

Health Link

Final Report

Reviewing the Period

September 1, 1984 to June 30, 1987

and including a

Quarterly Report

Covering the Quarter

April 1, 1987 to June 30, 1987

Submitted by

Program for Appropriate Technology in Health  
(PATH)

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Seattle, Washington 98109

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## Table of Contents

	Page
I. Executive Summary . . . . .	1
II. Conclusions . . . . .	2
A. Number and Dollar Value of Loan Guaranties . . . . .	3
B. Number of Products Introduced to the Market . . . . .	4
C. Sales and Profits to be Generated as a Result of the Program . . . . .	5
D. Assistance to U.S. Companies in Introducing Their Products to Foreign Markets . . . . .	6
E. Stimulating Private Sector Involvement in Health . . . . .	7
F. Impact on Public Health . . . . .	8
G. Enhancement of PATH's Capabilities to Work in the Private Sector and on Health . . . . .	8
III. Technology Transfer Program . . . . .	10
A. Projects Leading to Technology Transfer and Loan Guaranties . . . . .	10
1. Inexpensive Eyeglasses . . . . .	10
2. X-ray Equipment . . . . .	10
3. Dental Equipment . . . . .	11
4. Hepatitis B Vaccine . . . . .	12
B. Projects Leading to Technology Transfer . . . . .	12
1. Rabies Vaccine . . . . .	12
2. Diagnostics . . . . .	13
3. Condom Production . . . . .	14
4. Water Purification Tablets . . . . .	15

<b>C.</b>	<b>Other Projects . . . . .</b>	<b>15</b>
	1. Soy-based Weaning Food . . . . .	15
	2. Anhydrous Glucose . . . . .	16
	3. Inexpensive Surgical Equipment . . . . .	16
	4. Inexpensive Eyeglasses (Thailand) . . . . .	16
<b>D.</b>	<b>Projects Possibly to be Transferred to HealthTech . . . . .</b>	<b>16</b>
	1. Syringes . . . . .	17
	2. Single-use Injector . . . . .	17
	3. Larvicides . . . . .	18
	4. Mosquito Protection Product . . . . .	18
	5. Solar Cold Chain Equipment . . . . .	18
	6. Iodized Oil . . . . .	19
	7. Japanese Encephalitis . . . . .	19
<b>E.</b>	<b>Projects Offered to PRE for Possible Implementation . . . . .</b>	<b>20</b>
	1. Fracture Plates and Screws . . . . .	20
	2. Intraocular Lenses . . . . .	20
<b>IV.</b>	<b>Loan Guaranty Program . . . . .</b>	<b>22</b>
<b>V.</b>	<b>Financial Report . . . . .</b>	<b>24</b>

## I. Executive Summary

This is the final report to PRE on the Health Link program.

The program has resulted in the placing of approximately \$300,000 in loan guaranties. The program objective had been \$4 million.

Seven products or product lines were introduced to the market. The program objective had been five.

In addition, PATH identified thirteen other products that either could or most likely will be introduced in the near future either from PATH or other agency continued effort.

Five of these projects we are proposing for follow-up under the new HealthTech program. We are suggesting that PRE may wish to follow-up independently on two other projects.

In sum, PATH identified a total of twenty products or product lines that either have been or have great promise to be introduced in the market. The objective had been fifteen.

Looking only at the projects which have been completed at this date, Health Link will have created for private sector entities in developing countries sales of approximately \$45 million and profits of about \$5 million over the next five years. These figures are based on the projections used to establish financing for the projects, and in some cases are quite conservative.

Projects underway or completed by the end of the program represent assistance to the following seven U.S. companies: Sero-Immuno Diagnostics, Monoclonal Antibodies, Abbott Laboratories, Wisconsin Pharmacal, CILCO, Becton Dickinson, and Energy Concepts.

## II. Conclusions

This is the final report on the Health Link program. It includes information on the overall program that extended from October 1, 1984, to June 30, 1987. The report also includes information on what has taken place in the last quarter, April 1 to June 30, 1987.

Before proceeding to a detailed review of the Health Link program, PATH would like to express its sincere appreciation to the staff of the Bureau for Private Enterprise (PRE) for the confidence they have placed in PATH. \$1.46 million is a significant amount of money. At a time when international assistance programs are under scrutiny it is important that funds expended have a demonstrable positive impact. PRE staff have provided critical support at important junctures. They have provided insights about how best to operate the program. They have made important recommendations about products to pursue. In sum, we admire the professionalism and competence of PRE staff and hope there will be opportunities in the future to collaborate again.

The thirty-three months of the Health Link program can be evaluated by a variety of criteria. Some of the program's results can be easily quantified as in:

- Number and dollar value of loan guaranties
- Number of products introduced to the market
- Sales and profits to be generated as a result of the program
- Assistance to U.S. companies in introducing their products to foreign markets

Additional results of the program, though less easy to quantify, include important contributions to the development of private sector initiatives in health:

- Stimulating private sector involvement in health
- Impact on public health
- Enhancement of PATH's capabilities to work in the private sector and in the international health field

A. Number and Dollar Value of Loan Guaranties

Health Link resulted in four loan guaranties with a total dollar value of \$294,776. These results are a disappointment to PATH and to PRE. We had hoped to have eight guaranties totalling at least \$4 million. We believe there are several reasons for this shortfall:

- PATH erred in its estimation of the demand for bank guaranties. Following funding of the project, PATH found that almost no large capital investment was being made by the health industry in either Indonesia or Thailand.
- PATH had originally been instructed by PRE staff that loan guaranties were to be seen as "additional arrows in the quiver" to be used if they would make a difference in technology transfer. Thus, we tended to give them lower priority than technology transfer. These instructions were modified to give the guaranties highest priority, but only one year was left in the program which was too short a time to meet the objectives.

The guaranty mechanism proved to have certain limitations which lowered its attractiveness to the banks and to the investors. PRE staff declined to approve modifications which PATH believed would have made the mechanism more attractive.

If we had to do it over again, PATH would have recommended not a loan guaranty program but rather a venture capital fund. We are not clear whether this would have been possible, but understand PRE is pursuing something along this line through the International Biotechnology Group, Inc.

#### B. Number of Products Introduced to the Market

Seven products or product lines (cataract eyeglasses, X-ray equipment, dental equipment, hepatitis B vaccine, rabies vaccine, diagnostics, and condoms) were introduced to the market. The program objective had been five.

In addition, PATH identified twelve other products (water purification tablets, soy-based weaning foods, intraocular lenses, surgical equipment, eyeglasses, syringes, larvicides, mosquito protection product, solar cold chain equipment, iodized oil, Japanese encephalitis vaccine, and fracture plates and screws) that either could or most likely will be introduced in the near future either from PATH or other agency continued effort.

Six of these projects (syringes, larvicides, mosquito protection product, solar cold chain equipment, and iodized oil, and Japanese encephalitis vaccine) plus a product (single-use injector) on which research and development has been undertaken, we are proposing for follow-up under the new HealthTech program. The Japanese encephalitis lead may also be pursued with support from PATH's International Loan Fund.

We are suggesting that PRE may wish to follow-up independently on the fracture plates and screws project and the intraocular lens project.

In sum, PATH identified a total of twenty products or product lines that either have been or have great promise to be introduced in the market.

**C. Sales and Profits to be Generated as a Result of the Program**

Looking only at the projects which have been completed at this date, Health Link will have created for private sector entities in developing country economies estimated sales of \$45,451,000 and profits of \$5,258,000 over the next five years. These figures are based on the projections used to establish financing for the projects, and in some cases, are quite conservative.

We feel this achievement is truly remarkable resulting in a leveraging of PRE's funds by a factor of about 3.5 in generating profits and 30 in generating sales.

1. In Indonesia, P.T. Vision Teknik Utama anticipates an increase in sales of \$1,060,000 and additional profits of \$309,000 from its cataract glasses business.
2. P. T. Binuma expects to receive \$129,000 in revenue and \$19,000 in profit from sales of water purification tablets over the next five years.
3. Ausadha Graha (P.T. Wigindo) expects to earn a profit of \$1,495,000 on hepatitis B vaccine sales which are projected at \$5,967,000 for the same period.

4. In Thailand, Kongsak X-Ray's expanded capacity will result in \$3,780,000 in equipment being sold, earning \$732,000 for the firm in the next five years.
5. Sales of Verorab rabies vaccine are expected to total \$10,000,000 generating profits of about \$2 million.
6. MD's dental equipment sales are projected at \$3,500,000 with an anticipated profit of \$700,000.
7. Diagnostic income to Mahidol University is expected to be \$15,000 with a profit of \$3,000.
8. Chinteik Hygiene Products' start-up venture to produce condoms anticipates sales in excess of \$21 million during its first five years of operation. A meaningful estimate of profit cannot be made at this time.

D. Assistance to U.S. Companies in Introducing Their Products to Foreign Markets

Projects underway or completed by the end of the program represent assistance to the following seven U.S. companies: Sero-Immuno Diagnostics, Monoclonal Antibodies, Abbott Laboratories, Wisconsin Pharmacal, CILCO, Becton Dickinson, and Energy Concepts. Several other projects involved assistance to non-U.S. companies. We understand PRE is disappointed about our assisting non-U.S. companies. All those projects started at a time when we were working under PRE guidance that the source of the technology was not important. Since PRE guidance was changed, we have worked only with U.S. companies.

In retrospect we believe PRE might want to consider limiting, contractually, future programs to work with U.S. companies.

## **E. Stimulating Private Sector Involvement in Health**

At the request of PRE, the Health Link project was reviewed by an outside consultant approximately midway through its implementation. Following the completion of this review, the evaluator noted a major impact of Health Link seemed to be increasing the interest of the private sector in health. There are several examples of how PATH has done this.

1. The feasibility study on soy-based weaning foods was terminated when a third party entered the market with such a product. It is likely PATH's study stimulated that company to get into the market.
2. The work on hepatitis B vaccine led to PATH's working with an Indonesian company that has subsequently decided to enter other markets of importance to public health, e.g. diagnostics.
3. The hepatitis B project has also led to a major increase in the interest of vaccine manufacturers in introducing their products to developing countries. PATH continues to be the focal agency for this work.
4. Our activities in Thailand and the concomitant good reputation led to a company approaching us to assess the market for fracture plates.
5. Various private agencies in Indonesia have approached PATH for business advice. They have commented that we are the only agency in Indonesia with an in-depth understanding of the private sector health technology market.

## **F. Impact on Public Health**

It is difficult, at best, to evaluate the program according to this criterion. One approach would be to compare the projects according to well-accepted international priorities for child survival in developing countries.

Immunization is a high priority in international health. Five projects (rabies vaccine, hepatitis B vaccine, Japanese encephalitis vaccine, syringes, solar cold chain equipment, and single-use injector) were related to immunization.

Family planning is another high priority. One project (condoms) dealt with a contraceptive.

Another high priority is nutrition. Soy-based weaning foods and iodized oil addressed this topic.

Oral rehydration is a high priority, but because another USAID-supported program, project SUPPORT, deals specifically with ORS production, Health Link did not address this topic.

The other projects involved products of varying priorities in terms of child survival. These projects were pursued because they offered the opportunity to meet another important objective of the program: increasing the private sector's role in the provision of health services.

## **G. Enhancement of PATH's Capabilities to Work in the Private Sector and in the International Health Field**

PRE support was crucial in allowing PATH to formalize its presence in Indonesia and Thailand. PATH now has fully operational offices in both countries. Each office is staffed by a representative, a medical advisor, an office

manager/secretary, a financial officer, and a driver. These offices have established themselves as valuable entities called on for assistance by the USAID Mission, other donors, and the private sector.

Even with the discontinuation of PRE support the offices will be able to continue their work. Support is expected to come from the HealthTech program which is being reviewed by the Office of Science and Technology/Health and from the hepatitis B program supported by the James S. McDonnell Foundation. Both HealthTech and the Hepatitis B programs emerged directly from the Health Link activities.

Health Link has also had important ramifications for other PATH programs. For example, the SUPPORT project, concerned with local production of oral rehydration solutions in the private sector, has benefited significantly from the lessons learned about how to provide financing.

### III. Technology Transfer Program

#### A. Projects Leading to Technology Transfer and Loan Guaranties

##### 1. Inexpensive Eyeglasses

On January 9, 1987, Bank Duta disbursed a loan of Rp 140 million to P.T. Vision Tehnik Utama for the purchase of equipment to manufacture cataract lenses. To support the loan, a Health Link guaranty of \$42,347 was issued on January 7, 1987. The equipment has been installed, and production is underway. At PATH's request, VTU has donated several thousand pairs of cataract glasses to the Government of Indonesia cataract program. VTU would like to increase production and has asked PATH for additional financial assistance to carry out expansion of the plant. A report on this project was submitted to PRE on May 27, 1986.

##### 2. X-ray Equipment

Kongsak X-ray Medical Industries Co. manufactures low-cost X-ray equipment. PATH's participation in this project included a business feasibility study and a Health Link loan guaranty. The Health Link guaranty for \$75,000 was issued on January 28, 1987, to support a capital equipment loan of \$150,000. The expansion is proceeding according to plan, with three new buildings currently under construction at the Bangkok manufacturing site. Health Link's assistance will enable Kongsak X-ray to increase monthly production from two to ten units. The company is now looking into export opportunities with assistance from PATH. Discussions have been initiated with firms in Indonesia, the Philippines, and Bangladesh which could

lead to export and eventual technology transfer from Kongsak X-ray.

Kongsak X-ray's expanded capacity has allowed it to bid on a government tender for the first time in its history.

In recognition of PATH's assistance on this project, the firm will donate to the government an X-ray machine valued at \$8,000 for use in a rural health clinic in Thailand. Technical and market reports on this project were submitted to PRE on June 9, 1986.

### 3. Dental Equipment

MD (Thailand) Co. Ltd. is the only manufacturer of dental equipment in Thailand. The firm sells its equipment to the lower end of the market, competing with imports on the basis of price and service. PATH carried out a market feasibility study and a financial analysis of MD's expansion plan and assisted the local lending bank in reviewing the loan application.

On January 15, 1987, a loan agreement for \$150,000 was signed between MD and Thai Farmers Bank. A Health Link guaranty of \$75,000 was issued on January 8, 1987, in support of this loan.

MD is currently in the process of constructing and equipping the new building. The move to new facilities will greatly improve their production capacity, since the new plant is specifically designed to meet MD's needs.

#### 4. Hepatitis B Vaccine

PATH has continued its assistance to P.T. Wigindo, a company headed by Drs. Wim Kalona, to set up distribution and manufacture of hepatitis B vaccine in Indonesia. Product approval has been given by the Indonesian FDA, and marketing began in May, 1987.

P.T. Wigindo obtained a loan of \$200,000 from Bank Duta to assist in financing market development for hepatitis B vaccine. A Health Link guaranty of \$100,000 was issued on March 18, 1987. P.T. Wigindo has offered the vaccine to the Government of Indonesia at concessionary pricing, providing the cheapest hepatitis B vaccine currently available in Indonesia.

PATH has received \$20,000 from P.T. Wigindo as partial reimbursement of PATH's costs in this project.

#### B. Projects Leading to Technology Transfer

##### 1. Rabies Vaccine

On February 11, 1986, an agreement among Institut Mérieux, May & Baker, and the Thai Red Cross was signed in Bangkok. This agreement provides for the distribution over the next five years of approximately 1.4 million doses of rabies vaccine, or about \$10 million worth of vaccine at wholesale prices. In the first year of distribution, 65,000 doses have been sold.

PATH has been requested by Institut Mérieux and the Thai Red Cross to assist in setting up local production of the vaccine. A meeting has been scheduled for October 1987 to discuss the transfer of production technology.

This subproject alone is expected to generate more profits in Thailand than the total cost of the Health Link program.

## 2. Diagnostics

### a. Thailand

PATH has assisted Mahidol University in arranging a distribution agreement for the sale of its alphafetoprotein diagnostic in Indonesia. The agreement to introduce this diagnostic product represented the first commercial application of a technology developed at Mahidol and made the University aware that it needed to develop a procedure for dealing with commercialization of its research projects. As a result, Mahidol requested PATH's help in establishing a policy on intellectual property rights. A seminar for Mahidol's staff on intellectual property rights was held in Bangkok under the sponsorship of the Diatech program on June 23 to 25, 1987. DiaTech, another USAID-supported PATH program, is assisting Mahidol on other diagnostic projects.

### b. Indonesia

PATH has continued to assist P.T. Wigindo to source a variety of reasonably priced diagnostics. Distribution agreements have been signed with Mahidol University of Thailand for a high-quality alphafetoprotein diagnostic and with two U.S. companies, Sero-Immuno Diagnostic and Monoclonal Antibodies, for pregnancy diagnostics of different sensitivities and an AIDS confirmation test. Government approval for the pregnancy diagnostics has

been received and marketing of the products has begun. The AIDS diagnostic has been approved and is currently in use.

PATH originally anticipated providing a Health Link guaranty to support the introduction of these diagnostics, but the local USAID mission requested an alternate source of funds be identified. PATH's International Loan Fund program has approved a guaranty of \$100,000 to P.T. Wigindo.

### 3. Condom Production

PATH proposed Health Link finance condom production in Thailand. The project is being implemented by Chinteik Hygiene Products (CHP), a joint venture between The Chinteik Brothers Group of Thailand and Mapa, GmbH, a German manufacturing concern. PATH discussed the project with the local USAID Mission and received their endorsement.

This project represents the first local production of condoms in Thailand. PATH was asked to provide assistance in four areas of the project: technical assistance related to quality assurance issues, procurement assistance, marketing assistance, and financial assistance.

The project will require loans totaling Thai Baht 102,000,000 (approximately US\$3.9 million). This includes a term loan of Baht 81,000,000 (US\$3.1 million) and a working capital loan of Baht 21,000,000 (US\$800,000). The project sponsors requested a Health Link guaranty for \$1.2 million.

PRE decided not to participate in the financing of this project. PATH was able to mobilize resources from another donor, the Ford Foundation, to meet the needs of this project.

#### 4. Water Purification Tablets

Under this project, PATH conducted a consumer acceptability study leading to a distribution agreement between the U.S. manufacturer, Wisconsin Pharmacal, and a local Indonesian company, P.T. Binuma. Marketing will begin as soon as Indonesian government registration is obtained. While the project has expanded the market for a U.S. company and introduced a new health product to Indonesia, there is no investment required in the initial distribution stage. Therefore, a loan guaranty was not required for this project.

### C. Other Projects

#### 1. Soy-based Weaning Food

Extrusion cooking has been used extensively in USAID's Food for Peace program. In Indonesia, the subproject was terminated by P.T. Kalbe Farma when another company, P.T. Sanmaru, came on the market with a soy-based weaning food. P.T. Kalbe Farma felt it would not be able to compete effectively against Sanmaru, a large and well-financed company. Also, Kalbe Farma has a corporate philosophy of not being "second into the market." A market feasibility study in Thailand determined that the market potential in Thailand did not justify the initiation of production of a soy-based weaning food. A full report was submitted to PRE on October 31, 1965.

## 2. Anhydrous Glucose

Anhydrous glucose is the major component of the WHO-approved formula for oral rehydration salts (ORS). A Health Link prefeasibility study concluded that the local production of anhydrous glucose in Indonesia and Thailand is not advisable because local production would result in only minimal savings over importing. Further, the future market for anhydrous glucose is uncertain because new ORS formulations are being developed that eliminate this raw material. PATH decided not to pursue the project further.

## 3. Inexpensive Surgical Equipment

The technical feasibility study determined the training period for a skilled toolmaker for surgical equipment to be from 10 to 20 years. Health Link's time horizon for success did not allow PATH to get involved in a subproject which may require a 10- to 20-year training period. Therefore, the project was closed.

## 4. Inexpensive Eyeglasses (Thailand)

PATH carried out a market study for inexpensive eyeglasses in Thailand and worked with Universal Optical to develop the company's business plan. Universal could not obtain a loan from a local bank.

## D. Projects Which May be Transferred to HealthTech

On February 10, 1987, PATH submitted a proposal for the continuation of Health Link to the Office of Health at USAID under the title of HealthTech: Technologies for Child Health. With the proposed move to the Office of Health, the focus of

Health Link will be modified to match the priorities of the Child Survival Program.

The following projects have been proposed for transfer to HealthTech. In each case, detailed workplans have been developed to ensure a smooth transition of the project.

#### 1. Syringes

PATH completed a market study for disposable syringes in Thailand and entered into discussions with Becton Dickinson on establishing a plant for local production. Becton Dickinson is interested in the market in Southeast Asia and has made the decision to establish manufacturing facilities in Singapore and Korea as a first step in introducing its product in Asia. It has also obtained a license to produce in Indonesia. PATH continues to discuss with Becton Dickinson, business opportunities in various Asian countries.

#### 2. Single-use Injector

During the last two quarters of Health Link, PATH, at the request of USAID S&T/Health, and with the concurrence of PRE, began the development of a single-use injector. Mr. McPherson has indicated that highest priority should be accorded to this project. PATH has designed several candidate products. Potential equipment manufacturers have been identified and sample injectors have been produced. The project is being carried out in close collaboration with plastics fabricators and vaccine manufacturers.

### **3. Larvicides**

In mid-1986, PATH submitted feasibility studies for the introduction and local formulation of microbial larvicides. The studies recommended that Abbott Laboratories, the manufacturer of the larvicides, initiate field evaluations of its particular formulations in both countries. This will represent the first application of this technology in the field of health. In Indonesia, P.T. Montrose Nusantara Indonesia is the potential partner for Abbott. In Thailand, discussions have continued with Chia Tai Company.

### **4. Mosquito Protection Product**

This product, developed by Simmons Nominees Pty. Ltd., is a soap-like bar which contains a mixture of DEET and permethrin. The combination of the two active ingredients has a synergistic effect which makes it a patentable product.

In Indonesia, a local private firm, P.T. Dupa, has expressed interest in becoming the manufacturer and distributor of the repellent bar. In Thailand, Teck Heng Yoo, a private Thai firm with country-wide strengths in marketing and distribution, has expressed interest in the product. As a part of HealthTech, PATH anticipates assisting in the effort to license the product for local manufacture and distribution.

### **5. Solar Cold Chain Equipment**

Energy Concepts Company of Annapolis, Maryland, has developed a new methodology for applying the principle of ammonia absorption. This patented approach has been

reviewed by USAID's Program in Science and Technology Cooperation, which has provided funding for the final development of the product. A plan has been developed to test the solar equipment in Thailand in cooperation with Pan Siam Engineering, a private Thai firm. These tests are scheduled to begin in early 1988 after a new unit is manufactured.

#### 6. Iodized Oil

Endemic goiter and cretinism are important public health problems in Indonesia. Iodized oil, in both injectable and oral forms, has been shown effective in controlling iodine deficiency. The Government would like to determine the feasibility of local production. The USAID Mission in Indonesia has expressed an interest in the project and has shown a willingness to support PATH's Jakarta office for work in this area.

#### 7. Japanese Encephalitis

Japanese encephalitis is a growing disease problem throughout SouthEast Asia and South Asia. Increasingly, serious attention is being devoted to it by ministries of health, the World Health Organization, and other health organizations. Wider scale use of the existing vaccine has been limited by cost; it currently runs about \$3 per dose. This price could be reduced substantially if certain components of the production process were carried out in developing countries. Under HealthTech, PATH may work on transferring the technology for these production components to Thailand.

## E. Projects Offered to PRE for Possible Implementation

### 1. Fracture Plates and Screws

Health Link has prepared a market study for the manufacture of fracture plates and screws in Thailand. This was presented to Surgical Instruments (Thailand) Co. Ltd. in June. The company had planned to approach Thai Farmers Bank for financing under the Health Link program. This is a large undertaking, with a projected capital requirement of just under \$1 million. Because the field of fracture plates is not a major public health or child survival priority, this project will not be transferred to HealthTech or another PATH program. However, completing the project and offering a loan guaranty to the Thai company may present a good opportunity for PRE. If the PRE staff of Bangkok or Washington are interested in finalizing this project, PATH would be happy to work on a transition to PRE.

### 2. Intraocular Lenses

PATH conducted a detailed and exhaustive review of all of the possible intraocular lens technology sources. The Thai party decided to negotiate for a production license with CILCO from Huntington, West Virginia. The project was terminated because the two parties were not able to finalize an agreement on export. PATH's market analysis had indicated that a project limited to supplying the Thai market was unlikely to be financially viable. Exports would be required. The Thai party therefore insisted that CILCO agree to purchase, for export, an amount of lenses that would assure the financial success of the project. PATH did not agree this demand was reasonable and so advised the Thais. As we expected, CILCO said it could

not agree to the demand. The Thai party then broke off negotiations.

We continue to believe the manufacture of IOLs in Thailand is a viable venture.

#### IV. Loan Guaranty Program

The following schedule lists the Health Link loan guaranties which have been issued during the program:

Kongsak X-rays	\$ 75,000
MD (Thailand) Co., Ltd.	<u>77,429</u>
Thai subtotal	\$ 152,429
P.T. Vision Teknik Utama	\$ 42,347
P.T. Wigindo Ausadha Graha	<u>100,000</u>
Indonesian subtotal	\$ 142,347
Total	\$ 294,776

All of the loans relating to the above Health Link guaranties are being paid according to schedule. No defaults have occurred.

PATH identified two other loan guaranty opportunities for the Health Link program, which for various reasons were declined by USAID.

The first such opportunity was for the introduction of a line of diagnostics in Indonesia by P.T. Wigindo. P.T. Bank Duta had approved a subloan for the Rupiah equivalent of US\$200,000, supported by a Health Link guaranty of US\$100,000. The Indonesian USAID mission became concerned about some aspects of P.T. Wigindo's ownership and the fact that Health Link was already supporting the company's introduction of hepatitis B vaccine. The mission requested PATH to withdraw the offer of the Health Link guaranty, and locate other non-U.S. government funding for the project. PATH's International Loan Fund was able to intercede and provide the necessary guaranty.

The other Health Link loan opportunity was presented by PATH to PRE on May 1, 1987. The project was a private joint venture

between a Thai and a German company to produce condoms in Thailand. The total financing was the Baht equivalent of US\$3.9 million, and the requested guaranty amount was for US\$1.2 million, or 30% of the total subloan. The project represented the first local production of condoms in Thailand and appeared to be an excellent opportunity for Health Link to support the development of a private Thai infrastructure that produced, marketed, and exported condoms. A local bank had approved the subloan before a Health Link guaranty was requested, but at a high rate of interest. The subborrower requested of PATH, along with other services, PATH's financial assistance in order to reduce the financing costs and thereby increase the economic viability of the project. PRE declined the opportunity because the joint venture was not utilizing technology of U.S. origin and it did not need the guaranty to mobilize local credit.

## V. Financial Report

Attached is the April through June 1987 Form 269 for the Health Link project. This report is the official final financial report for the project and clearly indicates actual expenditures against budget by program function for the life of the project.

The report shows an excess of expenditures over the total cumulative amount of Federal funds authorized. These costs were incurred during the final quarter of the project as technical activities were completed. The cost overrun was due to an acceleration of activities associated with the development of the Ezeject technology. While all other technical activities were winding down, USAID strongly urged PATH to complete as much work as possible during the first six months of 1987. PATH will propose additional funding be added to the Health Link award to cover these activities.

Analysis of each function category follows:

Program Marketing & Management. The overexpenditure in this category stems from management costs incurred early in the project as the direction of Health Link was established. In addition, time was spent establishing systems related to the unique nature of the project. Late in the project however, these costs diminished.

Technical Services. The overexpenditure in this category is due to the increased activity associated with the Ezeject Technology.

Feasibility Studies. Feasibility studies were completed throughout the term of the award to assess project areas. In the last year of the project, studies dropped off considerably as work was completed in existing project areas.

Evaluation. Funds budgeted for evaluation were sufficient to cover costs.

Indirect. The original Health Link budget was prepared using an indirect cost rate of 29%. Actual rates used during the life of the project varied from year to year according to levels of indirect cost expenditure. The rate applied during 1986 and 1987 was 32.9% (the USAID approved provisional rate for PATH). The application of this rate for the 18 month period caused the overexpenditure in this line item.

# FINANCIAL STATUS REPORT

(Follow instructions on the back)

1. FEDERAL AGENCY AND ORGANIZATIONAL ELEMENT TO WHICH REPORT IS SUBMITTED

United States Agency for International Development

2. FEDERAL GRANT OR OTHER IDENTIFYING NUMBER

PDC-0002-G-SS-4184-00

OMB Approved No. 80-RO180

PAGE OF

1 1

3. REPORT ORGANIZATION (Name and complete address, including ZIP code)  
 Program for Appropriate Technology  
 in Health (PATH)  
 4 Nickerson Street  
 Seattle, Washington 98109

4. EMPLOYER IDENTIFICATION NUMBER  
 91-1157127

5. RECIPIENT ACCOUNT NUMBER OR IDENTIFYING NUMBER

6. FINAL REPORT  
 YES  NO

7. BASIS  
 CASH  ACCR

8. PROJECT/TASK PERIOD (See instructions)

FROM (Month, day, year)  
 September 17, 1984

TO (Month, day, year)  
 June 30, 1987

9. PERIOD COVERED BY THIS REPORT

FROM (Month, day, year)  
 April 1, 1987

TO (Month, day, year)  
 June 30, 1987

## STATUS OF FUNDS

PROGRAMS/FUNCTIONS/ACTIVITIES ▶	(a) Program Mktg & Mgmt	(b) Technical Services	(c) Feasibil Studies	(d) Evaluation	(e) Indirect	(f)	TOTAL (g)
a. Net outlays previously reported	\$ 389,618.02	\$ 577,869.00	\$ 68,943.78	\$ 35,953.98	\$ 321,139.41	\$	\$1,393,524.19
b. Total outlays this report period	(10,053.68)	107,506.74	53.51	7.88	43,954.17		141,468.62
c. Less: Program income credits	0.00	0.00	0.00	0.00	0.00		0.00
d. Net outlays this report period (Line b minus line c)	(10,053.68)	107,506.74	53.51	7.88	43,954.17		141,468.62
e. Net outlays to date (Line a plus line d)	379,564.34	685,375.74	68,997.29	35,961.86	365,093.58		1,534,992.81
f. Less: Non-Federal share of outlays	0.00	0.00	0.00	0.00	0.00		0.00
g. Total Federal share of outlays (Line e minus line f)	379,564.34	685,375.74	68,997.29	35,961.86	365,093.58		1,534,992.81
h. Total unliquidated obligations	0.00	0.00	0.00	0.00	0.00		0.00
i. Less: Non-Federal share of unliquidated obligations shown on line h	0.00	0.00	0.00	0.00	0.00		0.00
j. Federal share of unliquidated obligations	0.00	0.00	0.00	0.00	0.00		0.00
k. Total Federal share of outlays and unliquidated obligations	379,564.34	685,375.74	68,997.29	35,961.86	365,093.58		1,534,992.81
l. Total cumulative amount of Federal funds authorized	347,033.00	644,423.00	83,000.00	45,500.00	328,494.00		1,448,450.00
m. Unobligated balance of Federal funds	(32,531.34)	(40,952.74)	14,002.71	9,538.14	(36,599.58)		(86,542.81)

11. REPORT TYPE

a. TYPE OF BASIS (Place "X" in appropriate box)  PROVISIONAL  PREDETERMINED  FINAL  FIXED

b. BASIS

32.9%	1,145,980.32	365,093.58	365,093.58
c. BASIS	d. TOTAL AMOUNT	e. FEDERAL SHARE	

12. CERTIFICATION  
 I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays and unliquidated obligations are for the purpose set forth in the award documents.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL  


DATE REPORT SUBMITTED  
 8/11/87

TYPED OR PRINTED NAME AND TITLE  
 Eric G. Walker  
 Vice President & Director of Finance

TELEPHONE (Area number and extension)  
 (206) 285-3500

Please note: Line 10L and Line 11 are based on amendment 5