EVALUATION REPORT

THE BOTSWANA CHILD HEALTH/FAMILY PLANNING TRAINING PROJECT 609-11-540-032

633-0032

IMPLEMENTED BY

THE MEHARRY MEDICAL COLLEGE

UNDER

CONTRACT AID/pha-G-73-8

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CHAPTER I

BACKGROUND AND SUMMARY OF FINDINGS

A. The Ministry of Health of the Government of Botswana is making a determined effort to shift the focus of its health delivery service from one that is predominantly curative-oriented to one that emphasizes preventive aspects and the basic health needs of its rural and peri-urban population. In accomplishing this goal, the Ministry of Health (MOH) has recognized that it will need a larger pool of qualified nursing manpower, and that its nurses will need qualifications especially tailored to their new and extended roles as deliverers of primary health care in the health centers, health clinics and health posts throughout Botswana.

To assist the Ministry of Health in its efforts to train new, or retrain existing, nursing personnel, the Botswana Child Health/Family Planning Training Project (hereafter referred to as the Project) was organized. Implementation of the Project was carried out by the Meharry Medical College of Nashville, Tennessee (Meharry) under a contract (Contract No. 690-11-540-032) between Meharry and the Agency for International Development (AID) of the U.S. Government. The project was designed to run for a five-year period which ended in May 1978 (although the project's official termination date has been extended until September 1978).

The objectives of the project were:

1) To train or retrain personnel for staffing rural health facilities in public health, maternal and child health, and family planning;
2) To prepare an integrated curriculum (including appropriate Public Health and Maternal Child Health/Family Planning components) for use in the basic nurse training schools;
3) To train a selected tutorial staff to continue use of the integrated health curriculum;
4) To establish a functioning Health Education Unit with a trained local staff capable of serving health needs including Maternal Child Health/Family Planning Services and preventive health;
5) To develop field training facilities and field practice areas needed to support the health training programs; and
6) To establish an effective post-natal family planning service in the three Government training hospitals.

The present report is the final report of an Evaluation Team from Medical Service Consultants, Inc., of Arlington, Virginia, under a contract (No. AID/afr-C-1133) with AID, which was asked to make an end-of-project evaluation of the Botswana Child Health/Family Planning Training Project.

B. Summary of Findings

1. Administration and management:

- Recruitment of personnel, timeliness of recruitment, appropriate credentials and experience of field staff, and personnel policies - these activities were adequately performed by the Contractor, with the exception of the failure to provide a health educator for 20 months of the project.

- Relationship of U.S. backstopping personnel to field staff were in many respects weak, particularly during the latter years of the project; a breakdown of effective field/Center and Center/field communication is described in the body of the report.

- Administrative and technical support to field staff was poorly handled, leaving field staff with a "sense of abandonment" by Meharry.

- Commodity and logistical support to field staff, as documented in this report, was conspicuously deficient.

- Management and financial resources was sufficiently difficult for the Evaluation Team to assess that a suggestion that a financial audit be initiated by AID/W is offered by the Evaluation Team.

- Responsiveness to field staff programmatic and operational concerns during project implementation was conspicuously weak.

- Management of participant training was handled in a timely and satisfactory manner, although during one full year no participants were sent abroad for U.S. study under the project's auspices.

- Host country relationships were warm and friendly. MOH and other government officials expressed their pleasure and satisfaction with the Meharry project.

2. Training Component

Both immediate and long-range positive effects on the quality of care being provided in PH/MCH/FP by nurses trained under the in-service program were identified.

Concepts of PH/MCH/FP were introduced into the basic EN and RN curricula as originally planned, but full integration of these concepts into the teaching program has been spotty.

3. Participants

The participant program under the project was appropriately conducted with reasonable and appropriate numbers and types of participants trained.

4. Health Education Unit

While problems of planning, leadership, administration and management of this component of the project were of serious magnitude, the future potential of the unit appears to be adequate to meet MOH needs in this area.

5. Residual Effects on the GOB Health Services

Post-partum program and family planning activities have clearly exceeded the original objectives established for this component of the project.

The Evaluation Team concludes that the Meharry Medical College as Contractor failed to develop the institutional committment and the degree of involvement required for the support and management of an overseas project of the scope and magnitude of the Botswana Child Health/Family Planning Training Project.

CHAPTER II

SCOPE OF WORK

A. In assessing the work and achievements of the project, the Evaluation Team has grouped its findings in this report under five main headings. These headings embrace:

1) The objectives and subobjectives of the project as defined in the AID/Meharry contract (Annex II) and the activities and targets found in the project's workplan (Annex III); and

2) The specific foci of concern as described in the Work Order for the Evaluation Team.

Some regrouping of the objectives and the foci of concern has been made in order to avoid unnecessary duplication and overlap in this report.

The five main headings referred to above, under which the major findings and observations of the Evaluation Team are grouped, are:

A. Administration and management of project.

B. Training component.

C. Participants.

D. Health education unit.

E. Residual effects on the GOB health service, including family planning.

CHAPTER III

METHODOLOGY OF EVALUATION

A. In carrying out its mandate, the Evaluation Team has relied upon the following sources of information:

1. A review of documents and reports from Meharry, AID/W, AID/B, OSARAC, GOB and Meharry field staff.
2. Interviews and discussions with key personnel involved with the work of the project.
3. Field visits to training and service institutions of the Ministry of Health (MOH) and the Unified Local Government Services (ULGS) of the GOB.
4. Discussions with, and a study of the reports of, other international agencies in the field of health.

A list of institutions and principal people contacted is attached in Annex I.

B. As its basic methodological approach, the Evaluation Team used the Project Work Plan (Annex III, prepared in July 1974, as its primary evaluation tool. The objectives, activities and targets of the project are well-presented in this document. Section IV of this evaluation report is structured, in general, to conform with the outline of the Work Plan.

CHAPTER IV

MAJOR FINDINGS AND OBSERVATIONS

A. Administration and Management of Project

1. Background and Summary Statement

The Evaluation Team, under the terms of its Work Order, was asked to:

> "evaluate Meharry administration and management of project as it relates to achievement of project objectives in the following areas:
>
> 1. Recruitment of project personnel, timeliness of recruitment and arrival, appropriate credentials, and experience, personnel policies, and relationship of U.S. backstop personnel to field.
> 2. Administrative and technical support of project staff.
> 3. Commodity and logistical support to field staff.
> 4. Management of financial resources.
> 5. Responsiveness to field staff programmatic and operational concerns during project implementation.
> 6. Management of participant training.
> 7. Host country relationships."

Summary

In some aspects of its administration and management of the project, the Contractor's performance was satisfactory and timely. In other aspects, deficiencies and shortcomings, some of a sufficient degree of seriousness as to impede the successful achievement of project objectives, were found.

2. Findings and Observations

a. Recruitment of project personnel:

i. The recruitment of project personnel was, in general, carried out in a timely and efficient manner. Responsibility for recruitment and selection was vested in the hands of the Director of the Center in Nashville; appointments were made by the Director with the approval and concurrence of the Dean of Graduate Studies.

ii. Recruitment procedures were not always carried out in a formal and systematic manner in that reliance was often placed upon word-of-mouth transmission of announcements of personnel needs. The procedures employed, however, reportedly yielded significant numbers of potential candidates from among whom selection could be made.

iii. Table I shows the approximate dates of arrival and departure of Meharry field staff members in Botswana from July 1973 through June 1978 (Table I). Of the total available number of 174 person-months for the field

TABLE I

DATE OF ARRIVAL AND DEPARTURE, FIELD STAFF

	Arrival	Departure
Katherine Magwene, Health Educator	26 July 73	20 Aug 74
Clotile Hurst, Nurse Educator (Francistown)	2 Aug 73	5 June 75
Claudette Bailey, Nurse Educator (Lobatse)	2 Aug 73	24 May 75
Jean Swinney, Senior Nurse Educator (Serowe/Gaborone)	20 Aug 73	10 June 78
Laurel Edwards, Nurse Educator (Francistown)	2 Aug 75	2 June 78
Shirley Gaydon, Nurse Educator (Lobatse)	17 May 76	(-) May 78
Louis Grivetti, Admin. Officer	(-) April 75	29 May 75
D. A. Mathis, Admin. Officer	28 April 75	30 April 77
Joe Burchette, Health Educator	22 April 75	15 May 77

staff nurses (calculated as of 1 August, 1973, to 31 May, 1978) the nurses were "in-place-at-post" for all but 12 person-months. This shortfall of 12/174 did not, according to the reports of field staff, hinder project activities to a significant degree, but the shortfall may be equated against the training of another 60 Botswana nurses who could have been trained.

The position of health education officer was unfilled for 20 of the project 58 person-months (calculated as above). On one occasion, there was an 8-month gap between the assignments of the first and second health education officers; subsequently the position remained unfilled for a 12-month period. Elsewhere in this report (Section IV D) it will be shown that this shortfall, inter alia, may have impaired the achievements of the project under one of the main objectives.

b. Appropriate credentials and experience:

i. A review of the personnel records on field staff maintained in Nashville revealed that there was a satisfactory "fit" between the background and experience of field staff

and the qualifications proposed in Appendix B of the AID/Meharry contract. The single exception to the above statement relates to the lack of prior overseas experience of one Public Health Nurse (PHN), Ms. Gaydon.

ii. The personnel policies under which project field personnel operates were identical with the personnel policies of Meharry Medical College (not examined by the Evaluation Team); in the field these policies were appropriately modified, as indicated, to meet the administrative and logistical requirements of the MOH and AID/B.

c. Administrative and technical support of field staff:

i. The inadequacies of the Contractor's support of its field staff under this heading, as described below, were identified by the Evaluation Team by the following methods:

- a review of correspondence from field staff to (Meharry/Nashville) Center and Center to field,
- field trip reports by consultants and visiting teams,
- interviews with project personnel at the Center,

- discussions with field staff,
- interviews and a study of files in AID/B and OSARAC.

The above sources are almost unanimous in presenting a picture of serious deficiencies in a) communication between project personnel at all levels, field to Center, Center to field, Center and its supporting resource agencies, and among field staff in Botswana, and b) inadequate (or delayed) definition of roles among field staff.

ii. The Evaluation Team verified, through a review of the files, that the Center was frequently and inexcusably lax in its failure to acknowledge or to respond to requests from its field staff for the purchase of commodities. As illustrative examples, the Team cites the following:

- In late 1973, the Team Leader returned to the Center in Nashville to help expedite the purchase and delivery of urgently needed books and materials, requests for the purchase of which had been placed four months earlier. It is inappropropriate

and extravagantly wasteful for field staff to have to return to home base to do its own backstopping for commodity purchasing.

- On at least three occasions (30/6/76, 5/11/76 and 13/12/76) lists of books were submitted to the Center at Nashville for purchase. No responses by the Center to these requests were made, nor were the orders for purchase placed. As a followup, field staff requested permission from the Center to make local purchases of some of the items. Again, no response was elicited from the Center.
- On October 19, 1977, the field staff in Botswana requested that the Center provide it with a financial statement showing the unexpended balance in its commodity-purchase account; no reply had been received in the field as of May, 1978.

The evidence is suggestive that field staff may have been delinquent, at times, in not having been more forceful and assertive in their efforts to followup unanswered correspondence with, and commodity-purchase orders to, the Center in Nashville. Other administrative inadequacies in backstopping of field staff were found;

some of these relate to the purchase of commodities, salary payments for field staff travel tickets, and air freight shipments.

iii. Among field staff, it was found that:

a) as late in the life of the project as April 1975, AID/B was requesting the Contractor to clarify the division of responsibilities between the Team Leader and the Administrative Officer.

b) a one-page, undated and unsigned copy of a job description for the Administrative Officer, found in the files, was woefully inadequate.

c) in his capacity as Team Coordinator, the Administrative Officer on one occasion established an hierarchical administrative structure which seriously reduced the opportunity for field specialists to deal with and communicate directly with their GOB counterparts - a situation not conducive to facilitating the exchange of information and advice.

d) the Senior Public Health Nurse had a non-assertive view of her role vis-a-vis the MOH and toward other team members; having explained her position concerning a problem

through a verbal statement, first, and having followed up by a written communication, the Senior Nurse tended to think her responsibilities had been discharged. MOH implementation of technically sound recommendations may have suffered as a consequence of this lack of forceful followup procedure.

e) documents prepared at the time of the resignation of one of the administrative officers, in April 1975, are on file; these cite poor administration at Meharry/Nashville and an "intolerable local situation" with another field staff member as major contributing factors toward his decision to resign.

Personnel in AID/B and OSARAC estimated that 2 person-months of time per year were spent in helping to handle and/or resolve problems relating to project activities that could, and should, have been handled and resolved by the Contractor.

The Evaluation Team sensed a lack of firm administration leadership throughout the life-of-project, but particularly after 1974, in areas which required

a) advanced planning (examples: recruitment of participants, placement of purchase

orders for books, teaching supplies, equipment and supplies),

b) a strong communication network between field staff, and

c) in developing a sense of "team work" or "esprit de corps" among field staff.

d. Backstopping by Meharry/Nashville Consultants' Visits:

i. The AID/Meharry contract called for the Contractor to "furnish up to twelve (12) man-months of specialized consultant visits as may be requested by the Government of Botswana regarding any project-related aspect of its public health policies and programs."

ii. The following table shows the consultants brought to Botswana under this component of the project.

TABLE 2

Consultants by Name and Position

Name of Consultant	Position/Specialty
Mr. Leander Jones	Health Education
Dr. William Darity	Health Education
Mr. Andreas Fuglesang	Health Education
Mr. Gyberg	Photographer
Dr. Nellie Kanno	Administration
Dr. Johnson	Administration
Dr. J. Carter	Administration
Dr. Lloyd Elan	Administration
Mr. Leo P. Sam, Jr.	Administration
Mr. Ken Malveaux	Administration
Ms. Pearline Gilpin	Administration
Mr. Wayne Williams	Administration
Mr. Louis Grevetti	Administration
Mr. K. Dilip Bhowmik	Health Education

No requests were made by MOH to AID/B or to Meharry for consultants over and above those listed in Table 2.

The Evaluation Team did not solicit reactions of MOH Officials to the visits of consultants. However, one unsolicited comment was offered by the Matron of the Princess Marina Hospital to the effect that, whereas the Meharry Project's main thrust was in the education and training of nurses, only one consultant who visited Botswana had specialized qualifications in this professional area and that one consultant (Ms. Gilpin) visited Botswana to discuss matters of an administrative/managerial nature.

iii. Observations and Comments:

The remark of the Matron cited in the paragraph above struck a responsive chord with the Evaluation Team. It is probable that a consultant visit by a nurse-educator or by a nurse-specialist in manpower planning and development could have offered timely and helpful advice to MOH and Meharry field staff. The views of a nurse advisor not directly and intimately involved with the

day-to-day activities of the project would, perhaps, have presented project personnel with a broader perspective toward the achievement of project targets, objectives and priorities. A cross-reference to this observation will be found in Section IV B of this report.

e. Commodity and logistical support to field staff:

i. A review of the original contract and its several amendments reveals that a budget allocation of $48,543 was made for "Equipment, Materials and Supplies" for the period March 30, 1973 to September 30, 1978.

ii. Four (4) Chevrolet Suburban Carryalls, 4 x 4, were purchased through AID's purchasing office at a cost (including ocean freight [estimated] and 8% surcharge) of $25,062.28. Delays in purchasing and delivery caused these vehicles to arrive well after the arrival at post of field staff for whose use they were intended.

Although complaints were heard by the Evaluation Team to the effect that these vehicles were "too big," "too hard to handle" by the (female) nursing staff, and that they did not stand up well to Botswana road

conditions, no effort was made by the Team to evaluate these criticisms. The AID decision to purchase this type of vehicle is clearly based upon the technical recommendations of the General Manager of the GOB's Central Transport Organization (CTO) in a letter dated March 1973, which is in the AID/B files.

iii. An inventory list dated 29 January 1975 shows commodities purchased with project funds and delivered to the Health Education Unit of MOH. The list is divided into "Books" and "Hard Equipment." While no dollar values are shown, the total value of the materials and books listed would probably not exceed $2,500 (Annex IV).

iv. Books and teaching aids purchased with project funds were identified in training institutions visited by the Evaluation Team (Annex I); a formal inventory was not undertaken by the Evaluation Team.

v. The procedure for placing orders for commodity purchases was initiated by field staff in consultation with MOH; orders were sent to the Campus Coordinator in Nashville who then instructed the Grants Officer of Meharry Central Administration

to undertake the purchasing. That the procedure was inadequate to the demands imposed upon it will be found in Section b above.

Local purchases in Botswana were handled under an "Imprest Account" with a monthly statement by the Field Coordinator to the Campus Coordinator at Meharry. The procedure would appear appropriate to the needs, but breakdowns in field/Center and Center/field communications frequently vitiated its actual functioning.

f. Management of financial resources:

i. The MCF/FP Research and Training Center in Nashville employed a financial officer until February 15, 1977, subsequent to which time an administrative assistant handled project accounts.

ii. The Field Coordinator submitted to the Campus Coordinator a monthly statement of monies imprest and the local account in Botswana was refunded periodically from Nashville.

iii. The Campus Coordinator at Meharry approved all payments relating to the project participant program before submitting requests for payment to the financial officer.

iv. During its brief two day visit to the Center at Meharry on 8-9 May, 1978, the Evaluation

Team requested that there be prepared three basic tables, as follows:

1) a table showing the breakdown of expenditures by category and by year of purchase, following the format of page 8 of the AID/Meharry contract,
2) a table showing expenditures by category over time that could be compared with the budget in Appendix C of the contract, and
3) a table showing expenditures following the outline used in Page 1 of the PROP document.

Although the Evaluation Team requested the above three tables during its visit to Nashville on 8-9 May, 1978, and asked that they be delivered to the Team's Washington Office by June 1, only one table has been received to date (17 June 1978) (Annex V[1]).

Since the Evaluation Team had neither the necessary time nor the technical competency to evaluate the financial records, it is suggested that AID/W initiate an audit of the project's financial system.

g. Responsiveness to field staff programmatic and operational concerns during project implementation:

The documentation of findings relating to a term so elusive as "Responsiveness" stymies the Evaluation Team, but it is felt that other sections of this report do, indeed, touch upon the problem in specific detail. However, the general sense of abandonment by the Meharry field staff (alluded to during conversations with project field staff in Botswana, and inferred from a review of correspondence in the files from previous technicians) would suggest that a serious problem was evident throughout much of the life of the project.

h. Management of participant training:

The participant training program has been dealt with under Objective 3, and the conclusion reached that the management of this part of project was satisfactory.

i. Host country relationships

Relationships between project field staff and their professional colleagues within the Ministry of Health were, apparently, warm

and friendly. A top official in the Ministry of Finance and Community Development reported that Government was most satisfied with the training program conducted in conjunction with the Meharry project and that no problems associated with the project had ever been brought to his attention. MOH officials indicated their pleasure and satisfaction with the project and its field staff, noting only that the Health Education Unit had not fared as well as other aspects of the program (see Section IV D).

In general, therefore, the Evaluation Team concludes that host country relationships were satisfactory.

B. Training Components

1.1 OBJECTIVE I: TO TRAIN OR RETRAIN PERSONNEL FOR STAFFING RURAL HEALTH FACILITIES IN PUBLIC HEALTH, MATERNAL AND CHILD HEALTH AND FAMILY PLANNING

1. Background and Summary

This objective relates specifically to the development of an in-service training program for registered and enrolled nurse graduates already working in GOB/MOH service. It represents a major component of the Meharry Project.

The Evaluation Team was requested to determine the effectiveness of the in-service training from the perspective of its effect on nurses' knowledge and skills,

utilization of those skills and relevancy to the MOH objectives in PH/MCH/FP.

Summary

Inputs from this component of the Project have clearly achieved both immediate and long-range positive effects on the quality of care being provided in the GOB PH/MCH/FP services. The target of 550 nurses to have been trained was not achieved. A further serious shortfall in nurses trained occurred because of an oversight in the initial planning process.

At the end of project, no on-going curriculum/plan has been developed for implementation.

2. End of Project Status

a) 501 RN and EN out of a target figure of 550 completed the in-service training course (Annex IX). The target would have been exceeded if there had not been a gap of one year (1975-76) between the departure of the first and the arrival of the second Meharry nurse-educator assigned to the Lobatse program.

b) The target figure of 550, set in the Work Plan in July, 1974, represented the number of nurses actually employed in the Ministry of Health at that time. The Work Plan failed to take into consideration the number of graduates emerging from the basic training schools during the period

before integration of PH/MCH/FP components could be developed and implemented and who would therefore also require the in-service training programme. These graduates, plus the numbers not met in the target, total approximately 250 nurses who have not received training in PH/MCH/FP.

c) The secondary objective outlined in the Work Plan, which relates to the development of a curriculum/ plan for continuing education refresher courses to be implemented by the Motswana In-charge after the Project's end, was not carried out. The primary reason for this deficiency, according to information provided by the Meharry Senior PHN, was the failure of arrival of reference materials requested from Meharry/Nashville by the Senior PHN in June 1977 and again in January 1978. Failure to implement this important complementary secondary objective is considered by the Evaluation Team to be a serious deficiency in completing the full purpose of the over-all in-service training objective.

d) An appropriately qualified (B.Sc.N.) Motswana counterpart/successor was appointed to the in-service training program in October 1977. Although still relatively inexperienced in teaching and

curriculum development, she has been working with the Meharry Senior PHN in observing/teaching the last two courses given in Gaborone, and is expected to carry on as the In-charge when the Senior PHN departs. Given the number of nurses remaining to be trained, the absence of an ongoing curriculum for refresher courses and her teaching inexperience, it is difficult to envisage how the tutor will manage to continue this program by herself.

3. Findings and Observations

a) To assess the effectiveness of the Meharry in-service training program by a measurable increase in nurses' knowledge and skills in PH/MCH/FP, the Evaluation Team reviewed

(i) the in-service curriculum,

(ii) the results of student evaluation tests,

(iii) the work and records of MOH nurses employed in a variety of preventive and curative services (reference: Annex I).

i) The curriculum:

The in-service curriculum (attached as Annex IX) was developed early and effectively in the life of the project (October 1973) by the first team of Meharry field nurse-educators, following consultation with Senior MOH Nursing Officials. Content was appropriately related to the RN and EN job descriptions and to the theoretical material provided in the basic nurses training schools. The course objectives and content were examined by the Evaluation Team which considers them to be both relevant and appropriate for meeting the MOH in-service training requirements and stated objectives of providing expanded services in PH/MCH/FP.

ii) Results of the student evaluation test:
The Evaluation Team reviewed a sample of student evaluation tests developed by the Meharry nurse-educators designed to assess pre- and post-in-service training knowledge (Annex X).

With the exception of one group in Francistown, (N-12), the results of the pre- and post-training tests administered to students had not been tabulated; however, the small Francistown sample clearly showed a significant increase in knowledge of PH/MCH/FP concepts. The Evaluation Team also examined a 10% sample of the remaining student pre- and post-training test results, and is of the opinion that an increase in knowledge did, in fact, occur.

Another indicator helpful in assessing an increase in knowledge is the number of students who successfully passed the in-service training final examination; of a total 501 RNs and ENs who completed the course of training, 403 (80%) passed with a final grade of at least 65%.

iii) The Evaluation Team held discussions with, and examined the records and works of, approximately 20 registered and enrolled

nurses working in MOH health centers, health clinics and hospitals who had completed the in-service training program. Without exception, all concurred that the Meharry training had

1) served to reinforce previously acquired knowledge,
2) taught new and relevant material, and
3) provided strong, practical learning experiences for practice of newly learned skills.

This view was confirmed by senior MOH and National Health Institute officials who expressed, in the most positive terms, a sense of satisfaction with the quality of the training provided by the Meharry Field Team.

b) Utilization of Newly Acquired Skills

i) There is no doubt that nurses are indeed actually using the knowledge and skills acquired in the in-service training program; this observation was verified by MOH, Matrons, Tutors, Staff Sisters, the RN and ENs themselves and personal observation of the nurses at work in the field.

ii) The in-service training program is considered to be highly relevant to the MOH objectives. The GOB National Development strategy has

placed emphasis on "...building up essential infrastructure, investing in manpower development, and channelling as many resources as possible into the rural sector." This strategy is reflected in the health sector by the high priority assigned to provision of comprehensive PH/MCH/FP services to rural areas, placement of appropriately trained personnel to deliver these services and reduction in preventable childhood and communicable diseases. In concert with the MOH priorities, the Meharry in-service training provides a competency-based program which stresses both a theoretical and strong practical grasp of PH/MCH/FP concepts.

c) Observations

i) In meetings with all levels of GOB/MOH members, the Meharry in-service training program was perceived to be a success. That a high priority was assigned to this program is evidenced by the efficiency in which the MOH dispatched its staff to attend, by the budget provided to support students when undergoing training, by appointing a qualified counterpart to the Senior Meharry Public Health Nurse, and by the willingness of Senior

MOH officials to take time from busy schedules to lecture the in-service students. However, the shortfall of approximately 250 nurses who should have had training, and the failure to develop an on-going curriculum for in-service refresher courses following the Project's end, seriously detracts from the overall success achieved under this objective.

1.2 OBJECTIVE 2: TO PREPARE AN INTEGRATED CURRICULUM (INCLUDING APPROPRIATE PUBLIC HEALTH, MATERNAL AND CHILD HEALTH AND FAMILY PLANNING PROGRAMS) FOR USE IN THE BASIC NURSE TRAINING SCHOOLS

1. Background and Summary

Registered and enrolled nurses (RN and EN) have been trained using curricula (attached as Annex XI and Annex XII) developed by the National Health Institute (NHI) in the late 1960s and implemented in 1970.

There was a recognized need by Senior MOH/NHI nursing officials that in order to meet the country's health needs and the expanding role of the nurse, a greater degree of public health, maternal and child health, and family planning (PH/MCH/FP) content would have to be incorporated into the basic training process of the nurses.

It was agreed by the MOH that the Meharry project would contribute to this process, by developing a curriculum that would integrate these components into the EN program and assist in revising the existing RN curriculum to include the same areas of study.

Summary

The Meharry Project Senior Public Health Nurse (PHN) developed a set of curriculum objectives and submitted them to the MOH/NHI for approval and integration into the RN and EN basic training programs. Differences in interpretation of the term "integration," unclear or lack of specific directives concerning implementation, insufficient manpower, and the use of the Meharry PH/MCH/FP in-service training program as an extension of the basic training program, resulted in minimal achievement of this objective.

2. End of Project Status

As called for in the Work Plan, a set of curriculum objectives incorporating PH/MCH/FP content, has been prepared (completed October, 1974) by the Meharry Senior PHN and submitted to the MOH/NHI for implementation. No evidence was found that this curriculum was being used by the NHI in the RN or EN basic training programs.

The observations of the Evaluation Team are that, while PH/MCH/FP theory is being taught in the RN and EN programs, the degree to which these components are being integrated is minimal.

3. Observations

i) When assessing the extent to which this objective had been achieved, the Evaluation Team had meetings with tutors from the RN program at NHI and EN programs located in Lobatse,

Serowe, Mochudi and Francistown. Course outlines from the NHI and Mochudi programs were made available and examined.

None of the training programs were using the curriculum developed by the Meharry Project, although most of the tutors had attended the Meharry Tutors Seminar (held in 1976 and 1978), which dealt with understanding and implementation of the integrated curriculum.

Course outlines indicated that students were being given a reasonable amount of PH/MCH/FP theory, although providing a sufficient amount of concurrent practical experience seemed to be a problem. At the NHI, there appeared to be an absence of a team-teaching approach to the development of curriculum; tutors in PH and MCH developed their courses with a minimum of consultation or coordination with tutors teaching other courses in the program. No convincing evidence was observed that any significant degree of integration of PH/MCH/FP concepts and practice was actually taking place. This observation tended to be confirmed when it was learned that recent graduates of both RN and EN training programs had continued to be sent to the Meharry

time, and in some cases, do not possess sufficient training, to carry out by themselves changes such as a major revision of the curriculum demanded.

The Evaluation Team suggests that in future endeavors involving the training and re-training of (nursing) personnel:

a) technical/educational definitions of terms such as "integration" be clearly defined in project planning documents;

b) mid-project evaluation be carried out to assist and guide project field staff in reviewing implementation of, and priorities assigned to, project objectives and activities;

c) provision for counterparts be included in projects of this nature;

d) ensure that a proper fit exists between the scope of work to be accomplished and the field staff assigned to projects.

1.3 OBJECTIVE 5: TO DEVELOP FIELD TRAINING FACILITIES AND FIELD PRACTICE AREAS NEEDED TO SUPPORT THE HEALTH TRAINING PROGRAMS

A. Nine rural field training facilities have been developed in health centers and health clinics for use by the three in-service training programs (Gaborone, Lobatse, Francistown)

Pages 35 and 36 are Missing

and are fully utilized as field practice areas for students. Three of these were visited by the Evaluation Team and found to be ideal for training purposes. Some are now being used by the EN schools and provide PH/MCH/FP field experience for the basic students. This objective has been satisfactorily achieved.

C. Participants

OBJECTIVE 3: TO TRAIN A SELECTED TUTORIAL STAFF TO CONTINUE USE OF THE INTEGRATED HEALTH CURRICULUM

1. Background and Summary

The original AID/Meharry contract stipulated that approximately 35 Batswana would receive long and short-term training in health related programs in Africa or in the United States over the life of the project. As the Project established itself, and as the manpower requirements of the MOH became more clear, a modification in the numbers and categories of nurses to be trained was made; these changes are reflected in the several amendments to the contract that were made during the period October 1974-December 1977.

Summary

The participant program under the Project was appropriately conducted, with numbers and categories selected for training reflecting the needs of the GOB/MOH.

2. End of Project Status

Based upon amendments made to the original contract, participant training targets have been achieved. A complete list of participants, showing current status and present placement, is shown in Table 3.

TABLE 3

MEHARRY/BOTSWANA PARTICIPANTS

NAME	INSTITUTION	COURSE	DATE STARTED	COMPLETED/ EXPECTED COMPLETION	POSITION PRIOR TO TRAINING	PRESENT POSITION OR CURRENT STUDENT STATUS
Sheila Morake	Dillard Univ. Catholic Univ.	B.S.N. M.P.H.	9/74 9/77	5/77 8/79	Enrolled in UBS (BSC). No MOH experience	Enrolled in M.P.H. Programme, Catholic Univ. of America 9/77 - 8/79
S.S. Kupe	Columbia Univ.	M.Ed.	9/77	8/79	Chief Nsg. Officer MOH (training)	Expected will return GOB/MOH/NHI Central
*Neo Mokgwati	University of Tenn-Knoxville	B.Sc.N.	9/74	5/77	Enrolled in UBS (B.Sc.) No MOH experience	In-Service Training Program
Portia Habangana Sola	Winston-Salem University	B.Sc.N.	9/76	12/79	NHI Tutor (Clin. Intr) medical	Expected will return NHI
Kelestise Tlale	Dillard Univ.	B.S.N.	9/76	3/79	NHI Tutor (midwifery)	Expected will return NHI
Christine Nleya	Dillard Univ.	B.S.N.	9/76	3/79	NHI Tutor (Clin. Inst.) Surgery	Expected will return NHI
Cynthia Leisi	Dillard Univ.	B.S.N.	1/76	5/78	NHI Tutor (Clin. Inst.) Surgery	Expected will return NHI
*Rose Makgoeng	Univ. of Mass. Amherst	B.Sc. (H.E.)	1/76	7/77	Enrolled in UBS (B.Sc.) No MOH experience	H.E. Officer GOB/MOH H.E. Unit
Winnie Manyeneng	Univ. of Mass. Amherst	B.Sc. (H.E.)	1/76	7/77	1. RN midwife Princess Marina Hosp. 2. Parttime UBS	H.E. Officer GOB/MOH H.E. Unit

*Completed training and returned to Botswana

NAME	INSTITUTION	COURSE	DATE STARTED	DATE COMPLETED/ EXPECTED COMPLETION	POSITION PRIOR TO TRAINING	PRESENT POSITION OR CURRENT STUDENT STATUS
Pamela Setidisho	Univ. of Mass. Amherst	B.Sc. (H.E.)	9/74	--	--	Did not complete. Present position unknown.
Theresa Khubile	North Carolina Central Univ. Durham	B.Sc. (H.E.)	9/76	12/79	RN Tutor NHI	Expected will return NHI as H.E. Tutor
Felicitas Radise	Meharry Medical College Dept. of Nursing Education	Family Nurse Practitioner (FNP)	1/78	1/79	GOB/MOH Service	Nurse Practitioner Programme Preceptor
Keatlaretse Saleshando	Meharry Medical College	FNP	1/78	1/79	U.L.G.S.	Nurse Practitioner Programme Preceptor
Meisie Seleka	Meharry Medical College	FNP	1/78	1/79	GOB/MOH Service	Nurse Practitioner Programme Preceptor
Martha Setlhabi	Meharry Medical College	FNP	1/78	1/79	GOB/MOH Service	Nurse Practitioner Programme Preceptor
Mmankwe Tlhabiwe	Meharry Medical College	FNP	1/78	1/79	GOB/MOH Service	Nurse Practitioner Programme Preceptor
*Rose M. Thobosi	Univ. of Nairobi	Diploma in Nsg. Education	10/74	7/76	Clinical Inst. RN Tutor NHI (Med. Nsg.)	NHI Tutor (Medicine and Microbiology)
*Grace Manisa	Univ. of Nairobi	Diploma in Nsg. Education	10/75	7/77	RN Tutor NHI (Surgery)	NHI Tutor (Surgery and A & P)
Daisy Moslleman	Univ. of Nairobi	Diploma in Nsg. Education	10/76	7/78	RN Tutor NHI	Expected to return to NHI

*Completed training and returned to Botswana.

NAME	INSTITUTION	COURSE	DATE STARTED	DATE COMPLETED/ EXPECTED COMPLETION	POSITION PRIOR TO TRAINING	PRESENT POSITION OR CURRENT STUDENT STATUS
Kgalalelo Shabane	Univ. of Nairobi	Diploma in Nsg. Education	10/77	7/79	RN Tutor NHI	Expected to return to NHI
*Regina Moremi	Planned Parent-hood Assoc. Chicago	Mangt/Adm Workshop	7/77	8/76	U.L.G.S.	U.L.G.S. Mapoka Clinic
*Gloria Ramggola	Planned Parent-hood Assoc. Chicago	Mangt/Adm Workshop	10/77	1/76	MOH	MOH Mahalapye FP/MCH Clinic

*Completed training and returned to Botswana

Of the seven (7) participants who have completed training and returned to Botswana, all have been assigned by MOH to appropriate positions where the multiplier effect can best be achieved.

3. Participant Selection Process

Candidates for study abroad (U.S.A. or Africa) were selected by the MOH, utilizing two methods:

(1) almost all candidates for degrees and diplomas in Nursing Education were pre-selected by virtue of job placement as tutors at the NHI;

(2) Family Nurse practitioners were selected from applicants responding to a MOH advertisement circulated to MOH institutions.

Criteria for selection included: 2 years teaching/clinic institution experience, English proficiency as demonstrated by TOEFLs, double qualifications (RN plus midwifery), minimum of Cambridge level, and an expressed willingness to study. Three students (2 B.S.N., 1 B.S.H.E.) were selected from sources other than the MOH/NHI service.

The list of prospective candidates was submitted to the Meharry Senior Public Health Nurse who interviewed each and made recommendations for selection. Following approval and nomination by the MOH, the Senior Public Health Nurse forwarded the pertinent documents to the Meharry Campus Coordinator for action. Admission procedures for entrance to African institutions were handled entirely by the MOH.

While the selection process of the degree candidates for study abroad undoubtedly reflects sound management/ planning decisions on the part of the MOH, designed to obtain the maximum multiplier effect within a reasonable time frame, the Evaluation Team suggests that in future selection procedures greater opportunity be given to the nursing cadre available from the total MOH/ULGS manpower pool. This process would tend to ensure a group of trainees with broader health-related nursing experience and backgrounds.

4. Management of Participants

Some participants were sent to AID/W for a one-week orientation before proceeding to their respective educational institutions. Apparently no participants went to Nashville for pre- or post-training evaluative discussions.

The selection of U.S. educational institutions for participant training apparently based upon the following criteria:

(1) the eligibility of Batswana candidates in meeting academic admission requirements;

(2) Meharry's contacts with, and prior knowledge of, each institution's capabilities; and

(3) the ability/flexibility of each institution to meet the training needs of Batswana students.

The Campus Coordinator at the Center was responsible for handling, or following up of, any personal or administrative problems of the participants, and apparently close

contact was maintained with each participant through telephone calls or written communications. Site visits to the institutions to which participants were sent were made by the Campus Coordinator until July 1977; similar visits by the present Campus Coordinator have yet to be made.

Scholastic reports showing courses taken and grades received are maintained by the Campus Coordinator. A review of the scholastic reports that were found by the Evaluation Team at the Center and in AID/B files indicated that all participants were performing very well academically.

The Evaluation Team noted that participants, in many instances, were not taking courses in subjects (such as teaching methods, development of educational objectives and curriculum development) that would have been useful to them upon their return to Botswana when they were involved in teaching activities of their own.

5. Observations

The management of the participant training component of the project was considered by the Evaluation Team to have been handled well. In future endeavors of this kind, however, the Evaluation Team suggests that AID and the educational institutions dealing with participants seek to arrange for programs of study specially tailored to the participants' future work-situation needs. Should such a suggestion be impractical (which it undoubtedly is), then participant training for African nurses might well be encouraged to be conducted in an African setting.

D. Health Education Unit

1. Background and Summary

Objective 6 of the AID/Meharry contract calls for the establishment of a "functioning health education unit with a trained staff capable of serving MOH health education needs." The Evaluation Team, in accordance with the frame of reference in its Work Order, undertook to "determine the present functioning capacity of the Health Education Unit and [to] evaluate if the project objective for the unit has been met."

Summary

While the input to the Health Education Unit under the AID/Meharry project leaves much to be desired (participant training excepted), the Unit, staffed by dedicated and energetic personnel, appears to have overcome its many difficulties, and presently appears to have a functioning capacity and a good potential for future programmatic activities.

2. Methodological Considerations

In considering a methodology appropriate to its task, the Evaluation Team discarded its initial plans to make an item-by-item review of the activities targeted under Objective 6 and to assess their levels of achievement. It was apparent to the Evaluation Team that the work of the Health Education Unit, subsequent to the departure

in August 1977 of its first Meharry-assigned health educator, was beset by so many problems of an administrative nature, by personality conflicts, and by weak leadership, that a simple technical review of the program was inappropriate.

As a consequence of the situation described above, the Evaluation Team has grouped its findings under two headings: a) experience of the Health Education Unit in the past, and b) its probable future potential.

a) Past experience of the unit:

i) The unit appears to have suffered from problems of poor management, inadequate supervision, weak leadership and poor communications, subsequent to the departure in August 1977 of the first health education officer.

ii) Working relationships with GOB and other agencies concerned with the activities of the unit - relationships that had been carefully nurtured and developed during the first year of the project - were undermined and disrupted.

iii) Inappropriate and unauthorized recruiting practices for identifying candidates for overseas participant study were employed by the second health education officer; these practices, in effect, attempted to

by-pass the established procedures of the MOH and the GOB Department of Personnel.

iv) Promises to provide health education materials were made by the (second) health education officer to health service facilities - promises that could not realistically be honored - and other members of the health education unit were not informed of those promises.

v) Erratic and inappropriate work habits of the second incumbent were described to the Evaluation Team.

vi) Upon his departure from post, no records or files were found that would reflect the work of two years on the job; no files or documents were turned over to his successor as field team coordinator.

vii) Illustrative of the inappropriate behavior of this individual as the representative of a distinguished educational institution were documents examined by the Evaluation Team; these contained reprimands couched in the strongest possible terms from high GOB officials concerning violations of GOB regulations re transport.

b) Contractor's role:

i) The problems cited in the preceding paragraphs were known to his superiors at Meharry/Nashville since reference is made to them in trip reports by Meharry officials. Could corrective action by Meharry have been taken earlier and more definitively? Should MOH have requested the Contractor to correct the situation at an earlier date?

c) Equipment, Materials and Supplies:

i) Funds were available for the purchase of supplies and equipment for the Health Education Unit. The original contract called for the Contractor "to assist in determining specific requirements [with] procurement . . . funded by AID separately and not under this Contract." As amended on May 31, 1974, the Contractor became responsible for actual procurement, and funds for the purchase of commodities were made available. Supplies and equipment ordered in September 1973 were received in Botswana within an acceptable time (Annex IV). Subsequent orders, prepared

in June and July 1974 and again at a later date were apparently never placed for purchase by Meharry/Nashville. Field staff interviewed by the Evaluation Team report that Meharry/Nashville never acknowledged or placed these orders; the records examined by the Evaluation Team substantiate this assertion.

Trip reports by Meharry backstopping personnel who visited Botswana fail to indicate that these backstopping inadequacies were corrected in a forceful manner.

ii) To meet the needs of the Health Education Unit for equipment, materials and supplies, in the absence of appropriate Meharry backstopping efforts, the unit arranged to get $40,000 from the World Food Program to meet its commodity needs. These commodities were received in April in 1975. As of May 1978 the unexpended balance from this grant was on the order of $2,500.

iii) On January 21, 1978, the unit made another effort to get the Center in Nashville to place purchase orders for previously submitted commodity requests. No action

had been taken, to the best knowledge of the Evaluation Team, until four (4) months later when, in May 1978, a Meharry nurse-educator brought the list back to Botswana for further discussions.

d) The Workplan

i) The health education component of the project's workplan was prepared in March 1974. The Evaluation Team, benefiting perhaps from the advantage of hindsight, considers that the activities proposed in the Workplan were overly ambitious and their results less quantifiable than other sections of the Workplan. However, had the Unit been professionally staffed more continuously and had more planning skills been available throughout the life-of-project, a reordering of priorities and a different set of activity targets might have evolved.

e) Consultants' visits:

i) Advice and guidance was provided to the Unit during its first year of operation by Meharry-sponsored consultants.

ii) The field visit in September 1977 by Dr. William Darity provided a timely

and useful visit which coincided with the return of two Botswana participants who had studied under Dr. Darity at the University of Massachusetts. However, the Work Order requesting the services of this consultant called for a set of objectives to be met by the consultant that might have proven more helpful to MOH and the Unit had they been more closely adhered to.

iii) Major recommendations in the Darity report had not been acted upon by Meharry/Nashville as of May 1978.

f) Future potential of the Health Education Unit: In spite of the negative findings described in the foregoing paragraphs, the Health Education Unit appears to have achieved a functioning capacity to carry on the work that might be assigned to it by the MOH.

i) A dedicated and energetic staff has been assembled which includes two Botswana health educators trained under the Meharry participant program; three additional health educators are now studying, or are in the process of preparing to leave for, overseas.

ii) Plans calling for trained Botswana health educators to serve on the Regional Medical Teams in the north and the south of the country are in preparation; when in effect the Health Education Unit will have a decentralized structure.

iii) The WHO health education officer shares the facilities of the Health Education Unit.

iv) Basic supplies and equipment provided by WFP are in place; additional commodities to be purchased under the Meharry project may yet become available before the termination of the project.

v) The ongoing activities of the unit give evidence of its capacity to provide a health education input into the Ministry's program.

g) Observations:

The Evaluation Team concurs with the assessment of the Dean of Graduate Studies at Meharry who observed that the main "deficit" of the AID/Meharry project related to the health education component; that there should have been stronger health education support at

Meharry/Nashville; and that more orientation should have been given (to the second health education officer) before he was sent to Botswana.

E. Residual Effects on the GOB Health Service

1. Implicit in the objectives of the project is the concept of "institutionalization" of the activities of the Botswana Child Health/Family Planning Project. Each objective presupposes that the GOB will maintain the effort as part of the on-going program of the Ministry of Health, GOB.

i) An in-service training program for ENs and RNs has been established and a Batswana nurse-tutor is in place to continue the program. Since the backlog of 250 nurses will have been trained under the in-service training program, the GOB will continue PH/MCH/FP training as a component of its NHI teaching.

ii) A curriculum has been developed but is not yet in use at the training schools. While PH/MCH/FP is being taught in the EN and RN schools, there has been minimal "integration" and "institutionalization" of the activity has yet to be achieved.

iii) Appropriate numbers and types of participants have been sent abroad for training; some have already returned to their posts in teaching and/or service institutions where a suitable multiplier effect may be anticipated.

iv) The Health Education Unit is organized and functioning as an integral part of the MOH; this activity may be considered to have been "institutionalized."

v) Field training facilities for practical field work have been established and are functioning; the MOH may be expected to continue their use as a regular part of its service training activities.

vi) Family planning and post-partum activities are thoroughly institutionalized in the GOB health service system.

2. Post-Partum and Family Planning Services

3. Background and Summary Statement

Objective 6 calls for the establishment of "an effective post-natal and family planning service in the three Government training hospitals" concerning which activity the Evaluation Team, in its Scope of Work, is asked to answer the question: "Have FP service delivery points increased since inception of [the] project?"

Summary

The development of the GOB program of post-natal care and family planning services has clearly reached and exceeded the activity targets of the project workplan. The input of the Meharry project to the achievement of these targets has been timely and effective.

4. Observations

a) Family planning services were first introduced into the MCH program of the MOH in 1969 and, by the time of the inception of the Meharry Project in 1973, were being provided in approximately 12 hospitals and 20 clinics. Family planning was seen as a health measure, to be offered on a voluntary basis, and with no stipulations relating to ideal family size. During the program's early years, pills were the contraceptive issued to nearly 100% of the women, with a small number of condoms given to men. The number of new acceptors in 1973 was 2545.

b) The Population Council's Hospital Post-Partum concept of family planning services (which is based upon the hypothesis that information presented to new mothers during the days of hospitalization immediately following delivery reaches the client [the new mother] at a time when she might be expected to be most receptive to motivational efforts) is difficult to apply to the Botswana situation; most mothers are discharged from the hospital within 6-10 hours of delivery. In Botswana, therefore,

information about contraceptives and child-spacing procedures are presented during antenatal visits and, following delivery, during post-partum home visits or at post-natal clinics.

The cursory analysis that the Evaluation Team was able to make on the small sample of records examined in hospitals and clinics failed to indicate the proportion of new acceptors who were primarily motivated by such ante-natal and post-natal contacts; health personnel interviewed were convinced that a large majority of new acceptors were reached through such ante- and post-natal contacts.

c) Health facilities offering family planning advice and contraceptive services in May 1978 were reported by the Chief of MOH/FP Services, MOH, to be as follows:

Hospitals, Government	9
" " Mission	3
Health Centers	8
Health Clinics	90
Health Posts (Majority of)	180

(N.B. health posts may give motivational information and provide non-medical [foam or condom] methods on a day-to-day

basis, while medical methods may be given by nurses or physicians during their periodic visits to health posts).

d) It may reasonably be assumed that each of the facilities listed in paragraph 3 above (except health posts) have one or more nursing personnel qualified to give postpartum and family planning services (Annex VI , Tables 2.1.1, 2.1.2).

e) An estimated 571 nurses (ENs and RNs) have been trained to provide postpartum and family planning services.

f) A number of health facilities (hospitals, health clinics and health posts) were visited by the Evaluation Team (See Annex I). Each was found to contain:

   i) An area set aside for (or a clinic session devoted to) patients seeking FP services.

   ii) Record systems suitable for a) individual patient followup, and b) simple statistical analysis.

   iii) Contraceptive supplies.

   iv) One or more nurses with knowledge and skills appropriate to the task of providing MCH/FP services.

g) All health personnel contacted by the Evaluation Team, at all levels of service within the MOH, had a positive and favorable attitude towards the concept of child-spacing and towards the inclusion of FP services in an MCH and public health program.

h) High government officials (MOH and Ministry of Finance and Development Planning) endorsed the inclusion of FP as an integral part of the MOH program. Official government statements support the concept. The fact that the MOH is the official affiliate in Botswana of the International Planned Parenthood Federation reinforces the conclusion that the program is officially endorsed.

i) The Central Statistical Unit presently receives, on a monthly basis, data on: numbers of new and repeat acceptors of contraceptive services, by method and by health unit reporting.

j) The numbers of new acceptors reported by year is shown in Table 4:

Table 4

New Family Planning Acceptors by Method
Period 1973-1977

	1973	1974	1975	1976	1977
Pill	3,461	4,274	4,965	6,578	6,751
IUD	231	446	1,096	1,341	1,314
Injectable	150	141	551	1,090	1,094
Diaphragms & Spermicides	20	16	20	339	269

The Chief of MCH/FP Services, MOH, attributes the three-fold increase in the number of new acceptors and the sharp increase in IUDs as a method of choice to the presence, at health installations throughout the country, of nursing personnel trained, during recent years, under the Meharry project.

ANNEXES

I. Institutions and Principal People Contacted

II. Contract Between the United States of America and Meharry Medical College

III. Botswana/Meharry MCH/PH/FP Project: Workplan

IV. Inventory List, 1/28/75

V. Financial Tables (1)
(2) Not submitted by Meharry, see
(3) Section IV a-b.

VI. General Background - Chapter I
(Mimeographed material from GOB/MOH, 1978)

VII. Criteria for Selection, Placing and Staffing of Basic Health Facilities (GOB/MOH, 1978)

VIII. In-Service Training Sessions: Jan. 1974 - May 1978

IX. Curriculum - In-Service Training Programme

X. Student Pre-Post Evaluation Test

XI. NHI RN Curriculum

XII. NHI EN Curriculum

XIII. Curriculum for Integration

} To be submitted later.

Annex I

INSTITUTIONS AND PRINCIPAL PEOPLE CONTACTED

Meharry Medical College, Nashville, Tennessee

Dr. Charles W. Johnson, Dean, School of Graduate Studies
Dr. Gladys Hardy, Director, Maternal and Child Health, Family Planning, Training and Research Center
Ms. Pearline Gilpin, Nurse Midwige, Maternal and Child Health, Family Planning, Training and Research Center
Ms. Sybil Thompson, Nutritionist, Maternal and Child Health, Family Planning, Training and Research Center
Ms. Joan Jones, Pediatric Nurse Practitioner, Maternal and Child Health, Family Planning, Training and Research Center
Ms. Evelyn K. Tomas, Chairman, Department of Nursing Education, School of Nursing
Ms. Bettye Jeanne Forrester, Campus Coordinator, Botswana/ Meharry/USAID Project

University of Massachusetts, Amherst, Massachusetts

Dr. and Mrs. (Dr.) William Darity, Chairman, School of Public Health and Health Services
Dr. and Mrs. (Dr.) Richard Ulin (former Botswana residents)
Ms. Nellie Kano, formerly Director, Maternal and Child Health, Family Planning, Training and Research Center, Meharry Medical College

USAID
USAID/Botswana

Mr. Phillip Buechler, Deputy USAID Representative
Ms. Constance Collincs, OSAPAC Regional Health Development Officer

Ministry of Health

Dr. Simon Moeti, Chief Medical Officer
Mrs. K.M.I. Makhwadi, Chief Nursing Officer
Ms. Eva Moagi, Matron, Lobatse Mental Hospital
Mr. Murray Kam, Planning Officer

Health Education Unit, Ministry of Health

Mr. Tim Jones, Health Education Unit
Ms. Winnie Manyeneng, Health Educator
Mr. P.B. Shrestha, Health Education Advisor, WHO

Princess Marina Hospital

Mrs. Grace Kgori, Senior Matron
Mrs. Margaret Motsepe, Matron
Mrs. Joyce Seitei, Assistant Matron

Lobatse Athlone Hospital and EN School, Lobatse

Miss Neo Raditlad, Matron
Mrs. Amanda Bome, EN Tutor-In-Charge
Ms. S.S. Kalane, EN Tutor
Ms. P.T. Ngube, EN Tutor

Botswana Nursing Association

Sekgoma Memorial Hospital, Serowe and Serowe EN School

Mrs. O. Moneigein, Matron
Mrs. Phala, Tutor
Mrs. B. Lobelo, MCH Clinic Sister

Maternal and Child Health/Family Planning Unit

Unified Local Government Service, Ministry Local Government & Lands

Mr. M.J. Rowland, Establishment Secretary

Medical Statistics Unit, Central Statistics

Mr. I. Nair
Mr. M.Z. Moapare

Serowe MCN/FP Clinic, District Council, Serowe

Ms. O.A. Monauen, Matron
Ms. B. Lebelo, Sister, MCH Unit

Serowe EN School

Ms. T.C. Mothubi, Junior Tutor

Palapye MCH/FP Clinic

Ms. Bagai, In-Charge

Sefophe MCH/FP Clinic

Ms. Lydia Mooketsi, RN, Staff Nurse
Ms. Bointlafatso Lekuntwane, EN
Ms. Gaetlione Galeeme, GDA
Ms. Babiditse Kelailwe, GDA

Deboran Relief Memorial Hospital, Lochudi

Mrs. H. Moanakwena, Matron
Dr. Schubert, Medical Officer
Mrs. N. Mogomoti, MCH Sister In-Charge
Ms. Salang Rapoo, EN Tutor
Ms. Christine Mayer, EN Tutor

Meharry/Botswana Field Staff

Ms. Jean Swinney, Senior PHN, Gaborone
Ms. Laurel Edwards, Francestown

Nutrition Rehabilitation Center, Serowe

Ms. Sampson, Sister
Ms. Meatlodi, EN

National Health Institute, Gaborone

Mrs. M. Kobue, A/Principal Tutor
Mrs. M. Motobosi, Senior Tutor
Ms. C. Akrofi, WHO, MCH Tutor
Ms. S. Hellard, CUSO Volunteer, PH Tutor
Ms. J. Cramer, UN Volunteer, PH Tutor

EN School, Jubilee Hospital, Francistown

Mrs. Mbai, Matron
Mrs. Malakongwa, Regional PH Nurse
Mrs. B. Moleele, EN School, In-Charge
Mrs. R. Berry, EN School, Tutor

Returned Participants

Ms. Neo Mokgwati, B.Sc.N., Tutor, NHI and In-Service Training Programme
Ms. Winnie Manyeneng, R.N., B.Sc.(HE), HE Officer, Health Education Unit
Ms. Rose Makgoeng, B.Sc. (HE), HE Officer, Health Education Unit
Mrs. Rose Thobosi, R.N., Dip. Nsg. Ed., NHI Tutor

Qualifications must include:

(a). A general academic background in public health, involving academic credentials in health education at the Master's Level, at the minimum; (b) Experience embracing a minimum of five years in health education, preferably involving developing areas (U.S. or abroad) and experience with communications media in both their informational and academic aspects; (c) Minimum age of 30 years; (d) Willingness to travel out of Gaborone as required.

Field Site: Gaborone

2. Senior Public Health Nurse:

As directed by the Director of Medical Services, who is assisted by the Chief Nursing Officer, the Senior Public Health Nurse will assume responsibility for:

Duties:

(a) Integrating public health nursing (including MCH/FP) into the curriculum of enrolled nurses (practical nurses) at all nurse training colleges (three government, three mission); (b) Collaborating with GCB nursing tutors in development and supervising a program of in-service training in public health (including MCH/FP) for registered nurses, enrolled nurses, and health assistants (male, two years medical training); (c) Providing assistance in conducting in-service public health training courses and assume general responsibility for such courses in the geographic area of her(his) assignment; (d) Assisting teaching enrolled

nurses in the teaching hospital located in the geographic area to which she(he) is assigned; (c) In association with GOB staff and other donor advisors, develop suitable field training centers. In association with other team members and appropriate GOB staff, plan for and participate in evaluation of training programs at suitable intervals; (f) Assisting Medical and Nursing Staff at the Government Hospitals in strenghtening and expanding the post-partal family planning services.

Qualifications

A qualified public health nurse with graduate study in public health and/or nursing education at the masters level minimum of 5 years experience in supervision and teaching in public health nursing, midwifery training, desirable minimum age of 30 years, willing to travel away from field site 1 week in 4.

Field Site: Sekuwe

3. Public Health Nurses (2)

The two public health nurses will come under the general supervision of the Chief Nursing Officer, in the Department of Medical Services. Their work will be generally coordinated by the senior public health nurse (above). When working with training hospitals, their activities will fall under the direct supervision of the Matron of the hospital.

Duties:

Their responsibilities will include: (a) Participating in the development of syllabus for in-service training in public health (including MCH/FP) for registered and enrolled nurses, and health assistants, in their assigned areas; (b) Teaching public Health (including MCH/FP) to

enrolled nurses in training colleges as designated; (c) Ensuring the timely turnover of responsibilities to appropriately trained citizen of Botswana; (d) Participating in evaluation of program at regular intervals with a trained Public Health Nurse to the masters level.

Qualifications:

Qualified public health nurses with graduate study at masters level with minimum of one year experience in public health nursing and teaching or at bachelors level with minimum of 4 years good experience in the supervision and teaching of public health nursing, midwifery training desirable, no minimum age requirement, willing to travel away from field site 1 week in 5.

4. Administrative Officer:

Unlike the four technicians (above) the administrative officer will not encumber an established post, and will therefore be free to arrive in advance of the next Botswana Fiscal Year, which begins April 1, 1973. The Director of Medical Services, who will be the A.I.D.'s direct superior, will make an office available for his(her) use starting January 1, 1973. The Administrative Officer is expected to arrive three months in advance of the four technicians, in order to make the necessary advance preparations (accommodations, materials, supplies, etc.).

Duties:

His(Her) principal duty will be to provide administrative support for

project activities, including the procurement of materials and supplies (not excluding the U.S. of AAPC) training arrangements, and technical logistic support. The Administrative Officer, however, will in principal be available to the Director of Medical Services for other related assignments as may be required.

Qualifications:

A minimum of five year's administrative experience and a good familiarity with contractors made of administrative operations.

Field Site: Gaborone

III. Contractor will assist in determining specific requirements and procurement on the below listed indirect commodities, which will be funded by A.I.D. separately and not under this contract.

4 Vehicles

Library Materials (3 libraries)

books, periodicals, duplication equipment and supplies

Teaching Aids

MCH/FP Clinics supplies and Equipment (including contraceptives)

Selections of items for purchases will be subject to the guidance and approval of the Director of Medical Services.

The Botswana Government will pay all operating costs and maintenance and repair of the four (4) vehicles.

CONTRACT BETWEEN THE UNITED STATES OF AMERICA AND

MEHARRY MEDICAL COLLEGE

Budget No. 1

Appendix C - Approved Budget

Line Items	Eighteen (18) Months Amount
1. Salaries	$139,465
2. Consultants	14,400
3. Fringe Benefits	13,950
4. Overhead	34,611
5. Travel and Transportation	104,630
6. Allowances	26,530
7. Other Direct Costs	2,500
8. Equipment Vehicles and Supplies	21,300
TOTAL	$357,386

Within the total estimated cost of this Contract the Contractor may adjust line item amounts as reasonably necessary for the performance of this contract.

Annex III

Botswana/Meharry MCH/FP Project

Workplan

This workplan covers the period September, 1973, when all members of the Meharry team had arrived in Botswana) to Spring 1978 (five years after the first team members when the project began).

The main "OBJECTIVES" shown in the workplan are taken directly from the contract.[1] More detailed objectives and the activities planned to implement them have been derived as much as possible from the PIO/T and PROP.

An attempt was made to tie this workplan closely to the project documents, objectives and plans previously agreed on by Meharry, USAID and the Government of Botswana. However, details of activities planned must also reflect the present situation as perceived by the field team and the Ministry of Health, and the conditions and constraints under which the team works. Where the work plan departs from the plans set our in project documents, this has been noted and commented on.

[1]Appendix B, "OPERATIONAL PLAN", Contract between the United States of America and Meharry Medical College (Contract No. AID/CH/PHA/c-73-8).

OBJECTIVES	ACTIVITIES	TARGET DATES
OBJECTIVE 1. To train or retrain personnel for staffing rural health facilities in public health, maternal and child health, and family planning.		
1.1. To develop an inservice training curriculum for nurses, which covers public health, maternal and child health and family planning.	1.1.a. The team public health nurses will develop, in consultation with the Chief Nursing Officer, a list of teaching areas, on which to base the inservice curriculum.	August 1973
	1.1.b. Following this they will develop a detailed curriculum specifying objectives and content for the inservice course.	September '73
	1.1.c. This curriculum will be approved by the Chief Nursing Officer and Botswana Nursing Council.	
1.2. To develop plans and a pool of study materials to be used in the inservice training program.	1.2.a. The Meharry team will request specific teaching reference books, equipment and supplies for the inservice course. The MCH/FP Center will purchase and ship them to Botswana.	June 1973
	1.2.b. Teaching plans and materials will be developed by each team nurse for certain subject areas, and shared with the other nurses in their respective training centers.	October to December 1973
	1.2.c. A common set of study materials will be distributed to inservice trainees in each center.	January, 1974

COMMENTS

The inservice training curriculum was developed in September 1973. It was at first hoped to begin the teaching on November 26, 1973.

Meanwhile, teaching reference books, needed by the team for writing teaching plans and course materials, had been delayed. These were requested by the team in June 1973 at Meharry, but problems in locating and ordering the materials arose. Once this was realized, the concensus of team and Ministry opinion was that the start of training should be delayed until books arrived. By mid-January a considerable number of texts had been received in Botswana. The first inservice course began on 23rd January 1974.

The second inservice course will begin April 1st, 1974 and subsequent courses will follow with two-week intervals after the end of each eight-week course. Part of the first interim week will be utilized for evaluation and team discussion, and the remaining time spent by the nurses in supervisory visits to clinic sites, to reinforce students' practical field work.

It is planned that Meharry public health nurses will ultimately be teaching the inservice course along with Batswana tutors. However, the shortage of nursing staff makes this impossible at present. Therefore, the Meharry team's nurses bear the full responsibility for teaching the inservice courses, and are fully occupied with this, for the time being at least. This has implications for another project objective, which concerns enrolled nurse training, and has been noted at the end of the following section (pages 7. and 8).

OBJECTIVES	ACTIVITIES	TARGET DATES
OBJECTIVE 2. To prepare an integrated curriculum (including appropriate public health and MCH/FP programs) for use in the basic nurse training schools.		
2.1. To prepare a curriculum which integrates public health, maternal and child health and family planning content into the existing enrolled nurse training program.	2.1.a. The senior public health nurse will develop objectives appropriate to enrolled nurses training, as a basis for integrating MCH/FP and public health into the existing curriculum.	Feb, 1974
	2.1.b. Content corresponding to the objectives will be outlined by the senior public health nurse in cooperation with a Botswana nurse(s) designated by the Ministry.	
	2.1.c. The Mchorry public health nurses will advise and guide enrolled nurse tutors in developing teaching plan and material utilising public health and MCH/FP concepts, and skills so that the Batswana tutors can implement the integrated curriculum.	
	2.1.d. By the end of the Mchorry project approximately 350 student enrolled nurses will have completed the integrated course.	
	2.1.e. The integrated curriculum will, after approval by the Chief Nursing Officer, be submitted to the Botswana Nursing Council for approval	

OBJECTIVES	ACTIVITIES	TARGET DATES
2.2. To assist in revising a curriculum which integrates public health, maternal and child health and family planning into the current registered nurse training program	2.2.a. The senior public health nurse will co-operate with tutors at the National Health Institute who are in charge of integrating public health, and maternal and child health/family planning into the registered nurse program. 2.2.b. The senior public health nurse will also be available to the mission nursing training schools, as a curriculum consultant on integrating public health, maternal and child health and family planning into their curricula.	This will occupy several weeks' time, not all in one block.

COMMENTS

1. The National Health Institute has been teaching student registered nurses according to a curriculum developed several years ago[1], which includes public health nursing. In the last year, however, there has been an initiative from the Chief Nursing Officer to integrate public health, maternal and child health and family planning into the teaching program to a much greater degree. This has received support at the National Health Institute, and specific tutors have taken the lead to work out means of effecting integration.

The Meharry senior public health nurse and team leader have offered to cooperate with these efforts as much as possible, to assist the N. H. I. tutors in revising the curriculum and implementing integrated teaching. It is expected that this will primarily take the form of advice and suggestions through requested consultations with the N. H. I. tutors.

2. As noted under objective 1, the inservice nurse training program is, for the first two years of the project, going to be a full-time teaching job for the Meharry team's public health nurses. This is because while the Meharry team has developed the curriculum and started the training, there are as yet no Botswana tutors available to assist with or take over the inservice teaching duties. It is planned that as soon as tutors return from

1. Curriculum for Nurse Training at the Training Unit for Health Personnel, Gaborone. Responsible Authority: Ministry of Health, Labour and Home Affairs. January 1970.

one and two-year training in Africa, they will begin to teach inservice courses. This will then free Meharry public health nurses for some teaching in the enrolled nurse schools, as specified in the description of their duties (P10/T, pages 8 and 9).

Meanwhile, Batswana tutors in charge of the enrolled nurse schools will develop teaching plans and materials integrating maternal and child health/family planning/public health objectives set out by the Meharry senior public health nurses will assist in this endeavour, but will not be able to teach enrolled nurses on a regular basis until the inservice teaching load decreases.

The Ministry of Health does plan, in accordance with the project agreement, to "appoint appropriately trained counterpart replacements for the U. S. technicians in time to allow a minimum overlap of six months to one year prior to departure of the U. S. personnel". [I.]

I. See page 9 of PRO/AG signed in July 1972.

OBJECTIVES	ACTIVITIES	TARGET DATES
OBJECTIVE 3. To train a selected tutorial staff to continue use of the integrated health curriculum.		
3.1. Approximately ten tutors will receive participant training in programs in Africa. These tutors will be assigned, on their return, to teach in the inservice program and the enrolled nurse schools, and will be prepared to teach with an emphasis on MCH/FP and public health.	3.1.a. Five suitable nursing tutors will be selected and made available by the Ministry of Health to undergo two-year training in Africa, in programs which include strong public health, MCH/FP components.	
	3.1.b. Five suitable nursing tutors will be selected and made available by the Ministry of Health to undergo one-year training in Africa, in programs which include strong public health, MCH/FP components.	
3.2. Approximately eight candidates will complete or be in training for B.Sc. or Master's degrees. On their return, these individuals will be assigned to teach registered nurses, supervise the refresher courses for nurses or teach public health nurses.	3.2.a. The Ministry of Health will nominate and make available academically qualified candidates for participant training in B.Sc. or Master's degree programs.	
	3.2.b. Meharry Medical College will identify and apply to suitable colleges or universities on behalf of the qualified individuals nominated by the Ministry of Health.	

OBJECTIVE	ACTIVITIES	TARGET DATES
3.3. Three Batswana nurses will have completed short-term training in MCH/FP training, evaluation and administration.	3.3.a. The Ministry of Health will nominate and make available qualified candidates for this short term training, according to the schedule shown, page 13.	
	3.3.b. The Meharry Medical College MCH/FP Training and Research Center will identify and apply to suitable training institutions on behalf of the three Batswana candidates, or arrange special training courses for them.	
3.4. A total of fifteen individuals will complete short-term study/observation tours. The purpose of these is to expose health personnel in supervisory or tutor positions to a broader concept of nursing, incorporating public health, maternal and child health and family planning.	3.4.a. The Ministry of Health will identify and make available three participants (from supervisory or training positions) every year of the project, for such tours.	
	3.4.b. Suitable programs and institutions to be visited will be identified by both the Ministry of Health, and Meharry MCH/FP Center.	
	3.4.c. Itinerary and travel arrangements will be made by Meharry MCH/FP Center for these visits.	

COMMENTS

1. One project indicator specified in the PROP is, "Approximately ten candidates will have completed or be in training as health educators at the B.Sc. or M.P.H. level."

After consultation with the Ministry, it is apparent that the number of degree-level health educators wanted and needed in Botswana is much less than the ten people originally envisaged in the PROP. It is felt that the Health Education Unit should be headed by a Chief Health Education Officer with Master's degree training and that his deputy should be trained professionally in communications at B.Sc. level.

Development and expansion of health education efforts in Botswana will for the next 5-8 years focus on

a) Production of materials;
b) National educational campaigns against health problems, utilising radio messages and radio listening groups, distribution of printed materials (and press releases);
c) Training and support of all other health staff in their educational functions:
d) Continuing health education input to the schools and teacher training colleges.

Projected expansion of District Medical staff and rural health services will include assignment of District Health Education Officers. However, the Ministry does not envision the necessity of training these officers at a degree level for some time to come.

Other than the people heading the Health Education Unit, it is felt that the specialized public health manpower needs in Botswana will demand more staff in the area of nursing training than in health education, at least for the next 8-10 years. For this reason, the Ministry wishes to send 6 participants for B.Sc. degrees in nursing, one of whom would continue for a master's degree.

2. The individual receiving both B.Sc. and Master's degree training in nursing will be responsible for refresher courses for Botswana nurses at all levels -- enrolled, registered, public health nurses, matrons and nurse tutors. Before completion of the present 5 year project, the Senior Public Health Nurse will assist the Ministry by developing a basic plan for refresher training. It is hoped that a Batswana nurse will begin Master's degree training in Fall of 1977, and return in Spring 1979 to take up supervision and implementation of the continuing refresher training program.

3. The 10 tutors who receive participant training in one or two year African training programs will be slated on their return for positions at the National Health Institute, where they will assist in training registered nurses and public health nurses.

4. One person will be identified in each of the first three project years for short term participant training in MCH/FP administration, evaluation and supervision.

5. It is hoped to send an average of 5 people each year of the project for short term study/observation tours. The purpose of these is to help Batswana nurses, especially those in supervisory or tutor positions, toward a broader concept of nursing ----- incorporating public health, maternal and child health, and family planning functions.

	First Project Year July 73-June 74 FY 74	Second Project Year July 74-June 75 FY 75	Third Project Year July 75-June 76 FY 76	Fourth Project Year July 76-June 77 FY 77	Fifth Project Year July 77-June 78 FY 78
Health Education/Nursing					
B. Sc. (8)	1 (B.Sc.Nursing)	1(B.Sc.Nursing) 1(B.Sc.Health Ed.)	3(B.Sc.Nursing) 1(B.Sc.Health Ed.)	1(B.Sc.Nursing)	----------
M.P.H. (2)	----	------	------	1(M.P.H.Nursing)	1(M.P.H. Ed.)
African Training for Tutors					
+ One-year (5)	------	2	1	2	------
++ Two-year (5)	2	1	1	1	------
Short-term MCH/FP					
Admin. Supervision (5)	1	1	1	-----	------
Short-term					
Study/observation tours (15) (U.S., Africa & elsewhere)	3	3	3	3	3

N.B.. Number in brackets refer to number of trainees specified in PAOF.

\+ Ghana: Clinical Instructors' course

++ "Diploma in Advanced Nursing"

These are programs already identified.

OBJECTIVES	ACTIVITIES	TARGET DATES
OBJECTIVE 4. To establish a functioning health education unit, with a trained local staff capable of serving health needs including maternal and child health/ family planning services and preventive health.		
4.1. To train local staff for the health education unit who are capable of serving health needs, including MCH/family planning and preventive health.	4.1.a. The Ministry of Health will nominate two academically qualified candidates who can be sent for participant training in health education and communications media at B.Sc. level. This will be done according to the training schedule shown on page 13.	
	4.1.b. Moharry Medical College will apply on behalf of academically qualified Batswana nominees to suitable colleges or universities which offer B.Sc. or master's degree training in health education or communications.	
	4.1.c. The Ministry of Health will recruit or transfer suitable local staff to the health education duties, to fill the following established posts: 2 Health Education Officers 2 Health Education Assistants.	By the end of 1974, to overlap with the project coordinator.
	4.1.d. Information Services will initially provide photographic services and facilities for the health education unit.	
	4.1.e. The Moharry Team Coordinator will provide on-the-job training for the individuals appointed as Health Education Assistants.	

OBJECTIVE	ACTIVITIES	TARGET DATES
4.2 To establish two supporting committees, one on a departmental basis and another on an interministerial basis, to advise on and help coordinate health education efforts in Botswana.	4.2.a. The Director of Health Services will initiate the formation of these two committees and will name suitable individuals to be members. 4.2.b. The Meharry team coordinator will help to organize these committees, and will attend their meetings and assist as required.	January 1974
4.3 To initiate local production of materials which can be distributed to and used by field staff throughout Botswana to teach the public about hygiene, prevention of health problems, and maternal and child health/family planning.	4.3.a. The Ministry of Health will provide supporting clerical/secretarial services for the health education unit. 4.3.b. The Meharry MCH/FP Center will supply a limited number of public health and health education reference books for the unit, as well as procuring sample teaching materials and aids. 4.3.c. The Meharry project team coordinator will provide advice and expertise to the Ministry of Health to produce teaching materials locally. This will include identifying existing needs for materials, and planning how the needs can best be met.	

OBJECTIVES	ACTIVITIES	TARGET DATE
	4.3.d. The Meharry team coordinator will advise the Ministry on basic equipment and supplies required to begin production of health education materials. The Director of Health Services will approve this list before it is requested from Meharry Medical College.	September 1973
	4.3.e. Meharry Medical College will purchase and ship the requested health education equipment to Botswana.	December'73.
	4.3.f. The Ministry will allocate and use funds necessary for production of health education materials, e.g. for additional equipment and furnishings for the unit, for paper, etc.	
	4.3.f. Meharry Medical College and AID/Washington will consider requests by the Ministry for specialist consultant services in health education/communications.	
	4.3.g. The Ministry, with the assistance of the team coordinator, will develop methods of pretesting and evaluating the educational materials produced by the unit.	

OBJECTIVES	ACTIVITIES	TARGET DATES
4.4. To integrate health education into the preservice and inservice training courses for health staff in Botswana.	4.4.a. The Meharry team coordinator will cooperate with the tutors of the following basic health training courses to integrate a health education component into their curricula: (i) Registered nurses (ii) Enrolled nurses (iii) Health assistants (iv) Family welfare educators. 4.4.b. The tutors responsible for the above training courses will implement and teach the integrated curricula, once developed. 4.4.c. The team coordinator will help to develop inservice training experiences for health staff to help them learn educational concepts and techniques. These experiences may form part of existing inservice courses, or take the form of seminars and short courses. 4.4.d. The staff of the health education unit will participate in teaching basic and inservice training courses for health staff, as practicable.	A start will be made on this task, with all of these training curricula before the end of the first project period.

OBJECTIVES	ACTIVITIES	TARGET DATES
4.5. To integrate health education into all levels of Botswana's education system. primary schools, secondary schools and teacher training colleges.	4.5.a. The Meharry Team Coordinator will, with the approval of the Director of Health Services, meet as a consultant with senior officials of the Ministry of Education to develop (1) a plan for improving school health, and (2) a strategy for integrating health topics and concepts into the curricula of Botswana's schools and teacher training colleges.	
	4.5.b. The Department of Health Services Health Education Committee, with the editorial assistance of the Meharry Team Coordinator, will write a health guide booklet covering health topics and methods of health education, on a simplified level. This booklet may be used by rural school teachers as well as health staff.	Will be completed before June, 1975.
	4.5.c. The Ministry of Education will designate a senior education staff member to work with the Team Coordinator on school health and health education in the curricula of the schools.	
	4.5.d. The Team Coordinator will help to write school curriculum health components, and/or will assist in identifying and obtaining other assistance such as reference materials and consultants.	

OBJECTIVES	ACTIVITIES	TARGET DATES
	4.5.e. The Meharry Team Coordinator will develop, at the request of the Ministry of Education, a plan for inservice training of teachers in Botswana, in health topics and health education.	
	4.5.f. The Ministries of Health and of Education will consider the proposed inservice training plan and, after asking any necessary changes, approve it for implementation.	
	4.5.g. Staff of the health education unit and of the Ministry of Health will conduct inservice training courses for Botswana teachers on selected topics in health, and health education concepts, on request of the Ministry of Education.	
4.6 To plan and carry out a national health education campaign, in collaboration with other staff in the Department of Health Services.	4.6.a. The Director of Health Services will identify a health problem or several health problems of priority in Botswana, to be the focus of a national health education campaign.	September, 1973
	4.6.b. The Project Coordinator will develop educational objectives for each of the health problems identified. These will be reviewed and approved by the Director of Health Services.	January, 1974
	4.6.c. The Director of Health Services will designate other health staff to work with the Meharry Team Coordinator and staff of the Health Education Unit on implementing the educational objectives of the national health education campaign.	

OBJECTIVES	ACTIVITIES	TARGET DATES
	4.6.d. The team coordinator will outline the methods to be used during the campaign to educate the public.	March 1974.
	4.6.e. The Ministry of Health will allocate and use funds, transport and extra staff as required for the successful implementation of the health campaign.	June
	4.6.f. The Meharry team coordinator will coordinate with personnel from appropriate other ministries and agencies in Botswana on implementation of the health education campaign objectives.	and July, 1974.
	4.6.g. Certain activities initiated during the campaign will be utilized on an ongoing basis for health education of the public.	
4.7. To collaborate in the proposed national work-oriented literacy program.	4.7.a. The Meharry team coordinator will attend meetings held to coordinate and plan the work oriented literacy program.	
	4.7.b. The team coordinator will be available as a consultant to the organizers of the work oriented literacy program.	

COMMENTS

1. The Department of Health Services feel in principle that it would be advantageous to have the health education unit eventually headed by a Motswana who is trained at master's degree level in health education or communications.

The problem is, to identify and send, in the four remaining project years, a person already possessing a university degree, who would be interested and available to undergo this training, and would return to head the unit.

While noting that the problem of locating counterparts and candidates for participant training exists for many projects and technical aid groups working in Botswana, the Meharry team will continue to try and identify suitably qualified Batswana to utilize the two slots for master's degree training under our project agreement.

As noted above in the comments on training of nursing tutors, it is hoped to send one academically qualified Motswana nurse for master's degree training in nursing.

2. Beginning local production of well-designed and executed health education materials is felt to be of high priority, among the duties of the Meharry team coordinator. This is not to downgrade the importance and priority of training health (and other) staff to use more effective approaches in educating the people they serve. However, there is a great need for health teaching materials at this time, and it is felt that a minimum of these, once produced and available, will also facilitate health education training. One is at a disadvantage trying to teach health workers how to change people's health behavior, without giving them some good reference and teaching tools. It is mainly for this reason that, during the first year of the project, consultant services were requested to help produce basic kits of teaching charts (posters).

3. The Ministry of Education is currently utilising the services of a team of consultants charged with curriculum development, both at the secondary and primary level. These consultants came to Botswana in 1973. It is hoped that the Meharry team coordinator, Ministry of Health staff, and some of the health education materials produced can serve as resources on health for the curriculum development team. At the same time, there has been a request (January 1974) from the Ministry of Education to the Director of Health Services, to explore possibilities of developing a suitable family life education curriculum for Botswana schools.

OBJECTIVES	ACTIVITIES	TARGET DATES
OBJECTIVE 5. To develop field training facilicies and field practice areas needed to support the health training program.		
5.1. To identify field training facilities suitable for development for the health training programs being conducted by the Botswana/Meharry team.	5.1.a. The Director of Health Services will designate several suitable field sites for each inservice training center.	August, 1973.
	5.1.b. The Ministry of Health will assume responsibility and take steps to improve or provide the required materials and facilities at these sites.	
5.2. To develop objectives for field practice, to ensure that all concerned are aware of the learners' goals and endeavours to implement maternal and child health and family planning services.	5.2.a. The Meharry senior public health snurse will develop, together with the Chief Nursing Officer, a set of objectives to help trainees translate theory into practice. These will be communicated to the trainees during their eight-week course, before they begin field practice.	January, 1974
	5.2.b. The Ministry of Health will inform hospital superintendents, matrons and staff at the field sites, of the Botswana/Meharry objectives. This will be done prior to the trainees starting to work in the field areas.	

OBJECTIVES	ACTIVITIES	TARGET DATES
5.3. To implement the specified objectives of field training experience in the inservice training program, over a period of time.	5.3.a. Length of the field practice, evaluation methods, and type of supervision to be provided will be decided by the Senior Public Health Nurse and the Chief Nursing Officer. This information will be communicated to trainees by the Meharry public health nurses and to the Ministry of Health staff concerned, by the Chief Nursing Officer, before trainees are assigned to field sites. 5.3.b. Transport and housing for trainees to and at the field training sites will be provided by the Ministry of Health. Transport for Meharry public health nurses making supervisory visits will be provided by the team.	
5.4. To evaluate the effectiveness of the field practice in meeting its stated objectives.	5.4.a. The Meharry public health nurse tutors will keep records of their methods of evaluating the field practice experience, and their observations regarding each student and each field site. 5.4.b. The team will meet together to discuss the field practice experience, to evaluate whether students are in fact translating theory into practice. 5.4.c. This information will be summarized, recorded by the senior public health nurse tutor, and communicated to the Chief Nursing Officer.	

OBJECTIVES	ACTIVITIES	TARGET DATES
6. To establish an effective postnatal and family planning service in the three Government training hospitals.	6.1.a. The Team Coordinator and Senior Public Health Nurse will meet the Director of Health Services and Chief Nursing Officer to (a) discuss this objective of our program, and (b) identify and utilise the right channels in establishing postnatal and family planning services at each hospital.	September 1973.
6.1. To determine the practice of the Government and Ministry of Health in regard to postnatal and family planning services, and to utilise the best approach in integrating the two at the three identified government hospitals.	6.1.b. Each Meharry public health nurse will meet with and work in collaboration with appropriate staff at each hospital and develop in cooperation with them postnatal and family planning services.	During 1974.
6.2. To provide supervision and direction to the newly-established postnatal and family planning services at each hospital.	6.2.a. Postnatal services and family planning clinics at each hospital will be under the overall supervision of the medical superintendent.	
	6.2.b. Meharry public health nurses will supervise clinical activites including counselling and patient teaching sessions. The focus will be on postnatal followup, contraceptive advice and care of the body.	
	6.2.c. Ministry of Health nurses will work in collaboration with the Meharry nurses in promoting smooth and efficient functioning of the clinics.	
	6.2.d. Postnatal and family planning clinics will eventually be under the supervision of Government nursingstaff with maternal and child health/family planning training, as said clinics become firmly established.	Before end of project period.
6.3. To provide the equipment and supplies necessary to carry out postnatal and family planning services.	6.3.a. The Ministry of Health will provide MCH/FP equipment and supplies not already available at hospital facilities.	

OBJECTIVES	ACTIVITIES	TARGET DATES
	6.3.b. Meharry MCH/FP Project will help provide supplementary family planning equipment and supplies as requested by the hospitals through the Director of Health Services.	
6.4. To evaluate the effectiveness of the postnatal family planning service in the three Government training hospitals.	6.4.a. Plans and tools for evaluation of these services will be developed by the Meharry team together with other staff of the Government (e.g. the Statistics Department), or with other contants.	
	6.4.b. Suggested methods for evaluation will include.	
	Patient statistics (clinic records). How many patients are utilising the service? How many patients return for followup? What length of time before next pregnancy?	
	Interview questionnaire. What is the patients' evaluation of services rendered in relationship to meeting their needs? Are patients satisfied with services offered? What additional services they feel would be useful in the area of maternal and child health/family planning?	

Annex IV

INVENTORY OF MATERIALS PURCHASED WITH PROJECT FUNDS AND DEPOSITED IN THE HEALTH EDUCATION UNIT - OR - THE OFFICE ALLOCATED TO THE PROJECT HEALTH EDUCATOR AND NOW UNDER LOCK AND KEY

Stock listed last Inventory (September, 1974) and distribution on inventory taken 1/28/75

Books	Present 1/28/75	Missing 1/28/75
Brown; seTswana Dictionary	X	
Cox; Operation Water Treatment		X*
Erickson and Curl; Audio-Visual Techniques	X	
Hopkins, et al.; Practice of Sanitation	X	
Jelliffe; Diseases of Children in Tropics	X	
Latham; Human Nutrition in Tropical Africa	X	
Lien; Measurement and Evaluation of Learning	X	
Lindgren; Introduction to Social Psychology	X	
Lindgren and Byrne; Psychology an Introduction	X	
Pollock; Trials of Prophylactic Agents	X	
Siegel; Non-Parametric Statistics (2 copies)	XX	
Skipper and Leonard; Social Interaction and	X	
Thompson; Pediatrics for Practical Nurses	X	
VWR Scientific Catalogue	X	
WHO Public Health Papers		
Number 36	X	
42	X	
44	X	
47	X	
48	X	
49	X	
51	X	
52	X	
Webstern New Collegiate Dictionary	X	
Wilcocks and Manson; Manson's Trop. Disease	X	

* Cox; located in Swinney's office and returned 1/29/75 to health education office

Hard Equipment		
Camera; Nikon F 35mm (body only)	X	
Camera; Polaroid Land 450	X	
Camera Lenses; Nikkor Auto 35mm f/2 wide angle	X	
Dark Room Equipment; miscellaneous estimated value $45.00 U.S.	X	
Graphic Arts Triangle	X	
Meter Stick; steel		X* **
Office Heater		X
Movie Screen; Kodak Ektolite (transferred to Hurst inventory at Francistown November 1974)	-	
Paper Trimmer	X	
12" sissors	X	
Stencil Pen set (Gestetner)	X	
Tracing Box (two)	XX	
Typewriter; Smith Corona Galaxie 12	X	
Exacto Square and Mat Beveler	X	
Overhead Projector; 3-M plus acetate attach.	X	

* missing on September inventory and not relocated since

Films

Hungry Angles (r)

X

I Certify that the Above Inventory Schedule is Correct

Frank Smith

11/29/75

Missing as Sept 75

Annex V(1)

TABLE SHOWING EXPENDITURES BY CATEGORY AND YEAR

UNDER CONTRACT NO. AID/CM/PHA/C-73-8*

Line Items	1973-74	1974-75	1975-76	1976-77	1977-78
1. Salaries	$ 91,691.46	90,261.54	95,917.00	144,573.00	36,913.00
2. Consultants	20,907.39	2,329.61	1,200.00	251.00	951.00
3. Fringe Benefits	4,984.92	7,856.08	8,379.00	12,054.00	4,576.00
4. Overhead	20,245.73	22,386.27	26,908.00	32,769.00	11,864.00
5. Travel & Transportation	28,864.78	49,561.22	51,814.00	34,590.00	⟨989.00⟩
6. Allowances	16,568.53	10,811.47	11,336.00	22,601.00	856.00
7. Other Direct Costs	19,793.86	13,761.14	7,977.00	18,282.00	1,941.00
8. Equipment, Vehicles & Supplies	20,298.67	5,416.33	2,317.00	2,161.00	219.00
9. Participant Costs	1,582.60	21,157.40	51,889.00	128,917.00	62,336.00
TOTAL COST	$224,937.94	223,541.06	257,737.00	396,198.00	118,667.00
TOTAL COST 1973-78	$1,221,081.00				

*See Appendix C of original contract "Budget No. 1".

CHAPTER 1

GENERAL BACKGROUND

This chapter contains the following sections:

1.1 The Country.

1.2 The Population.

1.3 Development Prospects at Independence.

1.4 Transformation of Botswana's Development Prospects.

1.5 Future Prospects.

1.6 Development Strategy.

1.1 The Country

The Republic of Botswana with an area of 570,000 square kilometres lies at the centre of the Southern African Plateau at a mean altitude of 1,000 metres above sea level. Botswana is bounded by South Africa, Namibia, the Caprivi Strip, Zambia and Rhodesia (Zimbabwe). The climate is continental and semi-arid, with an average annual rainfall of 45 cms which is erratic and unevenly distributed, ranging from 30 cms in the south-west to 70 cms in the north-west, with over 90% of the rain falling in the summer months between November and April. The country lacks perennial surface water except in the north-west and a few springs, dams, and pools in the eastern sector.

Mean maximum and minimum temperatures vary according to region, but the former seldom rise above 38°C and the latter seldom fall below 5°C.

About 84% of the land surface is covered with Kgalagadi sand, which supports a low, savannah type vegetation. Rainfall is normally held in the top few metres, and is largely lost through evaporation and transpiration.

In only 5% of the surface area of Botswana do adequate rainfall and suitable soils occur together and provide a potential for arable agriculture. The main crop is grain sorghum, but maize, millet, beans and other crops are also grown, especially in the south. The range land of Botswana basically consists of a number of bush and tree savannah types. The low rainfall and poor soils result in grasses being of low productivity particularly in the Kgalagadi (Khalahari), and recommended stocking rates are low.

The wildlife population has been much depleted in areas of heavy human population but wild animals still occur in most parts. A great diversity of species result from the wide variety of habitats, ranging from the papyrus swamps of the Okavango Delta to the semi-arid desert of the Kgalagadi.

Intensive, large-scale prospecting for minerals has begun only in recent years. Commercially exploitable deposits of diamonds, copper-nickel, and coal have been brought into production at Orapa, Selibe-Pikwe, and Morupule, respectively.

1.2 The Population

The availability of water is a dominant influence on the pattern of human settlement in Botswana. About 80% of the population lives in the catchment area of the Limpopo river in the eastern part of the country, where there are reasonably fertile tropical soils and where the rainfall is sufficient to produce good pasturage and permit arable agriculture. There are settlements on the Ghanzi ridge in the west, and along the line of the Molopo River in the south. Cattle ranching is practised where sufficient water is available, either as surface water, or from boreholes. There is discontinuous and sparce settlement along the eastern fringe of the Kgalagadi sands. The region supports scattered bands of nomadic hunters.

Settlement also extends west of the Limpopo watershed to the Plains and grasslands around the Makgadidgadi Pans, and the Nata River, and westwards to the Boteti River.

The census of 1971 produced the following information:-

(a) The population was approximately 617,000

(b) The crude birth rate was about 44.9 per 1,000
and the crude death rate about 14.1 per 1,000
giving a rate of natural increase of 30.8 per 1,000
or 3.08% annum

(c) The overall sex ratio was 84 males to 100 females largely caused by the absence of male migrant workers in neighbouring countries;

(d) Demographic analysis has shown that there are on average 6.5 live births to each woman who survives to the age of 50;

(e) The dependency ratio was about 115 dependants to 100 supporters;

(f) The child mortality rate in the first two years of life is 126 per 1000, of which 68 are males and 58 females;

(g) 52% of the population lived in villages of less than 500 persons, and over 90% lived in villages of less than 1000 persons.

By mid 1976 the population was estimated to be roughly 680,000 with an annual rate of natural increase of around 3%. If this annual rate of increase continues unchecked the population will double in less than 25 years, giving a population in the year 2000 of approximately 1,400,000.

1.3 Development Prospects at Independence

Botswana became an independent sovereign country in 1966. The long term prospects for development were unpromising and the per capita income of the country made Botswana one of the poorest in the world. Very little physical infrastructure existed and the manpower base was extremely low. There was an acute shortage of trained people, in terms of professional skills, middle level skills and artisan skills. The majority of the population depended on the rearing of cattle for a living, an activity that provided a precarious livelihood. During most of the 1960's Botswana experienced a series of drought years, similar to what the Sahel has faced, which decimated the national herd and caused great hardships. Some exploration for minerals was taking place but as yet no viable mines had been located. The development budget was small and almost wholly dependent on assistance from one donor, United Kingdom. In order to balance the recurrent budget of the Government, an annual grant of aid from the United Kingdom was required until 1972.

1.4 Transformation of Botswana's Development Prospects

In the 10 years since Independence, an unexpected and dramatic transformation of Botswana's development prospects has occurred. Gross Domestic Product has grown at a high rate, in excess of 15% per annum, and Government revenues and expenditure have been buoyant, thereby supporting a growing development programme. The causes of this transformation are threefold.

Firstly, there occurred the discovery and exploitation of two major mines, thereby increasing national output and Government revenues. In 1971 a large diamond mine at Orapa, 140 miles west of Francistown, was opened, producing two million carats annually. The mine is owned by De Beers and the Government of Botswana, and plans are in hand to expand the output. Next, a major copper/nickel mine was developed at Selibe-Pikwe. Of the two, Selibe-Pikwe is the most complicated project and required the assistance of a wide range of mining and the infrastructure packages required to support production. Mining began in 1974, but there have been technical and other difficulties which have reduced production significantly.

The second reason for the transformation of Botswana's development prospects was the re-negotiation in 1969 of the Southern African Customs Union Agreement. In common with Lesotho, Swaziland and South Africa, Botswana is a member of the Southern African Customs Union Area. The bulk of excise and customs duties are collected by South Africa and until 1969 were shared out on the basis of a formula divised in 1910. Over the years, this formula had become increasingly inequitable as regards the sharing of pool revenues. Under the re-negotiated agreement the shares for Botswana, Lesotho and Swaziland grew rapidly, thereby substantially strengthening the budgetary positions of these Governments.

The third reason for the change in Botswana's prospects has been the extent to which Botswana has been able to attract capital assistance from external aid agencies. This was

greatly facilitated by the establishment at an early stage of a strong and effective planning mechanism based on a succession of five year development plans revised every three years. Botswana now enjoys the support of a variety of international and bilaterial donors who have made a substantial contribution to the country's economic and social progress.

1.5 Future Prospects

The long term prospects for further mineral development in Botswana are considerably brighter than they appeared at Independence. Substantial soda ash reserves have been located at Sua Pan in the north of the country and plans are being made for the commercial exploitation of this material.

Extensive coal fields have been located in the east of the country and it is likely that in the 1980's the development of these reserves for export to Europe will take place. The coal is of relatively low grade yet suitable for power station needs. Further copper/nickel prospects have been located though at this stage it is not certain whether these are of sufficient concentration to make commercial exploitation attractive; and a new diamond core has just been found at JWaneng and will undoubtedly prove to be highly profitable.

Other prospecting activities are being carried out within Botswana, and taking these already located mining possibilities into consideration, the continuation of Botswana's mineral growth seems assured for the next 10 -.15 years. This in turn will provide Government with sufficient revenues to support the local costs of an ambitious development programme. The 1973/78 National Development Plan envisaged annual growth of the economy to be 15%. The evidence so far is that this figure has already been exceeded and the prospects for continued growth beyond the end of the Plan period remain bright. Botswana began its development with an extremely low infrastructure base. As the economy has grown, tremendous pressure has been placed on existing infrastructure. The Government has, therefore, been obliged to devote considerable resources to infrastructure development, both in terms of communications, manpower investments, and routine expansion of the Government's activities. The high rate of inflation in the last two years have accelerated the cost of such investments. There are both financing and implementation problems if Government is to respond to the challenge of rapid growth in the future.

Rapid economic growth has also imposed considerable pressure on the pool of local manpower. There is an acute shortage of all types of Batswana manpower. In the short and medium term, therefore, it is Government's intention to devote a substantial amount of capital and recurrent resources towards the development and expansion of schools and other forms of training institutions.

Associated with rapid development of the mining sector and the growth of Government spending has been a fast rate of urbanisation. Gaborone, the capital of Botswana, is growing at the rate of nearly 16% per annum, and other towns are growing at a similar speed. A shortage of housing, serviced land and areas for site and service housing has consequently emerged.

A further aspect of Botswana's development experience since Independence has been a growing disparity of incomes. While urban incomes have risen at a rapid rate, rural incomes have grown only slowly. In the early stages of economic development, this process may be inevitable. However, urban/rural income disparities have a bearing on urban migration, and have caused the Government to give particular priority to the encouragement of rural development. Major efforts are, therefore, being made to accelerate rural development, though it is recognised that this is difficult to achieve. For most of Botswana the climate is dry and the soils are poor. This makes arable agriculture hazardous in most years. Thus the bulk of the rural population depends on cattle for its livelihood. Unfortunately periodic droughts and vulnerability of grazing areas to over-grazing limit the extent to which traditional forms of agriculture can support higher incomes. The challenge of rural development is finding solutions to these difficulties.

Botswana as a landlocked country surrounded by white minority-ruling regimes is in an extremely vulnerable geo-political position. All transportation routes at present pass through either Rhodesia or South Africa. Botswana's economy is, therefore, highly vulnerable to interruptions in supply of materials and the export of goods. Attempts are being made to diversify Botswana's communications but the realities of Botswana's vulnerability in Southern Africa will remain for years to come.

1.6 Development Strategy

The Government's development strategy is outlined in the National Development Plan. Emphasis is placed on building up essential infrastructure, investing in manpower development, and channelling as many resources as possible into the rural sector. Although mining revenues have had a major impact on the Government's budgetary situation, they are insufficient to meet all of Botswana's needs. Botswana, therefore, continues to require assistance from donor agencies and other sources of external capital and manpower. This situation has been exacerbated recently by the political problems in Southern Africa. Botswana is being forced to divert funds from development projects and social programmes into the provision of defence staff, materials, and facilities in order to protect its citizens from attacks by the neighbouring racist regimes. This has seriously effected the recurrent resources of most Ministries and will also curtail the number of development projects receiving local funds. A report on the situation has recently been prepared by the UN Security Council.

CHAPTER 2

THE HEALTH SERVICES OF BOTSWANA

This chapter contains the following sections:

2.1 Organisation of Health Services.

2.2 Beds in Health Facilities, Bed-Population Ratios.

2.3 Incidence of Disease.

2.4 Review of Health Programmes and Objectives.

2.1 Organisation of Health Services

Health care in Botswana is organised for delivery at different levels of sophistication and coverage. Health services are provided by the Central and Local Governments, the Missions, the Red Cross, the Mining Companies, and by private and traditional practitioners. The Central Government is responsible for the general planning and supervision of the developing health care system, and for the total operation of Government hospitals and health centres. The Town and District Councils have been assigned the responsibility for construction, maintenance and operation of their clinics and health posts. The missions are responsible at present for the operation of their hospitals, clinics and health posts, although the Central Government provides them with yearly subventions. The mines at Orapa and Selebi-Pikwe operate small hospitals for their employees and their dependants. Together, the facilities operated by these four organisations constitute the network of formal sector health services.

Health posts represent the primary level of health care. The job of the visiting staff is to educate the population and promote the adoption of basic health practices in nutrition, ante- and post-natal care, tuberculosis, venereal diseases, etc. In addition to providing preventive health services, simple curative services and first aid are also available. By 1978 it is currently planned that 180 health posts will be in operation, and by 1984, 300. This latter figure will be reviewed in 1978 following the completion of the next District Development Plans and is likely to be revised downwards.

Health clinics provide the next level of health care. In addition to the type of services provided at health posts, health clinics cover a wider range of educative health subjects, collect statistics, carry out immunisations, and have up to six beds for curative and maternity care. It is planned that by 1978 and 1984, there will be 90 and 100 clinics respectively in operation. The next level of health care is provided at health centre facilities. Health centres are designed to duplicate on

a small scale most of the simple curative functions which are usually provided at hospitals, as well as providing maternity care and preventive health care. The highest levels of health care are provided at the district and regional hospitals, and at the main referral hospital (Princess Marina) in Gaborone.

The Table below shows the existing and planned numbers of the various units in Botswana's formal health care system up to 1984:-

TABLE 2.1.1

NUMBER OF HEALTH CARE FACILITIES IN CENTRAL AND LOCAL GOVERNMENT, MISSIONS, AND MINES

Category of Facility	in 1976	PLANNED by 1978	by 1984
General Hospitals	11	11	11
Industrial Hospitals	2	2	2
Psychiatric Hospital	1	1	2
Health Centres	7	8	18
Clinics	70	90	100
Health Posts	100	180	300

Staff shortages, especially of nurses, are one of the major constraints on the development of modern health care in Botswana. Present estimates of the main categories of health workers in the modern sectors of the health care system (including Government, Mission, and Private Sectors) are shown in the following table:-

TABLE 2.1.2

PRESENT HEALTH STAFF - MODERN SECTOR OF BOTSWANA HEALTH CARE SYSTEM

SELECTED CATEGORIES

JOB TITLE	PRACTICING IN 1977				TOTAL
	Government		Mission	Mines & Private	
	Central	Local			
Doctors	53	-	9	15	77
Enrolled Nurses and Nurse/Midwives	225	48	52	20	345
General Nurse/ Midwives	190	55	45	45	335

TABLE C.1.2 : Continued

JOB TITLE	PRACTICING IN 1977				TOTAL
	Government		Mission	Mines & Private	
	Central	Local			
Health Assistants	65	8	--	--	73
Pharmacists	4	--	--	6	10
Health Inspectors	9	5	--	1	15
Dentists	2	--	2	1	5
Family Welfare Educators	--	330	20	--	350

It is the policy of the Government to have as much training as possible done in Botswana. In line with this policy, the Ministry of Health is expanding its local training programme into fields that do not require highly specialised facilities. For this reason, doctors, dentists, pharmacists, medical technicians and specialists will still be trained outside Botswana. On the other hand, the National Health Institute (the national training centre for health personnel where training for registered nurse/midwives, enrolled nurses and midwives, health assistants, pharmacy technicians, dental therapists, rehabilitation technicians and anaesthetic technicians, is currently being offered) is planning to expand its programmes to cover laboratory technicians, nutritionists, public health nursing, family nurse practitioners and nurse tutors.

Although, in general, medical personnel are in short supply in Botswana, the introduction of a special cadre of village health workers, Family Welfare Educators, has provided many villages with access to basic health services earlier than reliance on highly trained health workers would have allowed. Family Welfare Educators, who are primarily health motivators and reporters, are chosen by their Village Development Committees and then given 11 weeks theoretical and practical training. There are now over 350 Family Welfare Educators stationed throughout the country. Although they are usually based at health posts and clinics, their responsibilities are community centered, and as much time as possible is spent in home visiting, Tuberculosis defaulter follow-up, disease and sanitation surveillance, etc.

The impact of these programmes at least in terms of services demanded by the rural population, has been dramatic. In the tables below the large increase at other facilities reflects the continuing emphasis on development of rural health facilities. In only four years the proportion of patients seen at hospitals has dropped from 60% to 41% of all patients as is shown in the following table:

Health Facilities	1973 %	1974 %	1975 %	1976 %
Hospitals	60	51	46	41
Other Facilities	40	49	54	59
TOTAL	100	100	100	100

With the development of rural health facilities the proportion of patients seen at rural health facilities continues to increase. However the rate of increase is slowing down, probably a reflection of increasing development in progressively smaller localities.

Health Facilities	1973 %	1974 %	1975 %	1976 %
Urban	34,5	31,7	29,7	28,8
Rural	65,5	68,3	70,3	71,2
TOTAL	100,0	100,0	100,0	100,0

For purposes of supervision, evaluation, and development the country has been divided into 8 health regions, to each of which has been assigned a Regional Health Team (composed of Regional Medical Officer, Public Health Nurse and a Health Inspector). Regional Health Teams are responsible for monitoring and evaluating the extent and quality of health care in their respective regions, all for ensuring that all health delivery points are operating effectively.

Access to modern methods of health service outside these Government services is extremely limited in Botswana. There are approximately eleven practicing private doctors, and five private pharmacies in operation and these are almost entirely located in the urban centres. Precise information on the numbers of traditional practitioners is presently unattainable, but the frequency of their use in all areas of the country is known to be quite high.

2.2 Beds in Health Facilities, Bed-Population Ratios

Table 2.2.1 outlines the number of beds in hospitals and health centres in Botswana. Besides the beds listed in Table 2.2.1, there are approximately 200 beds in the clinics and maternity wards located throughout the country.

The present number of beds in hospitals and health centres in Botswana and their regional distribution is more a legacy of pre-independence developments than anything else. Over half these beds are concentrated in the South-east of the country, in the hospitals at Gaborone, Ramotswa, Mochudi, Kanye, Lobatse and Molepolole. Three of these institutions are mission-operated and another was handed over to Government two years ago. It is not clear why these missions chose to

TABLE: 2.2.1.

BOTSWANA: BEDS IN HOSPITALS AND HEALTH CENTRES

(excluding psychiatric hospital at Lobatse with 120 beds)

HOSPITALS AND HEALTH CENTRES	EXISTING BEDS AND COTS 1977	BEDS PLANNED BY 1981	CHANGE
Princess Marina, Gaborone	234	284	+ 50 (Special) Areas
Lady Liesching, Gaborone	70	70	0
Jubilee, Francistown	160	180	+ 20
Athlone, Lobatse	150	160	+ 10
Sekgoma, Serowe	157	181	+ 24
Maun	148	150	+ 2
Mahalapye	90	99	+ 9
Molepolole	182	197	+ 15
Selebi-Pikwe	50	65	+ 15
Mochudi (Mission)	146	146	0
Kanye (Mission)	167	167	0
Ramotswa (Mission)	95	95	0
B.C.L. Selebi Pikwe (Private)	24	24	0
De Beers, Orapa (Private)	37	37	0
Tsabong Health Centre	12	22	+ 10
Rakops Health Centre	8	16	+ 8
Palapye Health Centre	15	15	0
Mmadinare(Mission) Health Centre	55	55	0
Bobonong Health Centre	12	15	+ 3
Kasane Health Centre	34	25	- 9
Ghanzi	28	23	- 5
	1874	2026	152
Estimated National Population	694000	784000	
Beds/1000 Populationn	2.70	2.58	

establish themselves so close together, except possibly that they were well received by the Chiefs of the area.

Virtually the only increases in the number of beds under Government control since Independence are in the newer hospitals (Princess Marina in Gaborone, and Selebi-Pikwe) which were built out of necessity as part of infrastructure for new townships.

The Ministry finds itself today with a very skewed regional distribution of hospital beds. It is the intention of the Ministry to attempt to correct this situation by giving higher priority to additional bed requirements in central and northern Botswana. Even so, some problems in the hospitals, at Lobatse and Molepolole for example, are considered critical and cannot be irresponsibly ignored.

Botswana has been criticised in a number of forums for its relatively high bed/population ratio of approximately 2.7 beds per 1000 population (in hospitals and health centres but excluding the Mental Hospital). However, this is a gross simplification which completely overlooks the historical development of the hospitals, the conditions of the hospitals, the regional bed distribution, the very poor transportation routes, and so on. Few of these critics have inspected our hospitals and health centres, and have not seen that beds fill the passage ways and the verandas and that many patients must sleep on the floors. They accept the number of beds without realizing that these hospitals were built over as long a period as 45 years and that the layouts are now totally confused. Much of the ward space available is only sufficient for maybe 70% of the beds, and case loads have increased substantially while the hospitals buildings have stayed virtually untouched. For these reasons, the Ministry of Health rejects these criticisms. Because of the poor condition of most of Botswana's hospitals the Ministry feels it is premature to prescribe specific regional bed/population ratios or to refuse to increase the number of beds or space in overcrowded institutions.

On the other hand, the Ministry emphasizes the importance of preventive health work and the delivery of primary health care to the rural areas, and therefore, is not proposing to increase the number of beds in all Botswana's hospitals. The policy on hospital development is that the hospitals must be upgraded to a reasonable standard so that they may properly fill the role of district or regional referral centres. In some instances this may mean adding a few beds. In most it means improving various facilities such as the X-ray, laboratory, surgery and CSSD, kitchen, laundry and mortuary; and also upgrading the site services such as sewerage, electrical and water reticulation. The Ministry's present policy is that the overall number of beds will grow in proportion to the growth of population so that the bed/population ratio remains more or less constant. Finally, as mentioned above, the Ministry's policy on regional bed distribution is that priority will be given to additional bed requirements in central and northern Botswana. From Table 2.2.1 it can be seen that actually a slight decrease is expected in the national bed/population ratio between now and 1981.

Hospitals in Botswana are often called district referral centres. This is actually a misnomer since it implies that each district has a hospital which acts as the referral centre for that district, which is untrue since some districts have no hospitals while others have more than one. The Ministry has an idea of how the country is presently divided into referral catchment areas - i.e. referrals from a health centre to a hospital. Generally speaking, these imaginary boundaries do not follow the district boundaries. This is because transportation routes and topographical irregularities encourage and discourage referral in certain directions. Thus because of the new road linking Orapa and Francistown for example, referrals from Rakops go to Francistown rather than Maun.

Estimates of the population living in the catchment areas of each of the hospitals and health centres vary from 35,000 to over 100,000. No accurate figures are available to indicate what proportion of the caseload at these facilities come from outside, say, a 25 km. radius of the facility. In any case the present figures considered alone would likely be misleading since the health network is hardly complete and the development of Regional Health Teams is still very new. Furthermore due to the shortage of medical staff in the rural areas and the poor conditions of the referral centres, the referral system from health post through to hospital does not function as it is expected to, in say, five years when the system is more or less complete and the problems less generalised.

2.3 Incidence of Disease

Diseases most prevalent in Botswana are shown in Table 2.3.1. It gives some indication of the structure of the disease pattern in 1975, but in the absence of time series statistics it is difficult to indicate trends. It is important none the less for showing that Botswana's major diseases are attributable to factors that can be controlled through more efforts in public health and health education activities.

TABLE 2.3.1

NEW OUTPATIENTS IN HEALTH FACILITIES BY CATEGORY OF MAJOR DISEASES, 1975

Disease Category	Patient Age Under 14 Years	Over 14 Years	TOTAL
1. Gonococcal infections	939	42,556	43,505
2. Acute respiratory infections	28,575	14,594	43,148
3. Enteritis and other diarrhoeal diseases	31,782	7,168	38,950
4. Other diseases of the genito-urinary system	1,884	30,964	32,848
5. Injuries	13,188	23,355	36,543
6. Infections of skin and subcutaneous tissue	18,908	11,156	30,064
7. Other diseases of musculo-skeletal system and connective tissue	2,125	22,724	24,894
8. Other diseases of digestive system	8,608	18,819	27,427
9. Bronchitis, emphysema and asthma	14,423	9,625	24,048
10. Inflamatory diseases of eye	17,068	8,386	25,454
11. Influenza	4,325	9,665	13,990
12. Other diseases of skin and subcutaneous tissue	10,846	8,661	19,507
13. Other diseases of respiratory system	10,276	8,948	19,224
TOTAL	162,947	216,631	379,578
TOTAL OF ALL NEW OUTPATIENT VISITS	241,815	342,533	584,348

The major causes of in-patient admissions (apart from routine deliveries and complications of pregnancy and childbirth) in 1975 were tuberculosis, enteritis and diarrhoeal infections, diseases of the respiratory system, and accidents. Statistical details are summarized below.

T A B L E 2.3.2

INPATIENT CASES BY BROAD CASE GROUP AND SEX 1975

Cause Group	Male	Female	Total	As % of Total Inpatients
1. Complications of pregnancy		15281	15281	32.6
2. Infective and parasitic diseases	4786	4269	9055	19.3
3. Diseases of the respiratory system	2616	2648	5264	11.2
4. Accidents, poisonings and violence	3134	1764	4898	10.4
5. Diseases of the genito-urinary system	713	2004	2717	5.8
6. Diseases of the nervous system and sense organs	987	1013	2000	4.3
7. Diseases of the skin and subcutaneous tissue	791	670	1461	3.1
8. Diseases of the digestive system	620	520	1140	2.4
9. Diseases of the circulatory system	472	583	1055	2.2
10. Other	2003	3035	4038	8.6

Of the above total, 14,150 or 30.2% were under the age of 15.

The major causes of hospital inpatient deaths (for comparison with admission rates) are shown below:

TABLE 2.3.3

MAJOR DISEASES IN TERMS OF HOSPITAL ADMISSIONS AND DEATHS 1975

Disease	Admissions	% of Total Admissions	Deaths Total (1130)	% of Total Deaths
Tuberculosis	2679	5.7	222	19.6
Respiratory Conditions	5264	11.2	120	10.6
Cardio-Vascular	1008	2.1	80	7.1
Enteritis	1914	4.1	95	8.4
Injuries	4898	10.4	62	5.5
Measles	2536	5.4	79	7.0
Malaria	733	1.6	10	0.9
Malignancies	299	0.1	52	4.6

2.4 Review of Health Programmes and Objectives

An improved level of health is a national goal and an important element in a better quality of life, and the provision of health services is an essential factor in achieving this. The long-term aim of the Ministry of Health is to provide a comprehensive health service to people throughout the whole country. To do this the curative and preventive aspects of health services must be integrated and aimed particularly at the community or village level. Much progress has already been made towards a well-balanced health care system, and over the current Plan period the main objectives in order of priority are:

- the strengthening of primary health services equitably distributed for all people, but with emphasis on the rural and peri-urban areas;
- the expansion and diversification of training facilities and opportunities for medical and para-medical personnel;
- the improvement of all hospitals and health centres to ensure adequate referral and specialist services to support the basic health network;
- the control and reduction of diseases caused by an unfavourable environment through immunisation, surveillance and treatment, and the provision of inspection and advisory services for environmental

- the expansion and diversification of training to ensure that health education is taught in all basic health facilities and to all medical personnel and students;

- the expansion of the Ministry's administrative and planning establishment to enable adequate planning, implementation, monitoring and evaluation of health projects and programmes;

- the expansion or introduction of new programmes in mental health services, occupational health, and care for the handicapped, integrated as much as possible into the primary health care delivery system.

In choosing and designing programmes and projects and in setting the target for the Plan period, the Ministry has been guided by a number of principles:

- a good referral system must be developed to ensure that patients at the primary health care facilities have access through referral to secondary and tertiary health care facilities, and vice versa. The latter will ensure good follow-up of patients;

- health services should be provided at a standard commensurate with other community and national developments;

- local communities should be involved in decision-making about the level and delivery of their health services.

Annex VII

NATIONAL DISTRICT DEVELOPMENT CONFERENCE 1978

Paper No: R

Title: Criteria for the Selection, Placement and Staffing of Basic Health Services Facilities during NDP V.

Originating Ministry: Ministry of Health (assisted by MLGL)

Background

1. The preparation of District Development Plans has highlighted the need for natural development cri teria to guide district planning in sectoral areas to avoid creating inter- and intra-district disparities. The present basic health services project was based on such criteria. However, the situation that prevailed in 1972 when the present criteria were chosen is now very much changed. Almost all the Districts either explicitly or implicitly recognize this in their Development Plans, and call for a review of the present criteria to select:

a) given a population group in a specific area, the type of health facility required.

b) given a number of population groups throughout a specific area, the location(s) and the type(s) of health facilities required.

2. In addition, rules of thumb seem to have developed to guide the staffing of health posts and clinics. But even though these rules were very much influenced by the continued shortage of nursing personnel, they seem to have been ignored in a number of instances leading to over-staffing of a few clinics and under-staffing of others in the same district.

3. The need to regularly review and periodically revise planning criteria is an accepted part of the overall planning process. The MOH and the MLGL recognized the need to review the basic health services criteria some time ago, partly because of comments by Districts in their annual health development programme submissions and in District Development Conferences, and also because of the work done by the DTRP on District spatial/population analysis of health facility coverages.

In the past three months the MOH and MLGL have reviewed present basic health services and Districts proposals for 1981, in the light of the existing distance criteria. The table in Appendix 1 summarizes District health service population coverages based on the '15 km radius' criterion from any health facility.

For Discussion at the Conference

4. In the light of the information in Appendix 1, it is necessary to give due consideration to 1) the fact that the LG 20 project (funded by NORAD) is still not complete, and the remaining funds can only be used for purposes approved by NORAD; 2) that the nursing shortage will continue for another 3-4 years; 3) that many districts are only now making special provisions to provide basic health services to remote areas; and 4) that a revision of the criteria, in favour of placing more facilities in relatively densely populated areas, if actually implemented, would tend to reduce our capacity to staff the Norad LG 20 project facilities and also reduce our capability to provide basic services to remote areas. Instead it would direct resources into the enhancement of health care available in those more densely populated areas where the quality of health care is already quite high. The MOH is therefore recommending that no change be made at this point to the existing distance criteria for the placement of health facilities. This would mean that priority in the allocation of capital and recurrent funds would be given to those Districts with low coverage, so that they can improve their coverage more quickly. Although the aim of the MOH is to provide basic health service for all,, it is appreciated that this will have to remain subject to review because of financial constraints as the overall coverage increases.

5. The MOH has prepared proposals for criteria to be used as guidelines during the NDP V period for selecting types of health facilities in given locations, and for planning the growth in the numbers of district health personnel. These proposals are listed in Appendix 2.

6. It must, of course, be remembered that these proposals would serve as gudelines, not regulations. We are all aware of many instances in the past when the present criteria could not provide a clear cut or reasonable solution given certain peculiar or unique circumstances, and when it was necessary to adopt a solution based on consultation, discussion, and compromise. This, of course, may be expected to continue to happen, and must be accepted when planning by the people takes precedent. What is hoped, however, is that planners will use the proposed criteria as guidelines developed with the aim of ensuring adequate health services for all (before encouraging the improvement of health services in already relatively well-served areas); and that therefore they will attempt to use the guidelines as much as possible rather than continually putting forward "special cases".

7. Also, it should be noted that the guidelines proposed for staffing health posts and clinics have been chosen with due regard to the expected output of trained nursing personnel between now and 1985 (see Appendix 3). After allowances are made for nurses required by the hospitals and health centres of Central Government, the Missions, the Mines, and the N.HI., sufficient nurses (especially ENs) will be available by 1986 to staff all health posts and clinics according to these long-term staffing guidelines. This is an extremely important point, because if we are to avoid large numbers of unemployed nurses, or sudden immense requests for additional recurrent funds by the Districts, then each District needs to plan the growth in its health personnel establishment now. These plans should take into account the increased availability of nursing personnel, beginning with ENs in 1980.

8. Many of the points mentioned above require further discussion. The MOH hopes the Districts will be able to discuss these points at the Conference, and present their reactions to the recommended criteria.

APPENDIX 1

Population Access within 15 km of Health Facility (Hospitals, Health Centres, Clinics, Health Posts)

	1971 Census[1]	STATED IN DISTRICT PLAN	
DISTRICT	Analysis 1974 [2]	End of 77/78 Dev. Programme	1981 Target
Central	59.9%	80%	85%
Ghanzi	62.8%	-	-
Kgalagadi	78.1%	65%	70%
Kgatleng	98.7%	-	95% (access to health posts & clinics only)
Kweneng	86.0%	-	-
North-East	34.1%	almost 100%	over 100%
Ngamiland	74.7%	-	-
Chobe	91.7%	100%	-
South-east	96.1%	-	-
Southern	49.3%	40% (5 km radius)[3]	54% (5 km radius
TOTAL	66.4%		

1. excluding Town populations
2. estimated at end of 1975/76 building programme.
3. DTRP estimates coverage using 15 km radius as 88% (1977/78) and 91% (1981).

APPENDIX 2

CRITERIA FOR CHOICE OF HEALTH FACILITIES, ACCORDING TO DISTANCE/POPULATION COVERAGE, STANDARD OF BUILDINGS, AND PROVISION OF STAFF

A) Settlements of less than 500 people (within a 15Km radius)

Description - no Government or District supplied fixed facility; visits possibly based at a hut provided by the community, or in a shop or at the kgotla.

Community based health personnel - F.W.E (to serve a minimum of 200)

Medical Personnel - visited by Mobile Teams who are based at clinics or health centres. (to serve a minimum 20 - 30 families)

Functions - as per health post.

B) Health Posts	Medium Term (During NDP 5)	Long Term
Desoription -	Fixed facility; standard design HP2 OR other building; 3 rooms (consultation treatment, store) and toilet; a house in remote areas	Fixed facility; standard design HP 2; 1 nurse's house.
Population covered (within 15 Km radius)	500 - 1000 in rural areas; 4000 - 8000 in major villages & towns	Minimum 500 in rural areas; 3000-5000 in major villages and towns
Health Staff	1 EN (in remote areas)	1 EN (possibly 2 depending on location and work load)
Community based personnel	FWEs (covering 500 to max. 2000 people each)	FWEs (covering 500 to max. 2000; possibly linked to ward system in major villages and towns)

Maternal Health

6.

6. (e) Renal disease in pregnancy
1) Management of pregnancy
2) Possible complications

(f) Venereal disease in pregnancy
1) Diagnosis
2) Treatment
3) Risk to the fetus.

7. To know and be able to manage common conditions in the mother which may place both mother and fetus at risk during pregnancy.

7. High risk pregnancies
(a) Elderly primigravida
1) Investigation for infertility
2) Referal to M.O.
3) Management of pregnancy
(a) Advice to and moral support of patient
(b) Early admission
4) Management of labour
(b) Grandmultipara
1) Effects of multiparity on patients general health
2) Effects of multiparity on wellbeing of the family
3) Management of pregnancy
4) Management of labour.
(c) Multiple pregnancy
1) Diagnosis
2) Management of pregnancy
3) Management of labour
4) Management of puerperium
5) Possible complications associated with multiple pregnancy.

8. To equip the nurse with knowledge of the physiological changes that are likely to take place during the post partum period so that she will be able to administer the necessary immediate nursing

8. The Puerperium
(a) Physiology of the puerperium
Involution
Autolysis
Ischemia
Lochia

Maternal Health

8.	8. (b) Lactation (c) Return to general state of health (Pre-gravid state) (d) Observation for and maintenance of contracted fundus (e) Measurement of fundal height (f) Maintenance of good hygiene during puerperium.
9. To provide the nurse with a suitable method for physical examination which will enable her to make accurate assessment of whether the woman has returned to her pre-gravid state and in condition to resume her reproductive functions.	9. Post natal examination (a) Purpose (b) Examination before discharge (c) Examination after one month or six weeks. 1) Preparation of patient for examination 2) Equipment required 3) Examination of breast 4) Inspection of abdomen 5) Examination of vagina Speculum Bi-manual 6) Inspection and palpation of legs for varicosity or phlebitis (d) Advice on post natal exercises (e) Introduction to family planning.
10. To demonstrate knowledge and skill in carrying out antenatal teaching in order to aid the mother in understanding her future role and responsibility as a mother	10.(a) Budgeting for the family (b) Preparing for the baby (c) Developing and implementing ante-natal courses.

Child Health

Infant mortality rate is the most important statistical index in assessing the health of any population. The first year of life is the most critical period in the development of any human being because of the high susceptibility to disease and the lack of acquired immunity to many diseases, but also that in this high risk period, irrepairable damage to a child's health might be incurred due to unsatisfactory attention to health needs.

Objectives	Content
1. The learner will know, understand, and be able to define and identify the different stages in fetal development.	1. Fetal development (a) The physiological and anatomical development of the fetus from conception to full term.
2. The learner will understand the effects of inherited factors on fetal development.	2. Inherited effects on development (a) Genetic effect (b) Genetic counselling
3. The learner will identify and be able to explain learned intra uterine enviromental and intramaternal factors which influence the outcome of pregnancy and the health of the child.	3. Enviromental influences (a) Teratogens 1) Influence in embryonic phase 2) Influence in fetal phase (b) Mechanical injuries (c) Chemical injuries (d) Nutritional disturbances (e) Infections 1) German Measles 2) Infective Hepatitis 3 Typhoid (f) Actinic injuries (g) Other maternal conditions 1) Rh Incompatability 1. Process of iso-immunization 2. Signs and symptoms of erythroblastosis fetalis 3. Nursing care of erythroblastosis fetalis

Child Health

Objectives	Content
3.	1. Content 3.(g) Rh Incompatibility 4. Kernicterus 5. Medical intervention during pregnancy 6. Management of baby after birth 7. Advice to parents. 2. Diabetic Baby (a) Immediate care (b) Hypoglycaemia in newborn (C) Management (d) Feeding (e) Observation & specific nursing 3. Caesarean Section Baby (a) Appearance (b) Observation (c) Nursing care 4. Premature or low birth weight baby (a) Immediate care (b) Observation (c) Specific nursing care (d) Feeding (e) Possible complications.
4. The learner will be able to demonstrate the examination and resuscitation of the normal newborn baby.	4. Examination of the newborn (a) How to establish respiration (b) How to resuscitate (c) How to identify signs of possible congenital abnormalities (d) How to observe the newborn to prevent incidents that might negatively affect the development of the child.

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Child Health

Objectives	Content
4.	4. Examination of the newborn (e) How to check for normal reflexes.
5. To understand the importance of, and be able to explain, the need for breast feeding.	5. Feeding (a) Breas feeding (b) Nutritional needs 1. Premature infant 2. Full term infant
6. The learner should be aware of, and be able to plan for infant and pre-school care needs.	6. The needs of 1-5 year olds (a) How to use the growth chart (b) How to advise on nutrition etc., based on interpretation of the growth chart. (c) Immunizations.
7. The learner should be able to employ tactful techniques aimed at ensuring good history taking and physical examination.	7. History taking and physical examination (a) How to elicit pertinent information from patients (b) Important information that may be acquired from inspection (c) How to do a complete history and physical 'd) Indications for referal.

Family Planning

Special instruction in family planning is necessary to prepare the nurse to effectively organize and administer family planning services which entail educational and comprehensive medical and social services necessary to enable individuals to freely determine the number and spacing of their children.

Family Planning

Objectives	Content
1. To enable the learner to appreciate and discuss the growth and development of family planning.	1. The history of family planning (a) The need for contraceptives (b) The invention of different methods of contraception (c) Overall public attitude towards family planning (d) Government attitude (e) Patients attitudes.
2. The learner should know the anatomy and physiology of the reproductory system, and be able to identify all parts by diagram, model, or on the patient.	2. Review anatomy and (a) physiology of female reproductive system and menstrual cycle (b) Female reproductory system.
3. To know and explain the endocrine activity related to the reproductory process.	3. Endocrinology (a) The action and secretion of the pituitary gland and placenta (b) Estrogen (c) Progesterone (d) Infertility (e) Habitual Abortions.
4. The learner will understand and discuss the nature and effect of the pill.	4. The pill - (a) Its composition (b) The different kinds of pills (c) The side effects (d) Mode of administration (e) Contra-indications.

Family Planning

Objectives	Content
5. The learner will be able to identify the different types of I.U.C.D.'s and understand their function.	5. I.U.C.D:s (a) The types of I.U.C.D.'s sizes, shapes etc. (b) Indications and contra-indications (c) It's possible side effects (d) It's effects (e) How it is inserted and removed.
6. The learner will be able to identify the diaphragm by size and appearance, and will be able to select suitable patients and devices.	6. The Diaphragm (a) Physical and emotional evaluation of the patient (b) Assessing the integrity of the pelvic organs (c) Determining the presence of cystocele and rectocele (d) Correct choice of device, measuring and fitting (e) Proper care and use of the device.
7. The learner will know and be able to advise patients about the function, reliability, and proper use of condoms, foams, and jellies.	7. Condoms, foams and jellies (a) What a condom is made of (b) The proper use and reliability of a condom (c) Different kinds of foams and jellies (d) How spermicides work (e) Reliability and proper use of spermicides.
8. The learner will be able to set up the rhythm method for a patient, and give proper instructions regarding its use and effectiveness.	8. The rhythm method (a) Emotional stability of the patient (b) Choosing a suitable patient or recommending a different method (c) How to study the monthly cycle to map out safe period etc.

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Family Planning

Objectives	Content
9. That the learner will be able to conduct an adequate physical examination.	9.(d) Physical examination. (a) Examination of the breast for lactation or suppression of lactation. (b) Examination of vagina and cervix. 1. How to use a speculum 2. Diagnosing the presence of infection or erosion. (c) Bi-manual pelvic examination. (d) Screening for gross physical signs and symptoms. 1. Vital signs-significance 2. General health 3. Physical appearance 4. Emotional adjustment 5. Deviation from normal.
10. To prepare the learner to function in the capacity of a consultant in family planning.	10. Consultation. (a) Interviewing techniques (b) Diagnosis (c) Referals.
11. The learner will be able to assess a post partum or post abortal patient.	11. Assessment after delivery. (a) Involution of the uterus (b) Breast examination for presence or absence of lactation (c) Healing of the perineum and the integrity of the abdominal and perineal muscles (d) Presence or absence of infection.
12. The learner will know and explain how and which method to initiate.	12. Choosing a contraceptive. (a) Counselling and imparting knowledge on all methods of contraception. (b) How to make the choice.

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Family Planning

Objectives	Content
13. The learner will be able to recognize the presence of learned vaginal infections by inspection and vaginal examination.	13. Vaginal discharges. (a) Monoliasis (b) Trichomona Vaginalis (c) Gonorrhoea.

Annex X

BOTSWANA/MEHARRY PROJECT

PRE - TEST

NAME _____

DATE _____

1- Definitions - You are to define the following words.

A- Public Health -

B- Enviromental Health -

C- Maternal Health -

D- Child Health -

/2.....

1. Cont.

E- Family Planning -

F- Weaning -

G- Preventive Medicine -

H- Basic 4 Food Group -

I- Communicable Disease -

J- Communication -

/3.....

2- True or False - Read each statement carefully then write in the blank space true if you think the statement is right or false if you think the statement is wrong.

a. _____ In health education it is important to teach people only the things which you are also willing to do yourself.

b. _____ Disease occurance always depends on a number of contributing factors.

c. _____ It is important that the doctor sees all the patients who come into the out-patient department.

d. _____ Serum Hepatitis is spread by the feces of people infected with the disease.

e. _____ Good nutrition is not very important in helping a person recover from disease.

f. _____ There are more people with T.B. who live in towns, than in the villages.

g. _____ The most effective method of birth control is the loop.

h. _____ Words, numbers and actions are all symbols used in communicating.

i. _____ Rickets may be considered a double deficiency disease, due to an inadequate intake of both calcium and vitamin "D".

j. _____ A light for dates baby is any newborn who weights less than 5 pounds at birth.

/4.....

3- Multiple Choice - You should underline the answer which will correctly complete the statement.

A- The pill is a method of family planning and is made up of:

1- Iron
2- Testosterone
3- Estrogen and progesterone
4- Progesterone.

B- The female organs of reproduction include:

1- Cervix and vagina
2- Bartholine glands and clitoris
3- Vagina, Uterus fallopian tubes, and ovaries.

C- The vulva is the:

1- Vagina
2- Perineum
3- External genitalia

D- To make water safe for drinking it should be boiled for:

1- 2 hours
2- 30 minutes
3- 5 minutes
4- 60 minutes

E- Koplic spots in the mouth is a comonon symptom of:

1- Mumps
2- Diptheria
3- Measles
4- Whooping cough

F- In Botswana all infants who are born in hospital are given at birth or before leaving the hospital.

1- DT and Polio booster.
2- Measles and smallpox
3- T.T. and smallpox
4- BCG and Smallpox

G- Maize, banana and sorghum are good examples of:

1- Energy giving foods
2- Protective foods.
3- Body building foods.

/5.....

3. Cont.

H- The principle source of gathering information about a population is:

1- demography
2- determinants
3- Census
4- statistics.

I- After the sixth month of pregnancy the womans diet should have an increased amount of:

1- Fats, carbohydrates and water
2- Iron, calcium and proteins.
3- proteins, carbohydrates and iodine.

J- The study of the distribution of disease in the human population is called:

1- Sanitation
2- Epidemiology
3- Ecology.

Annex II

Appendix B
Contract No. AID/CM/PHA/C-73-8

CONTRACT BETWEEN THE UNITED STATES OF AMERICA AND

MEHARRY MEDICAL COLLEGE

Plan No. 1 Date of Plan:

Appendix B - Operational Plan

I. General Plan

The work described in Section II, below, of this contract involves a very close cooperative working relationship between the Contractor, the Cooperating Government and A.I.D./Washington. The basic objectives are as follows:

1. To train or re-train personnel for staffing rural health facilities in public health, maternal and child health and family planning.

2. To prepare an integrated curriculum (including appropriate public health and Maternal Child Health/Family Planning components) for use in the basic nurse training schools;

3. To train a selected tutorial staff to continue use of the integrated health curriculum;

4. To establish a functioning Health Education Unit with a trained local staff capable of serving health needs including Maternal Child Health/Family Planning services and preventive health;

5. To develop field training facilities and field practice areas needed to support the health training program; and

6. To establish an effective post-natal family planning service in the three Government training hospitals.

II. Scope of Work

A. The Contractor shall:

1. Provide one public health educator and three Public Health Nurses to fill positions described herein, and one administrator to support the project activities described herein;

2. Provide all means of support for the above mentioned personnel and operations which is not otherwise provided for herein;

3. Organize and arrange for the training of approximately 10 Botswanans as Health Educators, eight of whom will receive four year B.S. degrees and two of whom will receive an MPH degree. At least one of the aforementioned Botswanans will specialize in communications media;

4. Organize and arrange for the training of ten Botswanans for positions in government nursing schools, five for two years training and five for one year of training;

5. Organize and arrange short-term training in family planning program administration, evaluation and supervision of midwifery family planning services for approximately three candidates, and short-term study/observation tours of appropriate programs (U.S., African, and other) for approximately fifteen (15) Botswanans.

Deleted per Amendment #2

6. Furnish up to twelve (12) man-months of specialized consultant visits as may be requested by the Government of Botswana regarding any project related aspect of its public health policies and programs.

7. Undertake evaluation of the project at regular and timely intervals as agreed to between the Contractor and AID/PHA/POP/AFR.

B. Toward achieving these objectives and under the guidance and direction of the Government of Botswana's Director of Medical Services, the personnel provided by the Contractor shall (a) Assist in the development of an integrated curriculum for nursing training institutions, both for Registered and Enrolled Nurses, which incorporates public health, maternal and child health and family planning; (b) Develop public health/MCH/FP, in-service training programs for enrolled and registered nurses and health assistants currently practicing in Botswana; (c) Participate in the selection of suitable candidates for both short-term and long-term participant training; (d) Assist in revision of curricula for health assistants to incorporate above described content; (e) Assist the GOB to develop a National Education Service; and (f) Assist the GOB in strengthening and expanding the post-partum family planning service.

C. The positions to which the technicians will be appointed and their duties and qualifications are as follows:

1. Health Education Officer:

The Health Education Officer will serve under the direct supervision of the Director of Medical Services in the Ministry of Health, Labor and Home Affairs, located in Gaborone. The Health Educator will serve

Health Educator

as project coordinator and will bear overall responsibility for developing the central government Health Education Unit, whose purpose it will be to disseminate health education materials and literature through every available medium to the people of Botswana.

Duties: More specifically, duties of the Health Educator include responsibility for: (a) Working in close collaboration with the Public Health Nurse team members and GOB personnel in the development of the Health Education MCH/FP content of the basic nursing syllabuses - for both Registered and Enrolled Nurses - for both Government and Mission training schools; Assisting the director of the health assistants training program in the integration of health education MCH/FP content into the training syllabus; (b) Integrating health education into all levels of Botswana's education system--primary schools, secondary schools, and teacher training colleges; (c) Supervising the proposed national health campaign, in association with the IPPF-assisted office for MCH and Family Planning; (d) Collaborating the proposed national work oriented literacy program; (e) Producing and distributing health education materials (including MCH/FP) for use and distribution by all government and non-government agencies in Botswana; (f) Training of counterparts and the on-the-job training of all staff in the Health Education Unit; (g) Coordinating the AID financed health team.

D) Clinic with Maternity Ward	Medium Term (During NDP 5)	Long Term
Description -	Fixed facility, standard design C2/MW1, a vehicle, three staff houses	as in medium term but with one additional vehicle, and total of five staff houses
Population covered -	As for clinic but Maternity ward subject to specific assessment of area	as in medium term
Health Staff -	2 SN/MW OR 1 SN/MW and 1 EN/MW 1 HA(clinical) 1 Driver 4 GDAs 1 EN	as in medium term plus 1 Public Health Nurse 1 EN/MW 1 EN 1 Driver 1
Community based personnel -	at least 2 FWEs	FWEs (as required by population)
Functions -	as for clinic but plus deliveries from wide area	as in medium term
) [illegible] -	[illegible] beds	

Functions -	i) Preventive health work (MCH, school health, immunization, nutrition, health education, family planning etc); ii) First aid; iii) Diagnosis and treatment or referral of common diseases. iv) Case finding, follow-up of discharged patients; v) Keeping records (becoming more comprehensive with time)	
C) Clinic	Medium Term (During NDP V)	Long Term
Description-	Fixed facility; standard design C2 or other building; 5 rooms with covered waiting area and toilets; vehicle; two staff houses	Fixed facility; standard design C2; vehicle; 4 staff houses.
Population (within 30 km. radius)	5000-10000 in rural areas; 10 000 in major villages and towns	3000-8000 in rural areas; 5000-10000 in large villages and towns
Community based personnel -	2FWEs (at least)	FWEs(as required by population; 1 FWE to max. 2000 people)
Health Staff-	1 SN/MW or 1 EN/MW(if available) 1 EN 1 HA(CLINICAL) 1 Driver 2 GDAs	1 Public Health Nurse 1 SN/MW 1 EN/MW + 1EN 1 HA (Clinical) 1 Driver 2 GDAs
Functions -	i) MCH, and family planning and necessary deliveries. ii) Immunisation iii) Environmental health iv) School health v) Health Education and nutrition vi) First aid vii) Elementary lab examinations viii) Diagnosis and treatment of common diseases ix) Case finding and follow up, with particular emphasis on TB x) Collection of statistics xi) Supervision of health posts in area and mobile services to small settlements. xii) Inservice training of FWs and FWEs	

E) Health Centre	Term: As soon as resource constraints permit
Description -	Wards with 4-12 beds for delivery and maternity, 8-18 beds for observation and curative care. Outpatients block comparable to clinic C2; support facilities such as basic kitchen, laundry, storerooms, incinerator, mortuary, generator, laboratory, and administration offices; three vehicles, eight staff houses or Pool houses where available
Population covered -	subject to specific assessment of area
Health Staff -	One Public Health Nurse Two Staff Nurse/Midwife Four Enrolled nurses Two Enrolled Nurses/Midwives One Senior Health Assistant (Clinical) One Health Assistant (Sanitation) One Executive Officer One Clerk/Typist Six General Duty Assistants Two Drivers
Community based personnel -	FWEs (employed by local authority; as many as population requires)
Functions -	i) MCH, inpatient midwifery and family planning ii) Immunisation iii) Environmental health, including demonstration and guidance iv) School Health v) Health Education and Nutrition vi) First Aid vii) Diagnosis and treatment of common diseases viii) Case finding and follow up with particular emphasis on TB ix) Collection of statistics x) Elementary laboratory examinations, including sputs, TB, examinations of blood films, analysis and examination of urine and stools for parasites xi) Field Surveys for communicable diseases xii) Supervision of clinics and health posts in its area xiii) In-service training xiv) General Inpatient care

F) General

i) Use of Clinic Medical Vehicles
- for scheduled mobile visits
- for referral of patients to clinic (on return of mobile team)
- for emergency evacuation patient to hospital
- not for transport of supplies
- not for follow-up of individual patients
- Council may use its discretion on whether to allow vehicles to be used for routine referral of patients from clinic to hospital
- Nurse-in-charge of Clinic should have responsibility for and overall control of vehicle, and vehicle use in a particular situation will therefore correspond to the particul clinic situation and requirements in the area.

ii) Placement of Radios - only in remote and/or isolated staffed health facilities

iii) Use of planes by MOH
- for regular supervisory trips by RHTs into remote areas
- irregular trips by specialists for special clinics to treat extra rural dwellers
- emergency evacuation when a matter of life or death

iv) Long term proposals are given to provide some idea of what the MOH presently foresees as the maximum level of health services that should be considered in a given area.

APPENDIX 3

Expected Output of Newly Trained Nurses

Enrolled Nurses	1978	1979	1980	1981	1982	1983	1984	1985	Total 1978-85
Lobatse	15	114	40	40	40	40	40	40	269
Molepolole	30	23	40	40	40	40	40	40	293
Serowe	10	16	40	40	40	40	40	40	266
Francistown	14	15	15	40	40	40	40	40	244
Sub total	69	68	135	160	160	160	160	160	1072
Missions	20	45	23	-	-	-	-	-	88
Total	89	113	158	160	160	160	160	160	1160
Adjusted Total	80	95	130	130	130	130	130	130	955
Registered Nurses									
Gaborone	48	52	62	62	62	62	95	95	538
Missions	4	7							11
Total	52	59	62	62	62	62	95	95	549
Adjusted Total	42	44	41	42	43	44	75	75	406

Assumptions 1) Drop-out rate of about 10% p.a. for enrolled nurses

2) Drop-out rate of about 25% over full course for registered nurses.

Annex VIII

NURSES IN-SERVICE EDUCATION TRAINING SESSIONS: JANUARY 22, 1974 to MAY 28, 1978

	Gaborone		Francistown		Lobatse		Total	
TEAM 1	R.N.'s	E.N.'s	R.N.'s	E.N.'s	R.N.'s	E.N.'s	R.N.'s	E.N.
Session 1 (1-22-74 to 4-11-74)	8		6		7		21	
Session 2 (4-16-74 to 7-17-74)	9						9	
Session 3 (7/74 to 10/74)		11		10		12		33
Session 4 (11/74 to 1/75)		10		10		10		30
Session 5 (12-30-74 to 3-14-75)		10		10		10		30
Session 6 (3/75 to 6/75)		11		15	16		16	26
TEAM 2								
Session 1 (9-8-75 to 12/75)	15			12			15	12
Session 2 (12/75 to 3/76)	16			13			16	13
Session 3 (4/76 to 6/76)		20		10				30
Session 4 (7/76 to 10/76)	13			11		12	13	23
Session 5 (10/76 to 12/76)		10		11	16		16	21
Session 6 (1-3-77 to 3-25-77)	24			12	11		35	12
Session 7 (4/77 to 7/77)		12	11			13	11	25
Session 8 (7/77 to 9/77 and 9/77 to 12/77)				15	9		9	15
Session 9 (10/77 to 1/78)		14				12		26
Session 10 (12/77 to 2/78 and 1-30-78 to 4-21-78)	19			13			19	13
Session 11 (3-6-78 to 5-26-78)				12				12
TOTAL BY TEAMS 1 and 2 (Total Nurses Trained)	104	98 (202)	17	154 (171)	59	69 (128)	180	321 (501)

Annex IX

BOTSWANA/MEHARRY PROJECT
INSERVICE PROGRAM

PUBLIC HEALTH INSERVICE EDUCATION

Objective-

To give the participants an understanding of Public Health, Maternal and Child Health, and Family Planning by providing classes and other learning activities geared to assisting the participants in acquiring the knowledge and skills necessary to prepare the nurse, so that she may assume her role in the prevention of disease, maintenance of health and promotion of health in the hospitals, out-reach clinics and community.

Course Description-

To provide knowledge of public health/preventive medicine through classes in theory and practice which will enable the learner to:-

(a) Identify public health problems.

(b) Construct solutions which may aid in eradicating health problems.

(c) Identify social implications of disease in order to develop an effective plan of health education for the patient and family.

To provide courses in theory and practice which will increase the learner's knowledge of Maternal Child Health and Family Planning in order to enable the learner to:-

(a) Identify and solve problems related to Maternal and Child Health.

(b) Develop health education geared at promoting the health of mothers and children.

(c) Carry out health education regarding all methods of child spacing as desired by the father and mother.

(d) Implement family planning methods as desired by the individual in the community.

IN-SERVICE EDUCATION GUIDELINES

Objective-

To impart knowledge to the learner health professional which will enable the individual to provide preventive, maternal and child care, and family planning services in an urban and rural health facility in Botswana.

The program will be implemented with the assistance of the following professional staff:-

(a) Public Health Nurse Educator
(b) Health Educator
(c) Tutors
(d) Guest lecturer/consultants.

Teaching methods for individual classes will be selected to meet the needs of the learners, and in consideration of the subject matter to be atught in order to promote an optimum learning experience.

Learning activities will take place during each 8 week session in:-

The class room
Hospital
Out-reach clinics

It is intended that all learning experience include:-

Theory
Practice
Evaluation.

Cultural Patterns-

A man's culture influences the way he acts and interacts automatically in relationships with his fellow man. Cultures may bear similarities or differences from area to area and country to country. It is intended to give the student an awareness which may be demonstrated by explaining cultural occurrences in Botswana and how they affect health.

Objective	Content
1. To be able to define culture and list the ways it influences man's behaviour.	1. (a) Definitions - Culture, Status, Norms, Customs, Taboos, Traditions, Values, Attitudes (b) How culture is learned (c) How culture influences behaviour.
2. To list and discuss cross cultural occurrences in the Botswana communities.	2. (a) Traditional Botswana society (b) Modernization/Urbanization (c) Cultural conflict.

Objectives	Content
3. To understand and discuss traditional systems of medicine in Botswana.	3. (a) Traditional doctors (b) Local names for common diseases (c) Practices which are harmful to health (d) Practices which are beneficial to health (e) Practices which have no effect on health.
4. To know and explain concept of "wholeness" in relationship to cultures.	4. Man/culture a part of the whole, and more than the sum of its parts.
5. To understand and discuss how cultural change takes place.	5. (a) Concept of changes in group behaviour (b) Change geared to ideas harmful to health (c) Importance of health education.

NUTRITION (basic to Botswana)

Good nutrition provides a man with the components necessary to maintain and promote good health. The objective is to provide the learner with an understanding of the importance of good nutrition by providing her with knowledge which will enable her to list, explain, and encourage the individual, group, and community education.

Objective	Content
1. To enable the learner to list and discuss the practical aspects of nutrition, and its application in the maintenance and improvement of health.	1. (a) Definition:- 1. Food 2. Nutrition 3. Diet 4. Food habits and patterns 5. Modified diet 6. Nutrients 7. Essential nutrients 8. Metabolism 9. Basal metabolism (b) Factors affecting food habits:- 1. Economics 2. Food supply 3. Customs.

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Objective	Content
1.	1. (c) Impact of illness on nutritional intake 1. Loss of appetite 2. Stress. (d) Food misinformation as a deterrent to good nutrition. (e) Factors affecting nutritional needs 1. Age 2. Body build 3. Activity 4. State of health 5. Pregnancy 6. Lactation 7. Sex. (f) Periods of greatest needs 1. Growth and activity 2. Reproduction and Lactation 3. Illness 4. Childhood diseases and effect on growth patterns (a) Importance of monitoring height and weight.
2. To be able to list and discuss the basic 3 food group.	2. Food is divided into 3 basic groups:- 1. Body building 2. Energy giving 3. Protective.
3. To be able to explain the influence of habit on good nutrition.	3. (a) Food habits begin in childhood (b) Cultural influences (c) Developing positive attitudes.
4. To be able to list and discuss the 5 basic nutrients.	4. (a) Fats 1. Function 2. Sources 3. Results of excessive intake.

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Objective	Content
4.	4. (a) Results of inadequate intake (b) Carbohydrates- 1. Function 2. Sources 3. Results of excessive intake (c) Protein- 1. Function 2. Sources 3. Results of inadequate intake:- (a) Malnutrition (b) Undernutrition (d) Minerals- 1. Function 2. Sources 3. Mineral deficiencies:- (a) Calcium (b) Iron (c) Copper (d) Iodine (e) Vitamins- 1. A.D.C. 2. Thiamin 3. Riboflavine 4. Niacin Sources Vitamin deficiences.
5. To demonstrate knowledge and ability in counselling individuals and families in food management.	5. (a) How to shop wisely (b) Price comparison (c) Good food buys
6. To demonstrate the ability to develop menus from local food items.	6. Millet, sorghum, maize, beans, oranges, paw-paw, ground-nuts, skimmed milk, meat, fish, eggs, dark green leaves, spinach, turnip and beet tops, carrots, cabbage, pumpkin.

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Objective	Content
7. To be able to discuss and demonstrate the ability to evaluate the nutritional status of individuals and families.	7. Information needed for evaluation of nutritional status:- (a) Vital and health statistics (b) Anthropometric studies (c) Clinical nutritional surveys (d) Dietary surveys (e) Socio-economic data (f) Food consumption patterns (g) Additional medical information.
8. To be able to list and discuss the principles of the weaning diet.	8.(a) Significance of the weaning period (b) Dangers 1. Kwashiorkor 2. Marasmus (c) Improvement of weaning practices (d) Education of mothers.
9. To be able to demonstrate the ability to engage in nutritional health education.	9.(a) Information about the people to be taught (community/individual diagnosis (b) Development of a nutritional education plan 1. What must be taught 2. To whom 3. How often 4. Where 5. Visual aids 6. Problems 7. Importance of teaching ont thing at a time 8. Size of family 9. Available outside help 10. Family favourite food 11. Food likes and dislikes 12. Is there a kitchen garden 13. Storage facilities

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Objective	Content
9. Cont'd..	9. 14. Cooking vessels (c) Importance of finding out what people/group/community want to know (d) 24 hour recall of individual or family meal (e) Evaluating effectiveness.

Communication

Interpersonal relationships of any kind transmit messages which are communicated in verbal or non-verbal ways. It is intended to give the learner an appreciation of human communication which will assist her in describing and implementing learned concepts to aid her in meeting the total needs of the patient, family, and community.

Objective	Content
1. To enable the learner to understand and explain the way people communicate to each other verbally and non-verbally.	1. (a) Concept of communication (b) Factors which interfere with communication i.e. 1. Pre-occupation 2. Cultural differences 3. Illness 4. Language difficulties (c) Verbal communication i.e. 1. Speaking and listening 2. Formal or informal (d) Non-verbal communication i.e. 1. Facial expressions 2. Body movement 3. Body posture (e) Written communication permanent records (f) Importance of written communication by nurse and other health professionals i.e. patient/family records.
2. To gain skill in developing effective inter-personal relationships.	2. (a) Interpersonal relationships and how they always involve responses to others

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Communication

Objective	
2.	2. (b) Attitudes as a result of personal experiences and cultural beliefs (c) How attitudes may help a relationship to grow or hinder its development. (d) Importance of positive interpersonal relationships with patient, family and co-workers (e) Learning to recognize the emotional needs of others.
3. To develop skill in establishing rapport.	3. (a) Encouraging the patient to talk (b) Being a good listener (c) Observing for non-verbal communication (d) Promoting a relaxing atmosphere.

Common Diseases

The health of a community is reflected in the health of the individuals who make up the community. Improvement in living conditions and prevention of disease helps to improve the health of man and communities. It is intended to give the learner an understanding of common diseases in the community of Botswana in order to enable the nurse and other professionals to participate in the treatment of disease, prevention of disease, and maintenance of health.

Objective	Content
1. To list and explain learned respiratory disease-signs, symptoms, treatment and method of prevention.	1. Pneumonia: Etiology S & S Treatment Teaching/Prevention 2. Conjunctivitis: Causes S & S Treatment Teaching/Prevention
2. To know and explain learned communicable diseases and their effect upon the health of the community.	2. Tuberculosis: Etiology S & S Treatment Health/Education

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Common Diseases

Objective	Content
2.	2. (b) Smallpox: Etiology S & S Treatment Health/education
	(c) Hepatitis: Etiology S & S Treatment Health/education
	(d) Scabies: Etiology S & S Treatment Health/education
	(e) Venereal Disease- 1. Yaws 2. Chancroid 3. Lymph Granuloma Inguinal 4. Gonorrhoea 5. Syphilis:- Etiology S & S Treatment Health/education
	(f) Rabies: Etiology S & S Treatment Health/education
	(g) Amoebic Dysentery: Etiology S & S Treatment Health education
	(h) Cholera: Etiology S & S Treatment Health education
	(i) Intestinal Parasites: 1. Ascaris 2. Pinworm: Etiology S & S Treatment Health education.

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Objective	Content
3. To list and explain learned diseases effecting children, including signs, symptoms, treatment and methods of prevention.	3. (a) Measles Chicken Pox Whooping Cough: Etiology, S & S, Treatment, Teaching (b) Pneumonia Otitis Media: Etiology, S & S, Treatment, Teaching (c) Gastro-enteritis: Etiology, S & S, Treatment, Teaching (d) Ringworm Favus Impetigo: Etiology, S & S, Treatment, Teaching

Tropical Medicine

Diseases in Botswana which are peculiar to Ngamiland. Ngamiland is a special case for Botswana because of its climate and geographical area. Most of Botswana is not tropical, but the diseases endemic to Ngamiland may occasionally spread south and affect other areas of the country.

Objectives	Content
1. To list and be able to explain learned tropical diseases including signs, symptoms, treatment and methods of prevention.	1. (a) Leprosy: Etiology, S & S, Treatment, Health education (b) Malaria: Etiology, S & S, Treatment, Health education (c) Bilharzia: Etiology, S & S, Treatment, Health education

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Tropical Medicine

Objective	Content
	1. (d) Trypanosomiasis: Etiology S & S Treatment Health education
	(e) Snake Bite: Treatment Health education
	(f) Trachoma: Etiology Treatment Health education

Ambulatory Care Service

Outpatient care constitutes a large part of the total health care delivered to any community. It constitutes that portion of personal health care services delivered in a health facility to patients who do not remain overnight in the hospital.

It is intended to give the learner a knowledge and appreciation of those services rendered in the treatment and prevention of disease and in maintaining health. To impart skills necessary in order to deliver quality care in an adequate, dignified, and scientific way to all people in the community.

Objective	Content
1. To know and explain the concept of ambulatory care service.	1. Definition and purpose of ambulatory care-role in treatment of disease. - Financial feasibility
2. To identify and discuss required staffing patterns for a clinic facility.	2. (a) Disease patterns of the community (b) Proper utilization of medical staff - Physician - Nurse - Health educator - Family welfare educator.
3. To identify and implement correct procedure for history taking.	3. (a) Interviewing techniques (b) Pertinent history i.e. Family Patient Past illnesses Current illness

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Ambulatory Care Service

Objective	Content
4. To explain the importance of clinical assessment, and be able to identify patients based on acuteness.	4. Priorities of care: - Inspection Screening Diagnosing Treatment Patient assessment.
5. To identify and develop clinic clinical sessions based on community need.	5.(a) Community assessment (b) -Diagnosis (c) Under 5 clinic (d) Nutrition clinic (e) Antenatal clinic (f) Minimizing waiting time (g) Evaluation.
6. To identify and implement health education.	6.(a) Importance of patient teaching (b) Utilizing all opportunities to teach.

Epidemiology

A basic epidemiological approach is imperative in the field of Public Health. It may be used to acquaint the learner with the basic tools used in investigating the occurrence of disease(s) and abnormal physiological states within the population.

The learner is expected to interpret past and current qualitative and quantitative clinical and laboratory data from the patient's hospital/clinic records.

As the learner acquires a better understanding of epidemiology he will be made aware that it is easier to prevent than treat and cure disease.

Epidemiology

Objectives	Course Content
1. To define and discuss epidemiology and the use of the problem-solving approach.	1. Definition of epidemiology (a) Major categories of epidemiology (b) Problem- solving approach used by epidemiologist Epidemiological methods Clinical Laboratory Field observation.

Epidemiology

Objective	Course Content
2. To define, discuss, and give examples of statistical rates and ratios.	2. Knowledge of logic and mathematics in developing some skills in compiling qualitative and quantitative data. crude birth rate, infant mortality rate, maternal mortality rate, crude death rate, infant morbidity rate, neonatal and perinatal mortality rates.
3. To define and explain population and its relationship to health and family planning.	3. Definition of population: (a) Positive effects (b) Negative effects 1. Improved health - decrease in diseases = increased population growth 2. Family planning- longer life expectancy- healthy nation- change in disease patterns = improved socio-economic status. 3. Increase in children- depleted economic resources- poor nutrition, decreased education and poor health.
4. To define and be able to discuss the epidemiological methods of assessing population.	4. Define census: (a) Birth and death records. (b) Purpose of census gathering: increase of health facilities, schools, government representatives, teachers, industry.

Environmental Health

As countries develop and experience the growing pains of technological advances more emphasis must be placed on the health of the community in relationship to the enviroment.

This course will emphasize conditions which prevail in the environment that interfere with the health status of the family and community. It is intended to create an awareness in the learner of the important role he can play in educating the family and community regarding his environmental health problems.

The implementation of elementary laboratory techniques in addition to personal and sanitary hygiene is to motivate the learner by strengthening his professional skills and growth.

Environmental Health

Objectives	Course Content
1. To identify environmental health problems in the community and country which interfere with optimum health.	1. (a) Definition of environmental health.
2. To define and be able to discuss the relationship between man and his environment.	2. (a) Man-animal and environment as inter-dependent forces (b) Changes in one affects the other simultaneously.
3. To list and explain the elements of personal and sanitary hygiene within a community.	3. Air, ventilation, food, milk, water, meat, refuse and sewage disposal, adequate housing and space, personal hygiene etc.

Maternal Health

To help the nurse develop a broader view of maternal health with a focus on education, prevention and maintenance rather than on treatment and cure. She should be able to place the woman in the child bearing period in her proper perspective in society as a person who is experiencing a special period in human biological development when certain cultural stipulations, psychological and economic factors influence her existence and well being.
The nurse should be aware of, and understand the nature and effect of these factors and be able to recognise and translate them into every day discussion, so that she will be better equipped to guide a woman through this most important period of her life.

Objectives	Content
1. To understand and be able to discuss the anatomy of the female and male reproductory system.	1. (a) Anatomy and physiology of the female and male reproductory system. (b) The menstrual cycle.
2. To understand and be able to interpret the physiological and changes that take place during the child bearing period.	2. Changes that occur between puberty and menopause (a) Physiological changes (b) Psycho-sociological changes.

Maternal Health

Objectives	Content
3. To know and be able to explain the added physiological and emotional changes that take place under the strain of pregnancy.	3. The physiology of pregnancy (a) Conception (b) The reproductive system (c) The cardio vascular system (d) The urinary system (e) The digestive system (f) The endocrine system (g) Peurperal psychosis.
4. To provide the learner with a suitable method for physical examination which will enable her to make logical predictions for the outcome of pregnancy.	4. 1. Examination of the pregnant woman. (a) Evaluation by inspection. Significance of height and size (b) Examination of the breast (c) Examination of the limbs for oedema, varicosity, etc. (d) Inspection of the external genitalia.
5. To equip the nurse with knowledge of history taking which will enable her to elicit information necessary to ensure proper supervision of pregnancy and labour.	5. History taking (a) Social history (b) Family history (c) Past medical history 1. Past illnesses 2. Blood type and blood diseases (d) Past obstetric history 1. Pregnancy 2. Labour and delivery and/or abortions 3. Puerperium 4. Lactation (e) Present obstetric history 1. L.M.P. 2. Signs of pregnancy 3. Minor disorders of pregnancy 4. Quickening.

6. To enable the nurse to identify, treat and/or refer for treatment common conditions that might complicate pregnancy.

6. Common conditions that might complicate pregnancy

(a) Diabetes in pregnancy

1) Signs and symptoms
2) Diagnosis
3) Treatment
4) Danger to the fetus
5) Risk to the mother
6) Nursing care during labour and delivery
7) Care during puerperium

(b) Anemia in pregnancy

1) Haemoglobin tests
2) Other signs and symptoms of anaemia
3) Treatment of anaemia in pregnancy
4) Possible dangers to mother and baby
5) Nursing care during labour
6) Nursing care during the puerperium

(c) Cardiac disease in pregnancy

1) Management of pregnancy
2) Conditions that worsen cardiac disease during pregnancy
3) Complications - heart failure
4) Medical Treatment
5) Nursing care
6) Management of labour
7) Management of puerperium n.b. family planning.

(d) Pulmonary tuberculosis in pregnancy

1) Management of pregnancy
2) Specific treatment for T.B.
3) Management of labour
4) Management of puerperium
5) Treatment of newborn.