IV. POSITION PAPERS/PROJECT PROPOSALS

7. *Environmental Health Program*

a) Organization and administration

The environmental health services are carried out by the Public Health Inspectorate which is part of the Public Health Bureau (Ministry of Health) and is headed by a Medical Officer of Health, although the Principal Public Health Inspector is now generally reporting directly to the Chief Medical Officer (see Organization Chart, EH 2) and the Permanent Secretary.

The duties of the three levels of inspectors are listed (see EH 3a, b, c). Due to resignations and transfers there is a shortage of trained inspectors to carry out their broad program of environmental control (see EH 4a, b, c). As a result, some untrained public health assistants are employed to fill the gaps and provide a pool from which inspector candidates can be selected and sent to the West Indies School of Public Health in Jamaica for basic training. Some of these assistants received training thisyear (5 July - 7 August) from a PAHO consultant and more such training programs are planned.

Most of the finance and other administrative support services for the inspectorate are housed in the central Ministry of Health, and only secretarial services, drivers, etc. are at hand in their offices at the Matron Roberts Health Center on Magazine Road in Belize City. Indeed, although requested, a 1982-83 budget for the inspectorate could not be supplied. However, extracts for the organization from the official government budget for the year 1982-83 are provided (see EH 5a, b, c).

The administration of environmental health services is now slowly shifting from the specialized and isolated technical unit of the past to an integrated element in the Primary Health Care services of the future. In this regard much will depend on the continued development of the health team concept and the utilization and performance of the new Community Health Workers whose job description specifically states that:

"5. Assist the Environmental Health Officer in educating and advising the community on the identification and solution of their environmental health and sanitation problems, especially water supply, disposal of excreta and waste, and food protection."

b) General activities

Training:

Because of a growing concern in the Ministry over the shortage of trained environmental health personnel a short in-house training program for 11 public health assistants was held (with PAHO assistance) from July 5 to August 7, 1982; and the unit participated fully in lectures and field visits. Senior staff also participate, on demand, in the training of other health personnel from time to time (e.g. sanitation workers in Belize City).

Legislation:

An inherent feature of environmental control is the control of man's activities for which legislation is essential. Existing legislation is out-of-date; and in addition, the lack of standards also

weakens enforcement of control measures through the courts.

Health education:

This is a routine function of all environmental health personnel, but the new trend for greater community participation will undoubtedly demand an increased effort in this aspect of their work.

Information system:

Much basic environmental health infromation is collected by the unit (and by census takers), but the appropriateness and usage of the information are in need of review, especially in light of the Ministry's intentions to develop the management aspects of all programs.

Program design and management:

Environmental surveillance and other activities of the unit are bascially carried out on an open-ended basis making monitoring and evaluation somewhat difficult if at all possible. Activities need to be programmed within definite time-frames, and managed for improved effectiveness within the limitations of available resources.

Inter-sectoral coordination:

Coordination between environmental health and other environment-oriented services of the Ministry (e.g. Housing) and other ministries (e.g. Water Supply, Local Government) is far from developed at this time, and will require deliberate directives from the highest policy level.

Disaster sanitation:

The unit is not organized or prepared to meet serious or urgent post-disaster demands for its services. No emergency environmental

health management action plan exists and vulnerability assessment of water supply and other environmental health systems have not been made.

c) Water supply

- Urban

About half the population in Belize live in eight urban centers served by communal water supply systems, all with chlorination facilities (see EH 6 for available details) and operated by the Water and Sewerage Authority (WASA). For urban areas there is a large percentage without internal plumbing (40%) or served by standpipe (19%).

Water quality control is primarily carried out by WASA.[1] In Belize City, 10 samples are taken twice monthly for bacteriological analysis and 10 samples daily for residual chlorine concentration. Physical and chemical analysis are carried out approximately four times annually. The plan for other urban systems is 10 samples to be taken, once monthly. However, what is currently achieved is far short of the planned schedule. All samples are analysed in the relatively new WASA laboratory at the Belize City water plant.

The water sampling and analysis by Ministry of Health personnel in urban areas are limited to two samples, once weekly, in Belize City. Tests for residual chlorine concentrations are taken at irregular intervals.

As indicated in EH 7 prepared by the inspectorate, "the present surveillance of drinking water quality is inadequate" in urban areas.

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[1] Useful budget data re 1982-83 are available in munites of a meeting of WASA held on 20 May 1982.

- *Rural*

Three different organizations, under different ministries, are responsible for different rural water supply programs as follows:

Ministry of Natural Resources:

This program is primarily for livestock development (cattle) and irrigation, but also provides drinking water to a small population. Drilled wells are constructed on private farms.

Ministry of Energy and Communications:

The Water and Sewerage Authority (WASA) construct individual drilled wells with hand pumps and also provides rudimentary water supply systems, primarily in the Stann Creek and Cayo districts.

Ministry of Health:

Under a rural water supply and sanitation program the Public Health Service of the Medical Department constructs individual drilled wells with hand pumps (previously with CARE support) in the Corozal, Orange Walk, and Belize districts.

The program is particularly hampered by the lack of pumps and 56 villages were identified in 1979 by a CIDA study as deserving rudimentary water supply systems.

In water quality control, both physical and chemical testing are carried out initially on wells drilled by WASA and the Public Health Service but not for wells drilled in the livestock development program. It appears that bacteriological analysis is not carried out initially or on a regular basis.

d) Sewerage

- Urban

There are two communal sewerage systems -- one in Belmopan and one being constructed for Belize City. In the latter, some building connections have already been made and two sewerage lagoons south of the city are operative. A pump station and some sewers are still being built. Both systems are owned and operated by WASA. The role of the Ministry of Health (Public Health Services) is to approve the design, construction and operation of septic tanks and other individual disposal systems (42 septic tanks approved in 1981-82); but it is felt that the regulations are "grossly abused by the public". Low income houses still use bucket latrines, the contents of which are dumped into canals or bushy areas in Belize City. This may be why the figures in EH 1 show a very high percentage (38%) of "Other/Not Stated" disposal facilities.

- Rural

The main method of sewage/excreta disposal in rural areas is the pit latrine (76% in EH 1). Some of these were undoubtedly constructed as part of the Ministry of Health former latrine program for rural areas, which is no longer fully operative. Expereince in other parts of the Caribbean suggest that a latrine program is a long term need for rural areas. Also, the problems of non-usage in the Toledo district need to be studied with a view to improving the situation.

e) Solid waste management

The execution of solid waste management programs in Belize City and other district capitals is the responsibility of local government

councils, and the common method of disposal is the sanitary landfill, which in many cases is really open dumping. Solid waste collection and disposal are affected by:

- insufficient transport and other equipment,
- untrained and unmotivated workforce,
- vague and outdated legislation.

Only for Belize City are any data available, and the unit's responsibilities are limited to:

- advice on appropriate disposal areas,
- periodic check to ensure safe environmental impact,
- training of Belize council staff,
- educating the public by community campaigns.

It is essential that the Ministry of Health is allowed to play a more positive role in what is a leading environmental health problem in the country.

f) Food sanitation

The food sanitation program of the Public Health Inspectorate covers four main areas, little mention being made of milk sanitation and beverage plants:

- Food establishments
- Food handlers
- Unwholesome food
- Meat hygiene

Food establishments:

The current program includes an inspection of food establishments when

complaints are registered or annually with quarterly follow-up inspections. These establishments, nearly 1100 in all, include restaurants, clubs, hotels, beer parlours and wholesale liquor shops. The following table represents 1981/82 activity in this area:

Establishments Inspected		*Approval* *Full*	*Conditional*	*Major Defects*
Liquor	= 889	153	301	435
Non-liquor	= 188	23	77	88

The shortage of trained inspectors and the lack of standardization in food inspection are the main problems at this time.

Food handlers:

The coordination of the clinical examination of food handlers is carried out throughout the year. Weekly clinics are held in each district and laboratory samples are collected and analyzed. Certified food handlers are examined every 90 days and clinical exams are conducted biannually. The 1981/82 figures are as follows:

Food handlers clinics - 42

Persons attending - 816

Persons treated for various parasites - 69 (54 female)

Certificates issued - 343 by government clinics

- 23 by private practitioners

Because of the high turnover of food handlers and weak legislation, the effectiveness of the program is subject to question.

Unwholesome food:

Another inspectorate responsibility in food sanitation is the inspection, condemnation and destruction of decomposing food stocks. It is feared that due to the manpower shortage, the inadequacy of food disposal means, and the weakness of food control legislation, a sizeable amount of unwholesome food reaches consumers. We have witnessed the open dumping of spoilt boxed and canned foods away from the main Belize City solid waste disposal site in such a manner that they could be recovered and used later.

Meat hygiene:

Inspection of abattoirs and poultry plants and the examination of meat are important features of the overall food sanitation program. Because of the erratic scheduling of animal slaughtering in some of the districts (each has a slaughterhouse), the required procedures are not followed and inspections are frequently conducted by untrained personnel.

g) Vector control

Except for mosquito control in the malaria eradication program and the anti-Aedes aegypti program, both of which are now executed by another unit in the Public Health Department, vector control is carried out in a modest way by the environmental sanitation unit. Rodent control (or extermination) is practised with the cooperation of the public; and on request houses may be sprayed with insecticides against cockroaches and bed bugs.

Because many urban buildings are wooden and their surrounding areas are insanitary, a more concerted drive on rodents is necessary,

starting with surveys of rodent prevalence.

For anti-rabies control, vaccination and extermination of feral animals (e.g. dogs) are carried out. In 1981-82, 551 animals were vaccinated and rabies infection was identified in 7 dogs, 6 cows, one pig and one human.

h) Housing

The inspection of premises, traditionally the public health inspector's prime responsibility, is carried out despite the shortage of trained manpower and the difficulty of winning court convictions. Unlike many other areas in the Caribbean, the unit plays no role in enforcing minimum environmental control standards in the pre-construction stage of buildings. In the 1981-82 year only 2056 premises (or 10% of all in the country) were actually inspected.

i) Quarantine

Chapter 89 of the Quarantine Regulations empowers the inspectorate to carry out Quarantine duties at the Belize International Airport and other ports of entry. Surveillance is limited to yellow fever (from South America) and cholera (from Africa and Asia). The total number of planes and ships arriving in Belize in 1981-82 were 5,549 while total certificates were 41,606.

j) Water pollution control

The inspectorate has been involved in studying and reporting on water pollution problems from disposal of treated industrial wastewater, with assistance from PAHO. Unfortunately, a full water pollution control

program depends on the drafting, enactment and enforcement of modern legislation, which is still outstanding. The rivers involved are the New River, Old Belize River, and South Stann Creek; and sugar, metal plating and citrus industries are involved.

k) Occupational hygiene and safety

Occupational hygiene and safety is primarily the responsibility of the Ministry of Labour. The Public Health Inspectorate has more than a passing interest in the working environment, but the manpower shortage has not allowed them to become very active in this field. As in other CARICOM countries, the Labour Inspectorate is mainly interested in accident prevention, and a joint program between ministries is still to be formalised.

l) Control and abatement of nuisances

The unit responds almost daily to the report of environmental nuisances and, in 1981-82, 416 nuisances were reported and 91 abated. These are generally related to waste disposal problems in housing areas.

m) Miscellaneous environmental control

There are several areas of environmental control not now served by the inspectorate either because problems have not been considered serious enough to deserve attention or due to the shortage of trained manpower, such as:

- Institutional sanitation
- Noise control
- Air pollution control
- Accident prevention
- Sanitation of recreational areas

Assessment of Performance

a) Resource shortages

In environmental health the great resource shortage is in trained manpower. Although the population of Belize (approx. 145,000) is relatively small the people are distributed through the country, and the administration of an effective national environmental health program in many scattered communities will require at least the doubling of public health inspectors and assistants within the foreseeable future. It is clear that more inspectors and assistants are needed to improve environmental surveillance and the enforcement of mimimum control standards. In addition, a concentrated attack on rural water supply and sanitation will require additional well drillers and maintenance crews, as well as latrine construction and installation workers.

Naturally, an expanded environmental health program will not be possible with a shrinking budget. Besides the present manpower shortage there is a need now for transport and other equipment; and indeed, rural water supply wells being drilled are capped because there are not hand-pumps in stock. This is more a sad reflection of limited funding for environmental health (if not of the whole health sector) than it is of the lack of management expertise.

b) Legislation

The second most important weakness in the environmental health program is the lack of modern environmental health legislation and standards. To control the environment one has to control man; and to

control man and his environmental activities requires laws, regulations and standards. Some aspects of the program depend more on legislation than others (e.g. water pollution control). However, education is not enough and must be backed up by the threat of court-awarded penalties.

c) Administration and management

The public health inspectorate is a technical unit with administrative direction from the Ministry and limited administrative support from within. Management expertise for the unit and its various technical programs is seriously lacking. If there is any development of environmental health projects, there will have to be a parallel development of program project design and management capability within the Unit.

d) Communities

There is a lack of community awareness and participation in environmental health activities in most urban and rural areas, due largely to the low socioeconomic standing of most segments of the population who give a low priority to environmental problems. The lack of environmental planning, consultation and infrastructure in the growing number of refugee settlements poses a serious threat of environmental diseases (e.g. enteric and vector-borne) for the future.

EH Table 1

Water Supply and Sewage/Excreta Disposal in Urban and Rural Areas*

WATER SUPPLY

Supply Connections	*Urban* (14,775 Households)	*Rural* (13,362 Households)
1. Public -- internal	21%	2%
2. -- external	40	13
3. Private -- internal	7	5
4. -- catchment	4	18
5. Public standpipe	19	9
6. Public tank	0	1
7. Other/not stated	9	52
	100%	100%

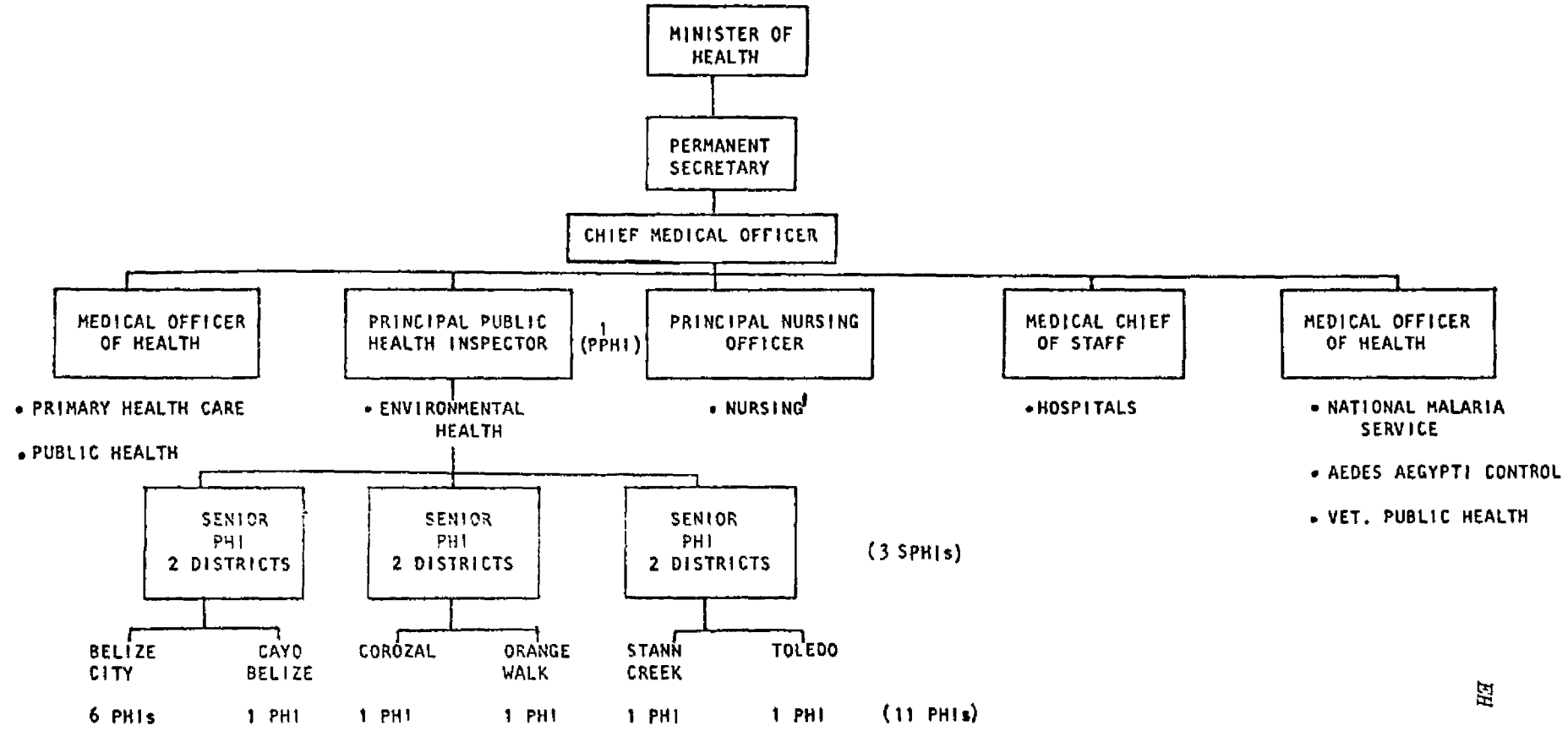
SEWAGE/EXCRETA DISPOSAL

Disposal Systems	*Urban* (14,775 Households)	*Rural* (13,362 Households)
1. Connected to communal sewer system	6%	1%
2. WC and septic tank	29	6
3. Pit latrine	26	76
4. Other/not stated	39	17
	100%	100%

*Urban areas include the towns of: Belize City, Corozal Town, Orange Walk Town, Dangriga, Punta Gorda, San Ignacio and Belmopan

Note: Figures from the 1980 Population census.

ORGANIZATION CHART OF PUBLIC HEALTH INSPECTORATE, BELIZE



EH 2

Note: Salaries are: PPHI ($39,576 - 15,864)

SPHI ($27,960 - 12,324)

PHI ($25,308 - 7,872)

Duties of the Principal Public Health Inspector

The duties of the Principal Public Health Inspector include:

1. Responsible for the day to day functioning of the Environmental Control Service.
2. Makes plan for the efficient functioning of the service.
3. Plans the Budget and ensures that all sections are adequately provided with materials and supplies.
4. He liaises with the Medical Officer of Health to ensure that all health policies are carried out.
5. Prepares progress reports.
6. Organizes in-service training programs for Public Health Inspectors.
7. Health education.
8. Undertake any other special investigations required by the Medical Officer of Health.

Duties of the Public Health Inspector

The duties of the Public Health Inspector include:

1. Control and abatement of nuisances as defined by law Chapter 87 Section 136.
2. Investigation of complaints.
3. Inspection of offensive trades.
4. Inspection of factories.
5. Collection of water samples.
6. Collection of food samples.
7. Inspection of food samples
8. Inspection and condemnation of unsound food.
9. Meat inspection.
10. Inspection of septic tanks.
11. Drainage
12. Rabies - control
13. Port health duties
14. Health education
15. Specialized campaign.
16. Pollution - control and prevention.
17. Keeping of records.
18. Reporting promptly and
19. Any other investigations required by the Medical Officer of Health.

Duties of Senior Public Health Inspector

The duties of the Senior Public Health Inspector include:

1. Acting in the absence of the Principal Public Health Inspector.
2. Purchase and issue stores.
3. Keep stores ledger.
4. Receive and collate Public Health Inspectors' reports.
5. Supervise and advise Public Health Inspectors.
6. Represent the Public Health Bureau in court, and;
7. Undertake any other special investigations required by the Medical Officer of Health.

EH 4a

Program of Environmental Control for the

Year 1981 and 1982

SOLID WASTES

Objectives:

1. To have a proper designated place for disposal of garbage for each municipality.
2. To obtain collection frequency of twice per week in all cities, and towns.
3. To have 100% of businesses provided with proper storage facilities.
4. To have 50% of private sector provided with proper storage facilities.

LIQUID WASTES

Objectives:

1. To have 100% of food establishments provides w/c for both sexes in all townships.
2. To have 50% private sector provide proper unit.
3. To have 100% rural families provided with acceptable units.
4. To have 100% of school provided with acceptable sanitary units.
5. Have 50% school provide hand washing facilities.

WATER SUPPLIES

1. *Quality control*

   a) Weekly sampling of municipal supplies.

   b) Monthly sampling of rural supplies.

2. *Provision*

   c) To provide 100 wells in the Cayo District.

d) To provide 50 wells in the Belize District.

e) To provide 50 wells in the Toledo District.

f) To re-establish the San Jose' system.

g) To build the new Dougals Section (San Juan).

h) To construct the new Chan Pine Ridge System.

FOOD CONTROL

a) Register 100% of establishments.

b) Register 75% of the vendors.

c) Organize 4 food-handlers seminars.

d) Submit 4 samples of flour for evidence of pesticides, herbicides, insecticides and food composition.

RABIES CONTROL

a) Eliminate 100% of stray dogs.

b) Vaccinate 80% owned dogs.

c) Investigate all dog bites.

d) Doctors to treat all suspect cases.

HEALTH EDUCATION

a) Lectures to schools on problems relative to the areas.

b) Lectures to groups and organizations.

c) Continue on person to person basis.

d) Continue weekly radio program with change of format - more interviews, more call in.

e) Continue to participate in agriculture shows - highlight general problems.

MEAT INSPECTION

a) Inspection of all meats slaughtered at the slaughterhouse.

b) Improve the sanitary condition of all slaughterhouses.

c) Improve the hygienic condition in which meats are transported.

d) Register all butchers as food-handlers.

e) Regulate slaughtering of animals.

POLLUTION CONTROL

a) Monitor Orange Walk River.

b) Monitor Belize and Sibum Rivers.

c) Monitor North Stann Creeek River.

OCCUPATIONAL SAFETY

1. Monitor the work places.
2. Ventilation.
3. Lighting.
4. Noise level.
5. Temperature.
6. Accident prevention.
7. First aid.

INSECT AND VERMINS CONTROL

1. Continue to distribute rat-poison.
2. Continue the spraying of houses against roaches and bedbugs.

ENVIRONMENTAL SANITATION EXTRACTS FROM BELIZE 1982-83 BUDGET

HEAD 22 -- MINISTER OF HEALTH (cont'd)

sub-Head No.	Establishment 1981/2	Establishment 1982/3	Details of Expenditure	Estimates 1981/2	Approved Estimates 1981/2	Revised Estimates 1981/2	Increase	Decrease	Actual Expenditure 1980
			IV. Public Health	$	$	$	$	$	$
(a)			Health Education Officer	15,563					
(b)	1	1	Principal Public Health Inspector AS3	15,563	12,893				
(c)	2	2	Senior Public Health Inspector AS5	22,168	18,909				
(d)	15	14	Public Health Inspector TSA u	101,021	90,334				
(e)	1	1	Visual Aid Officer TS5	5,796	5,127				
(f)	1	1	Supervisor of Public Nurses NIA u	11,044	8,762				
(g)	1	1	Senior Public Health Nurse N2A	9,636	7,794				
(h)	13	13	Public Health Nurse N3A qu	103,004	89,918				
(i)	41	41	Rural Health Nurse N5 qu	231,281	176,458				
(j)	2	2	Nurse/Midwife N3	17,328	12,971				
(k)			Overtime Fees to P.H. Inspector		21,780				
			Sanitary Engineer AS3		11,376				
(l)			Social Security	34,172					
			10% Salaries Increase		22,186				
	78	77	TOTAL, HEALTH SERVICES	566,676	479,138		87,538		

EH 52

HEALTH PROGRAMMES

Sub-Head No.	Establishment 1981/2	Establishment 1982/3	Details of Expenditure	Estimates 1982/3	Approved Estimates 1981/2
1.			II. Rural Environmental Sanitation PERSONAL EMOLUMENTS		
(a)	1.	1	Assistant Sanitary Engineer A	8,340	7,582
(b)	1	1	Foreman T2	7,234	6,183
(c)	1	1	Carpenter T5	4,994	4,227
(d)	2	2	Well Rig Operator T4	11,416	9,864
(e)	2	2	Typist C4	8,477	4,710
(f)	1	1	Messenger M	2,491	2,463
(g)			Unestablished Staff	50,625	43,255
			Social Security	5,615	3,915
	8	8		99,142	82,199
			OTHER CHARGES		
2.			Subsistence Allowance	15,000	10,000
3.			Stationery and Incidentals	3,500	1,500
4.			Running and Maintenance of vehicles	30,000	18,000
5.			Running and Maintenance of Rigs	25,000	15,000
6.			Materials and labour	70,000	20,900
7.			Miscellaneous		15,000
8.			Maintenance of Rudimentary Water Systems	12,500	6,600
				156,000	87,000
			Total, Rural Environmental Sanitation	255,192	169,199

4. PUBLIC HEALTH SERVICES

Description:- This subhead is concerned with carrying out the provisions of the Public Health Ordinance, Chapter 87. Its main functions are:

(a) enforcing regulations affecting environmental sanitation;
(b) conducting immunization programmes;
(c) implementing health programmes
(d) conducting maleria eradication and anti-rabies campaign and aedes aegypti eradication.

The analysis of expenditure in terms of object Accounts is provided below:-

Sub-head No.	Details of Expenditure	Estimates 1982/3	Approved Estimates 1981/2	Revised Estimates 1981/2	Actual Expenditure 1978	Actual Expenditure 1979	Actual Expenditure 1980	Increase	Decrease
22.4	Public Health Services	$	$	$	$	$	$	$	$
1.	Personal Emoluments	566,676	479,138		227,631				
3.	Materials and Supplies	13,000	12,000		4,783				
4.	Other Operating & Maintenance	100,000	131,000		68,523				
		679,676	622,138		300,937			57,538	

Brief Description of Urban Water Supply Systems

Locality	*Population*	*Source*	*Treatment Facilities*
1. Belize City	39,771	Belize River	2 I.MGD, Intake, Low lift pumps, 1 Clarifier, 4 Gravity sand filters, Chlorination and High lift pumps.
2. Belmopan	2,935	River	Coagulation, Sedimentation, Filtration and Chlorination.
3. Benque Viejo	2,435	Spring	Chlorination
4. Corozal	6,899	Bore Hole	Chlorination
5. Dangriga	6,661	River	Coagulation, Sedimentation, Filtration and Chlorination.
6. Orange Walk	8,439	Bore Hole	Chlorination
7. Punta Gorda	2,396	Bore Hole	Chlorination
8. San Ignacio	6,179	River	Chlorination

Water Quality Surveillance Activities in Belize

Surveillance Activity	*W.A.S.A.*	*Public Health Bureau*
1. Laws, regulations and policies	None	General public health regulations
2. Enforcement	-	As needed above
3. Drink water standards	None	-
4. Training water works operators	Only two with some local training	None
5. Sanitary surveys	None	None
6. Approval of source	None	None
7. Sampling and monitoring	Urban areas only but irregular	Urban areas only but extremely limited in scope and irregular
8. Standard method of analysis	Residual chlorine analysis, chemical and bacteriological but limited in scope	Residual chlorine and limited bacteriological
9. Reporting requirement	For activies 7 and 8	For activies 7 and 8
10. Remedial action	No effective procedure	No effective procedure
11. Design standards	None	None
12. Control of cross connections	None	None
13. Plumbing code	None	None
14. Materials and additives standards	None	None
15. Regulation of special water supplies:		
International airoprt	None	None
Hospitals	None	None
Schools	None	None
Army posts	None	None
Sea port	None	None
Ice manufacture	None	None
Tanker supplies	None	None
16. Medical examination of waterworks operators	None	None

Conclusions: As can be seen from the foregoing, the present surveillance of drinking water quality is inadequate because of many reasons, i.e. inadequate to provide and significant measure of protection to the public from the potential health hazards which could arise by drinking unwholesome water.

8. Primary health care (PHC)

The different components of the PHC project in Toledo district are in various stages of planning and implementation. Selection and recruitment of trainees has taken place; a nurse/midwife/educator is based in a centrally located village from which she makes periodic visits to trainees and health centers; a public health/primary care/educator just arrived in the country ready to assist in the training and supervision process; a solar powered radio communication network is being developed for the bulk of villages in the district; proposals have been made for instructional aids; elements of a disease reporting system have been devised; a project proposal has been prepared and submitted to support an assessment of the PHC program; and related needs in Toledo district identified.

This program has been given high priority by the government of Belize; has benefited by intersectoral collaboration; and has been supported by a variety of donor agencies including, for example, IDRP/Canada, CIDA/Canada, Project Concern, Council for International Health, UNICEF, and ODA.

There is a need to build additional health clinics, to rehabilitate old ones, to make optimal use of health data generated, to improve the resources of the health facilities network which supports the work of the PHC network, and more. However, the program is only beginning and optimism justified.

Position papers/project proposals

The stated objective of this health sector assessment was "to assist Belize health authorities in identifying priority health problem areas in the first Belize Health Policy Paper (or plan) now being prepared." Accordingly, at our final meeting on September 8, Mr. Shoman presented us with written drafts describing 5 projects which the Ministry wishes potential donors to support. In descending order of priority, they deal with the need for a hospital in Belize City, development and upgrading of the network of district hospitals, improved anti-malaria services, development of PHC infrastructure, and a rural water supply and sanitation project in Toledo district.

1. Re a hospital in Belize City

TO: Minister of Health

FROM: Chief Medical Officer

SUBJECT: On the need for a maternal and child hospital in Belize City

DATE: August 4, 1982

As you are aware, many difficulties have arisen in Government's efforts to procure external financing for a new General Hospital in Belize City. Among the factors that can be cited are the following:

1) Insufficiency of the EDF funding for the original ODS proposed hospital,

2) Ambiguity in pursuance of the Mexican offer to assist Belize in this

matter,

3) Increased construction costs due to difficult site conditions,

4) Hospital construction is a low priority item in present international funding agencies' agendas.

A possible alternative that would allow Government to meet it's pressing commitment, and effectively enhance secondary and tertiary care for the population groups identified as prioritary in the Ministry's Health Policy Statement, is the construction and equipping of a new Maternal and Child Hospital in Belize City. The justification for such a step are the following:

1) According to the 1981 Hospital Statistics, 75% of all admissions to Belize City Hospital are of Obstetrical, Gynaecological or Pediatric nature. Of these, Obstetrical - Gynaecological cases represent 62% of all patients admitted to Belize City Hospital. Pediatric and neonatal (premature babies) represent 13% of the total Normal Deliveries, Direct Obstetric causes. Diseases of the female genital organs and abortion are among the five leading causes of hospitalization, and represent 40% of all admissions. It is important to note that the hospital beds assigned to Maternity and Gynaecology number a total of 36, or 20% of the hospital complement of 174. In other words, 20% of the hospital beds provide care to over 60% of the demand. This can be explained by the fact that Maternity beds have a high turnover rate, i.e., the average length of stay is 3 days, whereas other services, such as Medicine and Surgery have between 9 and 10 days of average length of hospitalization.

Pediatrics takes up 30% of all hospital beds and attends to 13% of all hospital admissions, which is as much as Surgery and considerably more than Medicine. All in all, the Maternity and Pediatric Sections of the Hospital have 50% of the beds and attend to 75% of the patient load. All these figures are summarized in the following table:

Movements of inpatients - Belize City Hospital - 1981

Service	*Beds Available*	*Admissions*	*Average Occupancy (%)*	*Average Length of Stay*
Gynaecology	11	1883	45.0	9.8
Obstetrics	25	2425	80.0	3.0
Premature Newborn	12	165	11.0	2.8
Pediatrics	43	768	48.0	9.9
Surgery	40	980	60.0	9.0
Medicine	48	684	33.0	9.0

As can be ssen, a modern, relatively small (80 to 100 beds) Maternity and Child Hospital would provide secondary and tertiary care of high quality to attend 75% of the Hospital service demand. And it would provide such care to those groups that would benefit most and require priority attention.

2) Such a Hospital would be administratively and programatically linked to the Maternal and Child Health Programme of Belize. It would be a functional vertex of Maternal and Child Health activities from the community level on up. The Hospital would provide adequate advanced tertiary care to all "high risk pregnancies" and complicated deliveries

in the country, as well as support primary and secondary care needs for the Belize District populations.

This fact would allow the possibility of tying the Hospital into a wider multilevel M.C.H. package that would be more attractive to external financing; and could include other aspects such as Health education, equipping of Health Centres, Midwifery Training, etc.

3) By improving secondary and tertiary care for the Maternal and Infant population, such a Hospital would have a significant impact on the major health indicators such as Infant and Maternal mortality, life expectancy and Child mortality.

4) Very little additional staffing would be required to run the new unit, since the Medical and Nursing Staff currently engaged in these services would simply be transferred. Serious thought would have to be given to improving the quality of staff, i.e., by training in prenatal care, neonatology and some other, Pediatric Specialities (infectology, pediatric survery, etc). With sufficient time and planning, such manpower development could be achieved in a relatively short period (one to two years).

5) The present Belize City Hospital would become a Medical Surgical Hospital providing secondary care for the adult population of Belize City and surrounding areas. It could develop tertiary facilities for treating major prevalent adult conditions, such as heart disease, trauma, diabetes, orthopedic conditions and acute mental illness.

Present overcrowded bed capacity could be reduced to around 80 to 100 beds, and the existing facilities would be moderately upgraded.

Better space distribution would be possible. New areas for specialized

tertiary care could be opened and equipped at a moderate expense: a Cardiological unit, an Orthopedic traumatology unit, an intensive care area, and a Psychiatric ward. Finance for this upgrading effort could partly be met by Social Security funding, since this is an area of concern for this Institution.

6) It is a definite fact that it is easy to elicit public sympathy and support to an M.C.H. It may be difficult to procure all the required funding from one external source; in fact, it will probably be necessary to develop a wide range of contributors, including friendly Government, aid agencies, external non-governmental organizations and Belizean voluntary groups both in country and abroad. This is obviously a situation that could develop undesirable political ramifications; but, if well led, a large measure of community involvement would perhaps allow the project to arise above traditional political boundaries. (Neutrality of health as a common good).

7) It is impossible at this premature stage to provide any hard financial costs that the project would entail; an extremely cautious guesstimate would be the following:

Construction new Maternal and Child Hospital:	Under $Bze - 8 Million
Equipping:	$1000.000 to $2.000.000
Training Abroad:	$200.000 to 400.000
Upgrading Old B.C.H.	$2 million
Total	$11.2 to 12.5 million

This is well under a third the estimated costs of the O.D.A. project and about half that of the Mexican I.M.S.S. 250 bed hospital. The

possible sources of funding could be the following:

Local government sources:	$1.500.00	Bze
Social Security Board:	500.00	"
Local nongovernmental contributions:	1.000.00	"
External nongovernmental contributions:	2.000.00	"
Foreign governmental or international aid agencies:	7.000.00	"
	$12.000.00	"

Note that it is estimated that about 25% of the total cost could be raised through voluntary non-governmental contributions, both local and abroad. Also, various governmental aid agencies could be approached to finance different components of the project, i.e., E.D.F., A.I.D., some European governments, Canada, Japan, etc. Other foundations interested in health care, such as Kellog, could be tapped also.

Objectives of the Project:

1. To improve the quality of Maternal and Child Health Care at the primary, secondary, and tertiary level.

2. To provide facilities for adequate tertiary level of care of prenatal and prenatal pathology.

3. To develop adequate training facilities in the fields of midwifery and pediatric nursing.

4. To provide facilities for adequate tertiary level care of prevalent pediatric conditions.

Project Components:

The project can be divided into three major component areas:

1) Service Component

2) Training Component

3) Administrative and Support Services

1) Service Component:

The following service activities and corresponding areas would be included in the facilities:

a) Outpatient Care:

- Prenatal Clinic
- Family Education Clinic
- Child Health Clinic
- Gynaecology Clinic
- High Risk Prenatal Clinic
- Postnatal Clinic
- Nutrition Clinic
- Pediatric Clinic
- Dental Health Clinic

b) Hospital Care:

- Maternity Ward	(75 - 30 beds)
- Labor Room	(approx 4 - 5 beds)
- Delivery Room	(2 beds)
- Females Postoperative Ward	(10 beds)
- Female Surgical	(8 - 15 beds)
- Neonatal Ward	(8 - 15 beds)
- Infant Ward	(8 - 15 beds)
- Preschool Ward	(8 - 15 beds)