OVERVIEW AND EVALUATION OF KHDI HEALTH PROJECT

Korea Health Development Institute
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CONTENTS

SUMMARY

It was agreed under a Loan Agreement (AID Loan No. 489-U-092, Project No. 489-22-590-710) signed between the Government of Korea and the United States of America, acting through the Agency for International Development that the Health Demonstration Project should consist of (i) the establishment of the Korea Health Development Institute and (ii) the planning and implementation of a multi-Gun (county), low-cost integrated health delivery demonstration and evaluation system. The KHDI evaluation plan thus developed had two specific purposes:

- Establish the capability within the ROKG to plan, conduct and evaluate low-cost integrated health delivery projects directed primarily toward low-income families.

  Evidence of Achievement: Promulgation of the KHDI Law and a Presidential Decree for the said Law (April 1976);

  (a) A new semi-autonomous unit (KHDI) chartered, staffed, and functioning (plan, conduct and evaluate demonstration projects), and fostering KHDI as a health policy research institute by the Government,

  (b) A new National Health Council, to guide KHDI and coordinate policy formulation,

  (c) A National Health Secretariat within the Korea Development Institute, to conduct and assess research, evaluate

KHDI projects and recommend pertinent actions to the National Health Council.

Demonstrate successfully a multi-Gun (County) low-cost integrated health delivery system that is replicable in other parts of Korea.

Evidence of Achievement: The evaluation results by internal (KHDI) and external (the Government, USAID, KDI, etc.) show that the KHDI Community Health Demonstration Project conducted in the 3 Guns (Hongchon, Okgu & Gunee) during the 1978-1980 period has been successfully conducted in terms of efficiency, cost-effectiveness, acceptability, social applicability, etc. As a result, it is considered that the KHDI project can be replicable to other areas of Korea. All procedures and outcomes connected with achieving the said objectives are stated in detail in the evaluation documents.

1. DEVELOPMENT & IMPLEMENTATION OF KHDI COMMUNITY HEALTH PROJECT

In order to achieve the above stated second objective, KHDI Community Health Project was fully implemented in the three Guns of Hongchon, Okgu and Gunee after the CHPs were trained and deployed in July 1978. For the project implementation, four innovative features were adopted as follows:-

(a) Reorganization of the existing health care delivery system

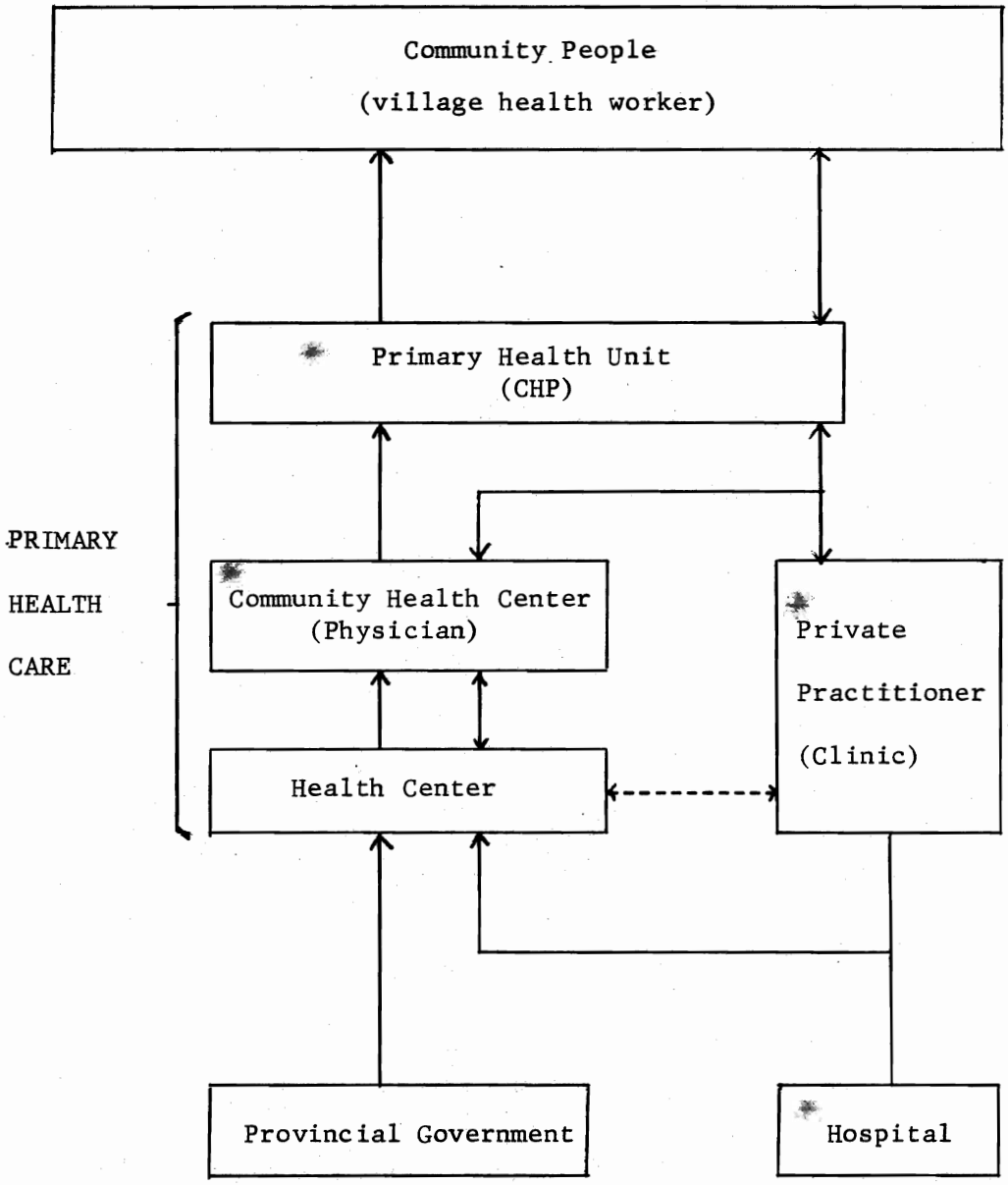
(b) Development of middle level health worker (CHP) and retraining as multipurpose worker of the existing health worker

(c) Promotion of community participation

(d) Development of financial mechanism such as the Daedong-hoe and the Health Insurance

A. Health Care Delivery System

For maximizing utilization of and continuity of primary health care service, the Primary Health Unit (PHU), staffed by CHPs, was established to be operated in villages. The Community Health Center (CHC), manned by a physician, supervised several PHUs' activities. The voluntary leader, acting as village health worker, was also trained and deployed at the village level. (See the diagram on the next page)


Community People
(village health worker)
Primary Health Unit
(CHP)
PRIMARY
HEALTH
CARE
Community Health Center
(Physician)
Private
Practitioner
(Clinic)
Health Center
Provincial Government
Hospital

Profile of Project Areas and various input of health workers are as follows:

(Project Area)	Hongchon	Okgu	Gunee
surface area (Km^2)	1,718	330	608
population (1,000)	120	120	70
density (per Km^2)	70	360	110
No. of Eup & Myon	1-Eup, 9-Myons	10-Myons	1-Eup, 7-Myons
Features	mountainous	coastal, plain	inland, mountainous

(Health Worker)	Hongchon	Okgu	Gunee
Physician *	5	4	4
CHP	11	7	5
CHA	30	30	31
VHA	105	-	-

* denotes that Limited-Area Doctor is excluded.

B. Training & Deployment of Health Manpower

1) New Manpower

Comparison of the existing & new health workers:

Existing	New
General Practitioner	Community Physician (CP)
No Middle-level Worker	Community Health Practitioner (CHP)
Single-Purpose Nurse Aide	Community Health Aide (CHA) (multiple-purpose)
No Village Health Worker	Village Health Agent (VHA)

Main functions & roles of new manpower:

CP : Technical support & supervision of CHP, overall curative and preventive activities

CHP : Preventive health activity, delivery attendance, supervision of CHA, and emergency care

CHA : Multipurpose roles, including environmental hygiene, health education, TB care-finding, MCH and FP

VHA : Provision of health information and education, cooperation of health activities as the bridge of villages and PHU

2) Training

Method - lectures, discussions, practices & role plays

Material - "flow" chart, guide books & slide films

Lecturers - health experts, teaching staff from universities & hospitals, and KHDI personnel

Training Period:

Category	Total	Lecture	Practice	
			Clinic	Field
CP	3 days	2 days	-	1 day
CHP	12 months	3 months	3 months	6 months
CHA	4 weeks	2 weeks	-	2 weeks
VHA	2 weeks	2 weeks	-	-

C. Community Participation

For the effective implementation of the Community Health Project, community participation was emphasized by mobilizing and coordinating community-wide efforts to see what health problems rural people could solve with their resources, as a step toward self-reliance in connection with the Saemaul Undong (New Community Movement).

The VHA was developed and utilized at each administrative Ri in Hongchon, and the Daedong-hoe (Community Health Cooperative

System) was fostered and operated at either the Myon-level or jurisdiction of PHU.

1) Village Health Agent (VHA)

VHA is volunteer and woman leader in a village:

(a) Deployment and level of effort

Total Number : 106 women

Active : 66 "

Inactive : 40 "

(b) Activities

- acting as bridge connecting PHU and community(village)
- holding village meetings & inspiring villagers with health knowledge
- gathering health information
- finding & referring the sick to CHP and/or dispensing simple drugs for minor cases as directed by CHP

(c) Performances (annual average per VHA)

- home visiting : 117 cases
- motivating family planning practice : 6.5 "
- supplying contraceptives : 12 "
- registrating pregnant women : 4 "
- collecting sputums : 4 "
- administering medicine & first aid : 84 "

2) Community Health Organizations

(a) Organization

Level	Name: No. of Members	Chairman
Province	Provincial Health Promotion Council : 14	Governor
Gun(county)	Gun Health Steering Council : 14	Gun Chief
Myon	Myon Health Development Committee : 10	Myon Chief
Ri	Ri Health Development Committee : 10	Ri Chief

(b) Activities

- reviewing & approving work plans
- coordinating & consultating with relevant institutes for the project implementation
- reflecting the demand of consumers in the project

3) Financial Support for the Community

Funds to build and/or refurbish facilities

- ₩112,536,000

Mobilization of labor of community people

- ₩6,000,000 (equivalent)

D. Development of Financial Mechanism

1) Organization of the Daedong-hoe (CHCS)

In order to remove any economic barrier to the use of primary care services, and to maximize the community participation in the project, the Community Health Cooperative System (CHCS) was organized and fostered in specific sites of the demonstration area.

(a) Area : Hongchon Gun, Kangwon Province
Target Population : 44,000 persons
Enrollees : 13,657 persons (31%)

(b) Total Fund : ₩33,606,000
(fees - ₩20,332,000)
(interests - ₩5,274,000)

(c) Total No. of treatments received : 74,169

Mean No. of treatments by enrollee : 5.4

2) Community Health Insurance

A voluntary, subsidized, fee-for-service system was developed in cooperation with several pre-existing medical facilities; in addition, some new facilities were constructed and CHPs and CHAs assigned. The objective was to determine whether such a self-insurance system can be developed to meet the health needs of its members, and whether the system can be staffed and operated in a viable manner.

(a) General Information

Area Covered : Okgu Gun, Chola-Buk Province

Target Population : 10,590 persons

Premium : ₩400/person/month

(b) Performance (as the end of 1979)

Total Enrollees : 4,879 persons(43%)

Out-patient Visits Per Enrollee : 2.6 visits

Hospitalization Cases Per 1,000 Enrollees : 28.9 cases

Average Days of Hospital Stay Per In-patient : 7 days

(c) Medical Fees (per case)

Facility	Out-patient	In-patient
CHC & PHU	₩1,342	-
Private Clinic	₩2,660	₩67,238
Hospital	₩5,579	₩91,068
General Hospital	-	₩337,360

A Management Information System

A Management Information System (MIS) is a means for obtaining,

recording and analysing specific pre-designated elements of statistical data for monitoring and controlling a program or project in a timely, systematic manner. This MIS has been developed and functions in parallel to the existing system for management of evaluation of the KHDI project.

The source of data for the MIS is broken down to; Monthly Activity Report, Monthly Performance Report, Annual Performance Record Survey, Annual Activity Accounting Study, and Special Studies. Especially, the MIS has been developed and operated to identify and supervise program's strength and weakness. For this purpose, CHP and CHA should use the Daily Record Sheet and the Monthly Activity Report based on the summary of the Sheet, and should be sent to the KHDI via Health Center. The Activity Report thus received was promptly summarized, analyzed and its result was fed back for the project implementation.

In this Monthly Activity Report, each service (curative, infant, maternity, family planning, tuberculosis, etc.) was to be divided in terms of individual, group contacts as well as the site of contact. This Activity Report, effective January 1979, was the most important part operated in the MIS.

2. RESULTS OF THE KHDI PROJECT

The results of the KHDI Community Health Project, objectively evaluated by comparisions of pre-and post-measurements in demonstration and control areas, as well as a time series, showed significant improvement of workers' productivity, utilization of service, and client satisfaction.

A. Supply of Health Care Services (daily average)

Physician : 20.1 (curative only)

CHP : 16.2 (curative 12.8 + preventive 3.4)

However, the CHP serving in densely populated, non-remote area (Gunee-Eup)
: 32 (curative 24 + preventive 8)

B. Utilization of Curative Service

1) Households utilized at Health Center, CHC & PHU (during the past one year)

Demonstration Area	: 44.6%
Control Area	: 16.3%
Difference	: 28.3%

2) No. of Visits to Physician & CHP during One Year

Year	Demonstration Area	Control Area
1979	1.73	0.44
1976	0.93	0.30
Change	0.80	0.14

A total effect of the KHDI Model System on the net change

: (0.80 - 0.14) / 0.93 x 100 = 71%

3) Continuity of Care (patient's referral rate)

: 6% (per 100 patients in 1979)

4) Time required to get to PHU or Physician

Year	Demonstration Area	Control Area
1979	20.8 minutes	68.5 minutes
1976	61.9 "	63.6 "
Change	-41.1 "	4.9 "

A total effect of the KHDI Model System on the net change

: (-41.1) - 4.9 / 61.9 x 100 = 74.3%

5) Utilization rate of curative care rendered by physician & CHP who are located in the same residence Myon area:

Year	Demonstration Area	Control Area
1979	62.8%	31.4%
1976	41.0%	55.8%
Change	21.8%	-24.4%

A total effect of the KHDI Model System on the net change

: 21.8 - (-24.4) / 41.0 x 100 = 112.7%

6) Proportion of Household received at least one curative care from CHP : 74.8%

C. Satisfaction with Curative Service

1) Attitude towards need of CHP

: 95.7%

D. Preventive Service

1) Service Contacts

	Demonstration Area	Control Area
Mean No. per infant or child	4.5	0.1
Mean No. per eligible woman for family planning	3.3	0.9

2) Immunization of Measles (% of children aged one year)

Year	Demonstration Area	Control Area
1979	45.4%	14.0%
1976	25.1%	6.2%
Change	20.3%	7.8%

A total effect of the KHDI Model System on the net change

: (20.3 - 7.8) / 25.1 x 100 = 49.8%

3) Proportion of Institutional Deliveries & Births used a hygienic delivery set in home per 100 births:

Year	Demonstration Area	Control Area
1979	43.7%	18.7%
1976	18.6%	6.9%
Change	25.1%	11.8%

A total effect of the KHDI Model System on the net change

: (25.1 - 11.8) / 18.6 x 100 = 71.5%

4) Family Planning (proportion of sterilization or loop users as 100 of current users)

Year	Demonstration Area	Control Area
1979	18.0%	10.0%
1976	6.1%	2.8%
Change	11.9%	7.2%

A total effect of the KHDI Model System on the net change

: (11.9 - 7.2) / 6.1 x 100 = 77.0%

E. Conclusion

1) Access to health care (curative & preventive services) was significantly improved by the total effect of the KHDI Model System in terms of utilization of service and consumer satisfaction.

2) CHPs, who were developed and deployed by the KHDI as an innovation, effectively contributed to improvement of accessibility to health care within the KHDI system.

3. FINDINGS OF THE EXTERNAL EVALUATION BY NHS/KDI ON KHDI PROJECT

A. A rural primary health care system, which was developed and field-tested by the KHDI, is undoubtedly the effective and feasible way, and probably the only way to meet the crucial and long neglected basic health needs of rural people.

B. The PHUs are delivering curative service reasonably well, reaching an average of 15-20 patients per day. Also, the ratio of direct service effort to total health facility effort is reasonably good; a PHU staffed with one CHP and one CHA is indisputably more efficient than the existing system in generating direct service activities.

C. The primary health care approach is more cost-effective than the previously existing (health center) type of care by a factor of approximately 50 percent.

D. The key features of the KHDI project should be incorporated in the next five year Socio-Economic development plan (1982-1986). A total extra health expenditure to be needed in replication of the KHDI system to all rural areas (1,458 Eups/Myons) is estimated as follows by year;

Year	Expenditure (in million Won)
1982	23,897
1983	21,401
1984	21,401
1985	16,395

4. RECOMMENDATIONS ARISING FROM KHDI STUDY TO THE GOVERNMENT

A. Future Role of KHDI

The KHDI has been established by law as an institute under the Ministry of Health and Social Affairs. KHDI's role is defined by that legislation which includes these functions;

(a) Health policy analysis, planning and research for the government. Such research may include the design and evaluation of demonstration projects.

(b) Support for the implementation of a national health care system. This includes technical assistance in the development of management information systems and possibly also the training of health system managers for national, provincial and county levels.

(c) Technical assistance (i.e. curriculum development and teacher training) for the preparation of various levels of health workers.

In order to fulfill the above functions both internal and external changes must be made with respect to KHDI.

A.1. KHDI needs to reorganize in order to develop a health policy research capacity. In particular, some economic and other scientific expertises must be developed within KHDI.

A.2. MOHSA needs to make better use of KHDI as a health services research and development institute.

A.3. There must be some coordinating body to integrate the planning and delivery of national health services. For instance the National Health Council could play a more active role as an interagency coordinating committee. If this were the case there would also have to be a lower level working committee.

B. Administration of Health Care Delivery System

Recognizing the great difficulties encountered in implementing the KHDI project because of administrative, structural and legal constraints, it is recommended that:-

B.1. Administration of the health care delivery system be brought under one central body - a National Health Authority which would subsume the functions and

responsibilities now divided between MOHSA, MOHA, MOE, province, county and Myon authorities.

B.2. This unified central authority should have, as an urgent priority, the development of proper working relationships between the public and private sectors of the health care delivery system and the development of appropriate referral mechanisms to ensure that patients are treated at the level of provision appropriate to their need.

B.3. Consideration be given to developing under the National Health Authority a regionalised system of health administration so that regional needs and resources may be used optimally. The overall supervision and allocation of funds and other resources to the regions would remain the responsibility of the National Health Authority.

C. Development of Primary Health Care Service System

Recognizing that primary health care has both preventive and curative aspects, it is recommended that:-

C.1. The places of the CHP and the VHA as essential personnel in the delivery of primary health care be legally recognized by the government and that provisions be made for the training and utilization of these categories of workers in close cooperation with and under the supervision of

qualified medical practitioners particularly in the rural areas.

C.2. So far as is practicable, community participation in the provision of primary health care should be encouraged through such mechanisms as the Saemaul Undong. This involvement should be directed mainly towards the education of the community in self-help and in proper utilization of health services. Development of grassroots participation in planning and management of services encountered considerable problems in the KHDI project.

C.3. Within the primary health care delivery system, the referral pattern would normally be from the VHA to the CHP to the general practitioner. The referral system should recognize that referral may be either upwards or downwards within the primary health care system. There needs to be consideration given to the proper linkage between the primary health care system and the institution-based secondary and tertiary levels of care including appropriate financial arrangements to cover the patient moving throughout the health care system and thus provide true continuity of patient care. The

referral system should, so far as is practicable, take account of patient preferences regarding choice of practitioners.

C.4. Because pharmacists have in the past played such a large role in the health care field, the activities of pharmacists should be carefully reviewed so as to ensure the appropriate utilization of this large component of the health care work force.

D. Financing of Rural Health Care Delivery System

Because the KHDI project and experiences in many other countries have demonstrated that it is not feasible to finance rural health services through voluntary insurance mechanism, it is recommended that:-

D.1. The concept of voluntary health insurance for rural health services be abandoned. Instead, a compulsory, prepaid group-practice scheme should be explored.

D.2. Priority should be given to the development of primary health services rather than to the building up of sophisticated health care facilities.

D.3. The present fragmentary system of financing the health care delivery system with contribution from various

levels of the government be revised so that all contributions from these various sources be paid into a National Health Fund, controlled by the National Health Authority which has power to allocate this fund so as to provide an equitable distribution of services throughout the Republic.

E. Status of Health Service Personnel

The KHDI project demonstrates the high wastage rate of trained health personnel. It is recommended that consideration be given to the improvement of the conditions of employment of health personnel to ensure that trained personnel be retrained in the health field and to provide a proper career structure for health personnel within a properly organized health care system.

5. HEALTH POLICY IMPLICATION IN THE 1980'S

The Government has expressed the adoption of the Primary Health Care Approach based on the past KHDI experience for the Fifth Five-Year Economic and Social Development Plan, to improve and enhance access to health care delivery for the rural community residents, by deploying middle level health workers and by experimenting on prepaid group-practice or new type of community health insurance schemes.

A. Project for Improving Health Care Delivery System

The Government established the policy, based on the KHDI study experiences and the recommendation of KDI, to redefine the catchment area to better meet community needs and to improve the efficiency of primary care practice in the rural community. It is expected that the present administratively-divided catchment areas which were originally made by the political jurisdiction will be reorganized to new catchment areas based on the concept of community of solution, that is, environmental health problems and health service marketing areas. After redefinition of the new catchment areas throughout the country, the Government will train and deploy the CHP-type intermediate health care workers during the next five years.

B. Demonstration Project of Community Health Insurance

The Government already announced that Community Health Insurance/ Prepaid Group-practice Schemes will be demonstrated in the three KHDI Study areas and will be extended further to other provinces in 1982. After two to three years of demonstration effort the feasible model will be replicated throughout the country up to early 1980.