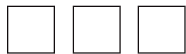
Internal Quality Assurance:

Lessons Learned from the PKMI Hospital Pilot Program in Indonesia

I. Background



A. PKMI Quality Assurance Program

The Indonesian Association for Secure Contraception (PKMI) has been actively developing and supporting an external monitoring and supervision system for long-term contraceptive methods[1] since 1984. This external quality assurance system consists of two major activities at the field level: 1) periodic meetings to review monthly activity reports submitted by clinics; and 2) site visits to clinics that are having problems to conduct a comprehensive review of facilities, equipment, clinic staff and clinical procedures. Provincial teams consisting of members from PKMI, the National Family Planning Coordinating Board (BKKBN) and the Ministry of Health meet periodically to assess quality and discuss feedback from clinic visits, as well as to select clinics to be visited. Selection of clinics is based on the extent of voluntary surgical contraception problems such as complications, failures, and incomplete procedures.

PKMI had been interested for some time in developing an internal quality assurance system to complement the external system. With encouragement and support from the BKKBN and the U.S. Agency for International Development-funded Private Sector Family Planning (PSFP) and Quality Assurance (QAP) projects, PKMI began developing such a program in May

1 Voluntary Surgical Contraception (VSC), IUD, Norplant

1992, when QAP staff member Wayne Stinson met with PKMI to plan a study to develop and test a new internal quality assurance model for hospital-based family planning programs.

The model, known as the Program Menjaga Mutu, or PKMI Internal Quality Assurance Program, consisted of a systematic team-based approach to improving the quality of long-term contraceptive services. The model was adapted from the current state-of-the-art in quality assurance as well as from the experiences of QAP in other developing countries. PKMI's internal quality assurance program was designed to encourage hospital staff to take responsibility for the quality of care in their hospitals by providing them with the skills needed to effectively resolve and monitor problems in the delivery of family planning services.

B. Pilot Test of the Hospital Internal Quality Assurance Model

The pilot test of the internal quality assurance program was planned to be implemented in several district-level hospitals (in Jakarta and West Java), since this is where most hospital-based family planning services are provided. The primary objective of the pilot test was to determine the feasibility of implementing PKMI's quality assurance model, especially with respect to the ability of teams to carry out steps in the quality assurance process and the effectiveness of the program in building and supporting the teams. The pilot program also sought to identify constraints to wider-scale implementation of the program, such as costs and staffing needs.

The study was conceptualized as a "case study" design involving individual monitoring and documentation of the experiences of 10 study hospitals. In 1994, seven other hospitals were added after they expressed a strong interest in quality improvement. The end of project date was extended from December 1994 to March 1995 to allow the newer hospitals time to work through a problem-solving cycle. Because one of the original 10 case hospitals dropped out at the start of the program, in the end a total of 16 hospitals participated in the PKMI internal quality assurance program.

PKMI played a dual role in this pilot project: firstly, providing management, administrative, and technical oversight for all aspects of the research study, and secondly, acting as an external consultative organization to the participating hospitals. PKMI received technical assistance in refining its quality assurance approach, developing the reference manual, and designing the training programs from QAP and PSFP.[2]

PKMI initially conducted orientation training for hospital directors to introduce them to the principles of quality assurance, the problem-solving process, and the benefits of improved quality to the hospital and its clients. PKMI also conducted basic skills training courses for up to three members of each hospital quality improvement team. For the research project, PKMI hired five teachers from the Faculty of Community Medicine of the University of Indonesia and seconded two of its own staff to serve as quality assurance facilitators who made regular visits to the hospital teams to assist them as they moved through the steps in the quality improvement cycle. PKMI did not, however, attempt to help hospitals develop an organizational or management structure to support a quality assurance program.

Each PKMI quality assurance facilitator was responsible for two to three hospitals, making monthly support/supervision visits. Initially, those hospitals that had functional teams were visited monthly by the PKMI facilitator. Beginning in January 1994, each of the hospitals was visited monthly by Dr. Azrul along with the facilitator assigned to that hospital.

PKMI supported all costs associated with training Hospital Directors and quality improvement teams and provided each hospital with a small amount of funds to support the activities of the teams, such as office supplies, photocopying and refreshments during the team meetings.

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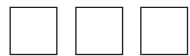
2 The Principal Investigator for the project was Dr. Azrul Anwar, the Director of PKMI. He was assisted by Ms. Amber Roestam and Dr. Dewi Soemarko from the Faculty of Community Medicine of the University of Indonesia, who were responsible for developing, testing and applying data collection forms and coordinated hospital visits. Additional faculty from the University of Indonesia and PKMI staff participated in the training and monitoring activities. Technical advisors to the project included Dr. Wayne Stinson and Ms. Maria Francisco from QAP and Patricia MacDonald from PSFP.

II. Design of PKMI's Internal Quality Assurance Program



A. Development of PKMI's Quality Assurance Manual

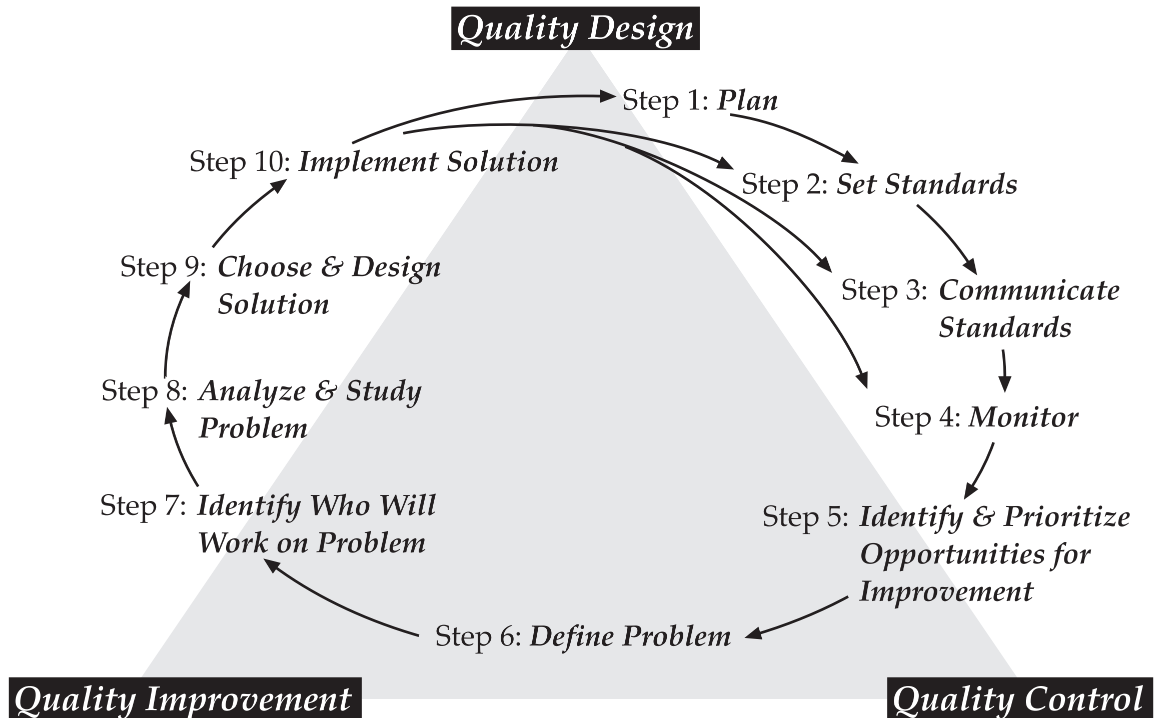
The Quality Assurance Manual formed the basis for the PKMI quality assurance approach by describing the basic concepts and techniques for implementing quality improvements. The manual was also used to develop the training courses and materials.

The first draft was produced during the months of June - September 1992 by staff of QAP. The quality assurance approach developed in the manual focused on quality improvement activities, a more narrowly defined set of activities than is typically encompassed by the 10-step quality assurance cycle advocated by QAP and illustrated in Figure 1. Because standards already existed for the hospitals' key contraceptive services (i.e., counseling, surgical procedures, infection prevention, etc.) (Quality Design) and because PKMI's external quality assurance efforts were monitoring program outcomes (Quality Control), the PKMI quality assurance program chose to focus on the steps in the Quality Improvement phase of the quality assurance cycle. PKMI defined its quality assurance approach as six steps: 1) build a quality assurance team, 2) identify a problem, 3) identify the causes of the problem, 4) identify a solution, 5) implement the solution (essentially the Plan-Do-Check-Act cycle), and 6) evaluate the outcome.

QAP staff Wayne Stinson and Maria Francisco spent a month in Indonesia in October - November 1992 to review the content and objectives of the draft with PKMI, PSFP, and an executive board comprised of senior members from PKMI and BKKBN. Selected tools and processes were pre-tested in several Jakarta hospitals to determine their appropriateness and the levels of facilitation needed to carry them out. The techniques described in the manual included brainstorming, criteria matrix, flow chart, fishbone diagram, pareto diagram, run chart and statistical measures.

Revisions were made to the manual by QAP staff between November 1992 and February 1993, and the final version was translated into Bahasa Indonesian soon after in preparation for the first training sessions which were scheduled for April 1993.

FIGURE 1. The QAP Framework



B. Training Activities

Four types of training activities were carried out as part of the pilot test: 1) Quality Assurance awareness seminars conducted by PKMI for hospital directors and department heads, 2) basic skills training in the use of quality assurance tools and techniques for up to three members of each hospital quality improvement team, 3) general quality assurance orientation seminars to introduce the concepts of quality assurance to a wider audience of hospital staff, and 4) specialized training for PKMI quality assurance facilitators or "coaches."

The Quality Awareness seminars were one-day orientations to the principles of quality assurance and the internal quality assurance model that were led by PKMI. The seminars were directed at Hospital Directors and Family Planning Program (PKBRS) Directors in the study hospitals as a means for strengthening commitment and organizational support for the quality improvement pilot test activities.

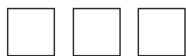
The Basic Skills Courses were five-day workshops to provide technical training in the tools and techniques of the PKMI approach. These workshops were attended by up to three members of the operational level quality improvement team from each hospital, made up chiefly of staff from the family planning program units (PKBRS) in each hospital. It was envisioned that the hospital staff trained by PKMI would in turn provide training and direction to the other team members who did not participate in the basic skills training. Training consisted primarily of lecture and small group exercises. Participant materials included the PKMI Quality Assurance manual as a reference guide, copies of overheads used in the presentations, and handouts for small group work. QAP staff Maria Francisco and Wayne Stinson also attended these workshops, along with PSFP's Patricia MacDonald, providing technical support to PKMI.

The first of the Basic Skills Courses was held April 19-22, 1993. A team of three participants (a doctor from the PKBRS or Obstetrics/Gynecology Department, one or two midwives or nurses, and one support staff) attended from Husada, Koja, Ridwan Meureksa, and Sukabumi Hospitals, and one participant attended from both Tanggerang and Marinir Hospitals. A second training was conducted April 26-29, 1993. Three participants attended from Budi Kemuliaan, Pelni Petamburan, and Bekasi Hospitals, two from Sukabumi Hospital, and three doctors from Marinir Hospital. In total, staff from nine of the original ten study hospitals were trained; one hospital dropped out prior to the training because they chose to use a different model for their quality assurance program. When PKMI expanded the Internal Quality Assurance Program to include seven other hospitals (UKI, Al Kamal, Harapan Kita, Tresna Pangestuti, Islam Klender, Fatmawati and Persehabatan), a third Basic Skills Course was conducted by PKMI staff in November 1993.

The third type of training activity envisioned in the pilot test design was to be a hospital-wide orientation seminar conducted in each hospital after the quality improvement teams were trained. Participants were to include all members of the hospital staff so that the Director and the quality improvement team members could introduce the objectives and activities of the internal quality assurance program. Seminars were to be led by the Hospital Directors and team leaders, although Dr. Azrul often did this. Six of the nine study hospitals (Marinir, Husada, Sukabumi, Bekasi, Budi Kemuliaan, Tanggerang) implemented orientation seminars during May and June 1993.

The final type of training was a specialized course entitled "Introduction to Coaching and Intermediate Skills" given by QAP Training Manager Elizabeth Mariani for PKMI facilitators assigned to monitor hospital quality improvement activities. The course was given in May 1994 after the project's first interim evaluation recommended that measures be taken to strengthen the technical and facilitation skills of PKMI monitors. In addition to the PKMI facilitators, the course was also attended by five participants from BKKBN and five from various groups within the Ministry of Health. This training enabled participants to better understand the role a coach plays in motivating and helping teams to apply and adapt quality assurance techniques. The course also covered effective communication and decision-making techniques, and provided more practice and experience with the quality assurance tools.

III. Implementation of the Internal Quality Assurance Program in 16 Hospitals



Information on the implementation of the quality improvement process was obtained from 13 of the 16 participating hospitals through interviews with PKMI and hospital staff during the interim evaluation in January 1994 and the final evaluation of the pilot project in January 1995 (information was not available for the other three hospitals). Case descriptions of the activities carried out in 11 of the hospitals are found in Attachment A.

Of the 13 hospitals, two did not initiate a problem-solving cycle (even though they each sent three staff to be trained at the first basic skills workshop). The principal reasons given for this by the team members were changes in the hospital and/or division directors and team leaders, who were usually doctors, being too busy to participate in the team's activities. Of those hospitals that began the quality improvement process, three did not complete the problem-solving cycle. Reasons most frequently given by the team members for not completing the cycle of activities included: the team leader was not available, lack of interest or the problem was not relevant to them, too much time required for meetings and activities, or the process was too slow.

At least one hospital expanded its quality assurance program beyond long-term contraceptive methods, either by having the existing team provide training to other teams within the hospital, or through a request to PKMI for further training and/or technical assistance. In this hospital, the Director was very interested in quality assurance and had been successful at motivating other units within the hospital to begin quality improvement activities.

A. Organization and Activities of the Quality Improvement Teams

Quality assurance was a new program for nearly all hospitals. Hospital directors who elected to participate in the pilot program were asked to assign staff members to be trained as part of the internal quality assurance program, with the understanding that these staff would constitute the core of the quality improvement team in each hospital. Members of the quality team were drawn from several units in the hospital including the family planning polyclinic, surgery and/or anesthesiology, the in-patient maternity unit, medical records and administration. These multi-disciplinary teams usually had between 8 and 13 members, with the head of the Obstretics/Gynecology department or another physician typically designated as the team leader.

Some hospital directors assigned team members prior to the selection of the first problem. This resulted in teams comprised of staff who were not all directly involved in the problem, often leading to disinterest, low

participation or drop-out by team members who did not feel they could contribute to understanding or resolving the problem. For most teams, about 75% of members participated fully in meetings and problem-solving activities. Teams usually required about 10 meetings to proceed through each of the steps in the process; one team met 29 times with nearly full participation from all its members. Team meetings lasted between 1 1/2 and 2 hours, with most teams taking the full 2 hours. Initial meetings were used for team-building and brainstorming about possible problems. Thereafter, the agenda consisted primarily of reviewing the work that individual team members completed between meetings, applying the tools, discussing findings, and planning next steps. Teams used more meetings to work through the first two steps (identifying a problem and understanding its causes) than were used in subsequent steps to develop, implement, monitor, and institutionalize solutions.

The factor that appeared to contribute most to the team's ability to function was the involvement of the team leader. If the team leader was not active in organizing meetings, motivating the team, and following up on the team's activities, the team quickly dissolved or become dysfunctional. External support and "push" from PKMI was also essential, and in some cases, critical for ensuring that teams remained together and moved forward with the problem-solving cycle.

Many teams reported that senior physicians did not have enough time or interest to dedicate to the quality improvement activities. In some instances, a staff physician or midwife was assigned to be acting team leader with responsibility for organizing meetings and informing key people.

Teams received varying amounts of internal support for their problem-solving activities. Only about half of the teams had the participation of departmental supervisors, and a third benefited from consultations by specialists within the hospital. Only four of the teams received feedback from either the unit or Hospital Director about the progress of their work. The support of the Hospital Director was a crucial factor in the team's success or demise. Some teams never got started, or stopped soon after starting, when the Hospital Director was not actively supportive of the activities. In several hospitals, even when the director was supportive of quality assurance, he was not always active in promoting its importance nor in encouraging the teams to continue their efforts.

B. Implementation of the Quality Improvement Process

Because a key objective of the pilot test was to determine how well the teams could carry out the steps in PKMI's internal quality assurance model, the final evaluation of the pilot program considered how the teams implemented the main steps in the model: problem identification, understanding the problem and its causes, and designing, implementing and evaluating solutions.

1. Problem Identification

Each team was free to select any problem related to the provision of family planning services; the problem could be clinical, non-clinical, or administrative in nature. Two hospitals selected clinical problems: side effects in IUD clients and post-operative wound infections in tubectomy clients. Six teams selected non-clinical problems: three related to clients' knowledge of family planning, two dealing with waiting time, and one dealing with new clients not returning for follow-up visits. Two teams selected administrative problems: incomplete medical records and the filing/retrieval system. Teams spent an average of 2 1/2 to 3 months identifying, prioritizing and selecting a problem to work on.

All teams began the problem identification steps by brainstorming a list of problems. Teams initially had difficulty with this step, and had to ask themselves such questions as: When is something a problem? What is a quality problem? Teams were encouraged to list anything that was said during a brainstorming session and then clarify and confirm these problems through group discussion and data gathering.

While the majority of hospital teams collected data to measure the magnitude of the problem, many did not gather the most appropriate information. For example, one team interviewed staff to derive a measure for the proportion of staff who felt that clients waited too long, rather than gathering data directly on the number of clients who actually waited and how long they waited. Such weaknesses make it difficult to evaluate the impact of a solution on a problem and underscore the need for improved guidance and/or skills training in data collection and use.

Nearly all teams used a criteria matrix to decide which problem to work on. Criteria included: the problem's importance, availability of technology

to solve the problem, and availability of resources. Some teams used the criteria matrix before collecting baseline data on the problem. However, they did collect data on a priority problem before proceeding further in the problem-solving cycle.

2. Understanding the Problem and its Causes

The basic skills training course introduced three methods for trying to identify the causes of a problem: the flow chart, the fishbone diagram, and the "5 Why's". Almost all teams used the flow chart followed by the fishbone diagram. Most teams constructed a high-level flow chart beginning with the client entering the clinic and ending with the client leaving. These flow diagrams had nearly identical steps: arrival, registration, payment, counseling, history-taking, examination, provision of a family planning method, and exit from the clinic. While some teams inserted more steps specific to their problem, very few teams actually constructed a detailed flow chart. While some teams were able to identify potential sources of problems in key activity areas such as counseling, other teams had difficulty analyzing the flow chart.

In constructing the fishbone diagrams, nearly all teams organized their ideas under the generic categories of manpower, money, methods, and materials. Most teams identified general causes rather than specific ones, often identifying the lack of resources or inputs as likely causes rather than processes which were not working. However, team discussions reportedly had more to do with improving the effectiveness of such inputs such as manpower, than with increasing the numbers of inputs. Teams may have had difficulty talking directly about 'processes', but indirectly talked of improving them.

After using these two tools, each team developed a short list of potential causes and collected data to verify them. Only in rare instances did teams determine the cause of a problem without using data (e.g., using only group discussion and consensus or a criteria matrix). Data collection methods included staff or client interviews, direct observation of services or equipment, and review of medical records.

When data had been collected and tabulated, teams used either the pareto diagram or criteria matrix to select priority causes. Some teams used both when the results of tabulating data did not reveal a clear priority among

the causes. Priority causes fell into three general categories: staff (not enough or poor knowledge and practice); equipment (not available or not existing in sufficient quantities); and processes (not implemented correctly or implemented in conjunction with other services). Table 1 summarizes the problems, causes, and solutions identified by the hospitals.

TABLE 1 Summary of Problems, Causes and Solutions Resulting from the PKMI Internal Quality Assurance Program

Hospital	Problem	Cause(s)	Solution
1 Al Kamal	80% of FP clients don't return for follow-up visit	Low knowledge, insufficient money, counseling, posters	Train staff, get posters, give counseling
2 Bekasi	7.5% of hospital inpatients receive IEC about FP		
3 Budi Kemuliaan	20% of FP clients' med. records are difficult to locate on return visits	Workers who file medical records want to go home quickly	Develop guides for filing medical records; training and dissem.
4 Fatmawati	92% of workers report that tubectomy patients wait too long	Team stopped work	
5 Harapan Kita	40% of medical records are incomplete	Behavior of nurses, doctors, others	Nurses check charts
6 Husada	7% of tubectomy patients have wound infections	No IEC materials	Get leaflets; provide education
7 Islam Pondok Kopi	95% of FP clinic users have low FP knowledge	Not enough staff to do counseling	Add staff to FP clinic to do counseling
8 Koja	Did not start		
9 Marinir Cilandak	50% of potential FP clients leave without receiving services	FP given on same day as immunizations	Increase FP/immun. from 1 to 2 days/month
10 Pelni	92% of FP clients don't know about voluntary sterilization	Few staff, low knowledge, not enough time	Rearrange FP clinic schedule
11 Persehabatan	Data not available		
12 Ridwan Meureksa	12% IUD users experience side effects (discharge, bleeding)	Insufficient IUD insertion equipment	Sterilize equipment immediately
13 Sukabumi	Multiple problem-solving cycles		
14 Tanggerang	Did not start		
15 Tresna	Data not available		
16 UKI	Data not available		

Many teams reported that the steps in this phase of the problem-solving process took the longest. On average, teams met 2-3 times to discuss and complete the steps.

3. Solution Design and Implementation

Teams brainstormed about ideas for alternative solutions and then used a criteria matrix to select one solution. Criteria used to select a solution differed from those used to prioritize and select a problem and included effectiveness (magnitude, importance, vulnerability) and efficiency (cost).

Although the majority of causes identified by the teams had to do with inputs, such as not enough staff and equipment, the majority of the solutions focused on improving processes. For example, three teams added and/or trained staff, while six teams made changes in the way tasks were being carried out. Of the latter six, two altered clinic schedules to make more time for services while the other four identified new activities and set up guidelines or procedures to implement them.

Teams spent from 3 to 6 months implementing and monitoring solutions, using the Plan-Do-Check-Act (PDCA) Cycle. Monitoring focused on assessing how well the activities of the solution were being carried out and their effect on the causes of the problem.

C. External Support

For most hospitals, the external stimulus and encouragement from PKMI facilitators appears to have contributed greatly to the team's motivation and ability to work through the problem-solving process. As described earlier, PKMI facilitators were assigned responsibility for motivating, coaching, and providing technical support to the hospital teams.

Each PKMI hospital monitoring visit lasted approximately 2-3 hours during which time the PKMI facilitators were supposed to review the team's progress and provide technical or administrative assistance as needed. Initially, these hospital visits were less frequent which may have been due, in large part, to time constraints on the part of PKMI staff, an inadequate number of facilitators, and assumptions made about the moti-

vation and capabilities of the teams. This may also have been due to the uncertainty or lack of confidence on the part of PKMI staff to act as facilitator, a role that they were not adequately prepared for at the beginning of the study. Later in the project, PKMI visits were better organized and more regularly scheduled.

Beginning in January 1994, each of the hospitals was visited monthly by the assigned PKMI facilitator accompanied by the Principal Investigator, Dr. Azrul. During Dr. Azrul's visits to the hospitals, meetings were held with hospital and family planning program (PKBRS) directors to continue building support and commitment to quality assurance. Together with the hospital quality improvement team members, Dr. Azrul and the PKMI facilitator reviewed the progress and work of the team, provided feedback, and discussed next steps. Formal meetings were held between Dr. Azrul and all facilitators at least once or twice a month. During these meetings findings from hospital visits were discussed and schedules planned for the next month's visits.

Whenever possible, the PKMI facilitators tried to plan their visits to coincide with the hospital's quality improvement team meeting. The intent was to assist the team either by observing and providing feedback about the use of tools, or by actively guiding the team through the process. It is perhaps not surprising then that the number of visits made by PKMI facilitators to each hospital corresponds almost exactly with the number of meetings held by the hospital teams. However, few of the visits by PKMI facilitators actually occurred at the time of the team meetings. This meant that the PKMI facilitator could review activities that were carried out since the previous visit, and could help plan the next steps, but could not intervene in a timely manner if there were problems.

Much of the motivation and work of the hospital teams appears to have been externally driven. When the team knew that PKMI would make a visit, they would hold a meeting and conduct one or more steps in the quality improvement process. This placed an enormous burden on PKMI to ensure that frequent contact and visits were made to each hospital. Much of the facilitators' time was spent calling hospitals and scheduling

visits, writing and sending letters, and then conducting the visits. Many of these visits were also heavily occupied with administrative tasks such as signing for money and collecting information for the research purposes of the pilot test. PKMI facilitators used special supervisory forms for recording information about the activities carried out by the hospital teams, including the dates and duration of team meetings, expenses incurred, number of team members, status of the quality improvement step being carried out, and results of the team's work.

D. Costs

PKMI supported all costs associated with orienting hospital directors and training quality improvement teams. In addition, PKMI provided each hospital with funding to conduct a seminar to orient all hospital staff to the problem-solving process and a small amount of money to support the team's activities, i.e., materials, photocopying, and refreshments during monthly team meetings.

Table 2 summarizes average PKMI expenditures for travel and other direct costs related to the training, problem-solving and monitoring activities per hospital. These costs averaged Rp 2,561,800 per hospital, or US $ 1219 (US 1 = Rp 2100).

It is important to point out that the real costs of the PKMI internal quality assurance model are much higher, since the figures exclude salary costs for PKMI personnel and personnel costs for hospital quality improvement team members. PKMI estimated that approximately 96 person hours of its staff time was spent on each hospital, and that the hospital quality improvement teams spent an average of 160 person hours of time in team meetings.

TABLE 2 Average PKMI Expenditures for the Internal Quality Assurance Program Per Hospital

Activity	Cost - Indonesian Rp	Cost - US $
Training		
Orientation for hospital director	315,000	150
Training hospital quality improvement team	915,000	436
One-day seminar for hospital staff	500,000	238
Subtotal	1,732,000	824
Expenditures by hospital teams		
Refreshments (Rp 26,800/meeting x 11 meetings[3])	294,800	140
Materials/photocopying[4]	100,000	48
Subtotal	394,800	188
Travel costs for PKMI facilitators		
2 visitors @ Rp 25,000/visit x 8.7[5] visits	435,000	207
TOTAL	**2,561,800**	**1,219**

IV. Conclusions and Lessons

A. Design of the Quality Assurance Model

Scope of the quality improvement cycle

Two key limitations in the PKMI internal quality assurance program design became apparent during the field test. First, the PKMI program focused only on problem-solving, with less emphasis on the planning needed to develop a more sustainable quality assurance program within each hospital. The program design did not fully consider how the quality improvement activities would relate to the management structure and the needs and expectations of the various levels of management within each hospital.

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3 Actual meeting expenses reported by the hospital teams ranged from Rp 12,500 to Rp 50,000 per meeting, at an average of Rp 26,800; total meetings reported by 12 hospitals equaled 133, averaging 11 per hospital.

4 Only two hospitals reported actual expenditures for stationery and other supplies, at approximately Rp 100,000 during one problem-solving cycle.

5 PKMI staff (usually the facilitator plus Dr. Azwar) made a total of 104 visits to 12 hospitals, averaging 8.7 visits per hospital.

The second limiting factor was the program's focus solely on family planning—PKMI's technical area of expertise. This limited work to only the PKBRS units and usually one outpatient clinic of the hospital. Of all the services provided within the hospital, family planning is usually not high on the list of priorities for hospital directors (unless they happen to also be director of the PKBRS). Thus, many hospitals are reluctant to buy into a quality assurance program which is not beneficial to many units, if not to the entire hospital.

- Hospital-based quality assurance programs depend on the support of senior management to be sustained. The establishment of a quality assurance programs within a hospital should include building commitment among hospital leaders; helping them articulate a vision of quality for the hospital; developing leadership and technical skills among a wider selection of hospital staff; and defining and developing a management structure to support quality assurance (beginning with the creation of a council or committee responsible for quality assurance activities). Programs that are limited to only certain types of services are less likely to be sustained.

PKMI QA Manual and Training

The PKMI manual provided a popular and useful reference for the quality improvement activities. The manual, however, rigidly defined problem-solving as a linear process and did not allow for much flexibility in deciding when and how to use the tools. Teams using the manual seem to have assumed they were supposed to use all the tools for the purpose and in the order described by the manual.

- Quality assurance facilitators and team members should not be overly concerned about using an exact sequence of tools as described by a manual or other reference document, but rather should be more mindful of the need to use and adapt an approach which ultimately gets results. Similarly, the basics skills training should be more flexible, for example, by allowing participants to choose the most appropriate tools, etc.

During the first technical or "basic skills" trainings, less emphasis was placed on data collection and analysis, interpretation results, and linkages between the steps, as it was expected that teams would receive "just-in-time" assistance when the need arose. The lack of these skills may have precluded effective problem analysis in many cases. Many teams had difficulty with identifying what kind of data would be appropriate and how to use the data (and data collection instruments) to study and monitor problems.

- Basic skills training should be strengthened by using pre-fabricated case studies, describing a relevant problem and tracing the flow of actions taken to resolve it, which effectively guide participants through the selection and use of QA tools and which demonstrate the need for and use of critical data.

B. Implementation of the Quality Improvement Cycle

Organization of the Quality Improvement Team

Due to budget constraints, only three members per team had received formal quality assurance training from PKMI, although teams grew to as large as 8-13 members within the hospitals. Some appointed team members were not concerned with the problem and did not need to be on the team. Team leaders were generally not well prepared for their role as a team leader prior to the start up of activities. Physicians, by and large, did not function well as team leaders; many dropped out primarily because they were too busy or not interested. Many teams were not fully participatory and did not include all members in discussions and decision-making; decisions were often made only by the team leader.

- Team membership may need to be adjusted to reflect the task at hand. It may be helpful to have a broader representation at initial meetings to help identify an appropriate problem. Once the problem is identified, team membership should be adjusted to reflect actual involvement with the problem chosen.

- All team members should be given some degree of basics skills training in the hospital. Such training should also include team-building elements such as understanding and clarifying the roles of individual team members and more effective communication and decision-making techniques.

Problem-solving Process

All steps in the problem-solving process were implemented to some degree by most of the teams. According to team members, the most difficult and time-consuming steps were to clearly identify a quality problem and then understanding the problem and its causes. Often teams produced problem statements which were too vague or complex, an error which may have been offset by the implementation and/or completion of an initial quality assessment. In many instances, service delivery standards were not used by the teams to assess quality or identify problems, though in others, team members formulated and then gained consensus on them before proceeding. The least well implemented steps were those surrounding the collection and analysis of data.

- The problem-solving process needs to incorporate better use of standards i.e., as a basis from which to evaluate performance and measure improvement. Simple quality assessments might be done to help staff acknowledge the existence of problems as well as provide useful quantitative measures of quality.

C. Support for the Quality Improvement Teams

Internal support

Support from the Hospital Director was a key factor in the overall success of the team's functioning. Support and encouragement from the director motivated the teams and led to some degree of ownership for the quality assurance program within the hospital. If the director was supportive, it was more likely that the team would function and proceed through the problem-solving steps. But when the director was not outwardly involved or supportive, the teams stopped functioning or did not start at all.

From the outset, PKMI recognized the critical role of senior management in implementing quality assurance, though their specific roles and the responsibilities were not formally articulated. Selection of hospitals was based on their agreement to try out the program. Participating hospital directors and family planning program directors were then given an orientation and/or were included in the team training. Some months later, however, several hospital directors were reassigned to other hospitals, and with the change in leadership, teams which had already been formed could not move forward with activities.

- The recurring problem of staff turnover, particularly among senior management, underscores the need for consistent leadership and institutional support to sustain quality assurance programs. Strengthening commitment among hospital directors and other division heads will help to ensure that quality assurance awareness and/or knowledge can be sustained despite the loss or change in staff. Directors should have specific roles as part of a quality assurance program and be given responsibilities for which they are held accountable. In addition, quality assurance programs should begin only in those hospitals which express a true commitment for quality assurance efforts.

External monitoring/coaching

PKMI's visits to the hospitals were regularly planned and carried out. Yet, PKMI visits did not always coincide with the dates and times of the team's meetings. PKMI facilitators then were limited to conducting a retrospective review of the team's work since the previous visit and had difficulty intervening if several steps had already been done incorrectly or incompletely.

- To provide ongoing support to quality improvement teams with a hospital, an individual within the hospital should be designed as the internal quality assurance facilitator who could be adequately trained to serve as an in-house coach and an ongoing source of motivation and support. This facilitator would be better able to provide timely coaching of teams as they worked through the problem-solving steps and reduce reliance on outside technical guidance and stimulus.