' which both side look for in this environment and in this timeframe, can be shared. Then, 'sharing the experience' through this shared process can be a basis to form the framework of required 'value', and eventually, 'value' of provider and service on the same ground is created through co-cooperation. TQM is a method of permanently continuing the approach to aim for 'Value co-creative organization' that all the staff can develop 'this value co-creation' independently.
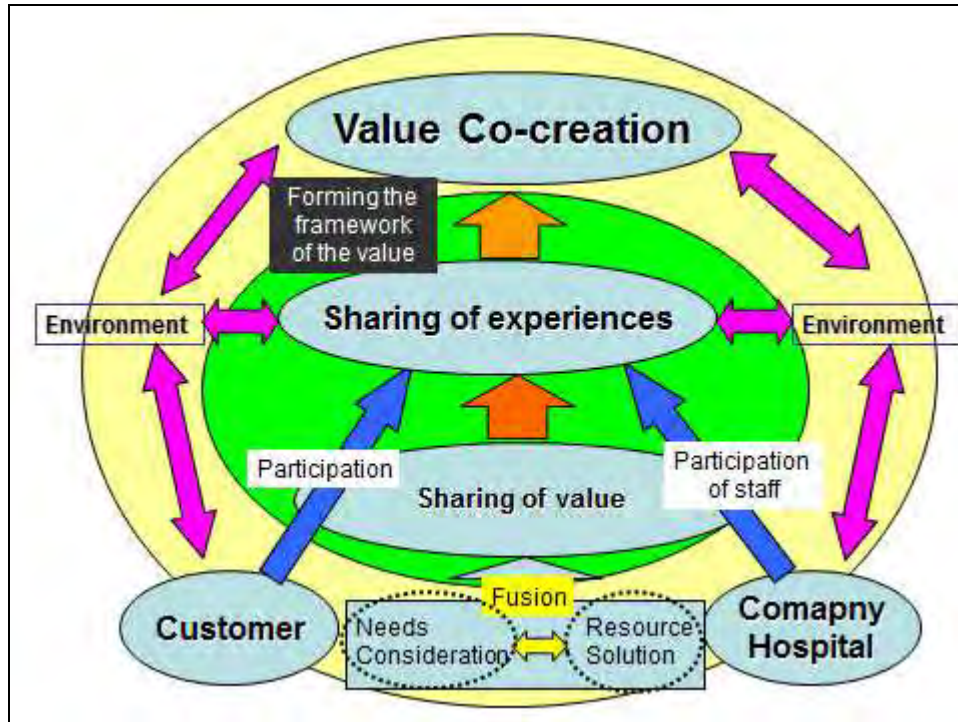
Figure 1-2   Conceptual diagram of the process of value co-creation

Furthermore, this approach is not implemented in one hospital alone, but when centered around the first hospital implemented (pilot hospital), and expands it to other hospitals and healthcare facilities, it is possible to improve public health services in relevant countries.

In order to deploy this 5S-KAIZEN-TQM method to a nation-wide level, the following 2 tracks will be required to be implemented;

- Track1:Proceeding of the efforts implemented within the hospital in the order of 5S-KAIZEN-TQM
- Track2:Deployment of the approach from the pilot hospital to a nation-wide level
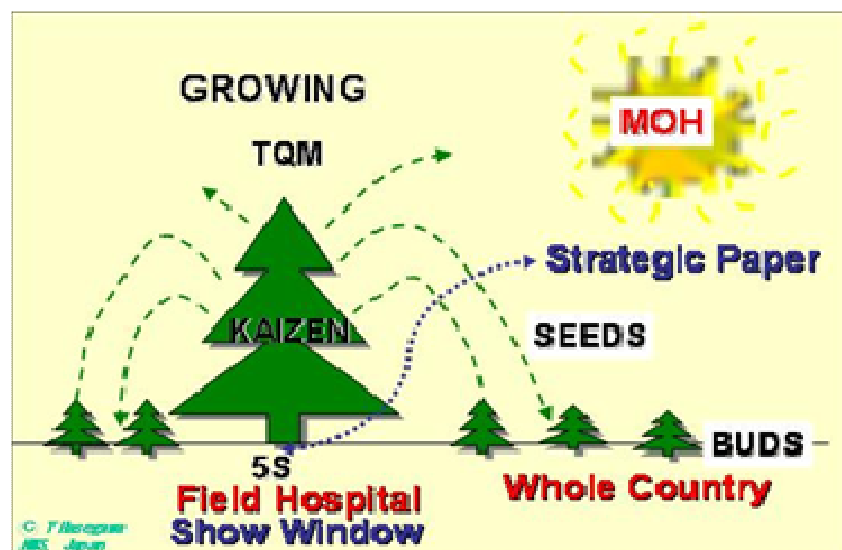
Figure 1-3   Tracks for Nation-wide expansion of the step-wise approaches

Track 1 sets its target to have the "TQM tree" grow within the pilot hospital (the Center of Excellence), which would become the model hospital for all of the other hospitals in the same country, and during this stage, it would be important for the responsible department within the Ministry of Health (MOH), etc. to provide appropriate support for the activities implemented within the pilot hospital. When the achievements within the pilot hospital are confirmed, the track will move onto Track 2 where the responsible departments within the MOH, etc. would establish the appropriate strategies and guidelines based on the knowledge gained through the successful completion of Track 1 and other activities, and deploy the approach to other medical institutions at a nation-wide level based on such strategies and guidelines. In order to deploy the medical service quality improvement activities utilizing 5S-KAIZEN-TQM to a nation-wide level, it would be necessary to functionally blend Track 1 with Track 2.

1-3   The Program of Quality Improvement on Health Services by 5S-KAIZEN-TQM

1-3-1   Outline of the program

Japan International Cooperation Agency (JICA) started 'Total Quality Management (TQM) for Better Hospital Services', the sub-program aim to improve health services (its detail described later) with the use of a before-mentioned Japanese-style quality management method (5S-KAIZEN-TQM) to 8 African countries (Eritrea, Kenya, Madagascar, Malawi, Nigeria, Senegal, Tanzania, Uganda) as target in 2007, and the program was expanded to 7 French-speaking countries (Benin, Burkina Faso, Burundi, DR Congo, Mali, Morocco, Niger) in 2009.   And then support for KAIZEN introduction and nationwide deployment of 5S are in place in the target 15 countries. Then, in 2011, to reorganize the structure of the French-speaking language group to another (9 countries) and English-speaking countries (6 countries), we have carried out training and other support. In addition, this 5S-KAIZEN-TQM approach has been utilized in various forms such as implemented in technical cooperation projects and grant aid prohject, adopted in JOVC activities, and introduced in the lectures of health related seminars. In this report, each program and activity level are standardized to following names.

Table 1-7   Each program names and its description

Name	Description
The Program of Quality Improvement on Health Services by 5S-KAIZEN-TQM (Commonly known as the Program "Total Quality Management (TQM) for Better Hospital Services")	Generic name for the program supporting introduction and establishment in phases of each method in 5S-KAIZEN-TQM started in 2007.
"Total Quality Management (TQM) for Better Hospital Services" Phase 1	Program supporting towards introduction and implementation of 5S activities in target countries. Period is 1 and half year consists of 3 seminars (introduction, mid-term, and final-wrap-up) and 1 Supervisory Trip Survey.
"Total Quality Management (TQM) for Better Hospital Services" Phase 2	Targets are the countries completed Phase 1 of "Program of TQM for Better Hospital Services". Support is made including establishing 5S in the pilot hospitals, step-up period for KAIZEN, and nationwide deployment of Ministries of Health. Key activities consist of seminars by issues, Supervisory Trip Surveys, and provision of support expense (each of them, once a year).
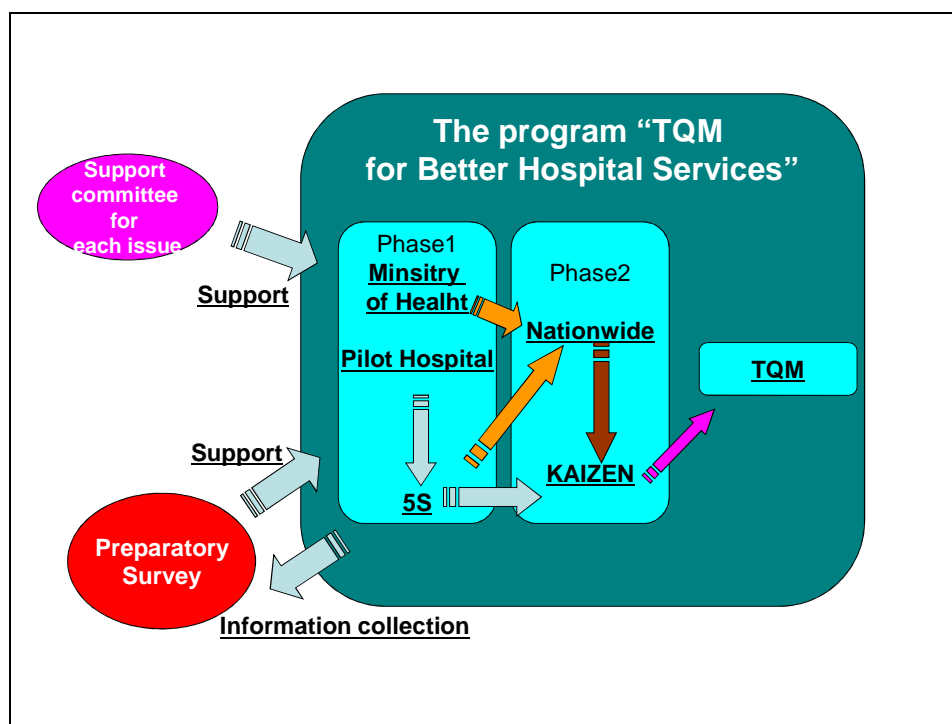
Figure1-4   Image of The Program of Quality Improvement on Health Services
by 5S-KAIZEN-TQM

1-3-2　Outline of "Total Quality Management (TQM) for Better Hospital Services" Program

Japan International Cooperation Agency (JICA) inaugurated an Asia-Africa Knowledge Co-creation Program (AAKCP) in 2005, with a view to the "promotion of Asia-Africa cooperation," an initiative launched by the Government of Japan (GoJ) in the Tokyo International Conference on African Development (TICAD) III held in 2003. The agency embarked on "Total Quality Management (TQM) for Better Hospital Services" as a sub-program of the AAKCP in March 2007. The sub-program aim to improve health services with the use of a Japanese-style quality management method, so called 5S-KAIZEN-TQM.

Here shows two main characteristics of the Program;

• It looks at both the policymaking level, i.e., administrative organizations in charge of health services, and the working level, i.e., actual medical institutions.　It intends to bring about synergy effects from both policy-level and field level activities.

• "TQM for Better Hospital Services" aims to achieve and establish "Value Co-creation Organization" by utilizing "5S-KAIZEN-TQM" method which implements so-called 5S and KAIZEN, which are two management tools, in phases.

Target countries for 'TQM for Better Hospital Services' are as follows;

Table 1-8　List of 15 countries participating in the Program "TQM for Better Hospital Services"

Group 1			Group 2		
English-speaking countries			French-speaking countries		
Eastern part of Africa	Western part of Africa	Southern part of Africa	Western part of Africa	Northern part of Africa	Southern part of Africa
Eritrea Kenya Tanzania Uganda	Nigeria	Malawi	Benin Burkina Faso Burundi Mali Niger Senegal	Morocco	DRC Madagascar

Table 1-9 indicates summary of pilot hospitals where activities were implemented.

Table   1-9 (1) Information of the Pilot Hospitals of the Group 1

Country	Hospital name	Number of beds	Department	Level
Eritrea (ERI)	Orotta General Hospital	189Beds	Emergency, Surgery, Internal Medicine	Tertiary
	Halibet Hospital	250 Beds	Internal Medicine, Surgery, etc.	Secondary
Kenya (KEN)	Mathari Hospital	750 Beds	Psychiatry	Tertiary
	Coast Province General Hospital	700 Beds	General Hospital	Secondary
Malawi (MWI)	Dowa District Hospital	144 Beds	Surgery, Internal Medicine, Obstetrics, Pediatrics etc.	Secondary
	Mzimba District Hospital	290 Beds	General Hospital	Secondary
Nigeria (NGA)	Lagos Island Maternity Hospital	184 Beds	Obstetrics and Gynecology, Newborn, Antenatal Care, Emergency Obstetrics	Secondary
Tanzania (TZA)	Mbeya Referral Hospital	477 Beds	General Hospital	Tertiary
Uganda (UGA)	Tororo General Hospital	210 Beds	Internal Medicine, Surgery, Obstetrics, Pediatrics	Secondary

Table1-9 (2) Information of the Pilot Hospitals of the Group 2

Country	Hospital name	Number of beds	Department	Level
Benin (BEN)	Lagune Maternal and Child Hospital (Hôpital de la Mère et de l'Enfant Lagune)	220 Beds	OB/GYN, Neonatal, Pediatrics	Tertiary
Burkina Faso (BFA)	Banfora Regional Hospital Center (Hôpital de la Banfora State)	104 Beds	Emergency, Pediatrics, Internal Medicine, Obstetrics, Surgery	Secondary
Burundi (BDI)	Prince Regent Charles Hospital (Hôpital Prince Regent Charles)	495Beds	General Hospital	Secondary Tertiary
DR Congo (COD)	Ngaliema Clinic (Clinique Ngaliema)	250Beds	General Hospital	Secondary
Madagascar (MDG)	CHU Mahajanga	392Beds	General Hospital	Tertiary
	CHU Fianarantsoa	444Beds	General Hospital	Tertiary
Mali (MLI)	Nianankoro Fomba Hospital (Hôpital Nianankoro Fomba de Segou)	139 Beds	General Hospital	Secondary
Morocco (MAR)	Sale District Hospital (Hôpital de Sale)	169 Beds	OB/GYN, Traumatology, Internal Medicine, Pediatrics, Emergency, ICU	Secondary
Niger (NER)	Lamorde National Hospital (Hôpital de Lamordé de Niamey)	253 Beds	General Hospital	Tertiary
Senegal (SEN)	Tambacounda Provincial Hospital	135 Beds	General Hospital	Secondary

In Phase 1 of the program 'TQM for Better Hospital Services', 5S was introduced as '5S phase' in the pilot hospitals, and Ministries of Health prepared policies and dissemination strategies in order to deploy nationwide based on the results of pilot hospitals. Phase 1 of "Program of TQM for Better Hospital Services"was implemented mainly in English-speaking countries with 8 countries from 2007 to 2008, and in 7 French-speaking countries from 2009 to 2010 as its target.

'5S phase: Improving workplace environment'

a. Introduction Seminar: Explain this approach to healthcare service quality and safety bureau responsible directors in Ministries of Health; and hospital directors in candidate hospitals for pilot hospitals, and introduction to own countries

b. Mid-term Seminar: Holding 5S seminars to mid-level management executives in the pilot hospitals, and formulating Action Plans

c. Starting 5S activities: Based on the Action Plans formulated in 2, each pilot hospitals starts 5S pilot activities, and Ministries of Health start to review quality and safety of healthcare services (1 year).

d. Supervisory Trip Survey: Supervision provided on-site by resource persons by issue from Japan and Sri Lanka

e. Wrap-up Seminar: Presentation and sharing the experience of results of 5S activities in the pilot hospitals

Later, Seminar by region, 'The Program of Quality Improvement on Health Services by 5S-KAIZEN-TQM' and the Supervisory Trip to support field activities were conducted to transform the results of "Program of TQM for Better Hospital Services" to 'KAIZEN-TQM Phase'. (Phase 2 of "Program of TQM for Better Hospital Services").

Seminars by region were held from 2009 to 2010 mainly in 8 English-speaking countries, separately held in English and in French-speaking countries in 2011, and are going to be held in 9 French-speaking countries in 2012. Supervisory Trips were carried out in all target countries until 2010, but have been carried out upon request from the target countries since 2011.

'KAIZEN-TQM Phase: Improving operational process'

a. Holding Seminars (KAIZEN-TQM Phase): Once a year to confirm the progress of each country, conducting lectures and exercises to formulate strategy paper and Action Plans. After initial year onwards, reviewing the contents of seminars based on the progress of activities in each country confirmed during the Supervisory Trips.

b. Ministries of Health formulating policies and nationwide deployment: Ministries of Health in each country formulate quality related policies, and start nationwide dissemination of 5S activities.

c. Starting KAIZEN activities: Pilot hospitals start introducing KAIZEN activities.

d. Supervisory Trip Surveys: Conducted one a year.

Moreover, 'Cooperative preparatory surveys' have been implemented since December, 2009 to support smooth implementation of Better Hospital Services, Seminars by region and Supervisory Trip Surveys.

Relationship between "Program of TQM for Better Hospital Services", Seminars by region and Cooperative preparatory surveys so far is sorted out and shown in Figure 1-5 in the next page.

Year	Group	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2007	Group 1			**5S Phase** Launching 5S pilot activies — Introduction Seminar (5S)				5S Interim Seminar					
2008	Group 1	**5S Phase** Proceeding 5S pilot activities (5S) (Continue) — Supervisory Trip (ST)										5S Wrap-up Seminar	
2009	Group 1									**KAIZEN Phase** Pilot activities (5S→KAIZEN) — KAIZEN Introduction Seminar			
2009	Group 2			**5S Phase** Launching 5S pilot activities — Introduction Seminar (5S)									
2010	Group 1	**KAIZEN Phase** Proceeding pilot activities (5S→KAIZEN) (Continue) — ST					KAIZEN Interim Seminar				ST		
2010	Group 2	**5S Phase** Proceeding 5S pilot activities (5S) — ST									5S Wrap-up Seminar		
2010	Prep. Survey	**Launching** — ST+Review Survey					Public Seminar		Capacity building training	Seminar Facilitation		ST+Review Survey	
2011	Group 1	**KAIZEN Phase** Proceeding pilot activities (5S→KAIZEN) (Continue) — ST									KAIZEN Interim Seminar	ST	
2011	Group 2	GHWA Global Forum							**KAIZEN Phase** Pilot activities (5S→KAIZEN) — KAIZEN Introduction Seminar				
2011	Prep. Survey	ST		Report Writing					Seminar Facilitation			ST+Review Survey	
2012	Group 1	**KAIZEN Phase** Proceeding pilot activities (5S→KAIZEN) (Continue) — ST										ST	
2012	Group 2	**KAIZEN Phase** Proceeding pilot activities (5S→KAIZEN) (Continue) — ST							KAIZEN Interim Seminar (In Japan)	KAIZEN Interim Seminar (In Senegal)	ST		
2012	Prep. Survey	ST+Review Survey				Support for KAIZEN Interim Seminar						ST+Review Survey	
2013	Group 1	ST											
2013	Group 2	ST											
2013	Prep. Survey	ST+Report Writing											

Figure 1-5   Relationship between the Program "TQM for Better Hospital Services" and region-focused training and preparatory survey

Chapter 2   Preparatory Survey

Chapter 2   Preparatory Survey

2-1   Results of last survey

As described earlier, '5S-KAIZEN-TQM' approach is utilized in various types of projects and JOVC activities, etc. other than "Program of TQM for Better Hospital Services".   However, their results and lessons have not been shared so far as the projects and activities were conducted by each respective countries and operations. In order to aim for establishing the region's horizontal support system by considering healthcare facility improvement activities in African regions as one operation, 'Cooperation of the Program of Quality Improvement of Health Services by 5S-KAIZEN-TQM', it is required to confirm the current and progress status, and results of the activities conducted so far, and to compile and systematize. Moreover, it is requested to clearly indicating the results of this method on evidence to communicate 5S-KAIZEN-TQM of so far as universal method.

Purpose, actual activities, survey results, and recommendations of Cooperative preparatory survey were as follows.

(1)   Purpose of the survey

a.   Review of the effectiveness of Cooperation: By Monitoring and result review of implementation status of each country

b.   Implementation support: On implementing Action Plans and formulating dissemination strategies in each country

c.   Review the possibility of cooperating with policies in each country and other assistance institutes: By confirming assisting the policy formulation in relevant countries, and quality and safety related assistance status in healthcare services by international institutes and other donors

d.   Sharing the results of this approach through PR and transmission of information

e.   Related case formation assistance in each country

(2)   Activities

a.   Review the cooperative results by "Program of TQM for Better Hospital Services" carried out so far (confirm the progress of this program, and extract good examples and issues, results of seminars conducted so far in the program and area for improvement, etc.)

b.   Systematize and transmit the knowledge obtained during the seminars and practices in "Program of TQM for Better Hospital Services" (by creating web pages; newsletters; standard textbooks; and collection of documentation, and supporting international seminars and open seminars; and competence enhancing seminars, and carrying out publicity activities etc.), and review the possibility of mutual complement with other methods towards quality improvement of health services.

c.   Support formulating wide-area programs based on compilations of directions and activities of "Program of TQM for Better Hospital Services"

d.   Support the implementation of existing pilot projects and project formation approach in each

target country of this program

(3) Survey Results

a. Dissemination of 5S activities and formulation of quality improvement strategies of health services have started in many countries and the planning was in place.

b. It was confirmed that approach towards KAIZEN started in Tanzania, Nigeria and Uganda, and Madagascar and Senegal were on-going the trial period.

c. As the result of 5S process evaluation using monitoring check sheet, it was confirmed that in Group 1, under strong leadership, relatively showing steady progress from Sort (S1), Set (S2) to Shine (S3), but difference was expanding with the progress on Standardize (S4) and Sustain (S5) phase from country to country, and that also in Group 2 steady progresses were found under strong leadership, but there was large difference with the progress among each countries.

d. It was confirmed that targets of this program, 'Introducing Stepwise', 'Nurturing Leaderhsip' and 'Mindset change' were actively functioning. Moreover, effectiveness of framework for effective implementation of this approach: 'Encouraging hospitals and Ministries of Health', 'Combination of seminars and Supervisory Trips' and 'Peer group formation' was also confirmed.

e. Among basic information and Baseline Review information collected, each hospitals secured information related to providing financial and health services in systematic manner to a certain level, however they did not regularly measure the items, which is easy to measure 5S effects such as those relevant to hospital management and safety, etc.

f. While there were many responses saying it was easy to utilize the results relevant to seminars at field level, there was a finding that contribution to secure finance for 5S implementation was low.

g. It was confirmed that as regards to the international institutes and other assistance institutes, some international and assistance institutes were working for quality improvement of health services including WHO, with them also showing highly interested in this approach.

h. Understanding the uniqueness of this approach is thoroughly permeated as well as widely introducing this approach to domestic international health researchers, practitioners, and donors and international institutes through activities such as open seminars, preparing the technical documentation, releasing the newsletters, and Skill Building Workshops (SBW) at the global forum of Global Health Workforce Alliance (GHWA).

(4) Recommendations

a. In order to support the effective introduction and dissemination of 5S-KAIZEN-TQM approach under correct understanding, it is desirable to build the system, a)formulating overall policy to introduce and disseminate this approach, b)promoting information sharing on the knowledge, progress and results, etc. of this approach, c)securing (human) resource in charge of disseminating this approach, and d)the personnel in charge of this program being charge of core operation: seminars by region and its follow-up operations that operating individual cases other than those should be handled by each operation personnel.

b. In future, it is considered possible to operate the program efficiently by standardizing activities

required in 5S-KAIZEN-TQM, and sharing information among the implementers. Moreover, it is required to transmit the information to increase the advocates and dissemination supporters as well as correctly demonstrating its validity to disseminate this approach.

c. Cooperative results in this program was reviewed through the previous survey, which is gaining international notice, however, it is extremely important to systematize this program including KAIZEN Phase and demonstrate future strategic deployment in order to communicate validity of this program.

2-2   Purposes of this survey

The preparatory survey has been continued to March 2013 to put in practice of the recommendations in the survey. Purposes of this preparatory survey are to review cooperative results of 'KAIZEN-TQM introduction phase', cooperation and mutual complement with other health supports (such as Technical cooperation projects, grant aid prohject, Japan Overseas Cooperative Volunteers (hereafter, JOCV), to systematize by considering the consistency with trend of other international institutes and assistance institutes; and international health, and to formulate the strategies towards its dissemination and establishment.

Moreover, expected results are as follows.

a. Cooperative results in "Program of TQM for Better Hospital Services" so far is reviewed(including Review of KAIZEN introduction phase in Group 1 target countries)

b. Information is sorted out and transmitted towards systematization of knowledge such as results and actual records in "Program of TQM for Better Hospital Services" (transmitting the information through creating collection of KAIZEN examples and web page)

c. Directions and activities of cooperation utilizing the results of "Program of TQM for Better Hospital Services" are compiled and concrete strategies are formulated.

d. With strategies formulated in above c, implementation support and monitoring are carried out for the pilot activities in each country, and future activity deployment is reviewed such as in project formation based on these strategies.

Target for Preparatory Survey includes, in addition to monitoring of pilot activities and technical assistance in 15 African countries implementing "Program of TQM for Better Hospital Services", support seminars by region, and furthermore, confirming the positioning of this approach in international health through surveys by World Health Organization (WHO) HQ, West African Health Organization (WAHO, Burkina Faso), and Regional Center for Quality Health Care (RCQHC, Uganda).

2-3   Implementation System

Implementation system in this Preparatory Survey is shown in the figure below. This Preparatory Survey is on-going along with resource persons by issue supporting 'Better Hospital Services 'that consultants are in charge of secretariat function to promote overall operational management in this

survey. Moreover, it supported not only coordinating communication between JICA and committee of resource persons by issue, but also the cooperation with organizations and institutes related to the activities such as related parties in "Program of TQM for Better Hospital Services" target countries.
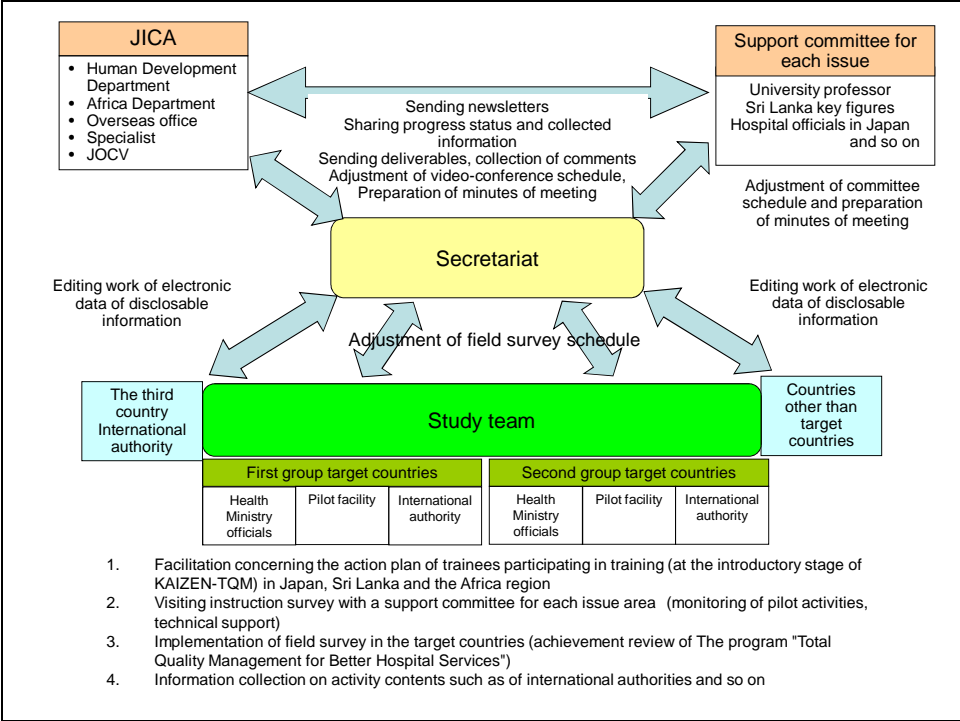
Figure 2-1   Implementation System

2-4   Survey and Activity Items

Activities in this survey operation covers wide range of areas such as supporting activities related to the program 'TQM for Better Hospital Services'; review of the effectiveness of this program; and future strategy formulation. Table 2-2 in the next page describes its implementation process.

Research purpose: To verify the effect of the activity to improve the medical facility function with 5S-KAIZEN-TQM adopted in 15 target countries through the program "Total Quality Management (TQM) for Better Hospital Services", and formulate a strategy toward penetration and sustainment.

Expected outcome:

Verification of the previous achievements of cooperation

Information assembly/transmission toward systematization of knowledge

Directionality of cooperation, coordination of activities and specific strategy formulation

Operational support and monitoring of the pilot activity in each country and review of the development of future activity

Specific activities:

Activity 1 Preparation of Inception Report

Activity 2 Implementation of facilitation in training

Activity 3 (Part 1) Implementation of field investigation (1st year)
3−1 Preparation of a field survey plan
3−2 Field survey
    (1) Visiting instruction survey with a support committee for each issue
    (2) Achievement review of The program "TQM for Better Hospital Services"
    (3) Information collection on activity contents such as of international authorities and so on
3−3 Coordination of field survey results

Activity 4 Revision of 5S-KAIZEN-TQM text and preparation of positive benefits (good practice)

Activity 5 Information sharing within Africa

Activity 6 Organization of information toward update of website

Activity 3 (Part 2) Implementation of field investigation (2nd year)
3−1 Preparation of a field survey plan
3−2 Field survey
    (1) Visiting instruction survey with a support committee for each issue
    (2) Achievement review of The program "TQM for Better Hospital Services"
    (3) Information collection on activity contents such as of international authorities and so on

Activity 7 Proposal for specific strategy formulation toward the future development of The program "TQM for Better Hospital Services"

Preparation of Final Report

Support by Secretariat

Figure 2-2   Overview of Operational flowchart based on activities

Key activities to achieve the results of this survey are as follows.

(1) Supporting seminars

Attend the seminars in Japan, Sri Lanka and African regions conducted by JICA Tokyo International Center, and support the workshops to prepare Action Plans (Activity 2)

(2) Conducting Field Surveys

1) Conducting supervisory trips with resource persons in the target countries (Monitoring of activities in the pilot hospitals) (Activity 3)

2) Conducting baseline review of the program 'TQM for Better Hospital Service' and survey on the existing policy framework and implementation system of the quality of health care services in target countries (Activity 3)

3) Collecting information on the related activities of international institutes and other assistance institutes
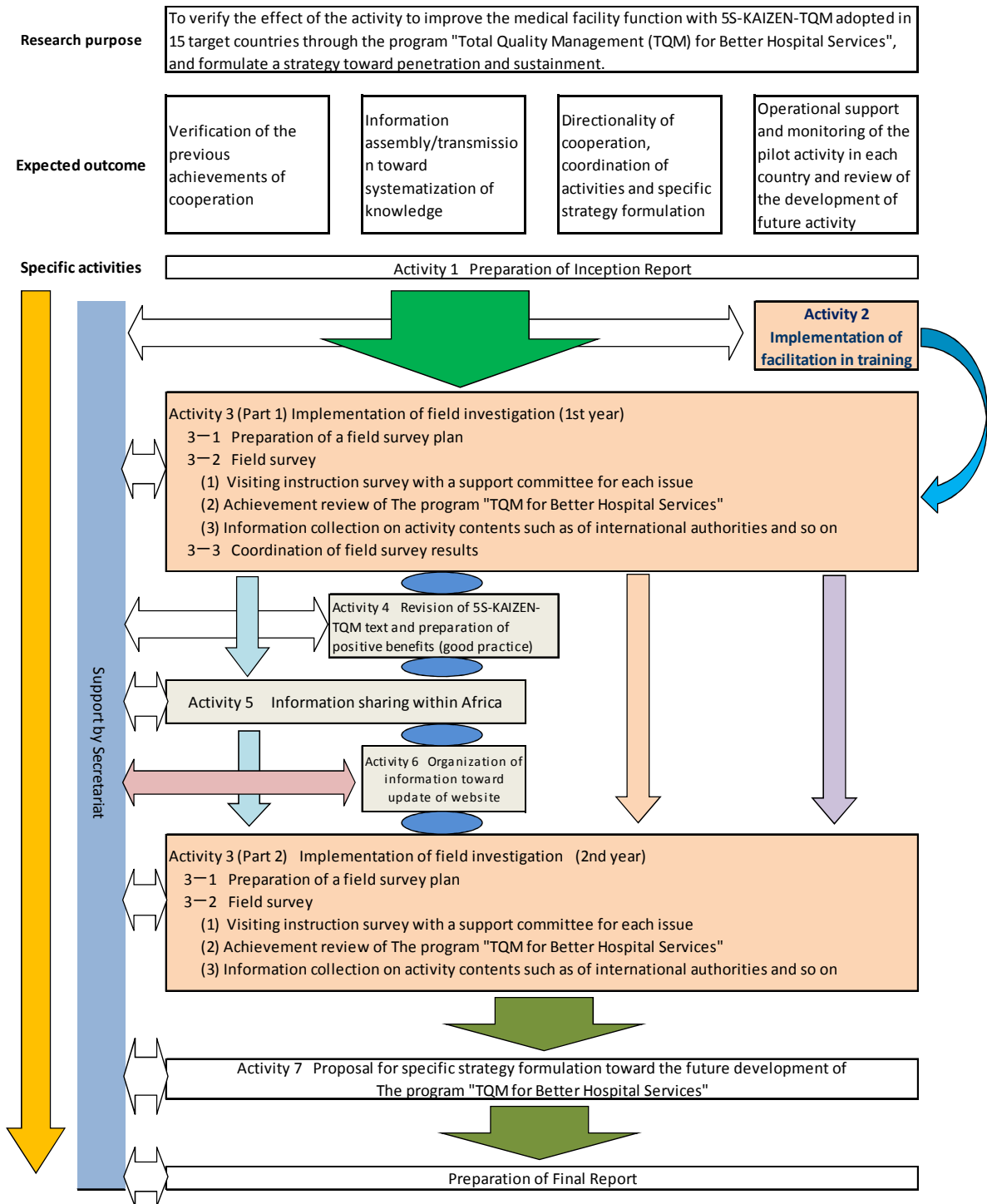
In the supervisory trips and baseline review, discussed with international institutes and other assistance institutes which implement related cooperation, and

Also captured quality improvement related activities in health service carried out by WHO headquarters and the quality improvement activities in health service with the various platforms that had been established in African regions.

(3) Other activities

Moreover, following activities were conducted to achieve the results of this survey by supporting the above survey activities.

a. Revise the 5S-KAIZEN-TQM textbooks and prepare good practice examples (Activity 4)

b. Sharing information to African regions (Activity 5)

c. Sorting out information for updating web page (Activity 6)

Chapter 3   Contents of Survey and Activity

Chapter 3   Contents of Survey and Activity

3-1   Supporting Seminars

Purposes of this seminar are:

1)   To promote preparation enabling the transfer to KAIZEN phase at the pilot hospitals in each target country.

2)   Pilot hospitals in each target country acquiring the processes to 'be organized' and competence enhancement of the medical workers to transfer from S4/S5 phases to KAIZEN in the framework of 5S-KAIZEN-TQM activities.

Each seminar has seen improvement based upon the recommendations from the previous seminars that progress method was adopted to let participants to conduct Q&A sessions and exercise presentations, etc. in order to enhance their initiatives as well as clarifying path from 5S to KAIZEN and required skills.   This Preparatory Survey supported JICA Tokyo International Center, which is the organizer of seminars by region, in formulating the seminar plans, logistics and facilitations at the time of seminars.

The first seminars were held from August 29th to September 8th, 2011 in Japan and from September 9th to 16th, 2011 in Sri Lanka.   These seminars were the first of the series of seminars provided to Group 2 as the target (KAIZEN-TQM introduction phase) that confirming the establishment status of Standardize (S4) and Sustain (S5) among 5S, and KAIZEN introduction were focus of the seminars. Enabling cross-sectional confirmation of progress in each country was considered in the progress presentation. Moreover, it was highlighted 5S: S4 and S5 in particular, are the preconditions for KAIZEN while recapping the link from 5S and KAIZEN during the seminars.   Formulating more practical plans in line with the progress of each country was taken into account when preparing Action Plans.   Furthermore, as Senegal and Madagascar that previously belonged to Group 1, participated in the seminars as Group 2 countries, consideration was made to enable the utilization of the knowledge of participants from relevant countries in the seminars.

The second seminars were held from October 17th to 25th, 2011 in Japan and from October 26th to November 4th, 2011 in Tanzania.   These seminars were the third of the series of seminars provided to Group 1 as the target (KAIZEN-TQM introduction phase) that TOT towards dissemination and expansion of KAIZEN in particular was important. Since participating countries in Group 1 were neighbors except Nigeria and Eritrea, regional cooperation possibility was also in focus while cooperating with other JICA operations (technical cooperation projects in Tanzania and Uganda, experts from Malawi, wide-area planning surveyors from Kenya, etc.) when preparing Action Plans.
The third seminars were held from August 3rd to 13th, 2012 in Japan and from September 17th to 25th, 2012 in Senegal.   These seminars were the second of the series of seminars provided to Group 2 as the target (KAIZEN-TQM introduction phase) that confirming progress status of Action Plans prepared in the first seminars; and of approach taken in response to the recommendations from

resource persons by issue in the Supervisory Trips was important. Contents of seminars were formulated by utilizing the knowledge in Group 1 while each country's progress status was taken into account.

Participants seem to have sufficiently accomplished the above goals as far as seen in the seminar evaluation. However, only 8 countries:　Benin, DR Congo, Kenya, Madagascar, Mali, Nigeria, Tanzania, and Uganda started KAIZEN activities at the time of Supervisory Trip Surveys in FY2012.

3-2　Implementation of the Field Survey
　3-2-1　Supervisory Trips and Baseline Review Surveys
　This Supervisory Trips and Baseline Review Surveys are in the position of being activities collecting evidence required for systematization of cooperative preparatory surveys as well as being the follow-up activities to 'the Quality improvement in health services by 5S-KAIZEN-TQM (KAIZEN-TQM introduction phase)'. And 'Baseline Review Surveys' are conducted in cooperation to confirm the implementation status of 'Supervisory Trips' by resource persons by issue supporting 5S-KAIZEN implementation and nationwide dissemination promotion of 5S, and Action Plans in strategy paper formulated in the seminars by region.

In this survey, resource persons by issue in charge of Supervisory Trip Surveys and consultants in charge of Baseline Review Surveys visited countries that had requested among 15 target countries, to make visits within pilot hospitals to collect the information required for 5S-KAIZEN and Baseline Review as well as evaluating 5S-KAIZEN activities' progress.

Furthermore, recommendations for future activities and supports were presented to target countries and pilot hospitals, related projects, and JICA Offices.　Description of support by target country is indicated in Table 3-1.

Table 3-1　Description of support by target country

Target countries	FY2011	FY2012
Benin		Supervisory Trip Surveys (several hospitals including HOMEL)
Burkina Faso		Support Ministry of Health formulating dissemination strategy for deploying the results of 5S approach in the pilot hospital nationwide (assuming technical advice such as introducing other countries' examples and points to consider when formulating the strategy)
Burundi		On-site about 1 week　coincide with TOT seminar period
Eritrea	Guidelines and instructions for nationwide deployment	Progress monitoring of Action Plans
	'KAIZEN' instruction	Advice for formulating the guideline
Kenya	Participating TOT and support the implementation	Advice and instruction for 5S nationwide dissemination and moving to KAIZEN
DR Congo	Support holding Action Plan Follow-up workshop of 5S-KAIZEN-TQM dissemination workshop of FY2010	Supervisory Trip Survey
	Support dissemination to 2 neighboring states	
Senegal	Supervisory Trips conducted　in both in Senegal and Mali.	Supervisory Trip Survey(Jointly evaluated with Mali)
	Senegalese related persons accompanied to observe a good practice.	
Nigeria	Discussed with JICA's maternal and child health reinforcing project	Progress monitoring of Action Plans by Supervisory Trip Survey
	Support 5S dissemination in the hospitals under supervision of Federal Health Ministry	Conduct 5S Follow-up Seminar to hospital staff in the hospital under supervision of Federal government Health Ministry
Madagascar	Monitoring and Instruction	Monitored the extent of implementation by pilot hospital and Ministry of Health of proposed items during the Supervisory Trip in November, 2011.
	Opinion exchange regarding cooperation between 'human childbirth care' and 5S method.	
	Discuss on activity support system by Ministry of Health	
Malawi	Participating TOT and support the implementation	Supervisory Trip Survey
	Advice to the guideline	
	Partially participating and advising to 2nd　5S Workshop hosted by JOCV and C/P	
Mali	Trips conducted　in both in Senegal and Mali. Senegalese related persons accompanied to observe a good practice.	Jointly conducted in Senegal. Confirmed activity progress based on the presentation by Malian participant and consultation provided.
Morocco		Conduct 5S-KAIZEN-TQM seminar for administrative vice secretaries and division managers of Ministry of Health, and advice to JICA Office.

(1) Survey items

Survey contents, subjects and methods for each survey item are as Table 3-2. Concrete survey methods are described in the following section.

Table 3-2   Contents, Subjects, and Methodologies of the Survey

Contents	Subjects	Methodologies
Confirmation of the implementation status of the Action Plans	Pilot Hospitals	Interview, Direct observation and Questionnaire
Confirmation of the implementation status of the 5S activities	Pilot Hospitals	Conducting Supervisory tour based on the check sheet
Hospital clinical and management indicators	Pilot Hospitals	Interview, Direct observation and Questionnaire
Research on trends of the national policies to improve quality of health services	MOH, Administrative Agencies	Interview, Questionnaire
Research on trends of the International Organizations and other assistance organization to improve quality of health services	Related Organizations	Interview
Supporting activities based on the request from the recipient countries	Requested organization	Workshop, On the Job Training, etc.

Supervisory trip is conducted mainly evaluating with the monitoring check sheet, and implementation plan was formulated after clarifying the purpose of supervisory trip in each country and target countries, the standard levels expected from pilot hospital, and its contents were confirmed with JICA Human Development Department and resource persons by issue.

Survey group explained to Ministries of Health, hospital directors and 5S committee members of pilot hospitals the purpose of supervisory trip and Review Surveys, purpose and meaning of questionnaires and Time Study, and definitions and purpose of measurement of each data to ask for submitting the reply to the questionnaires, for understanding the Time Study and cooperation with implementation at the time of field survey.

(2) Overview of survey methods and results
1) Confirming the implementation status of Activity Plan
Fifteen countries participating in this program have established the strategy paper in the training courses by region so far and indicate the Action Plans in future. In this survey, interviews to mainly 5S committee members of the hospitals were conducted based on the action plans established by each country to confirm the progress of the action plan. Progress delay reasons were confirmed as much as possible with the progress delayed items. Latest strategy paper was established in November 2011 (in English speaking countries) and September 2012 (in French speaking countries), and progress status of

pilot hospitals that didn't participate in the seminars by region were confirmed based on the action plans described in most recent strategy paper.

Activity planning and its implementation status in the pilot hospitals in each country shows relatively progressed in the plans in the hospitals such as Ngaliema Clinic (DR Congo) and Nianankoro Fomba Hospital (Mali) with high leadership of hospital directors, and in Lagos Island Maternity Hospital (Nigeria) and Mahajanga University Hospital Center (Madagascar) with QIT functioned. On the other hand, progress of action planning was stalled among the hospitals such as Mathari Hospital (Kenya), Orotta Medical-Surgical Hospital (Eritrea) and Tambacounda Provincial Hospital (Senegal) where leaders and QIT members left. It is considered that leadership attitude and QIT function largely placed an impact on activity progress.

2) Confirming implementation status of 5S-KAIZEN

In the previous survey, 5S-KAIZEN-TQM progress and results were initially confirmed by using the monitoring check sheet indicated in the strategic document of Tanzania. Later, the contents of check sheet used by Tanzania were reviewed in the previous survey: 2nd supervisory trip (November 2010 to January 2011), and the revised check sheet setting up the indexes to have more objectivity was prepared to be used.   Survey process by this monitoring check sheet is as follows.

a. Handed out the check sheet in advance, and explained the purpose, importance, contents and evaluation implementation method of supervisory trip as well as confirming the progress of 5S activities with Ministry of Health officials and pilot hospital personnel.

b. Evaluators selected by Ministry of Health, representatives from the hospitals, survey group member conducted the supervisory survey of the hospitals and provided the instruction as required while keeping in mind the contents of check sheet.

c. Evaluated based on check sheet.

d. Feedback of evaluation and provided the recommendations with the issues at that time and future deployment.

Hospital personnel such as hospital directors and QIT members were able to capture their own activity progress status and the required activities to achieve 5S through implementation process of evaluation by this check sheet, and were able to deepen the understanding of 5S-KAIZEN-TQM. And Ministry of Health officials also participated in these evaluation processes to capture the progress of pilot hospitals.

KAIZEN survey was conducted by evaluating with the same type of monitoring checklist as 5S as well as confirming KAIZEN implementation process using check sheet and collecting KAIZEN examples in the pilot hospitals or pilot departments. Good examples of 5S activities were collected as well as discussing the required items to begin KAIZEN activities in the pilot hospitals that did not implement KAIZEN activities.

Monitoring check sheet is divided into 5S evaluation and KAIZEN evaluation categories. In 5S evaluation, leadership and 5 items are set up as questions in terms of S1 (Sort), S2 (Set), S3 (Shine), S4 (Standardize) and S5 (Sustain) to confirm the achievement of individual activities. These questions are scored in 5 levels according to the evaluation standard. Subtotaled the evaluation scores for the questions in each item, and calculated the achieving rate in each item by looking at the percentage of scores against full points. These results are put into cobweb chart and feedback was sent to the personnel in the relevant countries.

There are 6 items; PQMSCD (P: Productivity, Q: Quality, M: Morale, S: Safety, C: Cost and D: Delivery) in KAIZEN evaluation.However, the survey was not conducted as there were no pilot hospitals where KAIZEN could be evaluated in the Supervisory Trip Surveys in FY2012.

Evaluation using the monitoring check sheet was going to implement one evaluation targeting whole hospital; however, different method was taken by target countries and Supervisory Trip Survey teams upon the request of the hospitals. Moreover, there are some differences in evaluation implementation methods and in target departments, etc., for supervisory contents were modified based on the requests and progresses of pilot hospitals at the time of Supervisory Trip Surveys in FY2012.

Table 3-3   Evaluation methods using monitoring check sheet conducted in each country

	Evaluated by department	Evaluated whole hospital
By Survey team (Expert) alone	Dowa (MWI) Mzimba (MWI)	
By QIT alone*	Mbeya (TZA) Troro (UGA)	Orotta (ERI) Haribet (ERI) CHUF（MDG） Nianankoro Fomba (MLI) Clinic Ngaliema (COD)
Jointly evaluated by Survey team and QIT	Lagos (NGA) CPGH (KEN)	CHUM (MDG) HOMEL (BEN) Banfora (BFA) HPCR (BDI) Tambacounda (SEN)
Not conducted	Morocco	
Unknown	Niger	

*: The hospitals where the evaluation was conducted by QIT alone had experienced joint evaluation with the Survey team in the past Supervisory Trip Surveys. Based on those experiences, each of them conducted the surveys by themselves using the methods implemented by the Survey teams.

Among 15 target countries, Orotta Hospital and Halibet Hospital in Eritrea and Fianarantsoa University Hospital Center in Madagascar show the results of self-evaluation conducted in QITs prior to Supervisory Trip Surveys. Dowa District Hospital and Mzimba District Hospital in Malawi show

the results of Supervisory Trips by experts sent from July to August, 2012. Moreover, self-evaluation was conducted by QITs in the hospitals in Nianankoro Fomba Hospital in Mali, in Tororo General Hospital in Uganda, and in Mbeya Consultant Hospital in Tanzania, as they were not in the target for Supervisory Trip Surveys in 2012.

When implementing 5S, the ideal way is to implement 3S in pilot units with leadership enhanced condition, then expand it to whole hospital to achieve 5S, that it is desirable scores for evaluation results in score distribution in this check sheet to be 'leadership > 3S(Sort, Set, Shine) > S4, S5'. Most of the above facilities had similar results confirming 5S activity implementation in the environment where the leadership nurtured. However, 2 hospitals in Eritrea had lower scores for leadership compare to those in other items. While it is assumed that the activities implemented by former hospital directors and Executive officers with strong leadership during their tenure were still maintained, it is crucial to obtain the competence for the new leaders to develop the activities in future.

Score is lower in Sort compare to other items in Mahajanga University Hospital Center (CHUM). This was due to no progress in removing equipments and machines from the departments where once distributed, among unrequired items. Set score is low in Senegal because review of storage and controlling method of what were necessary was not progressing. Sort and Set scores were lower compare to other items in Burkina Faso and in Burundi. It is required to first carry out complete implementation of 3S as Sort and Set are basis of 5S that because it would not progress to further activities when those showing no progress.

With regards to the hospitals where monitoring evaluation were implemented by department, those in Nigeria and in Tanzania had many departments showing high in their evaluation results while both Mathari and Coast (CPGH: Coast Provincial General Hospital) in Kenya, and that in Uganda had many departments with low evaluation results. The percentage of high and low evaluation departments was fairly same in both Dowa District and Mzimba District Hospitals in Malawi.

3) Hospital management and consultation information
Hospital management, consultation information, and the following 5S-KAIZEN implementation process information were collected besides confirming the progress using monitoring check sheet as Review Surveys so far

a) Hospital statistic documents
   Latest fiscal year statistic documents were collected, and new values were added in the statistic documents collected and compiled in the previous survey.

b) Implementation status of recommendations of supervisory trips from the previous survey
   This was confirmed through hearings from Ministry of Health and the pilot hospitals.

c) Good practice extraction
   Presented the format and asked to prepare it.

d) Time Study

Asked to record the waiting time from receiving the patients to consultation, and the time taken from giving the prescriptions to actually receiving the medicines.

Information and motives of collection in this survey are indicated in Table 3-4.

Table 3-4   Information and motives of collection in this survey

Collected statistic information		Motive of collection
Financial Data		Impacting factors of lowering the motivation of employees and service
Clinical Data	Number of patients	Confirming the quantity and quality of service, and access to services
	Number of delivery	
	Number of operations	
	Number of tests	
	Number of referral	
Mortality Data	Major causes of death	Confirming the quality of service
	Mortality	
Data of Beds	Average Lengths of stay	Confirming the quantity and quality of service
	Bed Occupancy Rate	
Inventory Management Data	Number of days of medicine stock out	Confirming the work process, the quantity and quality of service
	Number of days of diagnostic reagents stock out	
Medical Safety Data	Number of nosocominal Infection	Confirming the quality of service and the work process
	Error number	
Time Study	Time to receive the consultation	Confirming the work process
	Time to receive the prescription	

Although each survey item in this survey is cross-department, and some of them require time to collect the data, on the other hand, some information could not be collected since the dates were set and visit duration was limited according to the requested visit periods and the receiving preparation with the Review Surveys. Collection status of survey sheets in each country are indicated in Table 3-5.

Responses were obtained from Nianankoro Fomba Hospital (Mali), Mbeya Consultant Hospital (Tanzania), and Tororo General Hospital (Uganda) by distributing questionnaires and requesting

information collection through JICA Offices in Mali, Niger, Tanzania and Uganda where Supervisory Trips were not conducted in FY2012.

Table 3-5   Situation of the Data Collection in the Pilot Hospitals

		Mathari Hospital	Coast Province General Hospital	Lagos Island Maternity Hospital	Ngaliema Clinic	Dowa District Hospital	Mzimba District Hospital	Nianankoro Fomba Hospital	Mahajanga University Hospital Center	Fianarantsoa University Hospital Center	Tambacounda State Hospital	Orotta Hospital	Halibet Hospital	Banfora Regional Hospital Center	Lagune Maternal and Child Hospital	Prince Regent Charles Hospital	Tororo General Hospital	Mbeya Consultant Hospital
Financial Data		○	○	○	○	○	△	○	△	○	○	○	○	○	○	○	○	○
Clinical Data	Number of patients	○	○	○	△	△	○	○	○	○	△	○	○	○	○	○	○	△
	Number of delivery	×	○	○	○	○	○	○	○	○	△	○	×	○	○	○	○	○
	Number of delivery	×	○	○	○	△	○	○	○	○	△	○	×	○	○	○	○	△
	Number of examinations	△	○	×	△	○	○	○	○	○	△	○	○	○	○	×	○	○
	Number of referal	○	×	○	△	×	×	○	△	△	×	○	○	×	○	×	○	△
Mortality Data	Major causes of death	×	○	○	○	△	○	○	○	○	×	○	○	○	○	○	○	○
	Mortality	×	○	○	○	△	○	×	○	○	×	×	○	○	○	○	○	△
Data of Beds	Average lengths of stay	○	○	○	○	○	○	△	△	△	△	○	△	○	○	○	○	△
	Bed occupancy rate	○	○	○	○	○	○	△	△	△	△	○	○	○	○	○	○	△
Inventory Management Data	Number of days of pharmacy stockout	×	△	×	×	○	×	○	△	○	○	×	○	×	○	×	×	×
	Number of days of laboratory stockout	×	×	×	×	×	×	×	△	△	×	×	×	×	○	×	×	×
Medical Safety Data	Number of nosocominal Infection	×	○	×	×	×	×	×	△	△	×	×	×	×	×	×	×	×
	Error number	×	○	×	×	○	×	×	△	△	×	○	×	×	×	×	×	×
Time Study	Time to receive the consulation	×	○	○	×	×	○	○	×	○	○	×	×	×	○	×	×	×
	Time to receive the prescription	×	○	×	×	×	○	○	×	○	○	×	×	×	×	×	×	×

*○collected、 △partially collected, ×uncollected

Summary of data collected from each hospital is as follows.
- Many hospitals showed tendencies for increase in their financial conditions, yet connection between the difference in evaluation results and financial conditions could not be recognized.
- Facilities showing tendencies of increase in the number of patients seemed to come from the effect of the strikes of employees where the number showing tendencies of natural increase and

decrease.

- Number of surgeries showed tendencies of decrease in Benin, which was likely to coming from the effect of strikes of employees. And the effect from rebuilding the surgery facilities was suggested as reason in Burundi.

- Number of laboratory examinations showed tendencies of increase in many of the groups with low evaluation results, while decrease in many of those with high evaluation results. Although relation of cause and effect is not clear, it is likely to be affected from the effects of a) decrease in the number of patients, and b) enablement of conducting adequate examinations due to the progress of 5S-KAIZEN-TQM.

- Number of referrals showed tendencies of decrease in the hospitals with high evaluation results, particularly tendencies of decrease with upper referral number in the top referral hospital; Mahajanga University Hospital Center in Madagascar, and Lagune Maternal and Child Hospital in Benin indicating ideal trend which suggested the possibilities of hospitals being able to address their patients in their own hospitals than before.

- With regards to cause of death, while diseases specific to developing countries in Africa such as malaria, HIV, malnutrition, diarrhea, and anemia were listed for both adult and children alike, lifestyle disease such as high blood pressure and diabetes were reported as that of adult. Moreover, cause of death related to childbirth such as intrapartum hemorrhage, neonatal sepsis, and intrauterine hypoxia were also reported.

- Data for number of days for examination medicine out of stock was collected only from Ngaliema Clinic in DR Congo and Lagune Maternal and Child Hospital in Benin with tendencies of decrease.

- Data for number of days for medicine out of stock was collected only with 6 hospitals, which all showed tendencies of increase.

- 'Hospital-acquired infection' and 'event and incident report' were collected as data related to medical safety. With 'hospital-acquired infection' data obtained from Fianarantsoa University Hospital Center (increasing) and Mahajanga University Hospital Center (no change) in Madagascar, and 'event and incident report' from above 2 university hospitals (their trends were same with that of 'hospital-acquired infection') , Orotta Hospital in Eritrea (decreasing), and Coat Province General Hospital in Kenya (no change). In Madagascar, the importance of medical safety was reaffirmed through data collecting from the surveys by questionnaire in this Preparatory Survey, and started collecting the 'hospital-acquired infection' and 'incident report'.

Moreover, Table3-6 indicates Numbers of Beds, Average Length of Stay (ALS), and Bed Occupancy Rate (BOR) in each hospital.

Table 3-6   Number of Beds, ALS and BOR of each hospital (2010)

Country	Hospital	Number of Beds	Average Length of Stay (Day)	Bed Occupancy Rate (%)	Remarks
DR Congo	Ngaliema Clinic	256	7.5	62.4	Number of bed allowed is 306.
Kenya	Coast Province General Hospital	681	6.6	72.7	BOR [3] lowered as ALS[4]reduced.
Mali	Nianankoro Fomba Hospital	139	2.8	55.8	BOR went up from 36% to56%.
Nigeria	Lagos Island Maternity Hospital	-	-	10.6	
Eritrea	Halibet Hospital : Internal medicine	57	17	78.7	
	Halibet Hospital : Surgery	122	12.3	77.5	
Benin	Lagune Maternal and Child Hospital	227	4	47	Department of Obstetrics and Gynecology
Madagascar	Fianarantsoa University Hospital Center	459	7	40.4	
	Mahajanga University Hospital Center	392	5	41.3	
Tanzania	Mbeya Consultant Hospital	468	8.0	82.0	2008
Senegal	Tambacounda Provincial Hospital	115	8.9	-	
Eritrea	Orotta Hospital	276			Including Maternal and Child, Neonate
	Internal medicine	58	12	89.6	
	Surgery	60	12.4	78.6	
	Obstetrics	60			
	Gynecology	35			
	Pediatrics	35	4.6	65.5	
	ICU	9	4.6	68.6	
	Other (Recovery Room, Emergency)	19			
Burundi	Prince Regent Charles Hospital	479	12	75	
Uganda	Tororo General Hospital	214	4.8	74	
Malawi	Dowa District Hospital	144	3	100	Internal medicine
	Mzimba District Hospital	295	6.8	103.5	
Kenya	Mathari Hospital	700	47	93	
Burkina Faso	Banfora Regional Hospital Center	170	2.9	41.4	

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[3] BOR: Bed Occupancy Rate
[4] ALS: Average length of stay

Analysis of success factor extracted from survey results of each country is presented in Chapter 4.

4) Collection of information on trends in the Ministry of Health

In this survey, preliminary request was made to JICA Office personnel to explain the objectives of this survey to the related divisions and departments of Ministries of Health to ask for cooperation with the survey. Visited the personnel in the related divisions and departments of health service in Ministry of Health in the field survey, and the technical resource person explained the concept of 5S-KAIZEN-TQM again as well as explaining the objectives and methods taken in this survey. And the issues that health trend and health services face in the target countries, health policies, and the approaches for the action plans in the strategy papers formulated in the seminars by issues were confirmed. It should be particularly noted that in this survey, prepared and asked to fill in the 5S-KAIZEN-TQM deployment record list to fill in the number of facilities that implemented 5S and KAIZEN by fiscal year to confirm the progress of nationwide deployment of 5S-KAIZEN-TQM so far.

With regards to the action plans formulated by Ministries of Health in each country and its implementation status, activities relatively progressed according to the plans in the countries such as Malawi, Kenya, DR Congo, Burundi and Uganda where implementation systems of the quality improvement were established in the Ministries of Health through this program. On the other hand, the activities did not progress very much in the countries such as Nigeria, Eritrea, and Madagascar where implementation system establishment within the Ministries was delayed. Activities in Mali did not progress due to political unrest, and no responses were obtained from Senegal, Burkina Faso, and Benin.

5) Extracting good practices

5S-KAIZEN activity status was confirmed in the Ministries of Health and pilot hospitals in 15 target countries through Supervisory Trip Surveys. And among the information shared then, practices reported particularly on approaches affecting the improvement of organization management and health services and their effects were extracted as good practices, as shown in Table 3-7.

Table 3-7　　Good practices that have been reported in the target countries

Country	Hospital	Good Practice	Sources of information	The presence of data presentation	Indicators of improved management					
					Cost	Delivery	Quality	Safety	Productivity	Morale
a) Relation of Budget and number of Services (Statistical information)										
KEN	CGPH	BOR lowered as ALS reduced.	Questionnaire	○			○		○	
UGA	Tororo	Although budget decreased, number of patients increased (general, obstetrics, and number of surgeries).	Questionnaire	○					○	△
COD	CN	BOR improved. Both budget and service provision increased.	Verbally	-	○				○	△
MAD	CHUM	Although national budget decreased to fourth and strike occurred, maintained number of services.	Presentation Questionnaire	○	○	○			○	○
MAD	CHUF	Although national budget decreased to fourth, other budgets and number of services provided maintained..	Presentation	○	○	○			○	○
MLI	N Fomba	BOR improved.	Questionnaire	○	○	○			○	
b) Information and document management method										
MAD	CHUF	Book storage (Library section)	Presentation	○			△		○	△
BEN	HOMEL	Medical record maintenance method was improved.(Previously kept by date, now classified by ID No. and stored in the cases).		-			○		○	○
MAD	CHUM	Patient record maintenance improved.	Presentation	-		○	○	○		
MAD	CHUF	Comprehensively managing patient information.	Presentation	-		○	○	○		○
MAD	CHUF	Patient record management method was enhanced.	Presentation	-		○	○	○		
NGA	Lagos	Integrated documents related to hospital discharge processing	Verbally Check Sheet	-		○				
c) Controlling and reducing waiting time for patients										
BEN	HOMEL	Waiting time reduced (in the clinical examination room). Regular working hours, place notebook for recording waiting time, notify where the keys are located, and implement evaluation, etc.		-		○				○
MAD	CHUF	Patient waiting time at pharmacy reduced.	Presentation	○		○			○	○
COD	CN	Controlling visitors	Presentation	-	△	○			○	○
MAD	CHUM	Controlling visitors	Presentation	-	△	○			○	○
d) Inventory Management										
MAD	CHUF	Eliminated blood transfusion bag out of stock.	Presentation	○		○	△	△		△
KEN	CPGH	Reduced expiration date medicine by improving inventory management	GP Sheet	○	○					
MAD	CHUM	Oxygen consumption reduced (budget and management control)	Presentation	△	○	○				
e) Quality improvement of patient care and services										
MWI	Dowa	Keep privacy and secure safety for pregnant women by placing curtains.	Good Practice Sheet	-			○	○	○	
MAD	CHUM	Reduced ulcer decubitus	Presentation	○		△	○	○	○	○
COD	CN	Reduced ulcer decubitus	Presentation	○		△	○	○	○	○
MAD	CHUF	Hospital-acquired infection measure	Presentation	-			○	○		○
MAD	CHUF	Compliance for tuberculosis patients improved.	Presentation	○		△	○	○	○	○

※○:Applicable,△: Indirectly applicable,－:N/A

Activities taken as good practices are largely divided into a) improvement of budget and number of services, b) information and document management method, c) controlling and reducing waiting time for patients, d) inventory management, and e) improvement of patient care

Bed Occupancy Rate improvement was confirmed in DR Congo and in Mali with Budget and number of services. Possibility was considered that in Mali, effective utilization of beds was realized by improving bed comfort as well as increasing beds that could be used by supplying mattresses. Whereas in DR Congo, occupation rate was improved with increase of patients visiting hospitals by improving cleanness of hospitals through 5S.

Approaches taken in Madagascar (CHUF and CHUM), Benin and Nigeria were reported with the information and document management method. In large categorization, improving existing information management method enabled to improve the staff's accessibility to the information that resulted in contributing to the service quality, moral, and motivation in the example of reviewing how to set documents and books. Moreover, in the example of preparing and introducing unified format to record patient information, required information for providing services was reviewed and contributed in establishing the system to collect and use those information in appropriate manner, and put it into practice.

In patient perspective, measures have been taken for waiting time for patients in HOMEL and in CHUF that in Mali, reduction of waiting time was confirmed as the result of Time Study. It is considered that patients can move to required locations without problem through clearly showing information indication and patient flow, etc. by labels that enables to reduce the time required for tasks. In addition to these 5S effects, in Benin, regular working hours, notifying where the keys are located and recording waiting time, and in CHUF, measures were taken to succeed in reducing waiting time by specifying the visiting hours by each department of medicine to prevent patients' concentration, and duty persons of other medical departments take turns to help.

In CHUM, approach was taken to control patients and visitors. This is relevant to S4 and S5 in 5S that education was carried out to enable patients and visitors utilizing hospital wards appropriately through IEC and demonstration, etc.

Three approaches were implemented addressing from different perspectives as the inventory management activities implemented such as preventing 1)out of stock, 2)expired medicines, and 3)unsuitable use. In CHUF, through experience of running out of required materials, they resolved the issue by reviewing the measure to prevent it. Here although shortage of blood transfusion bag was reported, they were unable to administer adequate treatment to the critical patients required blood transfusion from running out of blood transfusion bags, which had high potential of affecting the lives of patients. Moreover, there would be high potential of producing additional cost such as transport of patients and procurement of blood transfusion bags, without transfusion administered environment.

In CPGH, medicine storage condition was improved by introducing 5S. They came to manage expiry dates through eliminating unrequired items, storing via categorization by item, and introducing the labeling. This reduced 85% of total medicine previously ended up being expired to 12% enabling effective utilization of resources by reducing the waste.

CHUM QIT took up oxygen consumption issue in their KAIZEN theme, and reviewed its measure. Oxygen purchase sometimes covered 60% of hospital budget so that the hospital took approach equivalent of management improvement desiring to reduce the consumed amount of oxygen as much as possible. In CHUM, resolution was reviewed in KAIZEN proposal first, succeeding in reducing the consumed amount of oxygen to certain level by measure in place. However, problem solving by KAIZEN processes was ongoing review to solve the issue as cost for buying oxygen was still pressing hospital finance.

In Good Practice, activities equivalent of quality improvement in services and cares for patients was also reported. In Dowa Hospital in Malawi, approach was taken to contribute in improving safety as well as securing privacy for pregnant women by placing curtains. Moreover, measure was in place to prevent ulcer decubitus for long-stay inpatients in CHUM and in Clinic Ngaliema that 8 out of 20 examples having ulcer decubitus in CHUM reduced to 1 out of 20. In CHUF, approach to improve compliance for tuberculosis patients was in place, succeeded in reducing non-reconsultation rate from 10% to 2.8%. In pilot facilities in Madagascar, improvement of services for patients took importance such as acknowledging TQM as a patient focus care.

3-2-2　Situation of the national dissemination

Dissemination of Cooperation of the Program of Quality Improvement of Health Services by 5S-KAIZEN-TQM is ongoing its promotion in each target country after AAKCP started in 2007. The dissemination status as of February 2013 is indicated in Table 3-8.

According to the data collected so far, 5S activity has already been implemented in more than 200 hospitals, and that KAIZEN activity has started in 16 hospitals.

Table 3-8 Situation of the national dissemination in the target countries

Country	Level	2008 Total	2008 SS introduced	2009 Total	2009 SS introduced	2010 Total	2010 SS introduced	2011 Total	2011 SS introduced	2011 KAIZEN introduced	2012 Total	2012 SS introduced	2012 KAIZEN introduced
D.R.Congo	Kinshasa			14	1	14	1	14	1		14	7	0
	Bas-Congo											6	0
	Bandundu											6	0
Eritrea	National		2		2		2		2			2	0
	Region						2		3			3	0
	Secondary						1		1			1	0
	Rural								1			12	0
Kenya	National tertiary (general)	2		2		2		2			2	1	0
	National specialized	2	1	2	1	2	1	2	1		2	1	0
	Provincial tertiary (general)	8		8	1	8	1	8	1	1	8	1	0
	Provincial tertiary (teaching)								1		1	1	0
	Provincial Secondary (general)						3	3	2		3	2	0
	District Tertiary (general)								5			6	0
Madagascar	University	5	1	5	3	5	4	5	4		5	4	2
	Region			17	1	17	1	17	4		17	4	0
	District					114	1	114	5		114	5	0
Malawi	Tertiary	5		5		5		5	1		5	2	0
	Secondary	138	1	138	1	138	2	138	7		138	7	0
	Primary	295		295		295		295	2		295	3	0
Nigeria	Secondary (general)						2		4			4	0
	Secondary (specialized)		1		7		10		11	1		11	1
	Primary						12		15			15	0
	Private						4		4			4	0
Senegal	Tertiary General	8		8		8	8	8	8	0	8	8	0
	Tertiary Specialized	4		4		4	4	4	4	0	4	4	0
	Tertiary Educational	1		1		1	0	1	0	0	1	1	0
	Secondary	12	1	12	1	12	12	12	12	1	12	12	0
	Primary	0		0		0	0	10	7	0	10	10	0
Tanzania	Tertiary (general)	4	4	4	4	4	4	4	4	3	4	4	4
	Tertiary (specialized)	5	0	5	4	5	4	5	5	1	5	5	3
	Secondary (general)	21	4	21	12	21	21	21	21	1	25	21	3
	Region (general)	155	0	155	3	155	3	155	12	3	155	21	3
Burundi	Tertiary (general)										5	2	0
	Tertiary (specialized)										1	1	0
	National secondary										11	4	0
	Secondary (district)										45	4	0
	Primary										600	9	0
Benin												1	0
Burkina Faso												1	0
Mali												1	0
Uganda					1		6		10			18	0
	Total											235	16

40

3-2-3   Trend of international institutes and other assistance institutes

In this field survey, visit was made to personnel of international institutes and other assistance organizations that are taking quality improvement approach in health services in the target countries based on the information of local JICA office personnel or Health Ministry officials. In the discussion carried out during the visit, as well as explaining by survey group 1)Approach for quality improvement in hospital service by AAKCP and JICA, 2) Introduction of 5S-KAIZEN-TQM as the quality improvement method in health service, 3) Purpose of this survey, 1. Issues that health service of the target countries had, 2.Approach for quality improvement in health service conducted by visited institutions and 3.Possible collaboration with this cooperation were confirmed with them. To the institutions that were visited in the previous survey, progress and results of pilot hospitals and Health Ministries since last visit were introduced as well as explaining the activities briefly again.

Also captured quality improvement related activities in health service carried out by WHO headquarters and the quality improvement activities in health service with the various platforms that had been established in African regions such as WAHO and RCQHC, and reviewed potential mutual complement of the quality improvement method in health service other than 5S-KAIZEN-TQM.

Survey group visited following international institutions and assistance organizations in each country.

The survey results are as "Trends in aid agencies, other international organizations" in Annex.

Table 3-9   Visited international institutions and assistance organizations

Country	International Organizations		Assistance Organizations, NGO		Others
Burkina Faso	WHO	WAHO			
Burundi			EU	CTB	
Eritrea	WHO				
DR Congo	WHO		GIZ	ECHO	AfD
Kenya	WHO	IFC	GIZ		NHIF
Madagascar	WHO	UNFPA			
Malawi			GIZ		
Mali	WHO		USAID		
Nigeria	WHO				
Senegal			FHI	Inter Health	
Uganda			RCQHC		

3-2-4　Actual achievement of trainees relevant with this approach

Request was made to JICA Offices in target countries to confirm the actual achievement as part of 'Educating 100,000 health workforce in African countries'.

Actual achievement of those who participated in the training courses relevant with this approach so far is as follows.　Actual achievement of trainee from April 2009 to March 2010 was collected in the previous Preparatory Survey.　Later on, data from April 2010 to December 2012 was collected in this Preparatory Survey.　In Tanzania, participant number exceeded 5,000 as many 5S related seminars were conducted.　And more than 3,000 in Eritrea, more than 1,000 each with Uganda, Nigeria, Benin, and Burundi participated in the seminars relevant to this approach.

Table 3-10　Number of seminar participants

Group1			Group 2		
Country	April 2009-March 2010	April 2010-Dec. 2012	Country	April 2009-March 2010	April 2010-Dec. 2012
Eritrea	820	2,088	Benin	255	790
Kenya	372	568	Burkina Faso	318	71
Malawi	267	230	Burundi	604	615
Nigeria	370	725	DR Congo	210	102
Tanzania	5,012	178	Madagascar	186	500
Uganda	719	1,202	Mali	146	105
			Morocco	31	-
			Niger	313	100
			Senegal	260	389
Group1 Sub-total	7,560	4,991	Group2 Sub-total	2,323	2,672
Group1 Overall total	12,551		Group2 Overall total	4,995	
April 2009-March 2010		**9,883**	**April 2010-December 2012**		**7,663**
Total			**17,441**		

3-3　Issuing Newsletters

Progress status and reference information of "Program of TQM for Better Hospital Services" were compiled and distributed regularly to related parties as newsletters. Provision of these information has purpose of basically reporting the activities and informing future activities, however, Secretariat prepared the draft versions of newsletters first after confirming the contents with Human Development Department of JICA based on opinions from the users, then the newsletters and the list of related parties were distributed after approved by JICA's Human Development Department. Frequency of distribution was coordinated by adjusting distribution timing in line with the events of "Program of TQM for Better Hospital Services".

Activities in this program, future schedule, and information of approaches taken in each country obtained in the Supervisory Trip Surveys, etc. were shared among related parties by issuing this newsletter, that effectiveness was achieved meeting its purposes.　On the other hand, however, the information sent for the purpose of issuing the newsletter from the related parties was limited.　It is considered requirement to be creative such as reviewing the format of newsletter by utilizing the new media such as Social Networking System (SNS) and incorporating photographs, and reviewing information collection method so that each countries are able to provide approaches in their own countries and information proactively, in order to make sure more effective information sharing among related parties of this program in future.

3-4　Revising 5S-KAIZEN-TQM textbooks

Innovation of 5S-KAIZEN-TQM as a new health service management and KAIZEN examples, etc. were newly added (in 5S-KAIZEN-TQM textbook, revised version) as well as reviewing the descriptions related to KAIZEN and monitoring by the textbook editors based on the experience of each country so far.　In these preparatory surveys, the support was made in proofreading and in binding of the revised version of the said textbook.

**Chapter 4   Analysis of the success factors
of the Program**

Chapter 4　　Analysis of the success factors of the Program

4-1　Concept of the success factor analysis

In this program, a stepwise approach for activities using the 5S-KAIZEN-TQM method is assumed, and the pilot facility dictates whether or not you can step up to the next level to achieve the objectives of the present situation. For 5S-KAIZEN-TQM, the individual levels in terms of technique and the timing of step-up are shown schematically in Figure 4-1.
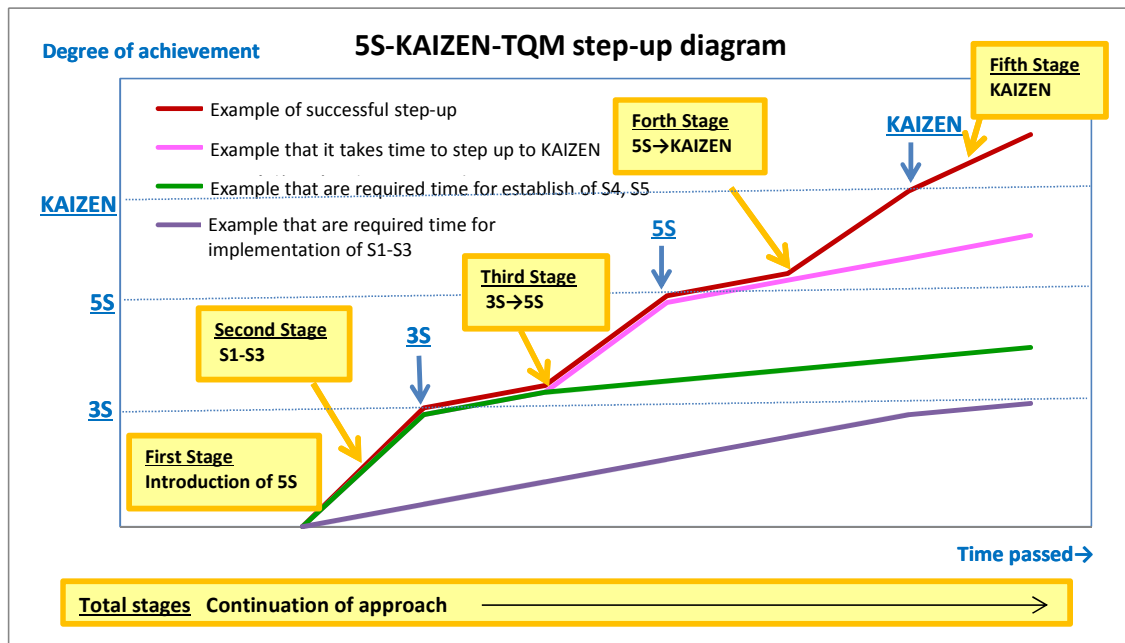

Figure 4-1　　5S-KAIZEN-TQM step-up schematic diagram

The facilities which have implemented 5S-KAIZEN can be classified into the following five stages:

- First stage: Introduction of 5S
- Second stage: Implementation of S1-S3 → to achieve 3S
- Third stage: Implementation of S4, S5 → to achieve 5S
- Fourth stage: 5S → KAIZEN introduction
- Fifth stage: KAIZEN introduction → Establishment of activities

To examine the factors affecting progress of activities on this pilot hospital program, and determine the progress of activities in the 15 target countries, the following criteria are set using the monitoring and evaluation results of the check sheet and the implementation status of KAIZEN, and the achievement status of each country is set using the above level classification.

Table 4-1 5S-KAIZEN-TQM Method of determination and achievement levels

Level	Status	Determination method	
		5S	KAIZEN
S1-S3 underway	5S is being implemented in some departments.	In the overall hospital evaluation, S1-S3 were below 60% (check items 3 points below average)	Not yet implemented
(S1-S3) +KAIZEN	5S is being implemented in some departments. Measures implemented corresponding to KAIZEN.		Staff training implemented, and instance implementation
3S achievement → S4, S5 underway	3S has been implemented in all departments, but standardization, training and other activities are limited.	In the overall hospital evaluation, S1-S3 were above 60% (check items 3 points above average)	Not yet implemented
3S achievement +KAIZEN	3S has been implemented in all departments, but standardization, training and other activities are limited. Measures implemented corresponding to KAIZEN.		Staff training implemented, and instance implementation
5S achievement	Standardization in all departments, 5S activities including training implemented.	In the overall hospital evaluation, All evaluation items were above 75% (4 points achieved for more than half the check items)	Not yet implemented
5S achievement ＋KAIZEN introduction	Standardization in all departments, 5S activities including training implemented, engaged in KAIZEN.		Staff training implemented or instance implementation
KAIZEN implementation	5S implemented in all departments, KAIZEN activities are underway.	In the overall hospital evaluation, All evaluation items were above 75% (as above)	Multiple instances of KAIZEN implementation

Table 4-2 shows the level of progress in terms of the activity of each country classified using the above criteria, and Table 4-3 shows its course. Of the 15 countries targeting the KAIZEN level attainment, the two countries of Tanzania and Madagascar succeeded, with a total of 3 facilities. While Mbeya hospital in Tanzania received expert assistance and support during the project, pilot hospitals proactively engaged in activities and have successfully made steady achievements. Madagascar, which does not receive assistance from Japan, has reached the KAIZEN level solely thanks to the support provided under this program, particularly Fianarantsoa University Hospital Center, which achieved KAIZEN level just 3 years after starting the program.

At Nianankoro Fomba Hospital in Mali and the Lagune Maternal and Child Hospital in Benin, although starting in 2009 in the second group, the steady promotion of activities have seen them reach 5S level. In addition, because both facilities are already implementing KAIZEN training for all staff, it will soon be possible to implement KAIZEN activities. As for Mali, which has not received JICA assistance, it has been developing steadily with the sole support of this program. The Hospital Director

is also striving to obtain financial support from other aid agencies for activities related to the 5S-KAIZEN.

Seven facilities of Ngaliema Clinic in the Democratic Republic of Congo, Lagos island maternity hospital in Nigeria, Orotta in Eritrea, Halibet Hospital, Dowa in Malawi, Mzimba Hospital, Banfora in Burkina Faso, hospitals in 5 countries have reached 3S level, while future tasks involve focusing on Standardizing and Sustaining. Among these, the 5S activities focused on by pilot hospitals in the Democratic Republic of Congo and Nigeria have mainly been those linked to improving the quality of service, and in accordance with the KAIZEN proposal, connected to KAIZEN activities. In Nigeria, KAIZEN training has been implemented and the staff has obtained some knowledge of KAIZEN. On the other hand, in the Democratic Republic of Congo, despite circumstances where KAIZEN training has not yet been implemented, efforts have been made to improve quality. In pilot hospitals in Eritrea, Malawi and Burkina Faso, the activities of 5 target facilities were focused on 5S. Although the facilities in question have participated in regional training, in-hospital KAIZEN training has not yet been implemented, nor any KAIZEN activities.

Four facilities in four countries, namely Kenya CPGH, the Tambacounda Provincial Hospital in Senegal, Tororo District Hospital in Uganda and Burundi's Prince Regent and Charles Hospital all achieved S1-S3 level. For CPGH, with significant disparities in the level of progress achieved among different departments, although some departments did perform well and achieved the 3S level, the facility as a whole could not be considered of 3S standard. Likewise, at Tambacounda Provincial Hospital, although attempts toward standardization have been made, the basic approach taken for S1 to S3 fell short. For Tambacounda Provincial Hospital, during the five-year implementation period for this program, the Hospital Director was replaced 5 times, and this repeated lack of continuity is thought to be one potential reason for the lack of success. In addition, following regional training, since no feedback on the training was given to QIT members, it was considered unlikely that the material learnt during the training would be reflected in the field. As for Uganda, it did reach the 5S level at one time, but subsequent activities declined. In 2011 in Burundi, and 2011/12 in Uganda on 2 occasions however, no supportvive supervision by Japan side was requested and the absence of such survey after regional training is suggested as one reason which could have affected progress. Among these facilities, CPGH and Tambacounda Provincial Hospital, simple KAIZEN activities based on KAIZEN proposals have been reported.

As for Morocco, both the Ministry of Health and pilot hospitals, instead of proactively collaborating, made minimal progress. Since 2009, Sareh Hospital near the capital has been specified as the pilot hospital, and JOCV was dispatched but much progress has not been seen. In 2011, the Ministry of Health exploited the past experience of the Sareh Hospital, based on which it intended to set a new pilot hospital to Sidi Kacem Provincial Hospital Center. In 2012, Sidi Kacem Provincial Hospital Center participated in regional training and a supervisory trip survey visited the hospital. At Sidi

Kacem Provincial Hospital Center, 5S has been introduced to pilot departments, at S1-S3 level.

At Lamorde National Hospital in Niger, the program started with the active implementation of programs under the leadership of the senior Hospital Director, with further future activities expected. However, after the first supervisory trip survey, in February 2010, the Hospital Director was replaced. After the replacement of the Hospital Director, the scope of participation was restricted to regional training, and due to the lack of even one supervisory trip survey, the progress of activities is unclear.

Based on the above results, the following possibilities have been intended:

- There are some hospitals which have been steadily promoting activities even if the active period is short while there are some with slow progress despite of long activity period. The presence or absence of other promoting or inhibitory factors significantly impacted on the overall progress of activities.

- Implementing both regional training and the supervisory trip survey is better to ensure optimally effective progress of the 5S-KAIZEN-TQM activities.

- In some cases, the project and the presence of experts enhanced effectiveness, while in others, there was no significant effect. Among pilot hospitals in countries without a project, some countries show high achievements, but depending on the form of approach, the project itself and the form of assistance provided, it was considered possible that the presence of the project may not contribute significantly to progress.

- When pilot hospitals are in 2 places within a single country, the progress was virtually the same, regardless of the start time. With reference to the mutual competition and positive activities, while a synergistic effect is possible, if no progress was observed in the course to the next step, they remained much the same.

- Even away from the capital, activity in some areas is progressing remarkably, while in other countries, even capital city suburbs see no activity, meaning no significant trend was apparent in terms of distance from the capital (distance from Ministry of Health).

- Where 5S had not yet been attained, as an extension of 5S activities, cases implementing KAIZEN were also confirmed.

Table 4-2　Achievement of the 15 AAKCP target countries and support provision situation

Level	Applicable country/ No. of centers	Country name	Facility name	Activity period	No. of supervisory trip surveys (Implementation rate: %)	Support provided ※	
						Yes/No[1]	Period
KAIZEN	2 /3	Madagascar	CHUM	5	5/5 (100%)	―	―
			CHUF	3	2/2 (100%)	―	―
		Tanzania	Mbeya Hospital	5	3/5 (60%)	◎ ☆	5 years 5 years
5S t+ KAIZEN	2 /2	Benin	HOMEL	3	2/3 (66%)	(○)	3 years
		Mali	Nianankoro・Fonba Hospital	3	3/3 (100%)	(☆[5])	1 year
3S → S4, S5 KAIZEN	2 /2	DRC	Ngaliema Clinic	3	3/3 (100%)	○	3 years
		Nigeria	Lagos island maternity hospital	5	5/5 (100%)	○	3 years
3S → S4, S5	3 /5	Burkina Faso	Banfora Hospital	3	2/3 (66%)	―	―
		Eritrea	Orotta Hospital	5	5/5 (100%)	●	3 years
			Halibet Hospital	3	4/4 (100%)	●	3 years
		Malawi	Mzimba Hospital	3	4/4 (100%)	◎ ☆	2 years 3 years
			Dowa Hospital	5	5/5 (100%)	◎ ☆	2 years 5 years
S1-S3 +KAIZEN	2 /2	Kenya	Mazari Hospital (2007-2011)[6] CPGH (2009-)	4 3	4/4 (100%) 4/4 (100%)	―	―
		Uganda	Tororo District Hospital	5	3/5 (60%)	◎ ☆	2 years 5 years
S1-S3 underway	3/3	Burundi	Prince Regent and Charles Hospital	3	2/3 (66%)	●	2 years
		Senegal	Tambacounda Hospital	5	5/5 (100%)	○ ○ ☆	2-5 years
		Morocco	Sale District Hospital (2009-2011) →Sidi Kacem Provincial Hospital Center (2011-)	2 1	1/1 1/1	☆ ☆	2 years 1 year
Not reported	1 /1	Niger	Lamorde National Hospital	3 years	1/3 (33%)	―	―

* Type of support provided

◎: Direct support through project established or experts dispatched for 5S-KAIZEN-TQM activities

○: Partial support through project being established or experts dispatched for 5S-KAIZEN-TQM activities

●: Previously, partial support for 5S-KAIZEN-TQM activities via project or dispatch of experts (End)

―: No project to support 5S-KAIZEN-TQM activities

☆: JOCV dispatch made

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[5] At Nianankoro Fomba Hospital in Mali, although JOCV has been accepted, due to political unrest, it retreated after one year of activity.
[6] Mathari Hospital excluded from pilot from 2012

Table 4-3　Pilot hospital activities progress over time and relation of progress

	Pilot	2007	2008	2009	2010	2011	2012
Eritrea	Orotta	Start	※	※	5S ↑	3S ↓	3S →
	Halibet			Start	5S ↑↑	3S ↓	3S →
Kenya	Mazari	Start	※	※	S1-S3 →	S1-S3 →	Exclusion
	CPGH			Start	S1-S3 ↑	S1-S3 ↑	S1-S3 ↑
Malawi	Dowa	Start	※	※	3S ↑	S1-S3 ↓	3S ↑
	Mzimba			Start	S1-S3 ↑	S1-S3 ↑	3S ↑
Nigeria	LIMH	Start	※	※	5S ↑	3S ↓	3S →
Tanzania	Mbeya		※	※	KAIZEN ↑	KAIZEN ↑	KAIZEN ↑
Uganda	Tororo		※	※	5S ↑	5S →	3S ↓
Madagascar	CHUM		※	※	3S →	5S ↑	KAIZEN ↑
	CHUF			Start	—	5S ↑↑	KAIZEN ↑
Senegal	Tambacounda	Start		※	S1-S3 →	S1-S3 →	S1-S3 →
Benin	HOMEL			Start	S1-S3 ↑	—	5S ↑
Burkina Faso	Banfora				S1-S3 ↑	—	3S ↑
Burundi	HPCR				S1-S3 ↑	—	S1-S3 →
DRC	Ngaliema				S1-S3 ↑	S3 ↑	3S →
Mali	Nianankoro・Fonba				S1-S3 ↑	3S ↑	5S ↑
Morocco	Sale				Not yet	—	Exclusion
	Sidi Kacem					Start	S1-S3
Niger	Ramorude			Start	S1-S3 ↑	Unclear	Unclear

4-2　Analytical methods

Based on the results of the evaluation described, we classified all pilot hospitals based on the level of achievement. At these facilities, we focused in particular on identifying the items supposed to have contributed to the progress of activities at each stage and thus the overall success of the hospital, and

the implementation status of these items in all pilot hospitals were determined based on the following information.

    a) Monitoring survey results

    b) Consultation during the supervisory trip survey

    c) Staff comments and remarks on the ground during the supervisory trip survey

    d) Submitted materials of activities received from pilot hospitals

    e) Subjective survey

With consideration of all factors, assessed via the following 3 stage:.

    ○: Ready (as applicable)

    △: 50% ready overall (applicable to some extent)

    ×: Unprepared (inapplicable)

Based on the results, the factors that have had a positive effect in boosting the step up at each level are clarified. (Tables 4-4~4-8)

4-3　Analytical results

(1)　Progress over time

1)　Examples of positive activities conducted

In Tanzania (Mbeya Consultant Hospital), CHUM, CHUF, Mali, Benin and so on, following the introduction of 5S, progress to implement S1-S3 and achieve 3S and 5S continued smoothly and the transition to KAIZEN was also observed (Figure 4-2). Among these facilities, for example CHUM, Mali, and Benin etc., about 2 to 3 years after activities got underway, the 5S was achieved and the transition to KAIZEN is underway. In Mbeya Hospital and CHUF, within 1 to 2 years, 5S was achieved, and depending on the approach taken to the 5S activities, the time required to achieve 5S can be cut down.
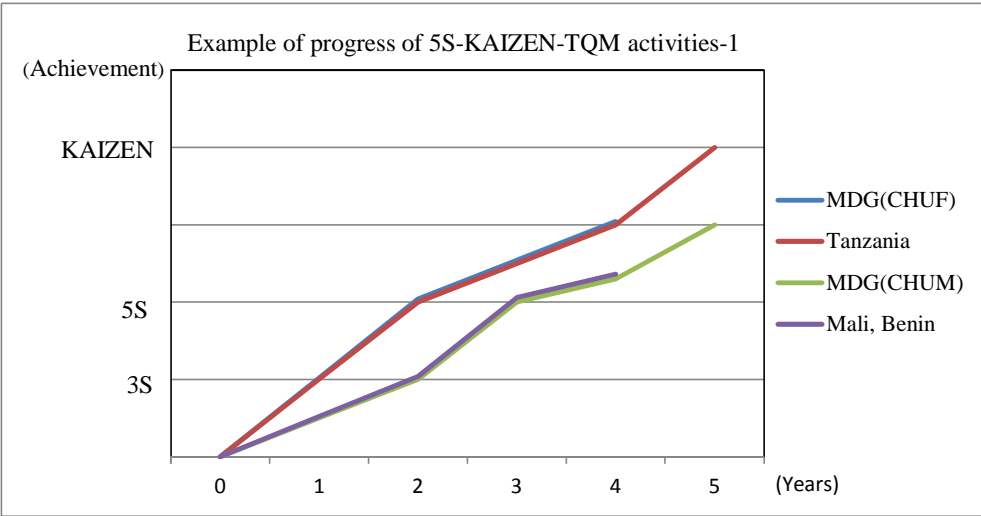

Figure 4-2　5S-KAIZEN-TQM activities course of progress 1－
examples of activities having achieved steady progress

The following details can be considered characteristics of these pilot facilities:

a) Hospital Director displaying strong leadership
b) 5S activities organization very well-implemented, organizational efforts made collectively as a team
c) Excellent understanding of procedures among QIT members
d) QIT and WIT roles clarified
e) Activities regularly implemented based on a schedule determined by QIT and WIT, and a record kept of the same
f) Develop the role of the organization in accordance with the progress made, practice the new initiatives

The reason why CHUF and Mbeya Hospital were able to fast track the way to 5S level is thanks to expert assistance (Tanzania), lessons learnt from previous pilot hospital activities (CHUF) and so on.

In general, it is said that introducing 5S-KAIZEN-TQM for larger-scale facilities with more departments and staff requires more time. However, the results show that Mbeya, CHUF and CHUM are tertiary care facilities while Benin and Mali have secondary medical facilities with different sizes from the above, so no causal relationship between hospital size and the progress of activities could be confirmed. If QIT can provide support commensurate to capacity, it was confirmed that activities can proceed, regardless of the size of the hospital.

At CHUM, compared to other hospitals, time was required from the introduction of 5S to establishment of 3S and 5S. The reasons were as follows: a) the Hospital Director did not invest strong commitment in the initial activities of this program and there was a lack of leadership, b) on a national level, budget allocations were insufficient for the initial activities, c) impacts due to events like strikes etc. were confirmed. In addition, at CHUM, when 5S activities were introduced to many departments at once, the monitoring and guidance via QIT was confirmed as insufficient. Subsequently however, the appointment of a Hospital Director with effective leadership meant these activities were promoted, while in addition, even under difficult circumstances, activities based on QIT and WIT were continued, leading to gradual empowerment of QIT and with the ability to properly execute the functions required of a 5S organization, activities could progress.

Last year, although both CHUM and CHUF experienced budget shortfalls and strikes, both facilities continued to steadily implement 5S-KAIZEN activities. On this basis, the 5S-KAIZEN organization was established, and while keeping staff motivated, introducing 5S-KAIZEN into daily activities helped confirm that even under difficult circumstances, the activity could be continued. In addition, when the CHUM Hospital Director having shown strong leadership passed away, although a new Hospital Director was appointed, the team had already been established in place, hence it was possible to demonstrate the results of activities in an organized manner to the Hospital Director. Accordingly,

the following Hospital Director was also convinced of the significance and usefulness of this activity, and thus continued the work of the former Hospital Director. In this manner, the system for the 5S-KAIZEN could be established, so that if organizational activities were implemented, such activities could be continued, even in the event of turnover in terms of new Hospital Director or staff.

2) Examples of activities conducted with moderate success

In Kenya (CPGH), Burkina Faso and the Democratic Republic of Congo and so on, although the process from the introduction of 5S to the implementation of S1-S3, 3S is on track, the time required has far exceeded that in the examples reported in 1) above, with the course of activities in these facilities shown in Figure 4-3. While Burkina Faso and the Democratic Republic of Congo have begun working on the transition from 3S to 5S, Kenya (CPGH) is still striving for 3S achievement.
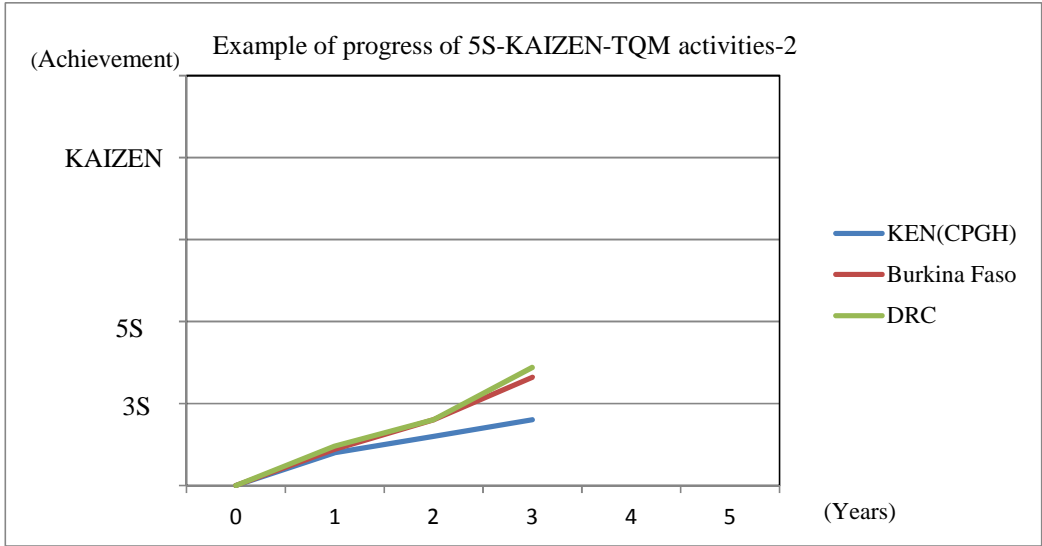

Figure 4-3　5S-KAIZEN-TQM activities course of progress 2－
Examples of moderate achievement

In these examples, while all hospitals concerned have experienced a shift toward 3S activities, the transition from 3S to 5S activities has not materialized. Among applicable facilities, Burkina Faso and the Democratic Republic of Congo have shown examples of strong leadership, progress in the organization of 5S activities, and a higher degree of understanding and willingness on the part of QIT members, but regular activities involving standardization and sustaining by QIT have not been fully implemented, and which is the main reason for the above. This could be caused by failure to conduct the 3 items from the 6 items presented in '1) Examples of positive activities conducted.'

- d) QIT and WIT roles clarified
- e) QIT and WIT have implemented activities and kept a record of the same, based on a schedule determined at regular intervals
- f) Develop the role of the organization in accordance with the progress made, practice the new initiatives

At CPGH, classed as a large-scale hospital, WIT is being implemented in stages, and it is still not at the point of promoting S4 and S5.

3) Examples of activities having stalled

In these pilot hospitals, even if 3 to 5 years have elapsed since the activity, there are still facilities where no departments have even achieved the 3S level. Examples of such facilities include Kenya (Mathari Hospital), Senegal, Malawi (Mzimba Hospital) and so on. The course of activities of these facilities is shown in Figure 4-4.
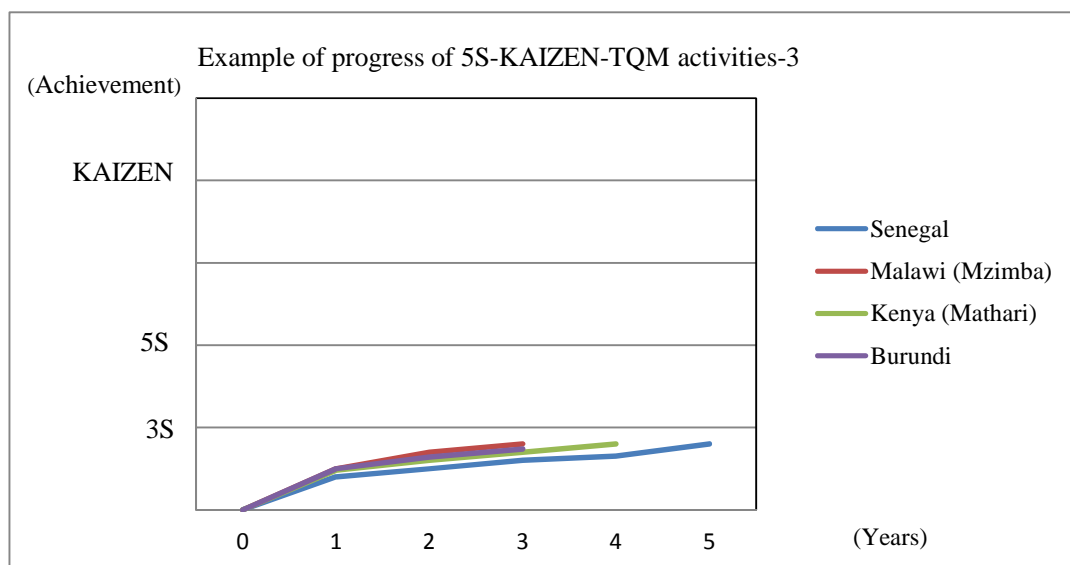

Figure 4-4   5S-KAIZEN-TQM activities course of progress 3－
Examples of activities having stalled

In applicable facilities, the following points may be cited as factors thought to have interfered with progress:

a)   The Hospital Director in charge of the initial activity or the top management showed weak leadership
b)   Hospital Director frequently changed (Senegal, Mzimba)
c)   Regional training participants were frequently transferred (Senegal)
d)   Regional training did not translate into on-site learning feedback (Senegal)
e)   QIT, WIT and so on not functioning properly, team activities were largely not implemented

In many of these facilities, the roles of QIT and WIT are poorly defined. In addition, QIT activities are restricted to meetings held only a few times a year, with activities remaining irregular, functions requiring QIT or WIT were not implemented.

From the introduction of 5S activities to the stage of reaching 3S level, it is crucial for QIT to regularly engage in site visits to introduce 5S, and support the activities in each department through

on-the-spot guidance and OJT. Having no QIT on-site visit makes it very difficult for WIT and the staff of each department to increase the motivation to participate in 5S activities, hence 5S activities in the field do not progress. Establishing organization at the time of introducing the activity, and to boost the motivation of QIT members and staff, leadership from the Hospital Director is crucial. However, the lack of leadership from Hospital Directors in the pilot facilities in question and no team-building, nor any approach with the positive attitude of staff in mind means the activity is considered not to have progressed.

As a further factor hindering the organization of 5S, in Senegal, rather than installing a WIT for each department, based on the advice given by short-term experts, a sub-committee is established for each facility, to support the operational team under WIT etc. (5S team production) and an individual approach is targeted. However, the procedure of establishing a sub-committee for each facility blurs the line of responsibility and hampers efforts to encourage teamwork and so on within the department and such approaches have therefore played a part in restricting activity.

4)   Activities could progress but subsequent example of decline (stagnation)

Within pilot hospitals, once activities got underway and the process of implementing activities was on track, after achieving 5S level, activities stalled and certain facilities regressed back to 3S level. Examples of the latter facilities include Eritrea (Orotta, Halibet Hospital), Nigeria, Uganda and others as applicable. The course of activities in these facilities is shown in Figure 4-5.
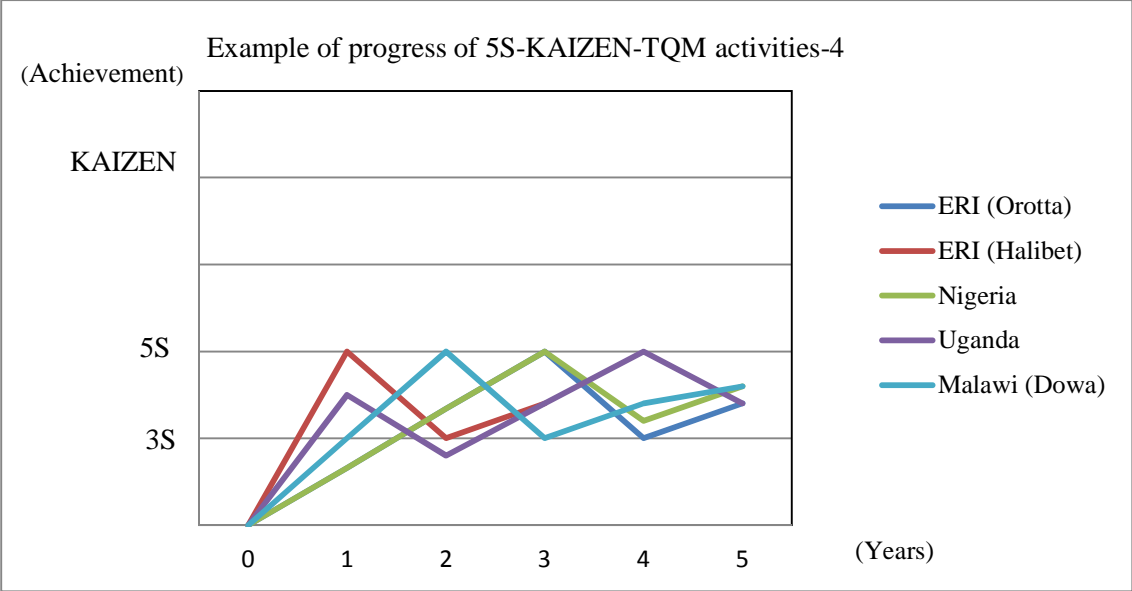

Figure 4-5   5S-KAIZEN-TQM activities course of progress 4－
Cases of activities progressing/stagnating

Of the 5 facilities above, excluding Nigeria, the following factors can be considered common causal factors for the remaining 4 facilities.

a) Although a Hospital Director with strong leadership pursued activities, the top management has been in decline due to turnover in the leader position

b) There is a lack of proper understanding of 5S-KAIZEN-TQM among QIT or WIT members

For example, citing the example of Halibet Hospital in Eritrea, it has a Hospital Director with exceptional leadership ability, and facilities that showed understanding of the 5S-KAIZEN method reached the 5S level in just 1 year, with activity significantly promoted thanks to leadership shown by the Hospital Director.

However, in the above facilities, changes of Hospital Director and top management meant activities stagnated. This is attributable to the fact that when leaders or top management extend the penetration of 5S activities, conveying the correct knowledge to staff and forming a highly functional team, the staff mindset did not become positive. Among staff, the actual understanding of the method is vague, particularly in terms of its significance and how to apply it, and activities tend to stagnate or decline in the absence of a leader.

Although the Hospital Director in Nigeria was unchanged, both progress and setbacks in activity were confirmed. As for causes those listed include a) staff exhaustion due to the increased patient numbers, b) the impact of the strike and so on. At these facilities and at this point, it seems the organizational strength required to overcome such difficulties had not been fostered.

Otherwise, the factors affecting progress of activities at each of the facilities are likely to be the following:

Decline in activity, stagnation factor

    a) Merger of 3facilities (Orotta Hospital)

    b) Renovation of the facility (Orotta Hospital)

    c) Staff with little experience of 5S-KAIZEN activities participating in regional training (Orotta Hospital)

    d) What is learnt during regional training is not shared (Orotta, Halibet Hospitals)

    e) End of term for JOCVs (Uganda, Dowa)

Activity promotional factors

    a) JOCV dispatch (Uganda, Dowa)

    b) Improved understanding of this method following participants' training course (Nigeria)

(2) Factors required throughout the activities (Table 4-4)

Countries where the activities have progressed are synonymous with exceptional leadership. Strong leadership on the part of the Hospital Director or top management, which prompted a strong wish

among people to bring about change in their own hospitals through steady activities. In addition, through program activities allowing the Hospital Director or top management to determine the effectiveness of the proposed method or the need for hospital reform, activity could be promoted.

With correct understanding of the gist of this technique and a change in mindset accomplished, its effect was reflected in action like a case where all parties involved were assembled at the start of the supervisory trip survey. Conversely, at facilities where activities are not progressing, problems such as the time required to gather stakeholders and the difficulty in assembling the right number were observed. From these points also, a change in mindset with 5S, and a behavioral change exerting a positive impact could be confirmed.

In countries where activities have progressed, in terms of feedback to those involved in regional training, the preparation involves successfully implementing voluntary pre-preparation before the supervisory trip survey, reviewing the recommendations of the supervisory trip survey, then implementing activities for improvement, reinforcing commitment to make up for shortfalls emerging based on the evaluation results of the last monitoring or check sheet, while as for information collected by questionnaires etc., and for items deemed beneficial to the facility in question, creating a system to obtain data provided on a voluntary basis etc., steady learning through this activity, which will eventually lead to behavioral change. These initiatives are supported by leadership from the person in charge and the ability to take action and within such facilities, furthering in-house activities by leveraging the experience of 5S-KAIZEN-TQM activities, and thus achieving improvement.

1) First stage: Introduction of 5S (Table 4-5)

With the introduction of the proposed method, a strong and enthusiastic leader (Hospital Director), wishing to improve facility management to use this technique is crucial. Since Hospital Directors adamant of the need to change their hospitals tend to start by introducing 5S activities in their own offices, examining the behavior of the Hospital Director is an effective barometer to determine the degree of commitment to implementing 5S. In addition, it is also important that the Hospital Director describes the significance of 5S-KAIZEN-TQM in his/her own words to motivate his/her own staff, focusing on managerial staff, to participate in this activity.

At the time of 5S introduction, it set up an organization for the implementation of 5S, where the configuration of QIT members is important. When selecting QIT members, it is still important within the managerial level staff of each department to obtain interest in and understanding of the 5S-KAIZEN-TQM approach. Pending efforts to get most activities on track, adapting the QIT member configuration and system to the activities and circumstances and flexibly reviewing allows the successful promotion of activities for more compatible facilities. Among members, not just doctors and nurses but also including non-medical personnel, the QIT leader should be from staff at managerial level as far as possible, with QIT and Hospital Director having a clearly defined

relationship, and where the Hospital Director has overall responsibility for recommending QIT activity, the facility functions well.

Facilities with more than enough QIT configurations or at least sufficient (around 10 persons) tend to be those in which cases are going well. Where there is insufficient manpower, the burden on each of the members intensifies, and when it is excessive, the mobility within the facility is compromised. At Orotta Hospital in Eritrea and so on, the excessive number of QIT members at the facility hindered the progress of QIT activities and meant few could be implemented. Moreover, a similar situation occurred at Halibet Hospital in Eritrea, where the QIT conference was postponed due to the lack of QIT participants. For 5S activities, since team-building is central to the success and continuation of activities, to ensure both WIT and QIT activities are adequate, consideration of both the number of activities and personnel selection is both important.

The QIT and WIT organizational structures vary according to the facility involved, but in the standard set-up, it is advisable for QIT to be in direct control of management of the hospital, and WIT should be established in each department. Conversely, in Senegal, a sub-committee is established for each facility in each department without establishing a WIT, and despite in-house efforts to establish a body across the organization to engage in 5S production e.g. in the form of an operational team, a) the responsibilities and roles for 5S activities are unclear, b) it deviates from the basic concept of 5S activities to improve each workplace with the participation of all members, c) failure to proceed with team-building, all of which hindered the implementation of 5S activities.

2) Second stage: Implementation of S1-S3 → 3S achievement (Table 4-6)

Key when moving from the implementation of S1-S3 to 3S achievement are activities involving the selection of pilot facilities, the staff of pilot facilities and support for pilot facilities and so on based on QIT. When selecting a pilot facility, while it is advisable to select a facility where the results can clearly be seen (patient records office, storehouse, pharmacy and so on), the greater the willingness of the leaders and staff of the department, the more clinical departments progress. Although the WIT composition should preferably be left to the department, it is successful in countries developing teamwork by creating teams within a department, including all types of departmental jobs for members.

At the S1-S3 level, there are important activities involving Sorting, Setting and Shine respectively and readiness or otherwise to conduct these will impact on progress.

When conducting Sorting, it is important to set up a storehouse for discarded articles. In the case of a hospital, medical equipment and so on are often the property of the state or administrative organs rather than the hospital, making it difficult to dispose of them at the discretion of the hospital. Without a storehouse or storage area for such discarded articles, there would be no place to move them within

an office and the discarded articles would remain there indefinitely and be neglected. In addition, similarly, cases where discarded articles have occupied office space for many years in the same place, with no means of removal have been confirmed. Therefore, establishing a system or method to move such discarded articles from each department facilitates the progress of activities. In addition, where a system of classifying such discarded articles into usable, usable if repaired and for disposal to reuse usable discarded articles in other departments exists, activities are successfully promoted.

The key points when conducting Setting include a) classifying by item and specifying the storage area respectively, b) utilizing 5S tools such as labels, tags and so on to implement the principle of 'can see, can take out, can return'. A facility with advanced activities has the ability to understand 5S tools, execute the adoption of 5S tools, the creative ability for a Setting system and so on.

In terms of Shine, 2 points: establishing a rubbish classification system and staff engaging in daily cleaning significantly impact on the Shine progress. By creating a rubbish separation rule, it is possible to a) keep the facility clean by installing appropriate rubbish boxes where necessary, b) reduce the rubbish volume by separating recyclable rubbish, c) enhance safety by separately storing disposed medical items, injection needles and so on.

In a facility which gives consideration to ensuring visitors as well as staff can utilize rubbish boxes, both the inside but outside of the hospital remain clean.

If staff conduct daily cleaning, Shine (5S activities) becomes an ingrained habits, all offices can be kept clean, and changes in awareness are possible, from the mindset that 'Shine should be done' to people realizing that 'they should always clean up their own office by themselves'. In addition, performing their own cleaning daily also boosts awareness raising and team-building, as well as improving the office environment. Accordingly, they can gain an insight into the inventory management of office supplies and documents and become aware of the need to keep their own section (office) clean as a team and so on.

3) Third stage: 3S → 5S achievement (Table 4-7)

The QIT function has a significant influence on the transfer from 3S to 5S. Among the facilities having achieved 5S, in Madagascar, Tanzania and Mali, the 5S‐KAIZEN‐TQM implementation system, activity goals, activity plans and so on are written up. In addition, the key characteristics include the QIT and WIT roles being properly understood and each role, including that of top management, clearly indicated. In addition, the schedule of activities (meetings, supervision and training) is clarified and activities are regularly conducted. It is important to hold QIT meetings at least monthly. For the transition from 3S to 5S, 5S is to be made into an organizational activity, meaning the QIT role is crucial. QIT plays central roles, such as supervising the site, approving and evaluating good practices, standardizing them and introducing them into the site with WIT, establishing rules for hospital use,

practically implementing them and so on. When, despite regular visits to the department, activities are implemented without understanding the purpose of those visits, when failing to discuss site issues and provide appropriate information and advice, when not determining good practices and considering their standardization and so on, activities are ineffective and it is ultimately difficult to shift to 5S. Whether or not the transition from 3S to 5 is successful depends on whether the original roles of QIT and WIT are properly understood, clearly written in TOR and practically implemented.

The success or otherwise of the coordination between QIT and WIT and top management also impacts on the transition from 3S to 5S. In countries where activities are advanced, opportunities to receive regular reports from WIT are set, feedback on supervision and monitoring results at QIT is given, and a system is prepared to engage in discussion concerning the reality and future activities as necessary with top management. In countries where activities are not advanced, it was confirmed that the meeting reports and information from WIT are not given to QIT and QIT fails in its supervisory duties.

For 5S, particularly at the standardization and sustaining level, it is crucial to store an activity log and utilize information. Keeping records means information can be properly stored and utilized for the next activity. This should be preferably practiced, not only by QIT, but also WIT or at site level, and in countries where activities are advanced, on-site storage of records is practiced.

Conversely, many countries which fail to shift from 3S to 5S do not understand the roles of QIT properly and QIT also performs activities irregularly. If meetings are held irregularly and infrequently, activities such as standardization and sustaining stall. Also, even if such meetings are held, if there is insufficient consideration of what QIT should decide during the meeting and what should be reported from WIT, hampering efforts to achieve progress in standardization and Sustaining.

4) Fourth stage: transition from 5S to KAIZEN (Table 4-8)
Although both 5S and KAIZEN are intended to improve management, because the target and implementation process are different tools, time was required to step up in facilities which actually advanced activities as well. To make the transition from 5S to KAIZEN, proper knowledge of KAIZEN is required. The first step should be to determine whether the human resources who took the regional training can properly understand KAIZEN and share it with hospital officials. Among countries not yet having made the transition to KAIZEN, in the case of Eritrea and Senegal, the participants of previous regional training gave no feedback and worse still, different staff participated every time, meaning the hospitals have no accumulated KAIZEN data and also fail to conduct KAIZEN training by themselves. Following the implementation of regional training, if long gaps exist until the feedback and KAIZEN training, the knowledge becomes more superficial and conducting training is difficult.

The characteristics of countries having successfully made the transition to KAIZEN include, a) ensuring the same human resources to continuously participate in regional training (multiple human resources alternate in some cases), b) feedback on what was learnt in regional training is given to other staff, c) KAIZEN training is provided to QIT members and interested staff, and they work on training by trial and error. Conversely, some countries worked on resolving problems at their own sites with KAIZEN tools, despite a lack of understanding of KAIZEN, and confirmed the results using data and the information pre- and post-implementation. Madagascar and the Democratic Republic of Congo could refine their knowledge of KAIZEN by utilizing their problems, checking the details of KAIZEN case examples and discussing points such as whether the method and review items were appropriate and how they could be further improved, through supervisory trip survey procedures, whereupon KAIZEN activities can be expected to further evolve.

Benin and Mali have reached 5S level, and KAIZEN training is also provided to staff, thus KAIZEN activities are soon expected to start. Examining the examples of Madagascar and the Democratic Republic of Congo, it is difficult to work on KAIZEN activities alone, hence the perceived need to conduct KAIZEN consultation by creating opportunities such as supervisory trip surveys.

5) Timing of transition from 5S activities to KAIZEN

This approach is characterized by introducing 5S, KAIZEN and TQM in stepwise form, and the transition to KAIZEN is recommended after reaching 5S level. However, following this survey, some facilities which had not reached 5S level but which practiced KAIZEN activities were confirmed on site. In many such facilities, the activities were actually KAIZEN activities but conducted intended as part of 5S, namely, activities for improvement of work process, and not intentional examples of conducting KAIZEN. Conversely, some cases of trying to work on KAIZEN while 5S was insufficiently conducted were confirmed but among the issues chosen, some were solvable by 5S. At the S4 and S5 implementation levels, problems can be recognized through activities, and problem solving by KAIZEN proposals can be performed, thus it is better to prioritize 5S attainment without forcing KAIZEN activities.

Success factors

1) Common to whole process

Table 4-4　Success factors (1) Common to whole process (Country name: ISO abbreviated form)

	KAIZEN			5S+K		3S+K		3S					(S1-S3)+K		S1-S3			Unclear
	MDG[7]		TZA	BEN	MLI	COD	NGA	BFA	ERI[8]		MWI[9]		KEN	UGA	BDI	SEN	MAR	NER
	1	2							1	2	1	2						
Hospital Director displaying strong leadership	○	○	○	○	○	○	○ Deputy Hospital Director	○	×	△	△	△	△	○	○ Deputy Hospital Director promoted to Hospital Director	○	○	─
Leader with strong leadership retained	△	○	○	○	○	○	○	○	×	×	×	×	△	×	○	×	○	─
Leader has sufficient knowledge of the 5S-KAIZEN concept, can explain significance of 5S to staff	○	○	○	○	○	○	○	○	△	△	△	△	△	○	○	○	-	─
Support from non-JICA sources possible	─	─		○	○	○	×	○	○	×	×	△	○	─	○	─	△	─
5S team-building under control, and consciously practiced	○	○	○	△	○	○	○	─	△	△	○	○	○	△	△	△	○	─
Prospective participants gathered during the mission	○	○	○	△	○	○	△	─	△	△	○	○	○	△	○	△	△	─

Evaluation criteria ○: Applicable, △: Moderately applicable, ×: Inapplicable, ─: Lack of information

[7] Pilot facility 1: Mahajanga University Hospital Center, Pilot facility 2: Fianarantsoa University Hospital Center
[8] Pilot facility 1: Orotta University Hospital, Pilot facility 2: Halibet Hospital
[9] Pilot facility 1: Dowa State Hospital, Pilot facility 2: Mzimba State Hospital

	KAIZEN			5S+K		3S+K		3S					(S1-S3)+K		S1-S3			Unclear
	MDG[10]		TZA	BEN	MLI	COD	NGA	BFA	ERI[11]		MWI[12]		KEN	UGA	BDI	SEN	MAR	NER
	1	2							1	2	1	2						
Gathered punctually during mission timing.	○	○	○	△	○	○	△		△	△	○	○	○	△	○	△	○	—
Ready to proactively advance supervisory trip survey preparation.	○	○	○	△	○	○	×	△	△	△	×	×	○	△	○	△	○	—
Score improved since previous supervisory trip survey (if the original score was over 75%, then maintaining it is OK).	○	○	○	○	○	×	○	○	△	△	×	×	○	△	×	○	—	—
Activities to implement the recommendations made on previous issues have been identified.	○	○	—	—	○	○	△	—	○	○	○	○	○	○	—	○	—	—
New data/information has been obtained to determine the effectiveness of 5S etc.	○	○	○	○		○	△	△	×	×	△	△	△	×	△	×	×	—
Sharing of experience and opportunities between facilities, healthy competition.	○	○	○	×	△[13]	△	○	△	○	○	○	○	○	○	○	○	△[14]	—

Evaluation criteria ○: Applicable, △: Moderately applicable, ×: Inapplicable, －: Lack of information

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[10] Pilot facility 1: Mahajanga University Hospital Center, Pilot facility 2: Fianarantsoa University Hospital Center
[11] Pilot facility 1: Orotta University Hospital, Pilot facility 2: Halibet Hospital
[12] Pilot facility 1: Dowa State Hospital, Pilot facility 2: Mzimba State Hospital
[13] No applicable facilities in Mali, but since last year, alternating Consultation Mission of Tambacounda Hospital in Senegal.
[14] GIZ teaching on quality competition is a project of the Ministry of Health, and despite competition due to the similarity of the work, an end result is considered unlikely based on 5S.

2) First stage: Introduction of 5S

Table 4-5　Success factors (2)First stage: Introduction of 5S

	KAIZEN			5S+K		3S+K		3S					(S1-S3)+K		S1-S3			Not reported
	MAD		TZA	BEN	MLI	COD	NG A	BFA	ERI		MWI		KEN	UGA	BDI	SEN	MAR	NER
	1	2							1	2	1	2						
Leader determined to improve hospital management via this technique	○	○	○	○	○	○	○	○	Δ	○↓ Δ	○ ↓ ×	○ ↓×	○↓Δ	○ ↓ ×	○	× ↓ ○	—	—
Leader has sufficient knowledge of the 5S-KAIZEN concept, can explain significance of 5S to staff	○	○	○	○	○	○	○	○	Δ	Δ	○ ↓ ×	○ ↓×	Δ	○ ↓ ×	○	○	—	—
Leader to introduce 5S in own offices	○	○	○	—	○	—	—	—	Δ	Δ	×	×	×	—	○	○	—	—
A structure for 5S-KAIZEN implementation (QIT, WIT) has been established	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Δ	Δ	—

Evaluation criteria ○: Applicable, Δ: Moderately applicable, ×: Inapplicable, 一: Lack of information

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3) Second stage: Implementation of S1-S3 → 3S achievement

Table 4-6 Success factors (3)Second stage: Implementation of S1-S3 → 3S achievement

	KAIZEN			5S-KAIZEN		3S+KAIZEN		3S					(S1-S3)+K		S1-S3			Not reported
	MAD		TZA	BEN	MLI	COD	NGA	BFA	ERI		MWI		KEN	UGA	BDI	SEN	MAR	NER
	1	2							1	2	1	2						
(Step 2) S1-S3																		
QIT comprises members actively involved in 5S	○	○	○	○	○	○	○	○	△	○	○	○	○	○	○	△↓○	○	—
Leaders of pilot facilities positive about the introduction of 5S	—	—	○	△	○	○	○	○	—	—	○	○	○	○	○	—	△	—
Activities have been conducted involving staff of the pilot facility	○	○	○	—	○	○	△	—	—	—	△	△	△	△	△	△	—	—
QIT have paid regular visits to pilot facilities to monitor activities	○	○	○	○	○	△	△	△	—	—	△	△	○	○↓△	○	△	—	—
S1 (Sorting)																		
Establish storehouse for discarded items	○	○	○	×	○	○	△	×	○	○	×	×	○	—	×	△	×	—
S2 (Setting)																		
Determine the storage area in which each item is to be stored	○	○	○	○	○	△	△	△	○	○	△	△	○	○	×	△	△	—
Can see, Can take out Can return- practical principles implemented	○	○	○	△	○	△	△	△	△	△	△	△	△	○↓△	×	△	—	—
S3 (Shine)																		
Waste classification system established	○	○	○	○	○	△	○	○	△	△	○	○	×	○	×	△	○	—
Daily cleaning carried out	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	—

Evaluation criteria ○: Applicable, △: Moderately applicable, ×: Inapplicable, —: Lack of information

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4) Third stage: 3S → 5S achievement

Table 4-7　Success factors (4)Third stage: 3S → 5S achievement

	KAIZEN			5S-KAIZEN		3S+KAIZEN		3S					(S1-S3)+K		S1-S3			Not reported
	MAD		TZA	BEN	MLI	COD	NGA	BFA	ERI		MWI		KEN	UGA	BDI	SEN	MAR	NER
	1	2							1	2	1	2						
(Step 3) 3S → 5S																		
Details clarifying the structure and TOR of each organization are clarified	○	○	○	○	○	△	○	○	△	△	○	△	○	—	○	△	△	—
QIT/WIT teams are functional etc. and engage in regular activities	○	○	○	○	○	○	△	○	△	△	○	△	○	—	△	△	△	—
Proper understanding of which QIT matters are key for standardization and Sustaining.	○	○	○	○	○	○	○	△	△	△	○	△	△	—	△	△	—	—
QIT has been scheduling regular activities (meetings) and is active	○	○	○	○	○	○	△	○	△	△	○ ↓ △	○ ↓ △	○	○	△	△	△	—
(Supervision)	○	○	○	○	○	△	△	—	△	△	△	△	△	△	△	×	×	—
(Training)	○	○	○	○	○	△	○	×	○	○	△	△	△	△	△	×	×	—
(5S Event)	○	○	○	—	○	—	△	—	×	×	△	△	△	—	△	×	×	—
Standardizing (S4)																		
Good practices are standardized	○	○	○	○	○	△	×	△	△	△	△	△	△	△	△	△	—	—

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	KAIZEN			5S-KAIZEN		3S+KAIZEN		3S					(S1-S3)+K		S1-S3			Not reported
	MAD		TZA	BEN	MLI	COD	NGA	BFA	ERI		MWI		KEN	UGA	BDI	SEN	MAR	NER
	1	2							1	2	1	2						
Applicable in-hospital rules are clearly stated	○	○	○	○	○	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	—	—
Sustaining (S5)																		
Visualize the rules and practice using a checklist	○	○	○	—	—	×	Δ	○	×	×	Δ	Δ	Δ	○ ↓ Δ	Δ	×	×	—
A categorized training system has been established (for newcomers, staff, QIT and so on), and implemented	○	○	—	○	○	Δ	○	—	Δ	Δ	×	×	Δ	—	Δ	Δ	×	—

Evaluation criteria ○: Applicable, Δ: Moderately applicable, ×: Inapplicable, —: Lack of information

Fourth stage: 5S → KAIZEN Transition

Table 4-8　Success factors (5)Fourth stage: 5S → KAIZEN Transition

	KAIZEN			5S-KAIZEN		3S+KAIZEN		3S					(S1-S3)+K		S1-S3			Not reported
	MAD		TZA	BEN	MLI	COD	NGA	BFA	ERI		MWI		KEN	UGA	BDI	SEN	MAR	NER
	1	2							1	2	1	2						
Same people participate in regional training	○	○	○	○	○	○	Δ	○	×	—	Δ	Δ	Δ	—	○	×	○	—
Regional training participants feedback to the hospital	○	○	○	○	○	Δ	○	○	×	—	○	○	○	—	○	×	×	—
KAIZEN training is conducted for QIT	○	○	○	○	○	○	○	×	×	—	×	×	○	—	×	×	×	—
KAIZEN training provided to staff	○	○	○	○	○	×	×	×	×	—	×	×	Δ	—	×	×	×	—
Attempt made to implement KAIZEN	○	○	○	×	○	○	Δ	×	×	—	×	×	Δ	—	×	×	×	—

Evaluation criteria ○: Applicable, Δ: Moderately applicable, ×: Inapplicable, －: Lack of information

6) External factors influencing 5S-KAIZEN-TQM activities (see Table 4-9)

Excluding Tanzania, in many countries where 5S-KAIZEN activities were advanced, support from Ministry of Health extended to monitoring and supervision and fell short of providing guidelines or policy support. Essentially, this program is designed with the expectation of the bilateral effects, including the establishment of 5S-KAIZEN-TQM showcase by pilot hospital activities and nationwide development by the Ministry of Health, but the implementation of such showcase roles is linked to efforts made by pilot hospitals. Although in many countries, monitoring/supervision was conducted via participation in traveling guidance and so on, and the Ministry of Health saw the importance of creating guidelines and the impact of nationwide development, they failed to obtain appropriate support to determine how they should advance in specific terms. When nationwide development in the target countries is considered in future, up skilling within the Ministry of Health is vital to formulate guidelines, plans and implementation, and the need to keep promoting activities in cooperation with pilot hospitals must also be considered. In countries where pilot hospitals in particular have made notable achievements, up skilling of the Ministry of Health must be supported at the earliest opportunity.

It is suggested that support from JICA offices has also influenced the progress of pilot hospitals. In countries which have demonstrated high commitment by JICA offices and local staff, such as Madagascar, Eritrea and so on, pilot hospital activities are promoted on a timely basis by discussing with hospitals and those responsible from the Ministry of Health to utilize support expenses to provide the necessary equipment for 5S activities and create opportunities for intergroup networking and monitoring. In addition, by participating in donor meetings and so on and introducing this program, the relationship with the program of other donors and the advantages of the 5S-KAIZEN-TQM method can be shared. In Tanzania, Madagascar, Burundi, Kenya and so on, the introduction of this method in cooperation with other donors is advanced.

Table 4-9　External factors influencing 5S-KAIZEN-TQM activities

	KAIZEN			5S-KAIZEN		3S+KAIZEN		3S					(S1-S3)+K		S1-S3			Not reported
	MAD		TZA	BEN	MLI	COD	NGA	BFA	ERI		MWI		KEN	UGA	BDI	SEN	MAR	NER
	1	2							1	2	1	2						
Ministry of Health status of activities																		
Ministry of Health has clearly stated national policy.	×	○	○	○	×	○	△	△	○	○	○	○	○	○	×	○	×	—
Ministry of Health has developed a concrete deployment plan.	△		○	×	△	△	×	×	△	△	○	○	△	△	○	△	×	—
Ministry of Health provides implementation guidelines and so on.	×		○	×	×	×	×	×	×	×	○	○	○	○	△	×	×	—
The Ministry of Health or its subsidiary organization regularly visit pilot hospitals and have conducted monitoring and supervision.	△		○	△	△	△	×	×	○	△	○	○	○	○	○	○	×	—
Support from office																		
5S-KAIZEN-TQM putting forward deployment strategy or ideas.	○		○	○	△	○	○	○ ↓ △	○	○	○		○	○	○	○	△	—
Office personnel regularly consult with the Ministry of Health and pilot hospitals concerning the deployment strategy for 5S-KAIZEN-activities.	○		○	○	△	○	○	○ ↓ △	○	○	○		○	○	○	○	△	—

	KAIZEN			5S-KAIZEN		3S+KAIZEN		3S					(S1-S3)+K		S1-S3			Not reported
	MAD		TZA	BEN	M LI	COD	NGA	BFA	ERI		MWI		KEN	UGA	BDI	SEN	MAR	NER
	1	2							1	2	1	2						
Pilot hospitals visited on a regular basis.	○		○	○	×	○	○	○ ↓ Δ	○	○	Δ		○	○	○	Δ	Δ	—
The status of activities at pilot hospitals and the Ministry of Health is determined and how best to take advantage of the assistance with expenses is discussed with the other party.	○		○	○	○	○	○	○ ↓ Δ	○	○	Δ		○	○	○	○	Δ	—
Donors attend the meeting, at which we provide updates on the latest 5S-KAIZEN-TWM activities[15]	○		○	—	×	—	Δ	—	○	○	○		Δ	Δ	○	×	Δ	—

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[15] Based on the consultation missions conducted to date, the remarks made by counterparts when visiting international agencies can be judged.

7) Promotion/ disincentives in cooperation with other JICA schemes

Among the target 15 countries, activities by other JICA schemes are or were conducted in 8 countries. Among them, in Tanzania, 5S activities have progressed smoothly, achieving synergy with other schemes and this program have been attained. Likewise, in the Democratic Republic of Congo and Nigeria, the hospitals themselves conduct activities uniquely by obtaining support for projects and individual specialist activities.

Conversely, in Eritrea, Burundi, Senegal and so on, the contributions to the 5S-KAIZEN activities projects in pilot hospitals are less impressive. This is considered primarily attributable to 1) the method of popularizing 5S activities and 2) relationship of the pilot hospitals and framework of the projects.

The foundation of the 5S-KAIZEN-TQM method is team-building and a positive mindset change, and through activities involving improving the work environment and team-building, a positive mindset is fostered. If 5S activities are introduced and popularized, simply as a 'beautification campaign' without any particular focus, this makes it difficult to continue the activities upon completion of the project. For example, in the case of Eritrea and Senegal, it was confirmed that the concept of 5S, 'full participation' and 'to advance from what we can do ourselves', were not understood by the QIT members, which raises the potential for a lack of concentration on fostering team-building and a positive mindset. In addition, in Eritrea, as part of medical equipment management, and Burundi, as part of maternal and child health, 5S activities were conducted. Accordingly, the impact of interfering with full participation in activities, due to the fact that 5S was recognized not in the form of organization-wide activities but activities of specific departments, such as the medical equipment sector, obstetrics and gynecology department and so on is also indicated.

When conducting technical assistance projects as well, 5S activities must be driven on-site by the site staff, but can also be considered project-driven initiatives and part of the project activity. When conducting 5S-KAIZEN-TQM under the scope of project activities, it is considered that by properly conveying concepts including the above to the site, respecting the 5S activities performed on-site and advancing and improving them with site staff, 5S activities become the tools of the site staff rather than the project.

In addition, the potential for the project framework and the positioning of pilot hospitals to be inconsistent has seen pilot hospitals fall away from the framework of activities and limitations on the scope of activities conducted by certain pilot hospitals. In the case of Senegal, despite

the project focus on Tambacounda Provincial Hospital, a pilot hospital, it comes under the jurisdiction of the Ministry of Health and is excluded from the scope of the project. Also the difference in counterparts between projects and pilot hospitals mean project activities and those of this program do not collaborate well. Similarly, in Uganda, the main project targets are regional hospitals, most of which have commenced 5S activites after the project. On the other hand, 5S was mainly introduced to district hospitals by the program with JOCV. Even if the project was specialized in specific areas, when introducing 5S, it is necessary to start with team creation for the entire hospital. However, when introducing 5S activities to the relevant departments only without undergoing the process, it is difficult to continue activities upon completion of the project. When introducing 5S-KAIZEN-TQM as part of project activities, the framework of the project must be fully assessed and the implementation system of 5S-KAIZEN-TQM established; not only in the relevant departments but also in the entire facility.

Table 4-10　Verify the validity of technical cooperation projects・Mandatory when implementing cooperation projects and others)

Evaluation criteria: ○ Mainly performed in-hospital, △: Around 50% implementation for facilities and projects, ×: Most projects implemented,

－: Lack of information

Item	Tanzania	Democratic Republic of Congo	Nigeria	Eritrea (Orotta, Halibet)	Malawi (Mzimba, Dowa)	Uganda (Tororo)	Burundi	Senegal
Assistance breakdown	Individual experts (End) Technical Cooperation Project	Individual experts Technical Cooperation Project	Technical Cooperation Project	Technical Cooperation Project (End)	Individual experts JOCV	Technical Cooperation Project JOCV	Technical Cooperation Project (End)	Individual experts Technical Cooperation Project JOCV
The importance of team-building and change in mindset in the 5S-KAIZEN-TQM approach is described and understood	○	○	○	× Some of the top section was understood but QIT members were unable to grasp it.	○ (JOCV support)	○ (JOCV support)	○	△
Hospital exclusively performs 5S activities	○	○ Mainly performed in hospital	○	△ 5S equipment had some support from the project	○ (JOCV support)	○ (JOCV support)	△	○

Item	Tanzania	Democratic Republic of Congo	Nigeria	Eritrea (Orotta, Halibet)	Malawi (Mzimba, Dowa)	Uganda (Tororo)	Burundi	Senegal
Assistance breakdown	Individual experts (End) Technical Cooperation Project	Individual experts Technical Cooperation Project	Technical Cooperation Project	Technical Cooperation Project (End)	Individual experts JOCV	Technical Cooperation Project JOCV	Technical Cooperation Project (End)	Individual experts Technical Cooperation Project JOCV
There is understanding that QIT and WIT should be implemented, the structure and TOR of the hospital established in principle	○	○ Mainly performed in hospital	○	△ Established at the hospital but understanding of the QIT and WIT roles is insufficient..	○ (JOCV support)	○ (JOCV support)	○	△ Based on the proposal of short-term experts, a different organizational structure established. QIT and WIT roles still not clearly defined.
QIT/WIT activities conducted on a regular basis within the hospital	○	○ Mainly performed in hospital, but infrequent QIT meetings	○	△ Project implementation remains unclear. Currently being attempted but no regular activity.	○	○	△	△
Records are mainly taken of QIT and WIT activities	○	○ Mainly performed in hospital	△	○ Project implementation remains unclear. Currently being implemented by hospital personnel.	△	△(JOCV)	×	△ Activity is recorded in each department but no system to expand reporting could be established.

Item	Tanzania	Democratic Republic of Congo	Nigeria	Eritrea (Orotta, Halibet)	Malawi (Mzimba, Dowa)	Uganda (Tororo)	Burundi	Senegal
Assistance breakdown	Individual experts (End) Technical Cooperation Project	Individual experts Technical Cooperation Project	Technical Cooperation Project	Technical Cooperation Project (End)	Individual experts JOCV	Technical Cooperation Project JOCV	Technical Cooperation Project (End)	Individual experts Technical Cooperation Project JOCV
QIT members or hospital personnel have conducted 5S-KAIZEN-TQM training	○	○ Mainly performed in hospital	○	○ Project implementation remains unclear. Currently being implemented by hospital personnel.	○	○	○	○
Other beneficial project features	・Collaboration with WHO and other countries	・Increased training opportunities ・Teacher training ・Showcase role	・Cooperation with the Center for Health	・Removal of waste equipment ・Creating signs at hospital (Halibet)	・Cooperation with the Ministry of Health		・Madagascar inspection of activities	・Exchange of info with other facilities ・Easy availability of relevant documents (guidelines and so on).
Notes	Ministry of Health the advisor on 5S-KAIZEN-TQM	Ministry of Health the advisor on Human Resources for Health	Maternal and Child Health	Equipment management	5S-KAIZEN-TQM	5S-KAIZEN-TQM	Maternal and Child Health	Ministry of Health the advisor on Management and obstetric care. Project is in the target provinces but hospital outside the scope of the project.

8) Success factors of introduction of this method and approaches to bring them out

Based on the above analytical results, the success factors to promote activities at each level and the approaches to bring them out are summarized in Table 4-11.

Table 4-11　Success factors and necessary approaches at each stage of 5S-KAIZEN-TQM

Success factors	Approaches to bring out the factors	Points of concern
Activities overall		
Hospital Director displaying strong leadership	Example: Create an opportunity to visit hospitals which have introduced 5S-KAIZEN-TQM, to show the results visually. ・Approach so that hospital management issues can be recognized as self-issues. ・As well as a site visit, show the results as data. ・Show the costs, budget and so on spent on the activity to raise awareness of what they can do	Establishment of a showcase Data collection at pilot hospitals Information storage related to activities/budget at pilot hospitals
Understand the significance of team-building and exercise consciously	・In 5S training, always emphasize the concepts of 5S, particularly the importance of team-building, mindset change, full participation and to begin with what can be done	Utilize consistent training materials and contents
Based on information (proposal items, past evaluation results and so on), improve past activities	・Try to get into the habit of keeping an activity log. ・When conducting monitoring and evaluation, ensure the results and proposals are shared, and in the next activity, review the previous issues and agenda. ・All activities should be conducted, driven from the hospital side	Provide the format for the activity log and revise it according to on-site needs
Set a framework to promote positive competition	・Establish multiple pilot departments. If possible, establish multiple pilot institutions too	・Create opportunities to promote positive competition
First stage: At introduction		
Change the mindset at the management level	・Obtain understanding of this method from managerial level. (visit executing facilities and so on)	
Build and enhance a team	・Properly convey the 5S concepts and focus on team-building	
Second stage: Implementation of S1-S3 → 3S achievement		
Selection of appropriate pilot departments and involvement of staff	・When selecting pilot departments, check the motivation of the department leaders ・QIT and OJT to conduct monitoring and so on regularly to promote sharing of knowledge. ・Explain this method to the staff in the pilot departments to obtain maximum understanding and participation of staff	
Activities to be advanced properly	・Add necessary items to the activities to preferentially work on the items	
Third stage: 3S → 5S achievement		
Clearly write the implementation system of 5S-KAIZEN-TQM and the roles of each organization	・Check the implementation system, reconfirm what is required of QIT and WIT and the activities to work on and obtain the understanding of the relevant people	
Schedule QIT, WIT, activities of each organization to regularly work on activities	・Ensure implementation of activities of each organization (meetings, training, supervision and so on). ・QIT members to understand what to be discussed in meetings	
Fourth stage: 5S → KAIZEN		
Obtain proper understanding of KAIZEN	The representatives of a hospital to understand KAIZEN properly	
Share knowledge of KAIZEN with the relevant people and seek implementation.	Address issues on their own sites to work on the KAIZEN process.	

9) How 5S-KAIZEN-TQM activities support should be

Based on the above analytical results, the points of concern for the introduction/support of 5S-KAIZEN-TQM are summarized in Table 4-12.

Table 4-12   Points of concern when supporting the introduction of 5S-KAIZEN-TQM

Person in charge of office
1. Regularly discuss with the responsible person of Ministry of Health so that activities toward nationwide development can be promoted. 2. Regularly visit pilot hospitals to inspect 5S-KAIZEN activities (at least quarterly), and discuss the site issues, necessary support and achievements. 3. Understand the plans for 5S-KAIZEN activities of the Ministry of Health and pilot hospitals and allot support expenses effectively through discussion with the other party. 4. Check the results from support expense allocation. 5. Participate in donor discussions and so on, explain this method to international institutions which implement similar activities, and consider the potential for cooperation. For example, recently, GIZ, USAID and so on conduct activities for quality improvement, thus a proposal on the implementation of 5S activities as a stage previous to that may possibly emerge.
Persons involved in the project
1. Obtain the understanding and support of supervisory institutions such as the Ministry of Health and so on. 2. Even if the targets are only some departments, approach the Hospital Director and introduce 5S activities; not only to the departments in question but also the entire hospital. 3. When introducing the 5S-KAIZEN-TQM approach, ensure team-building and mindset change happen. 4. Share good practices of other facilities to enhance the 5S knowledge of the site staff. 5. Respect the 5S activities and ideas happening on-site, and improve them together with the site staff. (Share proposals and methods to improve ideas from other sites). 6. 5S activities to be planned and advanced, not driven by the project by QIT. 7. Create opportunities to share achievements of activities with the Ministry of Health and the relevant institutions.
JOCV
1. Discuss thoroughly with the director of the facility with demands in advance, and obtain understanding of support for 5S activities driven by the hospital. 2. Obtain proper knowledge of 5S-KAIZEN-TQM in advance, and fully understand the importance of team-building and a positive mindset. 3. Promote 5S activities, belonging to the top management such as the Hospital Director's office and so on as closely as possible. 4. Conduct activities with awareness of the position to support 5S activities conducted by staff of the hospital rather than conducting 5S activities by themselves. 5. Create opportunities to visit other facilities and debrief meetings to learn activities of other facilities.

Chapter 5   Evaluation of the program

Chapter 5   Evaluation of the Program

5-1   Evaluation Framework

The program is evaluated in this chapter based on the survey and analysis results described in the previous two chapters. The purpose of the evaluation is to clarify how 5S-KAIZEN-TQM approach affected the program objectives of improving the functions of medical institutions and quality of medical services in Africa with limited resources and what factors worked effectively for the achievement of the objectives, thereby defining the preconditions to formulate strategies for the improvement of health and medical institutions in the region through the approach.

Before program and project implementation, traditionally, objectives, overall goal, activities to achieve them, and indicators to measure the outcomes are designed and activities are carried out based on the design. However, the program is the combination of overseas complimentary training, supervisory trip survey and small-amount fund provision with the main activities of training in Japan. Because there is no clear goal or indicator as a program, it is desired that the objective of the training in Japan be the central component. The overall goal of the training in Japan is that 5S-KAIZEN-TQM is used at quality hospitals to provide health and medical services in the target country and the objectives are that the KAIZEN activities are carried out based on the strategy plan formulated during the training in Japan and the work contents are improved at pilot hospitals and that the pilot hospitals are used as a showcase and the strategy plan clearly states that efforts for improving quality and safety of health and medical services by using 5S at the national level in cooperation with health ministries of each country.

The training term is for three year from 2009 to 2011 in English-speaking countries and for two years in 2011 and 2012 in French-speaking counties. However, because the program includes assistance from the AAKCP, visiting instructions and small-amount grant provision, it began in March 2007 in the former and March 2009 in the latter. Although the completion time is not defined, it is reasonable to say that the situation as of December 2012 is evaluated in consideration of the timing of the visiting survey.

As described above, the improvement of medical services in the program is to implement 5S-KAIZEN-TQM approach step by step at pilot hospitals and as well as the health ministry as a policy. Chart 5-1 below shows the two levels of entities—pilot hospitals and health ministry—and their structure and period needed to achieve each stage.

The chart shows that KAIZEN is promoted in the hospitals and 5S is developed across the nation to some degree in English-speaking countries that introduced the approach in 2007 (Group 1). KAIZEN is introduced in the hospital and 5S is beginning to be developed across the nation in French-speaking countries that introduced the approach in 2009 (Group 2).
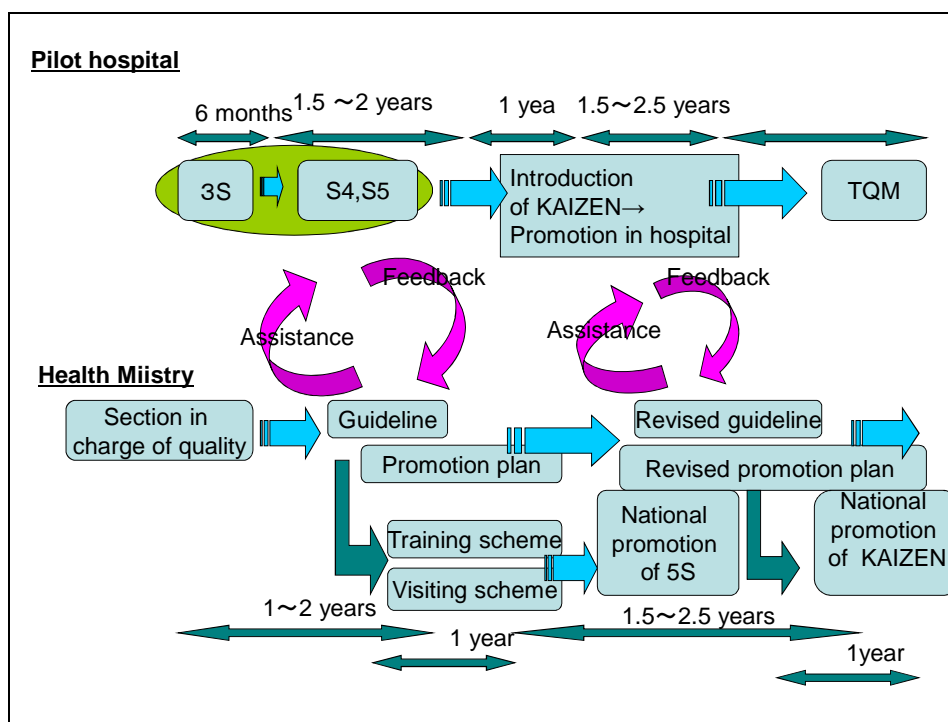
Figure 5-1   Action Plan of Pilot Hospitals and Health Ministry in the Program

5-1-1   Questions for Evaluation

For the evaluation, program objectives are clarified and goals defined to achieve them are confirmed. Thus, questions for the evaluation are categorized into objective and goal.

Objective: What changes is the program expected to make to hospitals in Africa?
Goal: What are the desired changes the program will make?

To clarify whether the objectives and goals are achieved or not, questions about the changes made by the program (outcome) and questions to confirm the factors of the outcome are given.

Outcome: What changes occurred actually?

Although the program is assumed to make changes, some changes actually occurred and some did not. Sort out what changes actually occurred and what did not occur and confirm changes that did not occur although they were expected to occur.

Table 5-1   Matrix of Confirmed Effects

	Occurred	Did not occur
Expected	Expected positive effect	Positive effect that did not occur
Beyond expectation	Unexpected positive effect	

Factor: What factors contributed to changes?

Factors of main effects are examined from the perspectives in Table 5-2. Factors are shown in alphabetic code below for convenience.

Table 5-2   Factors of Main Effects

Perspective	Factor	Code	Description
Assistance scheme	South-south cooperation	a	• Refers to technical transfer (training) between Sri Lanka and African target countries (training and supervisory trips) and technical transfer cooperation among target countries • Technical transfer that is easily adaptable, competition and cooperation with peer groups, and efficient assistance can be expected.
	Program assistance Training + supervisory trips + fund provision (tailor-made assistance)	b	• Refers to combined assistance of individual schemes--training, supervisory trips and fund provision. • Standardized technical transfer, efficient assistance, proper follow-up, and synergy effects of combination can be expected.
	Collaboration with other projects	b2	• Refers to collaboration with assistance related to the approach. Specifically, it includes technical cooperation projects, individual dispatch of experts, grant aid projects, and JOCV. • Such effects as mutual technical complementation and proper follow-up can be expected.
Technique	Stepwise	c	• Refers to approach of step-by-step introduction of 5S, KAIZEN, and TQM to achieve improvement of working environment, service upgrading and hospital operation. • Changes in mindset and behaviors, team formation, development of leadership, and accumulation of successful experience can be expected.
	Japanese-style management	d	• Refers to techniques related to on-site problem solving, team activities, and successor development • Promotion of communication, information sharing, development of management mind, creation of relation of trust in hospital, and development of successor can be expected.
External factor	Potential capacity of hospital	e	• Refers to such capacity as leadership of top management, location and staff quality that hospital usually has
	Assistance from other countries	f	• Refers to assistance for pilot hospitals and target countries from other donors and international organizations.

5-1-2 Survey items

Health and medical care evaluation uses the "Structure, Process and Output" of Donabedian in many cases[16] and this evaluation also uses the approach as we believe it is appropriate to set evaluation questions with it. Because one feature of the approach is to introduce different approaches in each stage, evaluation items of pilot hospital activities are established in each stage of 5S, KAIZEN and TQM. In addition, because the approach has two phases: gradual introduction at pilot hospitals and nationwide development by the health administration based on the learning from the pilot hospital experiences, evaluation items in both phases are also examined.

Based on the idea above, the evaluation frameworks of outcomes of pilot hospitals and health administration are shown in Tables 5-3 and 5-4, respectively, below.

Table 5-3   Evaluation Framework of the Program (for Pilot Hospital)

Question		Pilot Hospital		
		Initial stage (5S)	Mid-stage (KAIZEN)	Later stage (TQM)
What changes are aimed to be made at hospitals in Africa?	Output	Hospital work process is visualized.	Hospital organization is vitalized.	Hospital management is reformed (hospitality management to create values together)
		Problems are recognized.	Productivity, quality, safety, cost, service provision and moral improve at all departments.	Hospital that is trusted by patients and local community （Highly Reliable Organization）
What are desired changes?	Structure	Functional team is formed.	Leadership of the top management improves.	Work process improvement activities are conducted by all departments,
			Staff behavior becomes positive.	
	Process	Hospital becomes clean.	Staff becomes able to solve problems that can be solved on site.	Evidence-based management is realized.
		It becomes easy to perform work.		Hospital organization becomes able to manage it independently.

Pilot hospitals need to form teams (QIT, WIT) equipped with sufficient functions to promote and implement 5S as "structure" in the 5S stage. When the team implement 5S activities (Sort, Set, Shine, Standardize and Sustain), their hospital goes through the "process of "becoming clean and easy to perform duties. As a result, work process is visualized and problems can be recognized as

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[16] DONABEDIAN Avedis, *Evaluating the Quality of Medical Care,* The Milbank Quarterly, Vol. 83, No. 4, 2005 (pp. 691–729). Reprinted from The Milbank Memorial Fund Quarterly, Vol. 44, No. 3, Pt. 2, 1966 (pp. 166–203).

"output."

In the next KAIZEN stage, the leadership of the top management created in 5S improves and staff's behavior changes as "structure" and the budget and resources necessary for the activities are secured by themselves. It becomes also necessary to have knowledge to implement KAIZEN. Through the "process" of solving problems with the tool of KAIZEN, such "output" as vitalization of hospital organization and improvement of organizational product and services are achieved.

In TQM, the "output" of KAIZEN is utilized and through the "process" of management improvement and practice of independent organizational management, the hospital achieves the "outcome" of management reform and becomes a reliable organization.

Changes of management indicators and clinical indicators of the pilot hospital can be used to measure the effects. The following can be used for measurement:

 5S stage: number of QIT and WIT meetings volume of dust at the door and window sill, time required to find document, number of standardized manuals, number of good practice sheet, etc.

 KAIZEN stage: number of supervisory trips by leaders, number of KAIZEN proposals, number of KAIZEN activities of KAIZEN process, patients' waiting time, inventory volume, number of inspection errors, number of nosocominal infections, number of patients' deaths in the hospital, number of patients, number of operations, number of child delivery, number of handled prescriptions, number of employee's absence without approval and tardiness, etc.

 TQM stage: number of monthly data that can be used for management decisions, financial data, staff retention, patient satisfaction, employee satisfaction, etc.

The survey results in Chapter 4 are used based on the evaluation framework above to evaluate the activities of pilot hospitals and health administration of each country. Table 5-4 shows the achievement level of activities of pilot hospitals and Table 5-5 shows the index to measure the achievement level of the health administration.

Table 5-4   Indicators to Evaluate Effects and Achievement Level based on Evaluation Framework
(for Pilot Hospitals)

Stage	Expected effect/achievement level	Evaluation Indicator
Initial stage	**5S (improvement of working environment) → work flow, visualization of problems**	
Structure	Functional 5S team is formed.	Such teams as QIT and WIT function and implement activities regularly.
		QIT make regular activity schedule and implement the activities.
Process	Hospital becomes clean.	Result of monitoring check sheet (S1-S3)
	It becomes easy to perform work.	Result of monitoring check sheet (S4, S5)
Output	Work process is visualized.	Work flow is posted on the wall.
		Hospital SOP is created.
	Problems can be recognized.	Report of good practice includes problem-solving type examples.
		KAIZEN proposals are made.
Mid-stage	**KAIZEN→problem solving in work process**	
Structure	Leadership of top management improves.	Leaders have correct 5S-KAIZEN knowledge and explain the meaning of 5S to workers.
		Budget for activities is secured.
		Leaders introduce 5S to their office.
	Staff behavior becomes positive	Staff gathers on time in supervisory trips.
		Preparation for supervisory trip survey is made independently.
		Scores have improved from the previous supervisory trip survey. (or maintain the situation when the score of the previous survey is over 75%.)
		Activities to practice previous proposals are recognized.
	Equipped with KAIZEN knowledge	QIT members have received KAIZEN training.
		Staff members received KAIZEN training.
Process	Staff becomes able to solve problems that can be solved on site.	KAIZEN implementation is tried.
Output	Hospital organization is vitalized.	KAIZEN implementation is tried across hospital.
	PQSCDM[17] of each department improves.	Data before and after KAIZEN is obtained and accumulated.
		As a result of KAIZEN activities, improvement of some of PQSCDM is recognized.
Later stage:	**Reform of hospital management→joint value creation→reliable organization**	
Structure		
Process	Evidence-based management is realized.	KAIZEN activities are implemented by all departments regularly.
		Data and information before and after of (almost) all KAIZEN examples are secured.
		5S-KAIZEN activities are reported to the management regularly.
	Hospital organization becomes able to manage it independently.	The management understands problems across the organization.
		Budget and resources allocation and activity plans are formulated based on the report from each department.
		The plans formulated above are implemented.

[17] P=Productivity, Q=Quality, S=Safety, C=Cost control, D=Delivery, M=Morale

Stage	Expected effect/achievement level	Evaluation Indicator
		85
Output	Reform of hospital management (hospitality management to create values together)	Improvement of clinical indicators is recognized.
		Employee satisfaction is high.
	Becomes hospital trusted by patients and local community (Highly Reliable Organization)	Customer satisfaction is high.
		Trust from patients and local community improves. (team formation)
		Complaints from customers decrease.

Health administration first establishes a section in charge of dissemination of the approach as "structure" and the staff of the section learns how to introduce and practice, monitor and develop the 5S-KAIZEN-TQM approach that is the approach to improve health service quality and management through the "process" of assistance for pilot hospital activities. As "outcome," it develops the pilot hospitals as a showcase of 5S-KAIZEN-TQM and utilizes them for nationwide development of functional improvement of health and medical institutions in order to improve medical service with limited resources. This is the initial stage. In the following stage, preparation is made for nationwide development. A section in charge of quality improvement and hospital management improvement is officially created (structure) within the health ministry and it utilizes knowledge learned through the experiences of activities of pilot hospitals, monitoring and training to formulate strategies and guidelines for nationwide development in cooperation with other concerned sections (process). Based on the strategies and guidelines formulated in the process, a system for nationwide development is created (outcome). In the third stage, strategies and approach for the nationwide development created in the second stage are used to develop activities in accordance with the plan. In the nationwide development, the stage moves from 5S to KAIZEN and all hospitals eventually need to present hospital management strategy to reach TQM.

Table 5-5　Program Evaluation Framework (for Health Administration)

Evaluation questions		Achievement		
		Initial stage (assistance for pilot hospital activity＝establishment of showcase)	Mid-stage (preparation for nationwide development of 5S-KAIZEN-TQM）	Later stage (nationwide development of 5S-KAIZEN-TQM)
What changes are aimed to be made at hospitals in Africa? (objective)	Output	Organization and services improve even with limited resources to become an institution as a showcase.	Training mechanism (related to quality improvement) is established.	Quality improvement of health services with the approach is regularly realized at all medical institutions.
				Clinical indicators and management indicators of medical institutions improve.
				Hospital management strategy is established.
		Awareness of quality improvement of health services increases within health ministry.	Monitoring mechanism (related to quality improvement) is established.	Medical service improvement strategy is gradually developed across the country.
What are desired changes?	Structure	Section in charge of 5S-KAIZEN-TQM (health service quality) is defined.	Health ministry recognizes quality improvement of health service (management improvement) as an important policy.	Nationwide development structure is established in the administrative organization.
			Section in charge of health service quality is officially designated.	5S-KAIZEN-TQM facilitators are developed.
			5S-KAIZEN-TQM is recognized as effective approach for quality improvement.	
	Process	Personnel in charge in health ministry monitors pilot hospitals regularly.	5S-KAIZEN-TQM guidelines are formulated.	Medical service improvement strategy is implemented nationwide gradually based on training mechanism.
		Personnel in charge in health ministry reports learning of pilot hospitals within the ministry regularly.	Strategy and plan for nationwide development are formulated.	Institutions that have introduced the approach are monitored based on monitoring mechanism.

The evaluation framework and indicators are shown in Table 5-6 below.

The evaluation framework shall be used in the transition from 5S, KAIZEN to TQM regarding the introduction of each approach, excluding the creation of organizations. Efforts of health ministry for

transition to 5S to KAIZEN are evaluated because most countries are currently in the transition stage.

Table5-6   Evaluation Indicators of Effects and Achievement based on Evaluation Framework
(for Health Administration)

Stage	Expected effect/achievement level	Evaluation Indicator
Initial stage: establishment of showcase		
Structure	Section in charge of health service quality is clarified.	Section in charge of health service quality within health ministry is clarified.
		Health ministry personnel in charge of health service are clarified.
Process	Health ministry personnel in charge monitors pilot hospitals regularly.	Health ministry personnel in charge accompany supervisory trip survey.
		They also visit pilot hospitals other than in supervisory trip survey.
		Information is shared with pilot hospitals regularly.
	Health ministry personnel in charge shares information on pilot hospitals within the ministry.	Health ministry members of the section who are not in charge also share information on the approach.
		Staff not in charge also attends meetings in the interview with health ministry in supervisory trip survey.
Output	Organization and service improve even with limited resources and it is established as a showcase.	Working environment of pilot hospitals has improved (reached 5S level).
		Other medical institutions visit pilot hospitals to learn the approach.
	Awareness of health service quality improvement with the approach increases within health ministry.	Health ministry staff not in the section in charge understands the effects of quality improvement through 5S-KAIZEN-TQM.
		Health ministry staff not in the section in charge understands the effects of activities that occurred to pilot hospitals.
Mid-stage: Preparation for nationwide development		
Structure	Health ministry makes health service quality improvement (management improvement) through 5S-KAIZEN-TQM national policy.	Director of the responsible section in health ministry clearly state that the approach is used for health service quality improvement.
		Official documents that state that the approach is used for quality improvement are formulated.
	Section in charge of health service quality improvement is officially appointed.	Section in charge of health service quality improvement is officially appointed.
Process	5S-KAIZEN-TQM guidelines are formulated.	Formulation of 5S-KAIZEN-TQM guidelines is examined.
		Draft of above guidelines is formulated.
		Above guidelines are approved.
	Strategy and plan for nationwide development are formulated.	Ideas on nationwide development are agreed among concerned personnel in health ministry.
		Strategy and plan for nationwide development are explicitly described.
		Annual plan is formulated.
Output	Training mechanism is established.	Training mechanism is explicitly described.
		Training tools and mechanism are established.
	Monitoring mechanism is established.	Monitoring mechanism is explicitly described.
		Standardized monitoring tools and implementation method are established.
Later stage: nationwide development		
Structure	Nationwide development structure is established in the administrational organization.	Personnel and responsible staff of administrative organization in charge understand explicitly described training and monitoring mechanism correctly (distribution of

Stage	Expected effect/achievement level	Evaluation Indicator
		document, briefing session, etc.)
		System to dispatch training instructors and personnel in charge of monitoring is established. (national trainer scheme, etc.)
		Budget for training and monitoring is secured.
	Human resources development	Training instructors and personnel in charge of monitoring have received necessary education based on training and monitoring mechanism.
	Creation of cross-organizational structure	5S-KAIZEN-TQM is used to enable service improvement across all departments within health ministry.
Process	Medical service improvement strategy based on monitoring mechanism is gradually developed across the country.	Development to other institutions has begun based on strategy and plan.
	Institutions that have introduced the approach are monitored based on monitoring mechanism.	Institutions that have introduced 5S are monitored regularly based on monitoring mechanism.
Output	Health service quality improvement with the approach becomes common practice at all medical institutions.	5S-KAIZEN-TQM is introduced at all medical institutions.
		The approach becomes common practice at all medical institutions.
	Service quality of medical institutions has improved.	Indicators of PQCDMS are improved at institutions that are participating in the program.
		Patient satisfaction is recognized at institutions that are participating in the program.
	Management of medical institutions has improved	Improvement of management indicators is recognized at institutions that are participating in the program.
		Improvement of clinical indicators is recognized at institutions that are participating in the program.
	Hospital management strategy is established.	Health ministry is aware of progress level of all medical institutions.
		Health ministry has established hospital management strategy based on 5S-KAIZEN-TQM activities of each country.

5-2   Evaluation Results: An Overview

5-2-1   The evaluation results based on the evaluation framework

(1) Pilot hospital activities

1)   Results of program activities

Table 5-7 shows the results confirmed based on the information collected in the preparatory survey. Details of the evaluation results are shown in 5-8. As for the evaluation criteria, countries and facilities with response of "applicable" in more than 50 percent of evaluation indicators for effect/achievement level are regarded that they have positive effects.

Table 5-7　Expected Positive Effects (Pilot Hospital)

Pilot Hospital						
		Initial stage (5S)	Mid-stage (KAIZEN)		Later stage (TQM)	
Structure	Team formation	All hospitals (although Orota, Halibet, Morocco, Burundi, Senegal have teams, they are not functioning sufficiently.)	Leadership	Tanzania Madagascar （CHUF、CHUM） Mali Burundi DRC Senegal		
			Behavioral change	Madagascar Tanzania Mali DRC Eritrea (Orota, Halibet) Kenya		
			Equipped with KAIZEN knowledge	Madagascar (CHUM, CHUF） Tanzania Benin Mali		
Process	Hospital is clean	All hospitals (achievement level differs)	Problem-solving	Madagascar (CHUF, CHUM) Tanzania DRC Benin Nigeria Kenya	Evidence-based management	
	Easy to work	All hospitals (achievement level differs)			Independent management	
Output	Work process	Tanzania Madagascar (CHUF, CHUM) Benin Nigeria	Organizational vitalization (improvement of employee satisfaction)	Madagascar (CHUF, CHUM) Tanzania Kenya	Hospital management reform	
	Problems	Tanzania Madagascar (CHUF, CHUM)） Benin DRC Nigeria Kenya (CPGH)	Improvement of each department	Tanzania Madagascar Kenya	Trust from patients and local community (improvement of patient satisfaction)	

　※Of survey results in Table 5-7, countries and facilities with insufficient information for evaluation
　　are not included.

Visualizing work process in line with improvement of working environment and improvement of problem finding capacity through 5S in the initial stage, almost all pilot hospitals formed a team for improvement of working environment (structure). Almost all hospitals have also achieved clean hospital and creation of easy-to-work environment (process) although the level of achievement differs. All pilot hospitals formed a team and hospital environment has been developed through the program. On the other hand, about 50 percent of participating hospitals (Tanzania, Madagascar (CHU, CHUM) and Benin) have achieved visualization of work process and 50 percent of participating hospitals (Tanzania, Madagascar (CHUF, CHUM), Benin, DRC, Nigeria, Kenya (CPGH), etc.) have created

environment for problem finding. This shows that few hospitals have made improvement in consideration of working environment or easiness to work although hospitals become clean on the surface through the approach. At this point, about half of the hospitals have improved the working environment to the level of understanding the work and finding problems although many hospitals are clean as a pre-stage for KAIZEN implementation. Their capacity of the former is yet to reach a sufficient level.

Many hospitals have achieved creation of leadership and behavioral change of staff members through the program. Leadership and behavioral changes are recognized more in countries where 5S activities are more in progress. This shows that steady 5S implementation leads to creation of "structure" for launching KAIZEN. In Senegal, 5S is not in progress sufficiently. It is partly because of the replacements of five hospital directors in five years. Because the staff who participated in two regional training sessions became the director in July last year, its progress can be expected. There are few hospitals that were able to solve problems after KAIZEN process implementation is probably because the work process visualization is insufficient and it is not easy to recognize problems and because of insufficient understanding of KAIZEN approach, which are all due to insufficient improvement of working environment through 5S.

Tanzania and Madagascar (CHUF, CHUM) have officially introduced KAIZEN proposals and KAIZEN process in the second stage. Mali and Benin have provided KAIZEN training for all employees. These four countries have KAIZEN knowledge and the structure level is achieved. Nigeria, DRC and Kenya have yet to provide KAIZEN training for employees and KAIZEN activities based on KAIEZN proposal have been recognized.

KAIZEN leads to improvement of "reduction of inventory" and "reduction of failure of insurance claim" in Tanzania, "reduction of expired drugs" at CPGH in Kenya, "reduction of occurrence rate of decubitus ulcer" in Madagascar and at CHUM, and "reduction of no-return rate of tuberculosis patients" at CHUF. Hospitals in Tanzania, Burkina Faso and Nigeria conducted employee satisfaction survey and Tanzania and Burkina Faso compared it before and after 5S implementation.

There is no hospital that has not reached TQM. However, clinical indicators and management indicators are gathered as basic information in preparatory survey. Although it depends on mission and goal of hospital in the TQM stage, motarity rate in the hospital and nosocomical infection rate can be used as clinical indicators and average length of stay and bed occupancy rate can be used as management indicators and thus it is desired that activity progress be understood and evaluated continuingly.

Table 5-8　Results of Evaluation Item based on Evaluation Framework

Pilot hospital　Initial stage:　Improvement of working environment through 5S leading to problem finding

Expected effect/achievement level	Evaluation indicator	KAIZEN			5S+K		3S+K		3S					(S1-S3)+K		S1-S3			Unknown
		MDG[18]		TZA	BEN	MLI	COD	NGA	BFA	ERI[19]		MWI[20]		KEN	UGA	BDI	SEN	MAR	NER
		1	2	A						1	2	1	2						
Structure																			
Functional 5S team is formed.	3-2 WIT implements activities regularly.	○	○	○	○	○	○	△	○	△	△	○	△	○	—	△	△	△	—
	3-4 QIT makes regular activity schedule and implements activities.	○	○	○	○	○	○	△	○	△	△	○↓△	○↓△	○	○	△	△	△	—
Process																			
Hospital becomes clean.	Monitoring check sheet results (S1〜S3)	○	○	○	○	○	○	△	○	○	○	△	△	△	△	△	△	○	—
It becomes easy to perform work.	Monitoring check sheet results (S4〜S5)	○	○	○	○	○	△	△	△	△	△	△	△	△	△	△	△	△	—
Output																			
Visualization of work process	Work flow is posted on the wall.	△	△	○	△	—	×	△	—	△	△	△	△	△	—	△	△	○	—
	Hospital SOP is created.	△	△	○	△	—	△	△	—	△	△	—	—	△	—	×	×	–	—
Problems can be recognized.	Report of good practice includes problem-solving type examples.	○	○	○	○	—	○	○	×	×	×	△	×	○	○	×	×	△	—
	KAIZEN proposals are made.	○	○	○	○	—	○	△	×	×	×	×	×	△	×	×	×	△	—

Evaluation criteria:　○:　applicable , △: somewhat applicable, ×:　N/A, −:　insufficient information

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[18] Pilot hospital 1：Mahajanga University Hospital Center、Pilot hospital 2：Fianarantsoa University Hospital Center

[19] Pilot hospital 1：Orotta Hospital、Pilot hospital 2：Halibet Hospital

[20] Pilot hospital 1：Dowa District Hospital、Pilot hospital 2：Mzimba District Hospital

Pilot hospital   Mid-stage: Improvement of Work Process through KAIZEN

Expected effect/achievement level	Evaluation indicator	KAIZEN			5S+K		3S+K		3S					(S1-S3)+K		S1-S3			Unknown
		MDG[21]		TZA	BEN	MLI	COD	NGA	BFA	ERI[22]		MWI[23]		KEN	UGA	BDI	SEN	MAR	NER
		1	2							1	2	1	2						
Structure																			
Improvement of leadership of top management	All 3, Leaders have correct 5S-KAIZEN knowledge and explain the meaning of 5S to workers.	○	○	○	○	○	○	○	○	△	△	×	×	×	—	○	×↓○	—	—
	All 4 Budget for activities is secured.	○	○	○	—	○	○	△	—	—	—	×	×	△	—	—	—	—	—
	1-3 Leaders introduce 5S to their office.	○	○	○	—	○	—	△	—	—	—	×	×	×	—	○	—↓○	—	—
Staff behavior becomes positive.	All 7 Staff gathers on time in supervisory trips.	○	○	○	—	○	○	×	—	○	△	×	×	○	—	△	△	—	—
	All 8 Preparation for supervisory trip survey is made independently.	○	○	—	—	○	△	△	—	△	○	×	×	○	—	○	△	—	—
	All 9 Scores have improved from the previous supervisory trip survey. (or maintain the situation when the score of the previous survey is over 75%.)	○	○	○	○	○	×	○	○	△	△	×	×	○	△	×	○	—	—
	All 10 Activities to practice previous proposals are recognized.	○	○	—	—	○	○	△	—	○	○	○	○	○	○	—	○	—	—
Equipped with KAIZEN knowledge	QIT members have received KAIZEN training.	○	○	○	○	○	×	△	×	×	×	×	×	×	—	×	×	—	—
	Staff members have received KAIZEN training.	○	○	○	○	○	×	×	×	×	×	×	×	×	—	×	×	—	—
Process																			
Problems can be solved on site.	KAIZEN implementation is tried.	○	○	○	△	×	○	△	×	×	×	×	×	△	—	×	×	×	—

[21] Pilot hospital 1：Mahajanga University Hospital Center、Pilot hospital 2：Fianarantsoa University Hospital Center

[22] Pilot hospital 1：Orotta Hospital、Pilot hospital 2：Halibet Hospital

[23] Pilot hospital 1：Dowa District Hospital、Pilot hospital 2：Mzimba District Hospital

Expected effect/achievement level	Evaluation indicator	KAIZEN			5S+K		3S+K		3S					(S1-S3)+K		S1-S3			Unknown
		MDG[21]		TZA	BEN	MLI	COD	NGA	BFA	ERI[22]		MWI[23]		KEN	UGA	BDI	SEN	MAR	NER
		1	2							1	2	1	2						
Output																			
Hospital organization is vitalized.	KAIZEN implementation is tried across hospital.	○	○	○	×	×	×	△	×	×	×	×	×	△	−	−	×	×	−
PQSCDM of each department improves.	Data before and after KAIZEN is obtained and accumulated.	△	△	○	×	×	×	×	×	×	×	−	−	△	−	−	×	×	−

Evaluation criteria:　○:　applicable ,　△: somewhat applicable,　×:　N/A,　−:　insufficient information

Pilot hospital　　Later stage:　　TQM

Expected effect/achievement level	Evaluation indicator	KAIZEN			5S+K		3S+K		3S					(S1-S3)+K		S1-S3			Unknown
		MDG[24]		TZA	BEN	MLI	COD	NGA	BFA	ERI[25]		MWI[26]		KEN	UGA	BDI	SEN	MAR	NER
		1	2							1	2	1	2						
Structure																			
Process																			
Evidence-based management is realized.	KAIZEN activities are implemented by all departments regularly.																		
	Data and information before and after of (almost) all KAIZEN examples are secured.																		
	5S-KAIZEN activities are reported to the management regularly.																		
Hospital organization becomes able to manage it independently.	The management understands problems across the organization.																		
	Budget and resources allocation and activity plans are formulated based on the report from each department.																		
	The plans formulated above are implemented.																		
Output																			
Hospital management is reformed.	Improvement of clinical indicators is recognized.																		
	Employee satisfaction is very high.																		
Hospital that is trusted by patients and local community	Customer satisfaction is very high.																		
	Trust from patients and local community improves. (team formation)																		
	Complaints from customers decrease.																		

Evaluation criteria:　　○:　　applicable ,　△: somewhat applicable,　×:　　N/A,　－:　　insufficient information

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[24] Pilot hospital 1：Mahajanga University Hospital Center、Pilot hospital 2：Fianarantsoa University Hospital Center

[25] Pilot hospital 1：Orotta Hospital, Pilot hospital 2：Halibet Hospital

[26] Pilot hospital 1：Dowa District Hospital, Pilot hospital 2：Mzimba District Hospital

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Table 5-9 below shows the achievement level of each country based on the provided framework.

Table 5-9 List of Achievement Level (18 hospitals in total: 8 in English-speaking countries and 10 in French-speaking countries)

		English-speaking countries				French-speaking countries				Overall			
		Achieved	Partially	Yet to be	Unknown	Achieved	Partially	Yet to be	Unknown	Achieved	Partially	Yet to be	Unknown
Working environment achievement through 5S													
S	Team formation	6	2	0	0	6	3	0	1	12	5	0	1
		75%	25%	0%	0%	60%	30%	0%	10%	67%	28%	0%	6%
P	Hospital becomes clean.	6	2	0	0	6	3	0	1	12	5	0	1
		75%	25%	0%	0%	60%	30%	0%	10%	67%	28%	0%	6%
	It becomes easy to perform work.	6	2	0	0	6	3	0	1	12	5	0	1
		75%	25%	0%	0%	60%	30%	0%	10%	67%	28%	0%	6%
O	Work process is visualized.	1	6	0	1	3	4	0	3	4	10	0	4
		12%	76%	0%	12%	30%	40%	0%	30%	22%	56%	0%	22%
	It becomes easy to recognize problems.	1	3	3	1	4	1	3	2	5	4	6	3
		12%	38%	38%	12%	40%	10%	30%	20%	28%	28%	33%	11%
Work process improvement through KAIZEN													
S	Leadership	1	4	2	1	7	1	0	2	8	5	2	3
		12%	50%	26%	12%	70%	10%	0%	20%	44%	28%	11%	17%
	Behavioral change	2	6	0	0	5	3	0	2	7	9	0	2
		25%	75%	0%	0%	50%	30%	0%	20%	39%	50%	0%	11%
	Equipped with KAIZEN knowledge	1	1	5	1	4	0	4	2	5	1	9	3
		12%	12%	64%	12%	40%	0%	40%	20%	28%	6%	50%	17%
P	Problem solving	1	2	4	1	3	1	5	1	4	3	8	2
		12%	26%	50%	12%	30%	10%	50%	10%	22%	17%	44%	11%
O	Organizational vitalization	1	2	4	1	0	2	6	2	1	4	10	3
		12%	26%	50%	12%	0%	20%	60%	20%	6%	22%	56%	17%
	Improvement of departments	1	1	3	3	0	2	6	2	1	3	9	5
		13%	25%	38%	38%	0%	20%	60%	20%	6%	17%	50%	28%

※Upper column: number of hospitals, lower column: ratio to all hospitals

As described in Evaluation Framework, the program was launched in 2007 in English-speaking countries and the process in the KAIEN stage is assumed to be achieved by December 2012 that is the target period of the evaluation in this chapter. The program was launched in 2009 in French-speaking countries and the structure in the KAIEN stage is assumed to be achieved.

As for the results of English-speaking countries, all reached the level of "Achieved" or "Partially achieved" in terms of working environmental improvement through 5S in the structure and process. Because other approach for improving the working environment than the 5S is not introduced, the achievement is largely due to the program. However, the achievement level differs among hospitals. The team formation as the structure and process results are associated and the results show that no successful team formation leads to no progress of improvement of hospitals through 5S activities. According to analysis of factors of hospitals with limited team formation and process, possible reasons for little progress are that weakening of team power due to the transfer of leaders with good leadership and repeated transfer of leaders and training participants slowed down activities and team did not mature. Thus, because hospitals with weak leadership or hospitals where leaders were replaced before the team matured did not have enough effects of the approach, it is desired that they have dialogues with new leaders and provide complementary training to increase leaders' knowledge on the approach.

Regarding the output of improvement of working environment through 5S in the first stage, "work process is visualized" is at least partially achieved except for one hospital whose answer is unknown. This shows that efforts were made for visualization although they were not perfect. However, as for the problem recognition, half of hospitals responded that is achieved or partially achieved and three responded that they have not achieved it. Similar results are also observed in French-speaking countries. This is probably because it did not improve in the 5S stage because problem recognition and visualization of work process were not included in the training at the point of 5S activities. Because they were included in KAIZEN training later, learning from the training is likely to have been reflected at the hospitals.

As for work process improvement through KAIZEN in the second stage, most hospitals in both English- and French-speaking countries achieved or partially achieved leadership and behavioral change in the structure. This shows that the program helped hospital workers increase their leadership and take positive attitude. In English-speaking countries, 12 percent of hospitals responded that leadership is very high and 25 percent said that staff members are very positive, leadership and positive attitude are recognized at almost all hospitals except those that responded "unknown" in French-speaking countries, with 70 percent and 80 percent of hospitals choosing "applicable" to leadership and positive attitude, respectively. This is highly likely that leadership and creation of positive mind through the program assistance was successful. These are particularly high in French-speaking countries because their goals were clear as the program was launched later and hospitals with good leadership were selected properly in response to learning from the case of English-speaking countries, and there was positive competition in training, etc. This shows that group training from multiple countries and activity implementation methods worked effectively as intended. Joint evaluation with the monitoring check sheet was conducted in the supervisory trip survey and the joint work is likely to have provided the opportunity to discuss the current condition between the members and evaluation team, which enabled them to understand their progress and challenges.

As for KAIZEN knowledge of QIT members and hospital employees, KAIZEN training is officially provided in Tanzania, the only English-speaking country, and Madagascar, Benin and Mali in French-speaking countries where 5S is in progress. Although KAIZEN training for hospital employees is yet to be provided in DRC, efforts based on KAIZEN proposals were made. Although training in Japan after 2010 for English-speaking countries and in 2011 and 2012 for French- speaking countries was mainly KAIZEN training, the feedback to their hospitals are likely to be limited because few hospitals have implemented KAIZEN. It is probably because hospitals that have not reached the level of being able to implement KAIZEN participated in the training. If the contents of the training in Japan had been customized in accordance with the progress of pilot hospitals, the training might have been utilized more effectively.

Tanzania is the only English-speaking country that has achieved the level of problem-solving, an indicator in the process. Two other hospitals have partially achieved it. On the other hand, in French-speaking countries, 40 percent have worked on it when the activities based on KAIZEN suggestions are added, reaching the same level as English- speaking countries. This suggests that, although Madagascar and Senegal have conducted activities for the same duration as English-speaking countries, many of other French-speaking countries are implementing activities at faster pace than English- speaking countries. It is probably because learning from group training for English-speaking countries and supervisory trip survey was utilized in group training for French-speaking countries and supervisory trip survey.

Some countries participating in the programs are closely linked with assistance by other schemes and thus their outcomes cannot be measured as those of the program. However, there is a trend that as in the case of Tanzania and DRC, hospitals in which the resource person of the program is conducting activities of other schemes and hospitals in which the activities are only program with no other scheme have had good outcomes. On the other hand, Eritrea, Burundi, Uganda and Senegal where other related assistance projects are (were) implemented showed stagnant outcomes. This suggests that other scheme activities may hinder activities of this program if they are not working in collaboration aiming at the same goal.

2)   Outcomes that did not occur
Team formation and leadership is core of the progress of expected outcomes. These outcomes did not occur at Mathari Hospital in Kenya and in Morocco and hospitals where they did not occur sufficiently include Orota Hospital and Halibet Hospital in Eritrea and those in Senegal.

In the case of Mathari Hospital, the QIT and WIT no longer functioned and the activities slowed down after the replacement of the hospital director.   As for Senegal, repeated replacement of the hospital director led to no creation of QIT and WIT that function sufficiently and time as required to make progress of activities.

At Orotta Hospital and Halibet Hospital, when the hospital director and administrative director with excellent leadership were in the post, they took leadership in promoting 5S activities and the team was formed and they reached 5S level. However, the team did not function sufficiently and the activities slowed down after these leaders were replaced. Although these hospitals promoted 5S activities led by the leaders, no team capable of implementing 5S was created in the hospital.

In Morocco, the pilot hospital was replaced in 2011 and 5S activities resumed at the new pilot hospital this fiscal year. Thus, input since 2009 is not accumulated effectively.

Table 5-10   Positive Effects that did not Occur (Pilot Hospital)

Pilot Hospital			
Initial stage (5S)		Mid-stage KAIZEN	
Team formation	Kenya (Mathari) Eritrea Morocco	Leadership	Kenya (Mathari) Eritrea (Orota)

3)   Unexpected effects

Unexpected effects that occurred at pilot hospitals are shown in Table 5-11. They are 1) improvement of accuracy of data obtained on site, b) improvement of service quality as a result of integration with personal childbirth (linkage with concept of personal care), and c) promotion of intraregional cooperation.

The improvement of care as a result of integration of personal childbirth with the program that was observed in Madagascar and Senegal is an effect of collaboration with technical cooperation assistance related to maternal and child health. Local staff who received training on humanital childbirth and 5S-KAIZEN-TQM training practices it as they expect that their integration will have effects. In Senegal, improvement of service quality as a result of the integration of the two approaches at health centers and health posts that are not targets of the program is observed. In Mali and Senegal, concerned parties in Senegal accompanied supervisory trip survey in Mali in 2012 and concerned parties in Mali accompanied supervisory trip survey in Senegal in 2013. This provided them with opportunities to share knowledge, experience and learning from activities of each other and they also exchanged information via emails. Such intraregional cooperation was promoted.

Table 5-11 Unexpected Positive Effects (Pilot Hospital)

Pilot Hospital	
Improvement of accuracy of data (information) obtained on site	Burundi
improvement of service quality as a result of integration with humanital childbirth (personal care)	Madagascar Senegal
Promotion of intraregional cooperation	Mali Senegal

(2) Activities of health administration

1) Results of program activities

The results of effects of health administration that were observed from information gathered in the preparatory survey are shown in Table 5-12. Details of the evaluation results are shown in Table 5-13.

In all target countries except Morocco, the section in charge of 5S-KAIZEN-TQM or service quality improvement was clarified. As for the result of monitoring of pilot hospitals and information sharing within the health ministry, items in the process, countries are clearly divided into two groups, those that implemented them and those that did not. The ministry was actively involved in Madagascar, Eritrea, Senegal, Burundi and Malawi. Of 15 target countries, pilot hospitals function as a showcase in 10 countries and thus most countries have achieved the first stage. Although the health ministry in Benin and Mali is little involved in the process, pilot hospitals have developed to a degree that they can serve as a showcase. This is highly likely to be the efforts of the hospitals not as a result of the assistance from the ministry.

Although many countries decided to make the approach as a national policy, countries that are taking action for nationwide development were limited. Tanzania is the only country that has established strategies and carrying out nationwide development gradually. In countries where efforts are made to formulate strategies and establish training and monitoring mechanism, projects and individual experts are involved and it is suggested that assistance from experts and other external assistance had great effects in the process of writing strategies, plans and guidelines.

In Tanzania, activities for nationwide development equivalent to the later stage of activities were steadily in progress.

Table 5-12   Expected Positive Effects (Health Administration)

		Health Administration				
		Initial stage		Mid-stage		Later stage
Structure	Section in charge of quality	All target countries excluding Morocco (Section in charge in Nigeria and Burkina Faso had little involvement and responsibilities of two sections were not clear in Malawi.)	The approach as a national policy	Madagascar Tanzania Benin Mali Nigeria Eritrea Malawi Kenya Uganda Burundi Senegal	Establishment of system for nationwide development	Tanzania Kenya Malawi
			Official recognition of section in charge	Tanzania Benin Eritrea Kenya Uganda Burundi Senegal Madagascar Mali Nigeria	Human resources development	Tanzania
					Creation of cross-sectional system in the organization	N/A
Process	Monitoring of pilot hospitals	Madagascar Tanzania Mali Eritrea Malawi Kenya Burundi Senegal	Formulation of guidelines	Tanzania Benin Malawi Kenya Uganda	Gradual nationwide development of strategy	Tanzania
	Information sharing within health ministry	Madagascar Tanzania Nigeria Eritrea Malawi Burundi Senegal	Formulation of strategy and plan	Tanzania Malawi Kenya Uganda	Monitoring	Tanzania
Output	Establishment of showcase	Madagascar Tanzania Benin Mali DRC Nigeria Malawi Kenya Uganda Burundi	Establishment of training mechanism	Tanzania Malawi	Quality improvement through the approach becomes common practice.	
	Awareness of the approach increases.	Madagascar Tanzania Eritrea Malawi Senegal	Establishment of monitoring mechanism	Tanzania Malawi	Establishment of hospital management strategy	

This is probably the results of pilot hospital activities having sufficient outcomes as a model and effective combination of initiative of personnel of ministry of health and welfare in charge and assistance of JICA advisor for the health ministry (later technical cooperation project). Because there is no section in charge of quality issues in the health ministry in Malawi, the fragility of the organizational structure is a problem. However, the initiative of personnel in charge and assistance from individual dispatched expert served as a driving force of clarifying the process to gradual national development. The outcome of activities in DRC is the result of integration of the dissemination plan of the health ministry and effective assistance of JICA advisor for the health ministry.

In Kenya, effective use of assistance from JICA office and other donors by the Ministry of Medical Services led to formulation, distribution and awareness raising of KQMH. The health ministry of Benin introduced ISO to hospitals. Their awareness of quality improvement was high from the beginning and they understood the effects of the approach and added 5S to the national guidelines. Although Uganda formulated QUF with assistance from USAID, separately from the 5S-KAIZEN-TQM implementation guidelines produced by a technical cooperation project, health ministry personnel in charge decided that implementation of 5S in the introduction stage of QIF is effective and is examining coordination of the two parties.

Countries where document sorting for formulation of clear guidelines and policies is insufficient although 5S is implemented across the country include Madagascar, DRC, Eritrea and Senegal. These countries use regional training materials, etc., and health ministry personnel in charge are playing the central role in the development to other medical institutions. Although it is desired that it is carried out after examining materials for strategy and development, they are likely to be doing so as they provide materials that enables the development of 5S-KAIZEN-TQM through training and there is strong will of the ministry personnel for the approach.

In Malawi, the fragility of the organizational structure is a problem, because there is no section in charge of quality issues in the health ministry. In such countries as Madagascar, Eritrea and Senegal, document sorting for formulation of clear guidelines and policies is insufficient although 5S is implemented nationwide. They use materials for regional training and health ministry personnel in charge are playing the central role in the development to other medical institutions. Although it is desired that it is carried out after examining materials for strategy and development, they are likely to be doing so as they provide materials that enable the development of 5S-KAIZEN-TQM through training, health ministry officials are equipped with knowledge sufficient enough to serve as instructors of the approach, and they have a strong will to introduce the approach.

Table 5-13   Evaluation Results of Health Ministry

Initial stage: Pilot hospital activity assistance--establishment of showcase

Expected effect/ achievement level	Evaluation indicator	KAIZEN MDG[27] 1	MDG[27] 2	KAIZEN TZA	5S+K BEN	5S+K MLI	3S+K COD	3S+K NGA	3S BFA	3S ERI[28] 1	ERI[28] 2	MWI[29] 1	MWI[29] 2	(S1-S3)+K KEN	(S1-S3)+K UGA	S1-S3 BDI	S1-S3 SEN	S1-S3 MAR	Unknown NER
Structure																			
Section in charge of quality is clarified.	Health ministry section in charge of 5S-KAIZEN-TQM (health service quality) is defined.	○	○	○	○	○	○	△	△	○	○	△	△	○	○	○	○	×	−
	Health ministry personnel in charge of 5S-KAIZEN-TQM (health service quality) are defined.	○	○	○	○	○	○	△	△	○	○	△	△	○	○	○	○	×	−
Process																			
Health ministry personnel in charge monitor pilot hospitals regularly.	Health ministry personnel in charge accompany supervisory trip survey.	○	○	−	○	○	△	○	○	○	○	○		○	−	△	○	△	−
	They also visit pilot hospitals other than in supervisory trip survey.	○	○	−	−	△	−	×	×	○	△	○		○	−	○	○	×	−
	Information is shared with pilot hospitals regularly.	△	△	−	×	△	○	△	×	○	△	○		○	−	○	○	×	−
Information on pilot hospital is shared within health ministry.	Health ministry members of the section who are not in charge also share the approach.	×↓○	×↓○	−	−	−	○	△	△	○	○	△		△	−	○	△	×	−
	Staff not in charge also attends meetings in the interview with health ministry in supervisory trip survey.	×↓○	×↓○	−	−	−	×	○	△	○	○	○		○	−	△	○	○	−

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[27] Pilot hospital 1：Mahajanga University Hospital Center、Pilot hospital 2：Fianarantsoa University Hospital Center
[28] Pilot hospital 1：Orotta Hospital、Pilot hospital 2：Halibet Hospital
[29] Pilot hospital 1：Dowa District Hospital、Pilot hospital 2：Mzimba District Hospital

Expected effect/ achievement level	Evaluation indicator	KAIZEN			5S+K		3S+K		3S					(S1-S3)+K		S1-S3			Unknown
		MDG[27]		TZA	BEN	MLI	COD	NGA	BFA	ERI[28]		MWI[29]		KEN	UGA	BDI	SEN	MAR	NER
		1	2							1	2	1	2						
Output																			
Establishment of showcase	Pilot hospitals has reached 5S level.	○	○	○	○	○	×	×	×	×	×	×	×	×	×	×	×	×	−
	Other medical institutions visit pilot hospitals to learn 5S-KAIZEN-TQM.	○	−	○	○	○	○	○	×	−	−	○	○	○	○	○	−	×	−
Awareness of the approach increases in health ministry.	Health ministry staff not in the section in charge understands the 5S-KAIZEN-TQM approach.	△	△	○	−	−	−	△	−	○	○	△	△	−	−	−	△	△	−
	Health ministry staff not in the section in charge understands activities of pilot hospitals.	△	△	○	−	−	−	×	−	○	○	○	○	−	−	−	△	△	−

Evaluation criteria:　○:　applicable ,　△: somewhat applicable,　×:　N/A,　−:　insufficient information

Mid-stage:　　Preparation for nationwide development of 5S-KAIZEN-TQM

Expected effect/ achievement level	Evaluation indicator	KAIZEN			5S+K		3S+K		3S					(S1-S3)+K		S1-S3			Unknown
		MDG[30]		TZA	BEN	MLI	COD	NGA	BFA	ERI[31]		MWI[32]		KEN	UGA	BDI	SEN	MAR	NER
		1	2							1	2	1	2						
Structure																			
Health service quality improvement through the approach is made a national policy.	Director of the responsible section in health ministry clearly states that the approach is used for health service quality improvement.	○	○	○	○	○	○	○	×	○	○	○		○	○	○	○	×	—
	Official documents that state that the approach is used for quality improvement are formulated.	×	×	○	○	×	—	×	×	○	○	△		○	○	×	○	×	—
Section in charge is officially appointed.	Section in charge of health service quality improvement is officially appointed.	△	△	○	○	△	—	△	×	○	○	×		○	○	○	○	×	—
Process																			
5S-KAIZEN-TQM guidelines are formulated.	Formulation of 5S-KAIZEN-TQM guidelines is examined.	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○	×	—
	Draft of above guidelines is formulated.	×	×	○	○	×	×	△	×	×	×	○		○	○	×	×	×	—
	Above guidelines are approved.	×	×	○	○	×	×	×	×	×	×	×		○	○	×	×	×	—
Strategy and plan for nationwide development are	Ideas on nationwide development are agreed among concerned personnel in health ministry.	△	△	○	—	△	×	×	×	○	○	○		○	○	△	△	△	—
	Strategy and plan for nationwide development are explicitly described.	×	×	○	—	×	×	×	○	×	×	○		△	△	×	×	×	—

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[30] Pilot hospital 1：Mahajanga University Hospital Center, Pilot hospital 2：Fianarantsoa University Hospital Center

[31] Pilot hospital 1：Orotta Hospital, Pilot hospital 2：Halibet Hospital

[32] Pilot hospital 1：Dowa District Hospital, Pilot hospital 2：Mzimba District Hospital

Expected effect/ achievement level	Evaluation indicator	KAIZEN			5S+K		3S+K		3S					(S1-S3)+K		S1-S3			Unknown
		MDG[30]		TZA	BEN	MLI	COD	NGA	BFA	ERI[31]		MWI[32]		KEN	UGA	BDI	SEN	MAR	NER
		1	2							1	2	1	2						
formulated.	Annual plan is formulated.	×	×	○	−	×	×	×	×	×	×	○		×	×	×	−	×	−
Output																			
Training mechanism is established.	Training mechanism is explicitly described.	×	×	○	×	×	×	×	×	×	×	○		×	−	−	×	×	−
	Training tools and mechanism are established.	×	×	○	×	×	×	△	×	×	×	○		×	−	−	×	×	−
Monitoring mechanism is established.	Monitoring mechanism is explicitly described.	×	×	○	×	×	×	×	×	×	×	○		×	−	−	×	×	−
	Standardized monitoring tools and implementation method are established.	×	×	○	×	×	×	×	×	×	×	○		×	−	−	×	×	−

Evaluation criteria:　○:　applicable , △: somewhat applicable, ×:　N/A, −:　insufficient information

Later stage: Nationwide development of 5S-KAIZEN-TQM

Expected effect/ achievement level	Evaluation indicator	KAIZEN			5S+K		3S+K		3S					(S1-S3)+K		S1-S3			Unknown
		MDG[33]		TZA	BEN	MLI	COD	NGA	BFA	ERI[34]		MWI[35]		KEN	UGA	BDI	SEN	MAR	NER
		1	2							1	2	1	2						
Structure																			
Nationwide development structure is established in the administrational organization.	Personnel and responsible staff of administrative organization in charge understand explicitly described training and monitoring mechanism correctly. (distribution of document, briefing session, etc.)	×	×	○	×	×	−	×	×	×	×	○		○	○	×	×	△	−
	System to dispatch training instructors and personnel in charge of monitoring is established. (national trainer scheme, etc.)	×	×	○	×	×	−	×	×	×	×	△		○	×	×	×	△	−
	Budget for training and monitoring is secured.	×	×	−	×	×	−	×	×	×	×	×		−	−	×	×	-	−
Human resources development	Training instructors and personnel in charge of monitoring have received necessary education based on training and monitoring mechanism.	×	×	○	×	×	−	×	×	×	×	△		×	−	×	×	∆	−
Creation of cross-organizational structure	System to implement 5S-KAIZEN-TQM activities in all activities of health ministry is created.	×	×	−	×	×	−	×	×	×	×	×		×	−	×	×	−	−
Process																			
Strategy is gradually developed across the country.	Development to other institutions has begun based on strategy and plan.	×	×	○	×	×	×	×	×	×	×	×		×	−	×	×	×	−
Monitoring is conducted.	Institutions that have introduced 5S are monitored regularly based on monitoring rules.	×	×	○	×	×	×	×	×	×	×	×		×	−	×	×	×	−
Output																			
Service quality improvement with the	5S-KAIZEN-TQM is introduced to all planned medical institutions.																		
	The approach becomes common																		

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[33] Pilot hospital 1：Mahajanga University Hospital Center、Pilot hospital 2：Fianarantsoa University Hospital Center

[34] Pilot hospital 1：Orotta Hospital、Pilot hospital 2：Halibet Hospital

[35] Pilot hospital 1：Dowa District Hospital、Pilot hospital 2：Mzimba District Hospital

Expected effect/ achievement level	Evaluation indicator	KAIZEN			5S+K		3S+K		3S					(S1-S3)+K		S1-S3			Unknown
		MDG[33]		TZA	BEN	MLI	COD	NGA	BFA	ERI[34]		MWI[35]		KEN	UGA	BDI	SEN	MAR	NER
		1	2							1	2	1	2						
approach becomes common practice.	practice at all planned medical institutions.																		
Hospital management strategy is established.	Health ministry is aware of progress level of all medical institutions.																		
	Health ministry has established hospital management strategy based on 5S-KAIZEN-TQM activities of each country.																		

Evaluation criteria: ○:   applicable , △: somewhat applicable, ×:   N/A, －:   insufficient information

2) Expected outcomes that did not occur

As for health administration, pilot hospital activities in Burkina Faso where they are well under way have not led to formulation of national strategies or nationwide development. It is because of the lack of communication between the hospitals and health ministry and JICA office. Although the section in charge was not established in the health ministry in Malawi and Madagascar, the nationwide development is in progress. As described earlier, assistance from individual dispatched experts in Malawi and collaboration of the health ministry and pilot hospitals in Madagascar are the factor. Although there was no officially approved section in the health ministry in Madagascar, the university hospital bureau chief highly evaluated the significance of the approach and a group that handles health services for nationwide development of 5S-KAIZEN-TQM was established and there are moves to establish an official section. In Mali, health administration is not functioning sufficiently because of political instability. The health ministry personnel in charge in Morocco does not understand the approach, probably because of the health service quality improvement program with monetary inventive assisted by other donors and no such monetary incentive in this program.

Table 5-14   Positive Effects that did not Occur (Health Administration)

Health Administration			
Initial stage		Mid-stage	
Section in charge of quality	Malawi Madagascar Mali	Dissemination strategy, annual plan	Burkina Faso Madagascar Morocco
Formulation of strategy	Burkina Faso Madagascar Mali Morocco	Training mechanism	Burkina Faso Morocco
		Monitoring	Burkina Faso Morocco

3) Unexpected effects

Unexpected positive effects of health administration is as follows: Promotion of intraregional cooperation as experiences of Tanzania are shared by Malawi, Kenya and Uganda through training and visits among English-speaking countries as well as promotion of 5S introduction by the collaboration through exchange of views of JOCV in each country. This is because of the contribution of the project of assistance of capacity development of health human resources in Tanzania. In French-speaking countries, collaboration among countries through health human resources training programs is promoted.

Table 5-15　Unexpected Positive Effects (Health Administration)

Health Administration	
Promotion of intraregional cooperation	Tanzania Malawi Kenya Uganda Senegal DRC Mali
Collaboration with JOCV	Uganda Malawi Tanzania

5-3　Effects by Hospital

When changes (effects) that are made by each hospital are observed, Tanzania has made most progress, followed by Madagascar and Benin as shown in the previous chapter and in Table 5-16. Hospitals in Senegal and Morocco did not achieve expected changes so much. The description in parentheses in the table is the main factor of the changes.

In Tanzania, they made the progress in the order of 5S structure, process and output and then to KAIZEN structure and process. It is the development process based on good understanding of "stepwise" and "Japanese-style management." In CHUF in Madagascar, Benin, Burkina Faso, Mali, CPGH in Kenya、DRC and Burundi, changes in the initial stage are insufficient and moved on to changes in the next stage. Effective teams were formed under strong leadership of hospital directors in CHUF, Mali and DRC and it largely depends on potential of the hospital. In Benin, Burkina Faso, Burundi and CHUM in Madagascar, although hospital directors with strong leadership left the post, their successor continued the activities, which shows succession of knowledge, or Japanese-style management. As for CHUM, although the top leadership was fragile for a while partly because of replacement of the hospital director, the chief nurse participated in the training in Japan continuingly to accumulate knowledge and implemented activities continuingly with QIT members for development. In the case of CPGH, the behavioral change of the QIT and WIT served as the driving force and hospital visit in training in Japan and later small-amount financial assistance are likely factors as long as the activities of the maintenance department and warehouse are observed. Main factor of KAIZEN being in progress at HOMEL in Benin is the assistance for ISO accreditation from a French NGO. Documentation is important for ISO accreditation and the hospital was in progress in written record storage including data collection and manual production. On the other hand, activities slowed down in Mathari Hospital in Kenya, both hospital in Eritrea, and Uganda due to the transfer of hospital directors and other key persons and time was required to recreate the structure and implement activities. In addition, Orota Hospital in Eritrea integrated with an obstetrics hospital and a children's hospital in 2011 although it was a hospital specialized in surgery and internal medicine when the activities were launched in 2007 and the need for the recreation of the structure also affected the program progress.

Table5-16　Changes and their Factors by Hospital

Hospital /Change	Pilot hospital													
	5S					KAIZEN					TQM			
	Team formation	Clean hospital	Easy performance	Work process	Problem recognition	Leadership	Behavioral change	Problem solving	Improvement of departments	Organizational vitalization	EBM	Independent management	Management reform	Trust
Tanzania	◎ (c,d,e)	◎ (b,b2,c,d)	◎ (b,b2,c,d)	◎ (c,d)	◎ (c,d)	◎ (a,e)	◎ (a,b,c,d)	◎ (c,d)	O (b2,c,d)	O (c,d,e)				O (c,d,e)
Madagascar CHUM	◎ (a,b,c,d)	O (a,b,b2,c,d)	O (b,b2,c,d)	O (c,d)	O (c,d)			△						
Madagascar CHUF	◎ (a,b2,c,d)	O (a,b2,c,d)	O (b2,c,d)	O (c,d)	O (c,d)	◎ (e)	△	O (c,d,e)	O (b2,c,d)					
Benin	O (b,c,d)	O (a,b,c,d)	O (a,b,c,d)	O (b,d)	O (b,c,d,f)	O (d)	◎ (b2,d,f)	◎ (b2,d,f)	△					
Burkina Faso	O (b,c,d)	O (a,b,c,d)	O (a,b,c,d)	△	△	◎ (b,d)	O (b,c)							O (b,e)
Mali	◎ (e)	O (a,c,d,e)	O (a,c,d,e)	O (c,d,e)	O (c,d,e)	◎ (e)	O (c,d,e)							
Kenya CPGH	O (b,c,d,f)	O (a,b,c,d)	O (a,b,c,d)	△	O (d,f)	△	◎ (b)	△	O (d)					
Kenya Mathari		△	△											
Malawi Dowa	O (a,b,b2,c,d)	O (a,b,b2,c,d)	O (a,b,b2,c,d)	△	△	△	△							
Malawi Mzimba	O (b,b2,c,d)	O (a,b2,c,d)	O (a,b2,c,d)	△	△	△	△							
DRC	◎ (a,b,c,d)	O (a,b,b2,c,d)	O (a,b,b2,c,d)	△	O (b,b2,c)	◎ (a,e)	△	△						
Eritrea Orotta		O (b)	O (b)	△			△							
Eritrea Halibet		O (b)	O (b)	△		△	△							
Nigeria	O (a,b,c,d)	O (a,b,c,d)	O (a,b,c,d)	O (a,b,c,d)		△	△	△	△					
Senegal		O (a,b,b2)	O (a,b,b2)			△	△	Safety childbirth (b2)						O (c,d,e)
Burundi	O (a,b,c,d)	O (a,b2,c,d)	O (a,b2,c,d)	△	△	◎ (a,d)	O (b,b2)							
Uganda	◎ (a,b,c,d)	O (a,b,b2,c,d)	O (a,b,b2,c,d)	△	△		△							
Morocco														

◎＝Positive changes, ○＝Partial positive changes, △＝Positive changes are biginnning, (Blank)＝No change, ／＝Not confirmed

* a=south-south cooperation, b= tailor-made assistance, b2= collaboration with other projects, c= stepwise, d= Japanese-style management, e= potential capacity of hospital, f= assistance from other countries

5-4　Factors of Effects by Country

Table 5-17 shows factors of the effects in each country. In English-speaking countries in southeast Africa, south-south cooperation contributed greatly. This is a result of cooperation among peer groups through the participation by surrounding countries in various training within the project of assistance of capacity development of health human resources in Tanzania and regional JOCV 5S skill improvement training in Uganda. Mali had exchange visit with Senegal. Different from Senegal, assistance for Mali is given solely by the program. However learning from examples of another country through the exchange visit helped improve their knowledge.

The combination of training, supervisory trips and small-amount fund was effective in many countries. Partly because JICA head office was in charge of training and supervisory trips, the degree of their contribution is not likely to differ much among the countries. However, the degree of contribution of small-amount grant differs greatly in accordance with the capacity of the on-site personnel in charge of supervision. This means that improper use at improper time may hinder promotion whereas proper use at proper time helps promotion. Specifically, supervisors who understood the approach and had good communication with the health ministry and pilot hospitals used the small-amount grant effectively. The grant was used effectively particularly in the initial stage in such countries as Tanzania, Nigeria, Kenya, Mali, DRC and Madagascar. Meanwhile in Nigeria, they could not use the small-amount grant as the procedures were not in time after application. In Burkina Faso, the health ministry claimed that they could not continue the activities because the assistance from JICA is too small. This shows that the lack of communication with concerned parties had negative impacts on the activities.

Table 5-17   Factors of Effects by Country and their Impacts

Factor／Country	Tanzania	Uganda	Kenya	Malawi	Eritrea	Nigeria	Senegal	Madagascar	Benin	Burkina Faso	Burundi	Mali	DRC	Morocco
South-south cooperation	◎	◎	○	◎								○		
Training ＋ Supervisory trips ＋ Grant			◎	◎	○			◎		○	◎	◎	◎	
Stepwise	◎	○		○		○		◎						
Japanese-style management	◎		○	○		○		◎	○	○	○		◎	
Collaboration with other projects	◎	◎ ×		◎ ○			○	○ ×			○ ×		◎	
Potential capacity of hospital	◎		×		×		×	◎	◎			◎		
Assistance from other countries			○						◎		◎			×

◎＝major impact　○＝some degree of impact　×＝ negative impact

Tanzania conducted expansion of 5S activities from a small number of pilot departments in the hospital carefully to increase capacity of the QIT and WIT, changed mindset of the employees and developed leadership. It is using the experience for introduction of KAIZEN and nationwide development. CHUM in Madagascar used 5S song and 5S dance to brighten the atmosphere of the working environment, thereby promoting communication among employees. CHUF in Madagascar promoted creative activities to increase the team power. Although Malawi has the challenge of successor development, teams are being formed at both hospitals. DRC opened a KAIZEN school to assist practical capacity improvement. Uganda is working on work performance improvement by introducing 5S from sanitary improvement, for example. Nigeria is focusing on gradual introduction of KAIZEN in accordance with the capacity of the QIT and WIT and it has not examining regular numerical data collection or introduction of KAIZEN process. Benin, Burkina Faso and Burundi are

increasing the practical capacity of the QIT and WIT.

Collaboration with other projects is divided into that with effective assistance and that with little effective assistance. This is largely related to the technical understanding in assisting 5S-KAIZEN-TQM introduction and practice of other projects. In other words, other projects can be the factor of promotion or hindrance, depending on the level of understanding of the approach. Effective collaboration with the technical cooperation project in Tanzania and collaboration of individual dispatched experts and JOCV in Malawi, and collaboration with the health ministry advisor in DRC created synergy effects. In these countries, the involvement of human resources with much knowledge of the approach had a great impact. The collaboration with the maternal and child health service improvement project in Lagos State in Nigeria contributed to the maintenance of pilot hospital activities and continuingly assisted the delayed strategy formulation of the health administration. On the other hand, in Uganda, 5S activities progressed with collaboration with JOCV at some hospitals, whereas no synergy effects with the technical cooperation project emerged. In Eritrea and Burundi, 5S activities of the technical cooperation project showed the progress of 5S on the surface, understanding of team formation and 5S was insufficient and knowledge and experiences were not accumulated sufficiently for the independent development of the hospitals after the completion of the project. In Senegal, the target of the state maternal and child health service improvement project was the state health administration and there was little collaboration with the state-run hospital that is the pilot hospital. However, the project had the synergy effect of promotion of safe childbirth through 5S.

Countries with little assistance from donors often conducted activities only with the assistance of the project and, in such cases, potential capacity of the hospital, which includes organizational and team power and leadership, becomes important. In the case of CHUF in Madagascar, the hospital director had much interest in improvement of medical service quality from the beginning. Learning the activities of CHUM and it had great contribution. As a result, it became the basis for development of the approach and formulation of strategy for nationwide development as a pilot hospital. CHUF activities also resulted in vitalization of CHUM activities. In Mali, the hospital director with excellent leadership with excellent computer skills promoted 5S by herself as she procured fund from other assistance organizations and making posters with financial assistance from JICA.

Impacts of other assistance include introduction of ISO in Benin and the health and medical service improvement program by EU and CTB in Burundi. Burundi is examining the introduction of 5S activities in the improvement program based on the PDCA cycle and QUI members of the pilot hospital is participating in the monitoring activities of EU and CTB program. With assistance from USAID and GIZ, Kenya has completed KQMH that serves as the foundation of 5S quality improvement. On the other hand, in Morocco, the introduction of the approach is not in progress as they claim that it overlaps with the quality improvement program introduced by GIZ.

5-5 Evaluation Summary

5-5-1 Program Design

This program is designed with two-step structure: the first step is to introduce and showcase 5S activities at a pilot hospital, and then have the country's Ministry of Health decide guidelines and a nationwide expansion strategy based on studies and the results of the showcase. Recognizing the importance of making organizational improvements at the medical facilities that provide healthcare services, this program starts with introducing 5S at the pilot hospital. Through 5S activities, it aims to change the mindsets of leaders and stuff as well as make a team cooperate to solve a problem, thorough which it attempts to gradually tackle work process and cross-departmental problems by improving working environments and staff motivation. Then based on expertise at the pilot hospital, the Ministry of Health establishes a strategy along with the country to expand the program nationwide.

Program features include the following: a) introducing a variety of management tools of 5S, KAIZEN, and TQM; b) placing importance on forming team at each organization; c) improving the mindsets of top management and facility leaders; d) forming peer groups and encouraging positive competition among target countries; and e) utilizing the outputs of Sri Lanka, Tanzania, and other developing countries.

In addition to domestic and supplementary overseas training, instructional visits and assistance by way of small-scale grant (tailor-made support), we look to facilitate progress within each country while helping them in related projects.
This preparatory study team also helped to implement its training and instructional visits smoothly, acting as the program secretariat.

5-5-2 Effectiveness of this Program

As mentioned in Section 5-1-3, the English-speaking countries (Group 1), in which this approach was introduced from 2007, are assumed to have made progress in terms of KAIZEN's spread within hospitals and on the nationwide expansion of 5S. The French-speaking countries (Group 2), which began in 2009, are assumed to have started work on KAIZEN's spread within hospitals and on the nationwide expansion of 5S.

However, the only countries to actually achieve their expected stage thus far are English-speaking Tanzania and French-speaking Democratic Republic of Congo. Looking at the pilot hospitals, the keys to progress in stages of transition from 3S to S4 or S5 as well as from S4 or S5 to KAIZEN should lie in decisions of a country's Ministry of Health on establishing quality-oriented departments, guidelines, and plans for expansion.

Though the domestic and supplementary overseas training, instructional visits, and assistance by way of small-scale grant were by no means sizeable, we have successfully established 3S in the pilot

hospitals of each country. We have thus successfully improved their work environments, at least superficially. By supporting establishment of 5S showcases and in order to ensure nationwide expansion and involving each country's Ministry of Health in the program from its initial stages, efforts are underway in the ministry of most countries to include 5S-KAIZEN-TQM in their national policies. This means that preparations have been put in place to expand improvements in the quality of healthcare service throughout the entirety of the target countries. The program could end at the pilot project stage if input is only provided to the pilot hospitals. It's fair to say that the combined efforts of the project's pilot hospitals and the authorities of the Ministry of Health have been effective in providing footholds for nationwide expansion.

Meanwhile at the transition stage from S4 and S5 to KAIZEN, domestic and supplementary overseas trainings were conducted regardless of differences of countries' progresses to provide knowledge necessary for the transition. It can be said that the goal has been achieved by effective support which targeted each country's conditions, utilized supervisory trip surveys and small-scale grant, and corresponded to conditions and demands of each country and pilot facilities. This has led to standardization of the improvement processes of hospital work environments as well as a culture of continuous improvement within them. There were some countries which provided supplementary support utilizing relevant other projects (e.g. support cost of JOCV project). Supervisory trip surveys and small-scale grant have been utilized in a fashion similar to that of aid provided to the Ministry of Health, while effective support from other related projects has helped contribute to the introduction and monitoring of 5S-KAIZEN-TQM at new facilities. As a result, the Ministry of Health gains expertise from its pilot hospital(s) and collects data invaluable to the development of strategies aimed at improving healthcare services.

Nationwide expansion has already begun in 10 countries. Ministry of Health officials find this approach attractive and have indicated a willingness to introduce it at a number of their facilities. In Malawi, there has even been pressure from the hospital side, including one hospital director who heard about the popularity of this approach and requested the implementation of 5S training, even if the hospital itself was to be burdened with the cost. The original program is designed to start with specifying a pilot hospital as a 5S showcase, then establish strategies, plans and guidelines by the Ministry of Health based on expertise at the showcase and expand nationwide. In fact, however, a number of countries have begun nationwide expansion before the pilot hospital fulfills its role as a showcase. Nationwide expansion beginning before the establishment of a showcase is an undesirable development in this program. Use of an underdeveloped showcase as a model runs a high risk of leading to the spread of a less effective form of 5S activities at hospitals. If only superficial improvements to work environment are spread throughout the nation, they may not bring with them future improvements in healthcare services.

By its very nature, the establishment of a showcase in a country allows its Ministry of Health officials to better understand the significance and effectiveness of 5S activities. Even after nationwide

expansion had been assumed, Ministry of Health participants were able to understand the significance and effectiveness of the techniques through the showcases of other countries referenced during training and tie them to their own country's nationwide expansion efforts. This is the positive impact of South-South Cooperation. Furthermore, Ministry of Health officials have managed to serve in the capacity of trainers using training materials distributed at domestic training sessions and 5S-KAIZEN-TQM texts. This training has a positive effect as it allows participants to take actions toward the expansion of program techniques and enables them to understand the techniques correctly in a way that contributes to their expansion. The large collection of texts, training materials, and other materials related to the expansion of these techniques has also contributed to their positive effects.

In terms of transition into the KAIZEN stage at pilot hospitals, no countries were able to begin KAIZEN activities soon after the KAIZEN training session for English-speaking countries in 2009, not even the Mbeya Consultant Hospital (Tanzania's pilot hospital). However, the introduction of Kaizen has since been made possible in Tanzania thanks to the support of Ministry of Health advisors and further training provided in 2010. This suggests that domestic training alone may be inadequate when it comes to introducing KAIZEN[36].

We have also confirmed that some countries have started work on KAIZEN without having first established 5S. The standard of prioritizing the transition to KAIZEN in training provided has also impacted the acquisition of KAIZEN-related information of officials at pilot facilities that have seen delayed progress in 5S. However, implementing KAIZEN without adequate team formation and problem recognition can potentially leave workplaces unable to recognize and/or solve problems related to work process. It is important to bear in mind that the result of such a failure can potentially decrease motivation, breed distrust in the approach, and generate feelings of skepticism toward actions otherwise intended to improve organizations and services.

5-5-3   Promoting and Inhibiting Factors of this Program
We will now have a look at what kinds of factors have driven and impeded this program. We will start by verifying the necessary and sufficient conditions for each stage and then identifying the factors that have promoted or inhibited the fulfillment of these conditions.

First, a functioning Quality Improvement Team (QIT) and pilot department Work Improvement Team (WIT) are necessary conditions for transitioning from 3S to S4 and S5. Without a working WIT, the essential work environment improvements designed to make work easier are often left unattained even though the workplace appears to perform Sorting, Setting, and Shine on the surface. To achieve such improvements, the development of teamwork and proper mindset is essential, and it's important that the technical significance of this approach (stepwise/Japanese management

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[36] KAIZEN training in 2009 was domestic only. There was no supplementary overseas training.

techniques) be properly understood. Because these have been developed with in-hospital training through instructional visits and small-scale grant, effective instructional visits and small-scale grant are given as driving factors. Similarly, related technical cooperation projects and support from Japan Overseas Cooperation Volunteers (JOCV) are also promoting factors. However, if JOCV and said technical cooperation projects fail to understand the necessity of developing teamwork and proper mindset, they may end up promoting 5S activities without placing an emphasis on teamwork and proper mindset similar to that of their Japanese counterparts and become inhibiting factors.

When transitioning from S4 or S5 to KAIZEN, it's essential that the QIT and WIT understand workplace activities and are sensitive to problems that may occur. They need to be able to discover workplace problems by circumventing the gaps that exist between the ideal and reality. If they are unable to recognize problems, they will not be able to recognize problems in work processes or make improvements in work and services. This condition was clarified during the 2010 domestic training session and has been the subject of focused support in domestic training sessions and instructional visits since 2011. The assumption was that these conditions will develop naturally if S4 and S5 are able take root in hospitals, but this has not always been so. In this case, the promoting factors of these conditions are domestic training and hospital-wide implementation of S4 and S5, while the inhibiting factor is the introduction of KAIZEN at the 3S level or earlier.

In addition to this program's core support, Ministry of Health advisors and other personnel able to support the decision-making process are essential to ministry creation of guidelines and expansion plans. It's also important that the Ministry of Health's duties and responsibilities be clearly defined. If they are not, progress will not be made on the drafting of guidelines and expansion plans. Particular care must be taken in this regard; the spread of this approach without first drafting guidelines or expansion plans carries the danger of transforming the goal of the approach into the introduction of 5S or KAIZEN. The actual goal of this approach requires authorities to adequately work together to identify possible organizational and service-oriented improvements and to figure out how to utilize this approach to achieve those aims.

In order to ensure that training and instructional visits schemes are established and that everything is put on track to succeed, it's important that the pilot hospital possess a functionality adequate enough for it to receive training and to secure its own country's trainers (facilitators) in a sufficient quantity and quality. To achieve this, pilot hospitals need to develop personnel and Ministry of Health officials need to thoroughly understand this approach. On the other hand, nationwide expansion that is implemented without a pilot hospital serving adequately as an 5S showcase will have a tough time getting 5S to take root in other hospitals. Without a proper model, no amount of implementing 5S or KAIZEN will lead to organizational or service-oriented improvements.

Also of importance are how the field of public healthcare is situated within each country's JICA aid policy and how this program is situated within each country's healthcare sector. There have been instances in which changes have occurred in the aid policies for certain countries' healthcare sectors

since the start of this program and cases in which curtailments to the aid system in the healthcare sector from JICA offices has been viewed negatively.

In terms of support from related projects, there have also been cases, such as in Mali, where pilot hospital activities have proceeded favorably even without support projects. If a pilot hospital is able to increase motivation among both leadership and staff and gain a proper understanding of the significance of organizational development and the activities involved, support from related projects may not necessarily be an essential condition for program implementation. However, in the case of countries like Tanzania, the ability to receive an appropriate level of support from support projects accelerates the progress of the activities involved.

Progress should be made in each country even without support projects as long as there is nothing within the country to impede that progress. Countries that are faced with impediments, on the other hand, may need support to circumvent them. In particular, some pilot hospitals see frequent turnover of directors and staff and levels of facility degradation that cannot be solved with 5S. At the Ministry of Health of some countries, this program needs to be coordinated with other programs. Specifically, cases have been reported where the existence of other programs avoids the Ministry of Health from establishing strategies and expanding them nationwide because of failure of coordination between them. These cases have been seen in several countries with a remarkable tendency.

Meanwhile, barriers that impede the activities of pilot hospitals have emerged from related support projects. In completely outsourced projects, new activities are difficult to add to an existing project contract, which in turn makes it difficult to provide support for activities outside the scope of a project once started. While this method requires waiting for the parties concerned to decide when they will start work on these projects, this can be difficult for projects working within a limited time period and is particularly tough in completely outsourced projects, in which the goals have to be prioritized.

Taken together, all authorities must properly understand the factors involved in the effective expression of this approach and scheme technical aspects. This means that they must understand that stepwise progression, team-oriented activities, and the changing of mindsets are what comprise the core of what is required to properly enact this program. Program progress depends on whether or not instructional visits, small-scale grant, and other support projects can be effectively utilized. Additionally, staff and project in-charge at local JICA offices, Ministry of Health advisors, and specialists from related projects influence the effective utilization of each kind of support. The level of achievement of this program is high in target countries that possess the personnel required to lead its implementation in a timely and precise manner. In other words, the enhancement of domestic resources is considered essential to the appropriate promotion of this approach. In regions that are already utilizing domestic resources (English-speaking countries: Tanzania, Kenya, Uganda,

Malawi, etc.), creating opportunities for support in addition to domestic and non-domestic training has increased its overall effectiveness. Thus, effective use of regional resources through South-South cooperation should increase effectiveness and efficiency of this approach.

5-5-4   Changes in Management and Clinical Indicators and Program Impact

We have been unable to measure the effectiveness of this program from the management and clinical data gathered in this preparatory study. However, there are cases in which the various data collected in this preparatory study have allowed pilot hospitals and the Ministry of Health to better understand the importance of data collection. Tanzania learned the importance of time studies after using them to confirm the effectiveness of 5S-KAIZEN activities and have since implemented them periodically at their hospitals. Madagascar is considering the establishment of a system of collecting reports on nosocomial infections and other incident reports.

Additionally, in countries where progress is being made on KAIZEN, it is now possible to display the specific results of this program numerically. For example, data has been able to show the effect of efforts in Tanzania to reduce inventory and insurance claim leakage, efforts at CPGH in Kenya to reduce usage of expired drugs, efforts at CHUM in Madagascar to reduce the incidence of decubital ulcers, and efforts at CHUF to reduce the rate of non-reexamination of tuberculosis patients.

It is typically difficult to influence clinical indicators at the 5S stage. The results that can be expected from 5S include improvements to work-related indicators such as reduced inventory. At the KAIZEN stage, improvements to indicators of elevated hospital performance like productivity, cost, quality, and safety become possible. The establishment of a system of identifying the indicators for each KAIZEN process and periodically collecting data on them will be sought for the KAIZEN stage in the future.

5-5-5   Roles and Contribution of the Collaboration Preparatory Study

(1)   Background

In March 2007, the AAKCP "Program of TQM for Better Hospital Services" was established in the form of domestic and supplementary overseas training sessions targeting eight countries. In August of the same year, 5S Practitioner training was held in Sri Lanka and 5S pilot projects focused on the participants of the training sessions were started in the target countries. After that, resource persons from Sri Lanka and Japan traveled each of the countries from December 2007 through March 2008, and in October 2008, held a closing seminar in Egypt to share the results of 5S pilot projects. At the seminar, JICA authorities and resource persons discussed future expansion of the program. Among the topics examined were the spread of this approach to other countries, the evolution from 5S to KAIZEN, the importance of personnel development to the expansion of these techniques, and the need for a working secretariat to support the program. As a result of this seminar, AAKCP's second sphere (Group 2) targeting French-speaking countries was established in March 2009, and starting in September 2009, KAIZEN training was implemented for the first eight countries (Group 1).

The collaboration preparatory study was implemented to conduct pilot projects to review the progress and results of these efforts and allow us to consider future developments. Because management had become complicated due to the use of different schemes and supervising departments within JICA for Group 1 and Group 2, secretariat functions for the centralized management of both have also been added. These changes occurred in the previous preparatory study.

This preparatory study reviews the results achieved throughout the TICAD IV follow-up period. Because subsequent collaborative expansion also needed to be considered, the period of this study was extended to 2012. Continuing the pilot projects and secretariat functions of the previous study, KAIZEN Training for Group 1 and Group 2, the implementation/promotion of instructional visits, and proposals from the previous study were all applied to the training and instructional visits.

(2) Contributions

The contributions of this preparatory survey can largely be classified into two areas: 1) verification of the "Program of TQM for Better Hospital Services" and 2) support for the secretariat's smooth implementation of the Program. The Program was verified as given in this report. Additionally, the contributions of this preparatory study intended to facilitate the smooth implementation of this program are as follows:

1) Standardization of Instructional Visits

The study targets, items, monitoring, and check sheets were all standardized for instructional visits. This has succeeded in making it easier to decide the number of days and indicative timetables required for work-related duties. Additionally, unifying the forms used for instructional visits reports has made the results of studies easier to understand.

2) Introduction of a Standardized Data Collection Method

This displayed data that can potentially be used to measure the effectiveness of the 5S-KAIZEN-TQM approaches in pilot hospitals and their host countries. Collection was also made easier by settling on a questionnaire to be collected and by providing guidance on how to fill it out.

3) Improvements to Domestic and Supplementary Overseas Training

Based on feedback from instructional visits and previous training sessions, the contents of both the domestic and supplementary overseas training have been examined and support for facilitation and improvements to the effectiveness of the implementation/promotion of training sessions have been provided.

5-6   Conclusion

5-6-1   Summary of the "Program of TQM for Better Hospital Services"

The "Program of TQM for Better Hospital Services" was started as a program designed to promote South-South cooperation in TICAD III. As shown below, however, it has become a foundation for the improvement of healthcare services working under resource constraints. It has also improved

healthcare sites, the organization of healthcare facilities, and brought about massive changes at hospitals throughout Africa.

- Developed a system to improvement organizational capabilities by forming teams and having them work together

  The WIT increases the staff sense of identification with their workplace. Instead of focusing on their own work, they become able to keep an eye on the work of their fellow members as well and work in tandem as a team to deal with problems that affect each individual member and the team as a whole. Additionally, with teams comprised of members of different occupations, they are now able to come up with new and innovative ideas and help deal with problems faced by a variety of different occupations, such as simplification of hospital discharge. This sort of organized, participatory action has never before been seen in the hospitals of developing countries.

- Changed the mindsets and actions of staff to a more positive "Can-Do" attitude

  By effectively using cardboard, colored paper, and the resources around them, as well as by creating filing cabinets and actively encouraging such activities during instructional visits, progress has been made in helping staff members feel confident in the activities they themselves perform. Additionally, there are hospitals that use 5S to endorse staff creativity by having them compete to come up with new ideas. There are also hospitals that have come up with 5S songs and dances to make the implementation of the approach more enjoyable. Thus, a mindset has been developed that encourages workers to think about their work and workplace, what they want to do with it, and how it should be.

- Promoted improvement activities and provided confidence to leaders through small, visible achievements

  Some directors, having failed once in their attempt to introduce KAIZEN, use the confidence they gained from their success with 5S to reconsider the way in which they attempted to introduce KAIZEN, make a more concentrated effort to introduce it, and finally manage to establish it in their hospitals. Additionally, staff responsible for hospital inventories have become better able to understand expired drugs after discarding unneeded stock/organizing their shelves and start working to reduce the number of expired drugs in their hospitals. This first success has often led to further improvement activities.

- Clarified the processes involved from pilot hospitals to nationwide expansion by aligning the goals of both pilot hospitals and the Ministry of Health

  A great number of past policies were created on the desks of the Ministry of Health and did not necessarily reflect the realities in the field. For this reason, a detachment from hospitals has been observed when actual attempts have been made to spread approaches throughout countries. The program process of providing field experience as feedback on policies has led to the establishment of policies that can actually be implemented in the field. This in turn has

eased the nationwide expansion of the quality improvements developed for this program.

- Promoted regional collaboration by forming peer groups from among the participating countries
  The study tours and KAIZEN training held in Tanzania allowed neighboring countries to participate, learn about Tanzania's good practices, and become better able to adopt the program in their own countries. They were also able to share their experiences and actively discuss the ways in which the program should be implemented during domestic and supplementary overseas training sessions. Rather than learn unilaterally from Japan and Tanzania, these sessions have helped develop a stronger sense of mutual learning.

There are certain ways in which the 5S-KAIZEN-TQM approach of forming teams to implement improvements in the field differs from the healthcare service/quality improvement programs that have been promoted in Europe and the United States up until now. It not only aims to improve services and encourage staff to solve problems through the investment of resources. Rather, it allows staff to come up with ideas on how to effectively use existing resources, creates a mindset oriented toward improvement of services, and ensures sustainability even in times when resources are limited.

5S and the other expertise gained from this program up until now has been of great significance. This significance exists in the form of team building and changes in mindset. A number of donors have adopted quality assurance and quality improvement programs similar to that of KAIZEN. Primarily utilizing the PDCA cycle, these programs follow a flow that involves analyzing the present circumstances, implementing solutions through problem analysis, evaluating those solutions, and standardizing them. The problem is that there is no mention of who should perform what or how it should be implemented. 5S allows for the development of teams and a mindset among the members that will enable them to implement KAIZEN in the field. It's also a useful way of increasing the effectiveness of all activities.

As field teams formed with these techniques, WITs have proved effective in promoting other healthcare service quality improvement programs and also possess the ability to promote harmony between this program and the programs of other donors. As a result, these teams may also be effective in promoting other JICA projects, not just the programs of other donors.

On the other hand, though the program gradually introduces 5S, KAIZEN, and TQM, and offers the aforementioned impact, progress has come at a slower pace than had originally been assumed. This is because differences that emerged in each country's progress when proceeding from the 5S stage to the KAIZEN stage of this project was met with uniform (standardized) support that was not always in line with the level of progress made by said countries. Specifically, the support offered at domestic and supplementary overseas training sessions for the introduction of KAIZEN was also

provided to participants from countries not yet ready for KAIZEN, leading to confusion between 5S and KAIZEN. The result was that countries that had not yet adequately implemented 5S began implementing KAIZEN and were ultimately left with underdeveloped versions of both. The improvement of services in each field sought during the KAIZEN stage has therefore been limited.

Consequently, it is better that as the gradual implementation from building a 5S-KAIZEN-TQM approach-based foundation for improvements in healthcare services and the organization of healthcare facilities working under resource constraints to the implementation of those approaches are sustainable techniques and allow them to also be effectively applied to other projects will continue and help promote the introduction of 5S-KAIZEN-TQM.

Still, the framework of the Program for better service Hospital must be reconsidered to allow for support that is in line with the level of progress exhibited by each individual country. To achieve this, 5S-KAIZEN-TQM approaches that base their support on the requests of each country's government and offer uniform (standardized) support in line with what is required at the time should be promoted in favor of the approach of training, instructional visits, and small-scale grant that has been promoted as the core of the Japanese side up until now.

5-6-2   Program Challenges

The following challenges drawn from this preparatory study will need to be addressed if the managerial improvements achieved through the 5S-KAIZEN-TQM approaches are to be sustained into the future.

1. Support that does not properly understand this approach impedes the progress of the program. For example, introducing 5S without taking the actions required to encourage team formation and behavior modification reduces it to a mere beautification campaign and fails to achieve the approach's original goals of behavior modification and team formation. Particularly in cases when related support is provided through technical cooperation projects, project staff members run the danger of focusing on project outcomes in implementing 5S activities, potentially impeding team formation and the rise of 5S activities from among the staff. Similarly, if JOCVs act without understanding these points, 5S activities may become the responsibility of individual staff members. Even in the case of small-scale grant, supervisors will not be able to use the funds effectively unless they properly understand this approach.

2. Countries that have not systemically implemented nationwide expansion of the program have not established strategies/indicators for nationwide expansion in the form of implementation guidelines. Certain pilot countries aspire to spread 5S activity. However, because they have yet to clarify their goals and implementation processes, they have trouble promoting the spread. Additionally, an inability to create implementation guidelines in some cases has prevented proper feedback of pilot hospital successes to other hospitals in the field.

3. Following KAIZEN training, hospitals introducing KAIZEN on their own require external support from bodies able to offer support for KAIZEN techniques during the trial stages. The invisible events that occur during the KAIZEN processes need to be visualized through data measurements and other means, because it's hard to promote the acquisition of expertise like that of 5S through imitation. Improving KAIZEN implementation skills takes practice. Supplementary support through the likes of OJT has proved effective to this end.

4. Activities cannot be continued if the individuals who have received training and the authorities in charge of the approach are transferred. A number of hospitals do not share expertise and have not established systems of succession. The first step to knowledge sharing is in records. The minutes of meetings, activities, examples of good practices, and in-hospital activities all need to be recorded. These then need to be utilized in subsequent activities and consideration must be given to what should be shared with the staff. Periodic rotation of QIT members, QIT leaders, and WIT leaders must also be considered. It's recommended that a successor be trained before a key individual is transferred. Increasing the abilities of teams through activities will allow those activities to be continued even if changes occur among directors or other top management/leadership.

5. The level of each country's support is at the discretion of the authorities in charge of the program in each of the countries concerned. The core support for this program includes domestic / supplementary overseas training, instructional visits, and small-scale grant. Training is the only support item that is planned and implemented domestically. Requests for instructional visits and the utilization of small-scale grant are based on discussions with the partner countries and determined by the authorities in charge of the program in each respective country. The favorable progress of this program exhibited by a number of countries is due to the active involvement of the concerned authorities in the program. However, the authorities will not always be able to implement support effectively unless they possess knowledge and an adequate understanding of the support available for the program.

6. Information sharing of progress made by countries and support details is inadequate. Originally, this preparatory study was intended to examine future strategies, study support details within the program, and share methodologies with program support. As the program is based on information gathered during instructional visits, however, it was difficult to fully understand information from countries without instructional visits. It was also difficult to share information on related projects and JOCV activities.

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**Annex
Trends in other aid agencies
and international organizations**

Annex

Trends in other aid agencies and international organizations

Table of Contents

2-1 World Health Organization (WHO)

Visited WHO Headquarters to collect the information on WHO Africa Office from the literature as well as confirming the on-going activities from the bureaus related to qualities of health workforce and in healthcare services.

2-1-1 Health workforce section in Health development service division

In Health workforce section, the guideline for TE: Transformative Scale up of Health Professional Education was being prepared through funds of PEPFAR (The U.S. President's Emergency Plan for AIDS Relief) and USAID. From Japan, Professor Masamine Jimba (from University of Tokyo) and Mr. Hidechika Akashi (NCGM), advisor by issue, Yojiro Ishii from JICA, Maki Agawa (Junior expert at that time), participated in core group meeting, and Mr. Hiroki Matsui from Gunma University was involved in systematic review.

TE's concept is to 'change the current education to meet the needs of the community where health professionals work, and the adequate strengthening of the health system'. And team healthcare service is included in this new education method that the needs for education considering relocation, allocation and continuity was pointed out.

The purpose of this guideline is to achieve the fulfillment of number of health workforce, balanced allocation, quality improvement and adequacy improvement through restructuring the education system to strengthen health system, and furthermore contribute to the increase of the people's health. Those who use the guideline are people or institutes related to education such as Ministry of Health, Ministry of Education, schools, teachers, and preceptors in the hospitals, and target 'resource to be educated' are doctors, nurses, birth attendants, and those studying at special healthcare institutes or public health schools.

Also in this guideline, 'task shifting between line of work' that is one of the concepts for team healthcare service, including to aim for the optimum use of health workforce in its own country to shift some of doctor's work to Sub doctors, nurses and nurse assistants and regional community health workers to be concrete. Moreover, this guideline includes the quality improvement of health workforce so that points of this guideline is to change the existing system to the resource education system based on the current conditions of each community as aforementioned, and educating the employees (apart from educating the students) within the facilities and partnership among the facility infrastructures are included in its concrete items.

2-1-2 Patient Safety Program

WHO Patient Safety Program is a newly established bureau established in October 2014 with DFID: Department for International Development as its main sponsor after 'World association of Safe healthcare' inaugurated in 2004. Patient Safety Program raised following four areas as the new

strategy from 2012 to 2015.

- Method and innovation to promote the permission for patient safety
- Capacity building of patient safety
- Form interntaitonal network to promote the participation of the patients(customers) to patient safety
- Exercise international leadership for calling attention to the importance of patient safety through adapting best practice of patient safety

Among WHO Patient Safety Program activities, those that are strongly related to Cooperation of the Program of Quality Improvement of Health Services by 5S-KAIZEN-TQM and 5S-KAIZEN-TQM are as follows.

(1)   APPS: African Partnership for Patient Safety

This program is to improve and expand healthcare safety in the hospitals through forming the sustainable patient safety partnership among the hospitals in Africa and other regions, the importance of patient safety was acknowledged as a grave crisis with the health results by Health Ministers from 46 countries in African regions to designate 12 interrelated areas for patient safety activity in 2008. Currently, 14 countries in Africa (Ethiopia, Ghana, Malawi, Mozambique, Rwanda, Tanzania, Uganda, Zambia, Cameroon, Mali, Senegal, Burundi, Ivory Coast and Niger), UK, France and Switzerland participate in this program.

In APPS strategy conference held in Geneva in 2011, Dr. Sam Zaramba (executive board member of WHO) in Uganda made a proposal to conside the cooperation with KAIZEN project (this program), and interactive activities are shared among the relevant countries.

In this survey, series of discussions were made between WHO Patient Safety program, JICA and Tanzanian Ministry of Health and Welfare by introducing this program when survey through hearing was conducted to WHO. And that Mbeya Consultant Hospital, which is pilot hospital in Tanzania was decided to be APPS target hospital closed partnership with the hospital in UK and jointly started the approach towards enhancing patient safety activities following KAIZEN processes from 2012.

(2)   High 5S Initiative

High 5S Initiative is a project to assess the resolution method of standardized patient safety, and promote its implementation which currently 9 countries (Australia, Canada, France, Germany, Netherlands, Singapore, Trinidad Tobaco, UK and USA) participating. The High 5s name derives from the Project's original intent to significantly reduce the frequency of 5 challenging patient safety problems in 5 countries over 5 years. In this project, Standard Operating Procedure (SOP) of the five areas was developed specifically for individual issue related to healthcare safety, verify in approximately 150 hospitals in participating countries and then review its effect.

(3)   PSFHI: Patient Safety Friendly Hospitals Initiative

This program is practiced by East Mediterranean regional office (EMRO) of WHO. Evaluation manual for healthcare safety program in the hospital was developed based on patient safety standards developed by EMRO and experts. Currently, validity of this manual is now verified in 8 hospitals in 7 countries.

Patient safety standards consist of 5 areas (total of 140 indexes).

   A. Leadership and Management Standards

   B. Patient and Public Involvement Standards

   C. Safe Evidence based Clinical Practices Standards

   D. Safe Environment Standards

   E. Lifelong Learning Standards

(4)   Patient Safety Education

Patient Safety Program of WHO has already developed the safety curriculum guide in the patients of many line of work (doctor, nurse, birth attendant, dentist, etc.). This curriculum guide includes both instruction (for those teach patient safety) and learning (for those learn patient safety) guides. Currently, pilot tests are implemented in 14 universities, and voluntarily participation in the tests are increasing in the educational institutes including other universities. Final assessment report will be prepared about end of 2012.

WHO and its regional offices work together to conduct the presentation and introductory workshop to widely disseminate this curriculum guide. Presentation and workshop event were held in Western and Pacific Regional Office (WPRO) in October 2011. Hiroshi Inukai of Kyoto University participated from Japan. In recent dates, the event will be held in East Mediterranean regional office (EMRO) in spring of 2012.

It is planned to develop e-Platform and e-course that are platforms for remote education and self learning for patient safety education based on this guide in future. In concrete, it is to develop the platform including video conference, presentation, textbook, exercise, assessment, simulation and debate, etc.

2-1-3 The Global Health Work Alliance（GHWA）

As mentioned in Chapter 1, it is WHO partner institute established in 2006, and the role of Japan in GHWA became further expanded when Ministry of Health, Labor and Welfare bureaucrat, Mr. Mugitani assumed the post of its director chairman after 2nd Health workforce Global Forum cohosted by GHWA, WHO, PMAC (Thailand), and JICA in January 2011. In the said forum, the progress status was reported on 'Kampala Declaration, Agenda for Global Action' adopted in its previous forum. As of November 2011, 344 institutes (including governments, academic institutes, NGOs, private, job function associations, UN organizations and foundations, etc.) participate as its members or partners. On March 6, 2012, the statement was made by its secretary general, and external assessment was conducted in December 2011, and later, the response to the assessment and first draft was compiled for new strategy in the subcommittee in the directors' meeting under the leadership of the secretary general.

In the assessment report, Alliance governance and management are to be enhanced to focus on the support for high-value added areas as well as continuing the activity as a catalyst for health workforce reinforcement in the 2nd phase (from 2012 to 2017) based on the results and lessons from the 1st phase (from 2006 to 2011).   The 3rd Health workforce Global Forum is to be held in Brazil in November 2013.

2-1-4 WHO Africa Regional Office (AFRO)

WHO established regional offices in each regions towards smoothe and effective implementation of operations, and AFRO is established in Africa region. AFRO further holds subregional institute, Inter Country Support Team (IST), that they have its office in Harare, Zimbabwe in southeast, Libreville, Gabon in mid region, and Ouagadougou, Burkina Faso in west.

WHO has assigned experts in IST to provide support to the country offices in relevant regions that regional offices take initiatives with the formulation of that regional policies, guidelines, etc., and IST supports it.

2-2 African Regional Platform

Africa is group of small countries both in its economical scale and population as the result of artificial setting the borders with colonial policies. Therefore there are quite many Regional Economic Communities,: RECs in the neighboring countries to promote establishing import tax alliance, introduction of common currency, cross country trade promotion, common market creation, etc. RECs framework is used also for addressing health issues such as infectious disease measure in the relevant regions that WAHO of Economic Community of West African States (ECOWAS), EAHRC of East African Community (EAC) and OCEAC of Commission de la Communaute Economique et Monetaire de l'AfriqueCentrale. (CEMAC) are among those communities.

2-2-1 West African Health Organization (WAHO)

(1) Organization Outline

It was established in 2000 with the purpose of healthcare issues (initially addressing regional infectious disease measure) in West African regions by ECOWAS member countries, with it secretariat in Bobo-Dioulasso, Burkina Faso. This institute decides the development current trend of healthcare in West African regions is influential in healthcare policies and visits in each country. 15 ECOWAS member countries (Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo) are the members including Benin, Burkina faso, Mali, Niger, Nigeria and Senegal that are the target countries of this program.

There are conference of head of state level of each country, conference of Health Ministers, and conference participated by Ministers of Finance and Foreign Affairs existed as the decision making organizations where concrete actions are reviewed in the ministerial level conferences, and are decided in the head of state level conferences. ECOWAS contributes the annual budget of 12 to 16 million dollars. WAHO Headquarters is an department in charge of operation once decisions were made on the government policies with experts on epidemiology, etc.

Main operations in WAHO are coordination and promotion of health policies in each member countries with no implementation of individual programs.

Their basic activities are carried out earnestly according to strategy paper (of 2009 to 2-013) in health workforce (integration of curriculum for nurses, birth attendants and other), health information (building database (healthcare or expert information, etc.) and infectious disease measure. In February 2012, ministerial meeting was held with infectious disease as its agenda mainly focusing on malaria.

(2) Current status and issues in WAHO quality program

Priority for 'the quality of health service' is high in WAHO health system enhancement program. However, when looking at existing 'Quality improvement' (Demarche Qualite), there is no description of procedure for quality assurance (Assurance qualite) required for improving quality and performance that indexes development and strategic axis formulation, to improve the quality of care, and continual improvement culture were not sufficient. Therefore, contract was closed with Réseau international pour la planification et l'amélioration de la qualité et de la sécurité dans les systèmes de santé en Afrique (RIPAQS, http://ripaqs.e-monsite.com), the organization related to University of Bordeaux in France, to start current status survey related to 'quality improvement of patient safety and services in enhancing health system' targeting 8 countries out of WAHO member countries (5 of them are French-speaking countries). Focal points were place in Ministry of Health in each country, particularly with hospital-acquired infection and patient safety to work for building

network.　However, pilot areas in each country found many difficulties in conducting the surveys so that some only ended up with something like testing. Issue was also found in not being able to do political decision making easily.

2-2-2　East African Health Research Commission (EAHRC)

It was established with the purpose of promoting the evidence based policy formulation in East African regions and mediating the knowledge and experts required for it, with its secretariat in EAC secretariat in Nairobi, Kenya. Its member countries are EAC member countries (Kenya, Tanzania, Uganda, Rwanda and Burundi), that all except Rwanda are target countries of this program. It is also implementing institute of REACH (The Regional East African Community Health Policy Initiative) Project.

2-2-3　Organisation de Coordination et de Coopération pour la luttecontre les GrandesEndémies en AfriqueCentrale (OCEAC)

It was established with the purpose of addressing health issues in central African regions with the secretariat in Yaunde, Cameroon. Its member countries are CEMAC member countries (Republic of Congo, Gabbon, Ginea, Central Africa, Chadd), the target countries of this program are not included. They carry out infectious disease measure (including educating the experts and developing the new vaccines, etc.) and health workforce development, but implementation of the quality specific programs has not been confirmed.

2-3　Job function associations and Academic institutes

In Africa, there are networks derived from donor led initiatives and academic institutes (Obstetrics association, etc.). Periodic meetings among the organizations facing common issues (meetings of public health institutes (basic education institutes for nurses) and health workforce division lead) are held and those also function as informal networks.

2-3-1　New Partnership for Africa's Development (NEPAD)

Africa is to aim for eradication of poverty, sustainable growth and development, and integration with world politics and economies in their continent with the responsibility of their own. It is also the partnership to aim the partnership in the forma of complmenting the self effort in the international community with its secretariat in Johaneseburg, Republic of South Africa. Its implementation committee consists of the head of state from 4 countries each from 5 regional categories (north, west, central, east, and south) in African Union (AU) with total of 20 countries. And its steering committee consists of special envoys from South Africa, Nigeria, Algeria, Egypt and Senegal to propose the NEPAD implementation policies to its implementation committee or realize the policies decided by the implementation committee.

NEPAD acts according to the Action Plan (currently, it is in 2010- 2015 version) to specify the building infrastructure, resource development, agriculture and environmental initiative, culture,

science technology as their prioritized areas. Health belongs to infrastructure building and resource development, and address the water and health sanitary, infectious disease measures, strengthening health system (addressing medicine, health finance, health workforce and health administration).

2-3-2   African Health Economics and Policy Association (AfHEA)

It is a platform related to healthcare economy in African regions. It is making efforts to disseminate related policies and evidences for healthcare economy, but AFRO seems to be taking initiative. Its secretariat is in Accra, Ghana. Individual can register the membership by paying the membership fee.

2-3-3   Regional Center for Quality of Health Care (RCQHC)

The Center was established in Makerere University by assistance from USAID in 1999, mainly dealing with government policies relevant for quality improvement of healthcare services in 9 countries in East Africa, program assistance, and conducting advocacy and seminars.   Current key target areas are HIV, children's nutrition, maternal and child health, and tuberculosis, basically supporting vertical approach, having experience in supporting horizontal (medicine provision) and integrated (HIV and tuberculosis) approaches.

The process concept of this program, 'Implement activities in pilot hospital fist to establish the Center of Excellence, then promote the system change by showing the results of activities after reviewing methodology of this method.', was highly evaluated.

This center intends to develop QI course curriculum as pre-service seminar to be conducted within Makerere University in future, in which 5S components are to be reflected.

2-4   Trend of international institutes and assistance institutes in the target countries

2-4-1   World Health Organization (WHO) national office (Visited in FY2011: Eritria, DR Congo, Kenya, Madagascar, Mali, Visited in FY2012: Burkina Faso, Nigeria)

Only national offices in Kenya and Madagascar captured and understood this approach among WHO national office. Each WHO national offices are interested in this approach as they support quality related programs in their countries, but so far there are no cooperative activities.

(1)   Burkina Faso Office

Technical support to the program implemented by the Ministry of Health (seminars and strategy paper formulation, etc.) is in place.   Currently, they are highly interested in quality assurance for improving health service.

(2)   Eritrea Office

It supports the activities towards quality improvement in care implemented mainly by Ministry of Health. To be concrete, rapid assessment was implemented in Orrota Hospital, etc. and intensive seminars were conducted to improve the issues confirmed in the assessment. Ministry of Health is reviewing to expand these activities to other hospitals.

(3) DR Congo Office

Improvement in service status in hospitals is to be planned while on going the review of the maternal and child health and human resource education activities overseeing MDG4 and 5. Interferrance to wide area and rapid change are expected.

(4) Kenya Office

Esternal assessment was carried out in the Hospital Reform with public hospitals that are level 4 or over implemented by Healthcare service ministry. Variety of quality related programs are conducted such as satisfaction survey, hospital audit. Quality improvement in health services in Kenya are carried out in the programs by various assistance institutes taking different approaches that resulted in their awareness of issues remaining with implementation capacity of healthcare service ministry as the coordination is not sufficient nor hospital restructuring results cannot be observed.

(5) Madagascar Office

There is understanding of 5S since JICA Office personnel explained 5S-KAIZEN-TQM in the dornor conferences particularly with field staff is interested in maintaining the motivation of continous implementaton of 5S.

(6) Mali Office

It supports mainly with documentation while sharing the experience so far with the cooperation of Ministry of Health. Also it supports Ministry of Health's hospital assessment system with NGOs implementing quality improvement activities using USAID fund

(7) Nigeria Office

It works on improving management efficiency and medical quality (Hospital management quality) as part of health system enhancement framework, mainly supporting the approach relevant to human resource education, as well as supporting government policies for infectious disease measure, immunization expansion program, reproductive health, maternal and child health, and regional health promoted by WHO Headquarters.

2-4-2 The United Nations Population Fund（UNFPA）Madagascar Office

It fully understood the concept and validity of 5S-KAIZEN-TQM through the explanation by JICA personnel in donor conferences

Fischuara seminar conducted to the surgens in CHurearu University Hospital in May 2011, it consulted 'the possibility of improving hospital receiving system, hospital internal environment and awareness of the surgens by 5S in order for the women from the villages feeling comfortable when they visit regional core hospital to receive the surgery'. With this request, cooperation of this method and project realized by sending the researcher returned to the country to Chureau using JICA follow-up budget.

2-4-3 DeutsheGesellschaft fur InternationaleZusammenarbeit (GIZ) Domestic Office (DR Congo, Kenya, Malawi)

In each country, interest towards this approach is high as support related to the improvement in healthcare services are carried out.

(1) DR Congo Office

GIZ was introducing Systematic and Continuous Quality Improvement(SQI）approach in healthcare facilities in South Kivu state in last fiscal year's Supervisory Trip Surveys. In this visit, it was confirmed that SQI would start in the new target areas: Kwango, Kenge, and South Kivu (need to confirm) in February 2013. SQI components are as follows.

- Improving communication in 2 states to monitor the activities using each resources,
- Quality assurance by providing award items.
- Improving access to the services: Improving health insurance system and establishing community level mutual insurance.
- Continuing the support for implementing state health centers in South Kivu.

One of SQI components was similar to KAIZEN activity which solves the problem by utilizing PDCA cycle with the problem. Survey team explained that in this program, it is more effective to address KAIZEN with team building and work environment improvement by 5S as its basis, and GIZ was highly interested such as participating in the feedback seminar in Ngaerima Clinic.

(2) Kenya Office

Health is one of the major support areas particularly focusing on the access to basic service, reproductive health and health budget. GIZ supported quality improvement in health area in KQMH development over several years through healthcare service ministry. Seminar manual and QI indexes related to this development were prepared. Moreover, leadership program was conducted to teach leadership and communication method as leadership role is substantial in quality improvement, and sent the mentors to the hospitals to work with the employees to prepare the action plans.

(3) Malawi Office

Mainly with three items: Resource education, health services in community, support with policies and systems, support was carried out in MGHP : Malawi-German Health Program. In 2010, the current status analysis across health sector was conducted, and its result was taken as the important issues across the sector, then started the IP: Infection Prenvention program. In this program, the missionary hospitals that did not receive the support from other assistance institutes and NGOs are the target, and currently internal infection prevention program is implemented in the health facilities located in southeast health zone.

2-4-4 European Commission's Humanitarian Aid Office (ECHO) DR Congo Office

Approach is taken for quality improvement in health and healthcare facilities in health and healthcare service using the methods called IRR (initiative à résultats rapides) and PERQS (processus d'évaluation et de renforcement de la qualité des services) in 13 health zone in Aru District. Personnel are aware of the issues in detail assessment in the issues that cannot be clarified

with assessment involving customers and checklist. Checklist is also developed and used to measure the service quality.

2-4-5 National Hospital Insurance Fund (NHIF)

It was established in former Ministry of Health in 1960s to implement health insurance system, however, it becomes independent organization auhorizing hospital certificate system, conducting the audit other than providing the service to health insurance subscribers and its family members. Hospital certificate is defined by the required infrastructure, resource and service description according to the levels of hospitals. Its certificate standards were prepared with GIZ support. It thoroughly understands the condictions of 2 5S pilot hospitals.

2-4-6 International Finance Corporation (IFC) Kenya Office

Patient safety for private hospitals is addressed. Baseline surveys in private hospitals were conducted and the standards regarding patient safety are expected to be established within 2 years. It plans to promote the quality improvement with the private and government hospitals cooperating each other with KQMH as it could be a good tool to improve the quality of the service across health sector.

2-4-7 Senegal Office of Family Health International (FHI)

Quality improvement program in service for the care for HIV positive and turberculosis patients in health centers and health posts is implemented mainly withUSAID fund. It supports in clarifying the issues concerned in each processs when using the service, implement and practice Quality Improvement Cycle: implementation of quality improvement using PDCA after reviewing the improvement measure to solve the issue and practice. Quality Improvement Cycle is implemented in 5 districts with the cooperation of the government quality program coordinator.

2-4-8 Senegal Office of Intra Health

Activities are carried out focusing on health posts across Senegal based on the fund including USAID, Bill & Melinda Gates Foundation, Pfizer Foundation, etc. In Tambacounda, Kédougou, and Matam States, they focus on malaria, and concerns are addressed comprehensively including family planning, maternal and child health, immunization, etc. in rest of other states. Choose 1 target district from all the states (2 in Dakar), and slowly increase the target districts that they plan to choose 2 disrtics per state from next year, and all the districts in the following year. Implementation period is from 2011 to 2015 with fund from USAID; 3.2 billion dollars and 10 million from Bill & Melinda Gates Foundation respectively for 5year period.

2-4-9 Mali Office of United States Agency for International Development (USAID)

Quality improvement activities in health services are conducted in community health centers in the district by consigning the tasks to local NGO.

Traget is across all the states in Mali, but that does not count all the districts within the states

Target districts were selected based on the reports from the resource who fully understanding the status of each district. They assess the activities in the health centers in target health block and give awards. 46 facilities have been awarded so far, and this year 6 facilities are to be awarded. Activity information was already obtained with the pilot hospital in Ségou, and information sharing was promoted through this supervisory trip.

2-4-10   European Union (EU) Burundi Office

It opened support office within Ministry of Health to implement support health sector in Burundi with 4 components (expanding consulting areas, improving hospital function, PBF, and healthcare quality improvement). In regards to healthcare quality, PBF manual and check list were developed under care demand and supply bureau, and established 'quality circle' targeting 8 provincial district hospitals and health centers.   This circle selects theme from 25 indexes provided in the check list to solve the problems.   This activity will be monitored and reviewed in future.

With 5S, director of demand and supply bureau in the Ministry of Health explained the outline so that its contents were understood.   It intends to review with this bureau director to introduce 5S lecture when conducting the seminar in the quality circle activity in future.

2-4-11   Agence belge de développement (Burundi)

It has sent technical advisors to Ministry of Health to support healthcare service improvement. Currently, it supports the systems in the Ministry of Health, paramedical seminars, and improving competence of staff in the district hospitals and health centers targeting 2 provinces, in particular, their emphasis on support for establishing referral system and improving community level health service.   It showed very high interest in 5S that it was reviewing the introduction of 5S session in the seminar for 4 hospitals and 18 health centers, with care demand and supply bureau director of Ministry of Health.

2-4-12   Agence Française de Développement (AFD) DR Congo

Main activities of AFD in DR Congo are following 2 activities.
- Competence enhancement of 2nd bureau of Ministry of Health
  Currently, 2nd bureau of Ministry of Health is assessed for competence enhancing of this 2nd bureau that assessment result will be compiled in March.
- Refurbishing facility, equipment, and machine in Ngaliema Clinic
  Support is implemented in repairing the infrastructure, garbage disposal, and oxygen and medical devices. Other than that, device maintenance, seminars for capacity building and management are to be carried out.   Mission for the hospital is to become a hospital even accessed by the poor.

Agence was told by hospital directors and 2nd bureau director of Ministry of Health about 5S-KAIZEN-TQM, and showed high interest in their very positive attitude.   Moreover, it

acknowledged the mutual effect which 5S-KAIZEN-TQM would bring to their support that it indicated intention of cooperating with this approach. Assessment result of 2nd bureau will also be shared to JICA once it is compiled.