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**Towards the Documentation and Evaluation
of the PCI Immunization Project
in the Maluku Province, Indonesia**

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Storyline for Documentary Film

ACRONYMS

ALS	Adult Learning Service
BASICS	Basic Support for Institutionalizing Child Survival Project
DPT	Diphtheria-pertussis-tetanus (Vaccine)
ITI	Immunizer Training Immunizer
MOH	Ministry of Health (Indonesia)
NGO	Non-governmental Organization
PBS	Public Broadcasting System
PCI	Project Concern International
PVO	Private Voluntary Organization
TBA	Traditional Birth Attendant
TT	Tetanus Toxoid
USAID	United States Agency for International Development

I. EXECUTIVE SUMMARY

A. Purpose

As part of its small grants program for PVOs, BASICS has given a purchase order to Project Concern International (PCI) to document and evaluate its immunization program in the Maluku Province of Indonesia. The purpose of this trip was to provide technical assistance to PCI to implement the purchase order; especially to help evaluate the peer immunizer training program and develop a story line for a documentary film of the immunization program that can be used to prepare proposals for making such a documentary.

B. Activities

BASICS Technical Officer Bart Burkhalter and BASICS consultant Steve Talley traveled to the Maluku Province of Indonesia where they worked with PCI Project Director Steve Robinson and the PCI staff. They visited health clinics and field programs in several districts where they observed activities, interviewed health personnel and obtained data for analysis. Burkhalter held a final debriefing with USAID/Jakarta.

C. PCI Program Description

PCI is implementing a child survival project in Maluku Province with a USAID child survival grant. The PCI project provides support and technical assistance to the provincial and district health departments rather than direct health services. The immunization component is the principal focus of the project and includes six activities: cold chain management; peer immunizer training; intersectoral cooperation to increase services; computerized local monitoring; neonatal tetanus control with a lifelong TT card; and social marketing involving TBAs, schools, mass media, churches and mosques.

The peer immunizer training program, referred to as the immunizer-training-immunizer (ITI) program, was established to improve low performing health centers and to help inexperienced immunizers. The ITI program sends capable nurse-immunizers from nearby health centers to the host health center for a week or two to assist the host immunizer with on-the-job training. Both the visiting immunizers and the host immunizers were selected by district health officials. PCI provided funding in 1993-1994 and an assessment form that the visiting immunizer used to determine the strengths and weaknesses of the host health center and immunizer initially, and to judge improvement at the end of the training. Some techniques taught included injection techniques, refrigerator management, follow-up of no-shows, planning visits to villages, presentations to mothers, working with volunteers, and recording and use of information.

D. Conclusions

The conclusions from this trip are made in the spirit of work in progress. Final conclusions will be developed by PCI and communicated in their final report. The conclusions here are in three groups — evaluation of the peer immunizer training program; story line for the documentary film; and general conclusions about the information system, PCI's approach to child survival in Maluku, and the potential of the approach used develop a to documentary film.

Evaluation of peer immunizer training program:

1. The ITI program was implemented in 15 of the 116 Maluku health centers with immunization programs in 1993-1994. Performance data was obtained on nurse immunizer knowledge, nurse immunizer practice and coverage for DPT-1, polio-3 and measles (as indicated by reported age-appropriate doses given as a percent of target population).
2. During the trip, coverage data was obtained on 11 of 15 program health centers for the 24 month period bracketing the ITI training programs, as well as the total for all health centers reporting immunization data during that period (108 health centers). This data shows that in the program health centers, the reported doses given increased by about 30 percent in the 12 months following the training program relative to the 12 months before the program, while the corresponding figures for the non-program health centers showed essentially no change.
3. The 30 percent increase reflects a combination of improved reporting and an actual increase in doses given. Other potentially confounding factors that could threaten the validity of this finding were investigated, but found not to be important.
4. The ITI program is designed to improve poorly performing health centers and to provide assistance to inexperienced immunizers. Thus, the 30 percent increase cannot be generalized to all health centers.
5. Preliminary review of the data on immunizer knowledge and practice supports the conclusion that the ITI program was effective.
6. The immunizers interviewed believe the ITI training was valuable, more so than the formal training course they received, because the one-on-one format allows them to admit what they don't know, and the on-the-job format addresses their real problems and allows them to practice what they learn.
7. Preliminary analysis of the cost data indicates that the ITI program was relatively inexpensive, on the order of \$65 per immunizer trained, exclusive of immunizer wages.

8. As a result of the low cost and favorable reports, the province and at least one district health office are including the program in their own budgets.

Story line for documentary film (attached as appendix):

9. A strong documentary is possible, based primarily on the human aspects of the children, mothers and communities, and secondarily on the innovative solutions generated by the collaboration between PCI and the government health departments.
10. Audiences for the documentary can include local and national health officials in Indonesia, multinational donor organization, schools of public health, and possibly public television.
11. The documentary should include several program components, including the school children promotion, peer immunizer training, TBAs, and the radio quiz show.
12. The format should allow modules of the various components of about 10 minutes each to be used in short, focused presentations, as well as the full show of about 30 minutes.

General:

13. The immunization information system was a useful asset in this evaluation. Provincial and district health officials find it crucial for management. More investigation is needed with respect to the target figures (denominator).
14. The approach used by PCI in Maluku in which it collaborates with the district and province health departments to identify problems and find solutions rather than providing direct services to a limited number of households, may be a good model for future PVO child survival activities. It appears to have greater potential for sustainability and amplification of effort than direct services.
15. Documentaries based on careful field planning are often higher quality and easier to fund than those without the advance field work. The approach used by BASICS in this project, in which seed funding was provided to develop the story line which can then be used to seek funding, may well be a very cost-effective way to generate good documentaries on child survival.

II. INTRODUCTION

Project Concern International (PCI) has been an implementing partner in USAID's PVO child survival program in Indonesia since 1985. PCI's Indonesian program began with a small beneficiary population in five districts of one province. It has grown to province-wide programs in three provinces which have implemented innovative approaches that have been adopted by the central Ministry of Health for nation-wide implementation. One of PCI's best child survival activities is the immunization component of its child survival project in Maluku Province, which has the objective of increasing province-wide immunization coverage. This effort builds on experiences and lessons learned in PCI projects in Sulawesi and Riau Provinces.

The Province of Maluku is located in eastern Indonesia and consists of more than 1000 islands spread across an area of 851,000 square kms (roughly the size of Pakistan). The majority of the land mass is hilly or mountainous. The 1990 population of Maluku was 1.84 million according to the census, with 275,000 in the capital of Ambon. There are 133 indigenous languages in Maluku. Unlike the rest of Indonesia, 50-60 percent of the population is Christian, the rest being primarily Moslem or animistic. Major products include fish, timber, pearls and spices (cloves, nutmeg, cinnamon). The province is organized into five districts, and by 1995 was served by 153 health center areas.

PCI's immunization project in Maluku is implemented in partnership with the Ministries of Health and of Education, and includes six components:

1. Cold chain management that includes systematic survey and database
2. Peer immunizer management training
3. Intersectoral cooperation aimed at increasing the number of *Posyandu* providing child survival services
4. Computerized local monitoring of coverage
5. Neonatal tetanus control, including life-time TT vaccination cards for women
6. Social marketing using mass media, churches, mosques, TBAs, and elementary schools

After three years, an evaluation found that the proportion of children completely immunized by their first birthday increased from 45 percent to 60 percent, and documented coverage with two doses of tetanus toxoid in pregnant women increased from 11 percent to 23 percent, probably due to the PCI program. The Ministry of Health is considering implementing many of these strategies nation-wide, in part due to the strong demonstration of feasibility and effectiveness by the PCI Maluku project.

Immunizers are trained nurses that have been given the responsibility for managing the immunization activities of a health center. They are a key part of the government's immunization program. PCI/Maluku has developed a peer immunizer management training program, sometimes called the immunizer-training-immunizer (ITI) program, to improve the immunization performance of immunizers and their health centers. The ITI program identifies

immunizers who have performed well and after providing specialized management training, puts them together with immunizers who have not performed so well. The successful immunizers travel to the area of less successful immunizers where they work side-by-side with their less successful colleagues for about two weeks, so that the less successful immunizers learn good habits on the job from their peers. Preliminary evidence suggested that the ITI program is achieving significant improvements in the performance of less successful immunizers (Robinson SJ, "Innovations for increasing immunizations coverage." In: Storms D, Carter C & Altman P (eds), *Community Impact of PVO Child Survival Efforts: 1985-1994*, Conference Proceedings, Bangalore, India, October 2-7, 1994. Baltimore: School of Hygiene and Public Health, The Johns Hopkins University, pp 27-30.)

In order to achieve its mission of improving child survival in the developing world, one of BASICS' priority strategies is to increase the effectiveness of child caretakers and front line health workers through behavioral change. To accomplish this, BASICS intends to investigate models that are successful at the grass roots level, and then develop, test and disseminate innovative tools that promote widespread and appropriate adoption of successful models.

One of the models that appears to have been successful in diverse circumstances is the peer transfer of know how, often using positive deviance techniques. This approach identifies successful local practitioners (caretakers and front-line health workers) and uses them to improve the performance of less successful local practitioners. Use of successful peers is an approach that is particularly valuable in situations where the subtle details of local conditions are very important for success. BASICS is interested in investigating specific successful applications of this approach.

As part of its NGO/PVO Support Program, BASICS is working with PCI to document and evaluate the ITI program in Maluku. To accomplish this, BASICS has provided funds to PCI in the form of a purchase order and is also supplementing the purchase order with direct technical assistance to PCI to help with this effort. This report describes a technical assistance visit by BASICS Technical Officer Bart Burkhalter and BASICS consultant Steve Talley to Indonesia to assist PCI with the documentation and evaluation of the ITI program.

III. TRIP ACTIVITIES

Burkhalter and Talley traveled to Indonesia during the period January 23 - February 12, 1996. Burkhalter focussed on the evaluation methodology of the ITI program, while Talley developed the story line for a proposed documentary of the entire PCI immunization program in Maluku. Burkhalter and Talley were based in Ambon, the capital of Maluku Province, and also traveled to Ternate, the capital of North Maluku District and to the island of Halmahera. Steve Robinson of PCI and local PCI staff accompanied Burkhalter and Talley on these visits.

Visits were made to health centers, villages and neighborhoods, and to various components of the immunization program, including *Posyandu*, school immunization promotion programs, TBA meetings (including a birth), and the studio of the immunization radio quiz show. Interviews were held with district and sub-district health officials, health center staff including host immunizers and training immunizers, and mothers. Burkhalter probed data quality issues and investigated confounding factors that might threaten the validity of evaluation conclusions. Talley assessed various personalities for possible inclusion in the documentary, as well as practical filming issues such as availability of electric power supply and lighting. Burkhalter and Barbie Rasmussen, PCI Country Director, debriefed USAID staff at a meeting in Jakarta on the way out of Indonesia.

IV. RESULTS

A. Description of Peer Immunizer Training Program

Indonesia's preventive health care services are largely delivered through a network of health centers, which are next to the smallest service areas within the hierarchy of provinces, districts, sub-districts, health service areas, and sub-health service areas. Health centers use a variety of strategies to provide immunizations to women and children in their catchment areas, including monthly visits to villages and neighborhoods to weigh, educate and immunize mothers and children ("*Posyandu*"), as well as the creation of a special immunizer position on the health center staff to manage the health center's immunization program. In the *Posyandu* program, health center staff work closely with trained community health volunteers. The immunizers, who typically have a ninth grade education, three years of nursing training in a hospital, several years of nursing experience, and a one week government course on immunization techniques, have full responsibility for implementing the health center's immunization program, including managing the cold chain, giving vaccinations at the health center and *Posyandu*, recording and reporting data, and helping to organize the *Posyandu*. In Maluku the immunizers from each district meet quarterly for several days.

The immunizer-training-immunizer (ITI) program was established to provide on-the-job training to immunizers who were not performing well as indicated by low or poorly reported coverage data, or who were inexperienced. The ITI program was initiated in Maluku in 1993 and implemented in 15 health centers throughout the province during 1993-1994. Each of the five district health offices in Maluku identified two or more health centers to receive the ITI program (referred to here as "host health centers" and "host immunizers"), and also selected the immunizers to give the trainings (referred to here as "trainers"). Most of the trainers came from nearby health centers in the same district (to reduce travel cost) and were as similar in geography and other conditions to the host health center to the extent possible. All trainings were held at the host health centers for a period of one to two weeks. Usually the trainer and host immunizer were acquainted before the ITI training because of the quarterly district meetings, and sometimes the visiting trainer stayed in the home of the host immunizer.

During the training, instruction and practice was provided on techniques to improve quality (e.g., operation and maintenance of the refrigerator, proper storage of the vaccines in the refrigerator, injection techniques), coverage, and operation of the information system. Some strategies for increasing coverage included reinforcing knowledge that it is appropriate to vaccinate when the child is ill with fever or diarrhea; during a *Posyandu* using the record book to identify no-shows who are due for a vaccination and tracking them down that day to give the vaccination; giving public presentations at *Posyandu* to inform and motivate mothers about immunizations (for example, explaining that a slight fever in the child is normal after some vaccinations and should not be cause for failing to complete the full course of immunization), and increasing attendance at *Posyandu* by better scheduling and closer cooperation with community volunteers and leaders and sub-district officials.

B. Findings and Conclusions

With regard to the evaluation of the peer immunizer training program:

1. The evaluation will compare the performance of the 15 health centers that participated in the ITI program in 1993 and 1994 to the performance of the other health centers in the province that reported immunization information, but did not participate in the ITI program during that period. Performance is measured by indicators of coverage (DPT-1, polio-3, measles) and of knowledge and practice of immunizers. Changes in the number of reported age-appropriate doses given will be used as an indicator of change in coverage. Information on *Reported-Doses-as-%-of-Target* will also be analyzed.
2. During the trip, data on *Reported Age-Appropriate Doses Given for DPT-1, Polio-3 and Measles* was obtained from 11 of the 15 ITI health centers for the 12 months before and 12 months after the ITI training, as well as corresponding summary figures for all health centers in the province that reported immunization data during that period. The reported doses given increased by about 30 percent in the 11 ITI health centers following ITI training. In comparison, essentially no change occurred during the same time period in doses given in the 94 non-participating health centers reporting data.
3. The 30 percent increase reflects a combination of improved reporting and an actual increase in number of doses given. Other potential factors that could threaten the validity of this conclusion were investigated, but found not to be important. The discarded factors include change in immunizer, seasonal effects, delayed reporting and data heaping, one-time effect of campaigning during the training week, and the other components of the PCI immunization program such as the TBA and school program.
4. The health centers that received the ITI program were selected in large part because of low coverage. It is a program aimed at lower performing health centers. Therefore the increase observed would not necessarily apply to other health centers.

5. Information on changes in immunizer knowledge and practice was obtained earlier by PCI, during the period when the ITI trainings were occurring. Preliminary analysis of this information for ITI and non-ITI health centers, both before and after the ITI trainings, generally supports the conclusions summarized above.
6. All of the immunizers interviewed believed the ITI training was very valuable and clearly superior to the formal one to two week training they received on immunization theory. The main reasons given for this opinion included the one-on-one nature of the ITI training which allowed them to discuss what they don't know more easily than the classroom format of the formal course, and the chance to practice solutions in the field.
7. The cost of the ITI trainings was surprisingly low, approximately \$65 per immunizer trained, not counting PCI administrative costs or the wages of the immunizers. PCI paid for the 1993-1994 ITI program.
8. As a result of the low cost and general positive feedback on the ITI program, the province, and at least one District Office of Health (North Maluku) have decided to include the program in their own budgets.

With regard to the documentary film:

9. There appears to be the potential for a strong story here, based on the human aspects of the mothers, children and villages, and secondarily on the innovative process by which the public-private-community collaboration has identified problems and solutions.
10. Several audiences exist for such a documentary, including health officials at the national, provincial, district and health center levels within Indonesia and possibly other developing countries, multinational donor organizations, public health education classes, and subscribers to the adult learning service of public television.
11. The film should include several components of the immunization program, certainly to include the school promotion, the peer immunizer training, the TBA component and the radio quiz show.
12. Careful consideration should be given to using a format that allows the film to be shown in short modules (about 10 minutes) as well as the full story (about 30 minutes). This will enable the material to be used in shorter, focussed presentations to busy health officials, as well as longer shows suitable to educational curricula and channels.

General:

13. The information system developed by PCI proved to be a very valuable asset in the undertaking of this evaluation. It appeared to be the primary management tool of the

provincial and district health officials for the immunization program ("Lost without it; like a ship without a compass."). Its accuracy and usefulness should improve with time as it is used. The procedure for developing the target populations for health centers should be investigated in order to increase understanding about and accuracy of the estimated targets.

14. The approach used by PCI in Maluku in which it collaborates with the district and province health departments to identify problems and find solutions rather than providing direct services to a limited number of households, may be a good model for future PVO child survival activities. It appears to have greater potential for sustainability and amplification of effort than direct services. Several local health officials commented on the success of this collaborative approach, noting the contributions PCI had made in problem identification through its various systematic surveys (e.g., cold chain management survey, child mortality survey), in helping them to develop innovative solutions to the problems, and also noting the value of PCI having an independent source of funds to do these things on a small scale.
15. Documentaries based on careful field planning are often higher quality and easier to fund than those without the advance field work. The approach used by BASICS in this project, in which seed funding was provided to develop a story line which can then be used to seek funding, may well be a very cost-effective way to generate good documentaries on child survival. The involvement of a PVO like PCI provides credibility and field access; the involvement of BASICS provides scientific credibility with skeptical funders; and the seed funding can help attract the most successful producers to the topic in an environment in which many opportunities are competing for their attention and talent.

V. RECOMMENDATIONS AND FOLLOW-UP ACTIONS

1. Complete the evaluation of the ITI program (after obtaining the required data on the four health centers that participated in the 1993-1994 ITI program, but were not included in the eleven reported on here) after analyzing the data from the before and after assessments and the cold chain management survey on immunizer knowledge and practice, and cost data.
2. Complete the story line for the documentary.
3. Prepare a draft article on the ITI program for submission to a journal.
4. BASICS should foster and participate in discussion on the value of the "technical assistance" approach used by PCI in Maluku (as an alternative to direct service child survival projects by PVOs) with PVOs, USAID and JHU/CSSP.

5. **BASICS should pursue the application of the Maluku immunization monitoring system in other areas of Indonesia.**
6. **BASICS should seriously explore providing seed money to develop story lines for other successful child survival activities, where such will be used to seek funding for documentary filming from external sources.**

VI. PERSONS CONTACTED

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APPENDIX

Storyline for Documentary Film

SAVING MOTHERS AND CHILDREN IN MALUKU

A Documentary Educational Film

**Steven R. Talley
Banda Productions
February 23, 1996**

Summary of Proposed Documentary Film

1) **PURPOSE:** To use the power of visual images and human-interest stories to educate key audiences about the success of innovative strategies developed by Project Concern International which have been successful in improving infant and maternal immunization coverage and overall health and survival in the province of Maluku, Indonesia.

2) TARGET AUDIENCES

- Decision-making officials of the Indonesian government, many of whom have difficulty obtaining a realistic picture of the problems and successes in areas they administer
- Officers of multilateral international aid organizations concerned with child survival, women's health, and overall health care in the developing world
- Undergraduate and graduate students studying international public health or medical anthropology
- Subscribers to the PBS Adult Learning Service (ALS) and, perhaps, the public television broadcast audience

3) CONCEPTUALIZATION

The film will be shot on videotape in a classic documentary style. It will feature a strong narrative storyline which illustrates a series of challenges faced by Project Concern in Maluku, and showing how Project Concern, in partnership with Indonesian health and education officials, developed highly innovative strategies at the local level which successfully met those challenges. The story will be told through the words and actions of engaging, articulate individuals, Indonesians and Americans, who are designing, implementing, and benefitting from these successful strategies.

The film will be designed as a half-hour educational film for classrooms and for public television's Adult Learning Service. However, each segment of the film will also be edited into separate ten-minute videos. These may be shown individually or in combination as part of a presentation to busy government and multinational organization officials who may not be able to devote a half hour of time to watching the entire film.

SAVING MOTHERS AND CHILDREN IN MALUKU

The film opens in Rutong, a small village on the south coast of Ambon, one of the 1,000 islands scattered between Sulawesi and New Guinea which make up the Indonesian province of Maluku, an area the size of Pakistan straddling the Equator.

Amid the lush jungle and beautiful beaches that surround their homes, the villagers of Rutong are performing one of the intricate, exquisite village dances that has earned them fame throughout Ambon. As they dance, a map of Maluku dissolves through briefly.

The NARRATOR explains where Maluku is, and that it was once the famed "Spice Islands" which supplied the world with nutmeg, cloves and cinnamon, over which the European colonial powers fought bitter wars. Today, Maluku remains blessed with stunning unspoiled beauty, abundant natural resources, and rich cultural traditions. But for all its blessings, this seeming paradise is plagued by a serious health crisis.

As happy parents and children watch the Rutong dancers, the narrator explains that Maluku has some of the poorest infant and maternal health care in all of Indonesia. Infants in the first year of life routinely die from treatable respiratory infections like pneumonia and bronchitis. Others die of malnutrition worsened by dehydrating diarrhea. Neonatal tetanus and malaria claim many more lives. Out of every 1,000 babies born in Maluku, between 50 and 60 will die before the age of three - ten times as many as in the United States.

Over images of mothers watching the dance, the narrator continues: One reason for Maluku's tragic infant mortality rate is the poor health of mothers. More than half of the pregnant women in Maluku are anemic and suffer from poor nutrition, malaria, and the debilitating effects of frequent pregnancies. Most are not vaccinated for neonatal tetanus. More than two-thirds of Maluku's births are delivered not by doctors or midwives but by traditional village birth attendants with no medical training, whose delivery techniques include cutting umbilical cords with an unsterilized piece of sharpened bamboo.

The scene shifts to a Posyandu (a contraction of Pos Pelayanan Terpadu, or "Integrated Service Post") a community-run health clinic held every month in villages throughout Indonesia. Mothers bring their infants in to be weighed, receive immunizations, and have their growth rate, nutrition and general health evaluated and recorded in a special "Road to Health" card by visiting medical staff from the nearest government health center (Pukesmas). The narrator explains that every Posyandu is staffed by an immunizer, a midwife, and village volunteers (kaders, Indonesian for "cadres,") who offer immunizations and health education to mothers and infants. In theory, a system exists in Maluku for immunizing infants even in the remotest villages.

But in 1990, Indonesian health officials reviewed Maluku's bleak infant and maternal health statistics, and noted a disturbing fact. Thanks to the Ministry of Health's aggressive immunization campaign, 80% of the infant population in most provinces of Indonesia has been immunized

against common childhood diseases. But in Maluku, less than 50% of the infant population had been immunized.

Since the Ministry's immunization campaign had been no less aggressive in Maluku than elsewhere, health officials were puzzled and deeply concerned by these low results. They were determined to discover why Maluku had lagged so badly behind the rest of the nation.

DR. RISTIANTO SUGIONO, a Ministry of Health official in Maluku, explains that "while we possessed the personnel and infrastructure to investigate the situation in Maluku, we lacked the money and the technical expertise to carry out a successful analysis and implement solutions." Accordingly, the narrator explains, the Ministry of Health formed a partnership with Project Concern International, a San Diego-based health care PVO (Private Voluntary Organization), which had carried out highly successful health care programs in other parts of Indonesia. Together, PCI and the Ministry of Health set out to discover the reasons for Maluku's infant and maternal health care crisis, and how best to remedy them.

In an on-camera interview, DR. STEVE ROBINSON, director of the Maluku immunization project, explains that "when PCI and the Ministry of Health began to investigate why Maluku's immunization rates were so low, three reasons quickly became apparent: poor attendance at Posyandus by mothers and infants; poor performance by many of the immunizers responsible for carrying out the Ministry's immunization campaign; and poor infant delivery techniques and postnatal health care throughout Maluku. The challenge faced by the PCI-Ministry of Health partnership was to devise and implement innovative and effective solutions to each of these problems."

IMPROVING POSYANDU ATTENDANCE

The scene shifts to a cavernous radio sound stage in Ambon, capital city of Central Maluku Province. A most unusual quiz show is taking place. Two teams of eager contestants try to beat each other to the buzzer and win prizes by correctly answering questions thrown at them by the announcers. The contestants have spent weeks studying hard to prepare for the show. They are all kaders, the women from villages throughout Maluku who volunteer for service in their local Posyandus. The questions they must answer are about infant diarrhea, neonatal tetanus, proper immunization schedules, and other aspects of maternal and infant health care. The show, broadcast once a month throughout Maluku, has become a popular media event. It was invented by PCI as one method of improving Posyandu attendance in Maluku.

Steve Robinson explains: "Our initial surveys showed that, on average, only 30% of the children under two in Maluku villages were brought to the Posyandu by their mothers on a regular basis. They also showed that the principal reason mothers weren't bringing their children to the Posyandu was that they didn't know how the health services provided by the Posyandu could improve the health of their families. In other words, the Posyandu needed a public-relations campaign. We had to devise ways to educate mothers about the benefits of immunizing their

children. We had to reach women in towns scattered throughout Maluku's 1,000 islands. The radio quiz show was one solution we invented."

Over more scenes of the quiz show, the narrator continues: Because the village kaders selected as contestants have to study hard to win prizes, they as well as the listeners are educated by the show - a critical improvement, since kaders are the principal point of contact between the Posyandu and the community it serves. Moreover, listeners who send in their names may be chosen to answer a question by telephone and win a prize. All prizes are health care and hygiene products donated by the Unilever Company.

Steve Robinson: "The quiz show was a good start in our "social marketing" campaign to increase public awareness of the Posyandu. But it wasn't enough. While it worked well in Maluku's larger cities and towns, many remote villages don't get radio or television. 65% of Maluku's villages cannot be reached by wheeled vehicles. Some of these villages are hard to get to even in good weather, and during Maluku's two rainy seasons storms and high seas can cut them off from the world for weeks or even months at a time. How were we to teach mothers in these villages about the value of the Posyandu? We had to find a way to get our message to every village in Maluku, no matter where it was. And by thinking creatively, we succeeded."

The scene shifts to a neat but spartan classroom in a village elementary school. Fourth-grade students are busily studying an unusual curriculum: infant and maternal health. They learn to weigh infants with the portable Dacing scale used in every Posyandu. They practice mixing oral rehydration solution, which can make the difference between life and death for an infant with diarrhea. In a workbook designed by PCI and Indonesian educators, they complete assignments on immunization, nutrition, and childhood diseases.

This is Maluku's Elementary School Posyandu Program, the strategy devised by PCI to educate mothers living in remote island villages about the need for infant immunizations and proper health care.

Steve Robinson: "The School Posyandu Program grew out of our realization that thanks to the Indonesian government's efforts to wipe out illiteracy, every village in Maluku, no matter how remote, had a school and a schoolteacher. So a program based in schools was guaranteed to reach everywhere. We focused on fourth and fifth-graders because they were old enough to influence their mothers but still young enough to have infant siblings in need of the Posyandu. By teaching them about infant immunization and health care, we are not only reaching their mothers, we're reaching the next generation of parents before they become parents. So the School Program has a present and future benefit."

The School Program's most innovative - and effective - lessons are learned outside the classroom. We follow one student home with homework assignments which must be completed with his/her mother's participation. Together, mother and student complete assignments such as a three-day history of the family's diet, and writing a story about a family member who has suffered from an

immunizable disease. The student also shows his/her mother an important lesson learned in school - how to make the oral rehydration solution that could save the life of a baby brother or sister suffering from diarrhea. Together, they go over the infant sibling's "Road to Health Card." It is the student's responsibility to see if the growth, immunization and health records on the card have been accurately kept.

But the students' work is only beginning at home. We follow our student as he/she completes a third School Posyandu assignment - a "mini-survey" of homes in his/her neighborhood. The student asks mothers how many Posyandus they and their infants have attended, how many immunizations their infants have received, how long they breast-fed their infants, and how they cope with infant diarrhea. They tell the mothers what they have learned about the importance of immunizations and bringing infants regularly to a Posyandu for health monitoring.

Over scenes of the student reviewing a family's "Road to Health" card with a neighboring mother and her infants, the narrator explains that each student in the Posyandu School Program is given the responsibility of ensuring that two children under three attend the Posyandu each month over a 16-week period. During those 16 weeks, the student must review the two children's "Road to Health" cards and make sure their mothers are updating them with changing weights and new immunizations. They must also ensure that their mothers receive a neonatal tetanus vaccination at the Posyandu if they haven't already.

We follow our student back to the classroom, where he/she copies the Posyandu attendance and immunization records of his/her children onto a large wall chart which displays the attendance and immunization data for every student's children. The students crowd around the chart, checking to see how well their children are doing compared with everyone else's. This chart was deliberately created by PCI to foster competition and peer pressure among the students and thereby give them greater incentive to get their children immunized.

Over scenes of students whose children had the best records receiving prizes (inexpensive health care items like toothpaste, soap or shampoo, donated by Unilever), the narrator explains that the School Posyandu Program not only fosters competition but rewards it, by awarding prizes to students whose families' Posyandu attendance and immunization records are most complete.

When the School Posyandu Program was piloted in ten Maluku schools, many were skeptical that a fourth- and fifth-graders could have any real impact on Maluku's seemingly intractable immunization problems. But after the curriculum's sixteen weeks were up, surveys revealed remarkable results.

Over a graphic charting improvement in Posyandu attendance and immunization as a result of the School Program, the narrator continues: In the villages whose schools taught the Posyandu Program, Posyandu attendance had jumped from 33% to 77%. The number of children who had received all their vaccinations had jumped from 33% to 81%, the Ministry of Health's target percentage for immunization in Maluku.

"Before we taught this program, our village's monthly Posyandu attendance was only 20 children," says DAVID TALAHATU, a teacher in Rutong village who teaches the School Posyandu Program. "Now, it's over 60." Talahatu admits that he was among those initially skeptical of the School Posyandu concept: "I doubted that schoolchildren could really influence parents to change. But my doubts have vanished now. What really made the program succeed was the workbook. Requiring parents and students to complete workbook exercises together gave the parent-student interactions structure and focus. They weren't just randomly chatting about health."

MRS. M. LATUHERU, principal of the Rutong school, adds: " Before the Program, we met with parents in our village and told them that the students would be coming to see them to discuss their children's health. We asked the parents to treat the students well. The parents were delighted - They were proud to see the students helping the community."

MRS. ROSE, one of the village mothers visited by students, agrees: "It was unusual at first having young children come to my house to ask questions about my infant's health, but I thought it was fine - It was a nice experience."

As the School Posyandu program is implemented throughout Maluku, students are playing another important role in promoting infant immunization. In September and October of each year, the Indonesian government declares a "National Immunization Week" with the goal of vaccinating every child in the country against polio. In Maluku, local PCI-trained Ministry of Health officials have organized elementary school students into a "Student Immunization Force" to assist in the fight against polio.

We see fourth, fifth and sixth-grade members of this "Student Army" going door-to-door in their Maluku village, urging every mother to bring her infant to the vaccination site. It's clear from their dialogue and expressions that the mothers cannot refuse these endearingly earnest, neatly uniformed boys and girls. A few days later, when the vaccinations are given, the students return to the houses and escort the mothers and children to the vaccination site.

Maluku health official Dr. Ristiano Sugiono explains that thanks to student "soldiers," the number of Maluku children vaccinated against polio during Immunization Week went up 10 to 15%. The Ministry of Health in Jakarta is considering mobilizing student armies in other provinces for the next National Immunization Week.

Steve Robinson: "There's no doubt that the School Posyandu program is a success. The numbers prove it. Not only did Posyandu attendance and immunization rates more than double, so did the number of mothers who could answer questions about nutrition correctly, who understand that a pregnant woman must eat more and that certain foods will give their children iron and Vitamin A. Anemia and Vitamin A deficiency are two of Maluku's biggest health problems."

Over scenes of a student and his/her mother mixing oral rehydration solution at home, Steve

Robinson continues: "In addition, as a result of information given them by students, the number of mothers who understand how to prepare and use oral rehydration solution as a remedy for infant diarrhea has also increased. Before the School Program, the majority of mothers treated their infants' diarrhea with ineffective traditional methods like herbal teas, folk medicines, or even withholding all nourishment. Needless to say, diarrhea took the lives of many Maluku infants. But in villages which piloted the School Posyandu Program, the number of mothers who understand how to prepare and use oral rehydration solution to treat diarrhea increased more than 30% The number who used traditional treatments was cut in half."

"From these results it's clear that properly-trained schoolchildren can be highly effective health care advocates who can dispel ignorance and bring life-saving information to all the mothers in Maluku's remotest villages, where we "experts" often cannot go."

Perhaps most important, we succeeded in doubling Maluku's infant immunization coverage not by giving shots ourselves, but by educating and motivating mothers to have their infants immunized. Education is a strategy that produces a permanent improvement."

PEER IMMUNIZER TRAINING

Over scenes of uniformed Ministry of Health immunizers giving injections to mothers and infants at a Posyandu, the narrator explains that while the School Posyandu Program and other "social marketing" strategies have dramatically improved Posyandu attendance and numbers of children immunized, they cannot solve other aspects of Maluku's immunization problem. When PCI examined immunization practices in Maluku, it discovered that poor performance by Posyandu immunizers was as serious a threat to infant health as poor Posyandu attendance by mothers and infants.

Over more scenes of immunizers checking their refrigerated vaccines, sterilizing needles, keeping records and giving injections, Steve Robinson explains: "When we surveyed about 100 health centers (Pukesmas) throughout Maluku, we discovered that only about 60% were storing their vaccines at the proper temperature. Fewer than half were monitoring vaccine refrigeration temperature daily. Many were giving vaccine whose potency had expired. Proper records of vaccine use and storage were not being kept. In addition, we discovered that immunizers were often not vaccinating children who had a fever diarrhea, or even a simple cold. Many were doing little or nothing to contact mothers in their area who weren't bringing their infants in for vaccinations.

In other words, while it was true that many immunizers were hampered by remote locations, weather, and lack of transport vehicles, it seemed clear that immunizer ignorance was a much bigger factor than geography in Maluku's immunization problem. In a way, this was good news: There is little or nothing you can do about geography, but a lot you can do to improve immunizers' knowledge and skills. The challenge was to devise the most effective strategy for doing that."

That strategy turned out to be Immunizer Peer Training (Jurim Latih Jurim), another innovative partnership between PCI and the Ministry of Health. The Ministry of Health reviews immunization records at its health centers and selects those immunizers who have been most successful in meeting immunization goals. PCI provides these selected immunizers with an checklist of immunizer duties they can use to evaluate the performance of other immunizers who may be less successful. The successful immunizers then spend a week or two working with immunizers whose performance has been poor. They make a follow-up visit soon thereafter.

We follow SIMON PATTIWAELLAPIA, an immunizer peer trainer, as he evaluates and trains another immunizer. On the surface, we see nothing that looks like "training;" the two immunizers are simply working side-by-side in a health center or a Posyandu, checking vaccine temperatures, sterilizing equipment, giving injections, reviewing and updating immunization records. But throughout each working day, the trainer is observing the trainee at work, identifying problems, answering questions, and offering friendly, discreet, low-key suggestions for ways to do things better.

Steve Robinson: "The idea for this approach came to me while I was talking to a health center doctor about his immunizer's poor performance. "I can't change him," the doctor complained. "I yell at him but he just resents me." It occurred to me that sympathetic training by peers might be the way to circumvent resentment and fear."

Steve Robinson continues: "Everyone's training and management style is different, so we don't tell the trainers how to train and couldn't even if we wanted to. We just give them the peer-peer concept and the evaluation checklist and let them work it out for themselves."

In a series of interviews, the immunizers themselves, both trainers and trainees, share their enthusiasm for the peer-peer approach.

MR. BUCHE (TRAINER): "I use a very personal approach to training. There is no "trainer" and "trainee," but two friends who talk things over. That way the trainee opens up and begins asking questions."

"It's important to observe how closely the immunizer works with the kader at a Posyandu. The kaders know better than anyone else what's going on in their community. They know which mothers aren't bringing their children in to be immunized, and why. The immunizer needs to consult with the kaders and make them the motivators who go out and bring the missing mothers and infants in for their injections. Otherwise the immunizer will have to go door-to-door looking for people the kaders already know. The relationship between the immunizer and the kaders is the most important thing at a Posyandu."

MRS. HOBERTINA ("UBE") KILOY (TRAINEE): My "official" training lasted one week. It wasn't enough. When I started working as an immunizer, I still didn't know how to keep accurate records and wasn't sure how to give shots. The BCG tuberculosis vaccine in particular is very

hard - It must be given between two layers of skin - so I was afraid to give it. When they told me they were sending someone to improve immunization coverage in my area, I wasn't offended. I was relieved."

"My peer trainer just worked alongside me every day for a week. We had a great relationship. She taught me how to give the BCG vaccine and other injections, and how to keep accurate records. She also suggested that I give talks to mothers at my Posyandus about the importance of immunizing their infants, and that I ask the Posyandu kaders to track down mothers who weren't bringing their kids in. This suggestion has made all the difference. Now, after each Posyandu, I examine my records to determine who hasn't come in, then go with the kaders to their homes and immunize them and their infants on the spot."

MRS. KOTJE (UBE'S TRAINER): "When I arrived to work with Ube, I noticed right away that, being a new immunizer, she didn't have any way to evaluate her own performance or the overall situation. She needed an experienced perspective. By providing that, I was able to make a great difference. For example, it was immediately clear to me that one reason Ube wasn't getting good results was that when she went to a Posyandu, she vaccinated whomever showed up but did not identify and track down those who did not. As soon I suggested this to her, she began doing it immediately, and her results improved dramatically. It was a simple matter of my showing her how to go beyond her "official" training and innovate."

Over scenes of Simon Pattiwaellapia working at a health center, the narrator explains that innovation is often the key to immunizer success, and that the immunizers chosen to train others are frequently those who get the best results because they show initiative and innovate.

In an interview, Simon describes his own innovative approach to achieving immunization goals: "While checking my records, I discovered that some children were getting the first in a series of injections but not coming back to complete the series. I asked the local kaders to go to find their mothers and ask why they weren't coming back. It turned out that the children had colds or diarrhea, and their mothers believed that they could not be immunized until they were well. In one case, a DPT shot gave an infant a slight fever, a normal side effect. But the baby's fussing kept its father awake at night, so the father forbade his wife to bring it back for the rest of its DPT immunizations!"

"I got a letter from the doctor at my health center certifying me as an authority on immunization. Then I went to the various women's organizations, church and Islamic groups, and taught the mothers that immunizing a child with a cold was okay. We also organized a special Friday afternoon Posyandu where Muslim mothers could bring their infants after Friday prayers at the mosque. As a result, many more mothers brought their children in to be immunized."

Simon has just finished his first assignment as an immunizer trainer. He's a big fan of the peer-peer approach to training: "Before, when the government checked up on "problem" immunizers, they were afraid to open their mouths, to admit to any mistakes. But they aren't afraid to open

up to a sympathetic peer."

UDIN and KASIL, two young immunizers from remote northern islands who have undergone peer training, agree. "Immunizer training often consists of large groups listening to boring lectures. Classes sometimes last all day and then into the wee hours of the morning. Under these circumstances, it's hard to ask questions. The peer-to-peer, one-on-one approach not only makes asking questions easier, it teaches innovative thinking." Mr. Udin gives an example: "We discovered that mothers weren't bringing their infants back to complete immunizations because they developed mild fevers after their first injections. They didn't know that this was a normal side effect. So with the help of our sub-district governor, we held a meeting with all the village leaders in our district. We taught them the facts about immunization and showed them how to pass on this information to their people."

Over more scenes of an immunizer trainer working with another immunizer, the narrator tells us that in addition to being effective training, the PCI-designed peer-peer immunizer training program has been cost-effective as well: about \$100.00 per immunizer trained. It has been implemented at ten community health centers. All ten have reported significant improvements in their immunization coverage.

DR. Al-BAAR, District Medical Officer for northern Maluku, sees peer immunizer training as an excellent demonstration of a successful partnership between local government and a private voluntary organization (PVO). "The government provides the structure and sets the rules for the PVO's implementation of its ideas," he says. "Without the government, the PVO cannot operate effectively. Drawing on its worldwide experience of working in many countries, the PVO identifies the weaknesses in the government's programs and comes up with new ideas for solving them."

TRAINING OF TRADITIONAL BIRTH ATTENDANTS (TBAS)

Over scenes of a PCI-designed training session for traditional birth attendants (TBAS), Dr. Al-Baar continues: "Another highly successful government-PCI partnership has been the training program for traditional birth attendants. The government's training program was 30 pages long and hard to understand. PCI came up with a training model that was short and easy to understand."

The TBA training class continues. Again, the approach is peer-peer. Using infant dolls, TBAS trained by PCI show trainees how to cut umbilical cords using modern sterilized scissors instead of a sharpened piece of bamboo.

Steve Robinson: "At first glance, traditional birth attendants seem to be a tough group to train. Most have had no formal training. They learned their skill from their mothers and grandmothers. Their average age is 45. 35% are illiterate. But training them is crucial to improving Maluku's infant and maternal health. Not only do they deliver 70% of Maluku's babies; in local tradition,

they are informally "responsible" for the babies they deliver for the first year of their lives. They are informal godmothers. Child survival depends heavily on what they know, what they do, and what they can teach others, especially mothers in remote villages whom we could never reach."

We see TBAS who "graduate" from the PCI-designed training given a special midwifery kit containing scissors, alcohol, instructions for properly sterilizing equipment, a mother-infant health checklist which features pictures as well as text, so even illiterate TBAS can fill it out, and a plastic sheet to spread on the ground if the delivering mother has no clean bed to lie in. Steve Robinson's voice-over explains each item in the kit, and adds: "In addition to training the TBAS in sterile birthing techniques, we teach them about infant and maternal health, especially about the importance of infant immunization, so they can give mothers in remote areas correct information, dispel their fears, and convince them to bring their infants in to a Posyandu to be immunized. With simple, inexpensive training, the TBAS move from being part of the problem to being a big part of the solution."

We follow MRS. ASMA, a TBA who lives on the island of Ternate, through tiny villages as she visits with infants she has recently delivered and their mothers. Ibu Asma proudly displays her midwifery kit which identifies her as a graduate of PCI's TBA training. "I did things the old way for 22 years before I decided to take advantage of this training," she says. "I had no idea that babies could be delivered any other way. But I had no problems in immediately changing to more modern, safer techniques once I learned them. And now I get more calls than ever before because mothers know I've been trained in modern methods. Because I'm a better-educated birth attendant, I'm making more money."

CONCLUSION

The film concludes with a montage of scenes of other PCI innovations in Maluku: young women receiving neonatal tetanus injections; PCI workers at computers organizing immunization data using a software they invented for this purpose; bumper stickers promoting neonatal tetanus injections displayed on the ubiquitous becaks (pedal taxis) which throng Maluku's streets.

Steve Robinson: "The key to our success in Maluku has been, more than anything else, a way of thinking, a capacity to see creative, simple, inexpensive solutions to problems. For example, we have improved neonatal tetanus coverage simply by vaccinating all women of child-bearing age, instead of vaccinating only pregnant women as was formerly done. Now, the number of pregnant women vaccinated against neonatal tetanus has doubled. We have improved immunization records management by designing our own data-processing software. We look for every creative opportunity to market our programs to the public, such as sticking bumper stickers promoting neonatal tetanus vaccination on the becak cabs everybody in Maluku sees and uses."

Over final scenes reprising the innovative programs and people we have seen in the film, Steve Robinson makes the film's concluding point: "This innovative, flexible approach to problem-solving, implemented in a fruitful partnership with local health and education officials, has time

and time again achieved quantifiable results. It's proven itself as a strategy for tackling child and maternal health problems elsewhere in Indonesia and everywhere in the world."