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**BOTSWANA HEALTH SERVICES DEVELOPMENT PROJECT:  
AN ASSESSMENT AND A REDESIGN**

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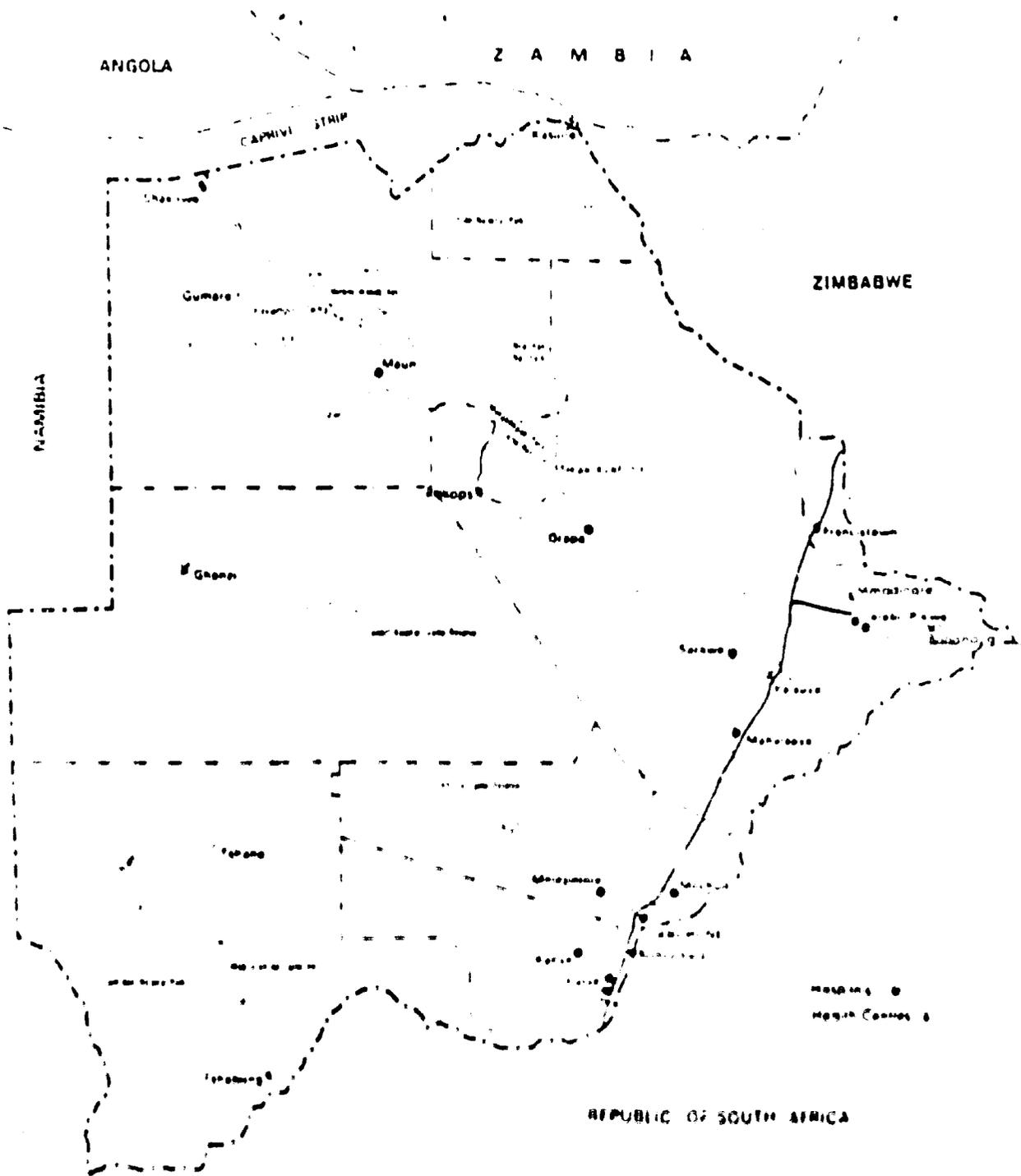
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# REPUBLIC OF BOTSWANA

MAP 11



- Road
- Town
- - - - - International Boundary
- - - - - National Park
- - - - - River



# CONTENTS

	<u>Page</u>
MAP OF THE REPUBLIC OF BOTSWANA . . . . .	i
EXECUTIVE SUMMARY . . . . .	vii
ABBREVIATIONS . . . . .	xi
I. INTRODUCTION . . . . .	1
II. JUSTIFICATION OF RECOMMENDED TECHNICAL ASSISTANCE TO THE NURSING SECTOR . . . . .	3
Family Nurse-Practitioner Post-Basic Course . . . . .	3
Community Health Nurse Post-Basic Course . . . . .	6
University of Botswana Bachelor of Education (Nursing) Program . . . . .	7
Enrolled Nurse Program . . . . .	7
SRN Basic Nursing Program, NHI . . . . .	8
III. ADDITIONAL RECOMMENDATIONS . . . . .	9
Demonstration Nurse-Practitioner Clinics . . . . .	9
Core Courses for FNP and CHN Post-Basic Programs . . . . .	9
Protocol Workshop . . . . .	10
Continuing Education . . . . .	12
CHN and FNP Curricula . . . . .	12
Nursing and Manpower Study . . . . .	13
BIBLIOGRAPHY . . . . .	15
APPENDICES	
Appendix A: List of Contacts	
Appendix B: Scope of Work for Nurse-Educator	
Appendix C: Project Evaluation Summary	
Appendix D: Excerpts from <u>Annual Report, 1978-1979, Botswana Ministry of Health (Statistical Documentation)</u>	
Appendix E: Organization of the Ministry of Health (1979)	
Appendix F: Job Description: Community Health Nurse	
Appendix G: Job Description: Family Nurse-Practitioner	

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Appendix H: Course Description: Health Care Administration

Appendix I: Update on Botswana (Department of Information)

Appendix J: "Botswana 1980" (African Index, November 3, 1980)

Appendix K: Road Map and Climate Chart

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## EXECUTIVE SUMMARY

The following is a summary of recommended technical assistance to the nursing sector of the Health Services Development Project of Botswana.

### Family Nurse-Practitioner Program, National Health Institute (NHI)

Two family nurse-practitioner educators should be recruited to work with Ms. Cynthia Leisi, designated head of the Family Nurse-Practitioner (FNP) Post-Basic Program, on the following tasks:

- curriculum development and adaptation;
- classroom and clinical teaching, including "core" courses;
- field supervision, including development and support of preceptor sites and performance as a role model (e.g., operation of demonstration nurse-practitioner clinics);
- development, adaptation, and revision of diagnostic and treatment protocols; and
- inservice and continuing education for NHI faculty and Ministry of Health (MOH) nurses in physical assessment.

### Community Health Nursing Program, NHI

One community health nurse-educator should be recruited to work with a Botswana counterpart on the following tasks:

- classroom and clinical teaching, including "core" courses;
- field supervision, including follow-up to the first group of trainees; and
- further development and revision of the curriculum, training program, and learning materials.

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Bachelor of Education (Nursing), Department of Nursing,  
University of Botswana

One nurse-educator should be recruited to assist the faculty in teaching the three-year program. This person should be a specialist in a field other than community health nursing (e.g., adult, psychiatric, or maternal and child health (MCH) nursing).

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## ABBREVIATIONS

AID	Agency for International Development
APHA	American Public Health Association
CHN	Community Health Nursing
EN	Enrolled Nurse
FNP	Family Nurse-Practitioner
FP	Family Planning
FWE	Family Welfare Educator
GOB	Government of Botswana
HSMD	Health Services Manpower Development
IDM	Institute of Development Management
MCH	Maternal and Child Health
M.D.	Doctor of Medicine
NHI	National Health Institute
OB/GYN	Obstetrics and Gynecology
PHC	Primary Health Care
SOW	Scope of Work
SRN	State-Registered Nurse
SRNM	State-Registered Nurse-Midwives
UBS	University of Botswana
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

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## I. INTRODUCTION

## I. INTRODUCTION

The United States Agency for International Development (USAID) sent a team to Botswana to assess the current situation there and decide whether conditions were favorable for resumption of the Health Services Development Project, suspended in July 1981. Another of the team's objectives was to redesign the project to include inputs, a plan for implementation, and monitoring, thereby providing "an efficient technical assistance package that will address the health services needs of Botswana and which can be implemented successfully in a timely manner" (AID, Memorandum, April 16, 1982).

The assessment team consisted of a health planner, Dr. S. Blumenfeld (USAID/Washington, ST/N); a health economist, Dr. A. Mackie (REDSO/EA); an AID backstop officer, Ms. K. Nurick; and a nurse-educator, Ms. Lynn Gilbert, provided by the American Public Health Association (APHA). Over two weeks, this team gathered information from interviews, documents, and field visits which led it to conclude that the project was both necessary and possible, with several alterations in emphasis and structure. The earlier problems which had led to the project's suspension appeared to be fairly well distributed among the contractor, the technical assistants, USAID/Botswana, and the Ministry of Health (MOH). The first three parties have made significant changes, and the fourth has demonstrated its commitment to the continuation of the project.

The redesign team consisted of the persons listed above and the regional health officer for southern Africa, Dr. C. Debose (USAID/Swaziland), and two AID/Botswana officers, Dr. L. Mailloux and Mr. P. Tuebner, who will be responsible for implementing and monitoring the project when it resumes. Issues, risks, priorities, and potential benefits of the resumption and the proposed redesign were discussed during 10 days of meetings.

The suggested redesign was presented to the Ministries of Health and Finance and Development Planning on July 27, 1982, at which time some alterations, compromises, and additions were made. The team, AID/Botswana, and the Government of Botswana (GOB) will present the proposal to AID/Washington for approval.

The recommendations for the nursing sector, as requested by the team leader, Dr. Blumenfeld, are attached to this report. With the concurrence of the team leader, tasks "c" and "e" in the scope of work (SOW) for nurse-educators have been eliminated (see Appendix B). At the request of the senior nurses in Botswana, observations and recommendations that extend beyond the SOW, or are more detailed, were developed and are also attached to this report. Additional supporting materials and background information are included as appendices.

**II. JUSTIFICATION OF RECOMMENDED TECHNICAL ASSISTANCE  
TO THE NURSING SECTOR**

## II. JUSTIFICATION OF RECOMMENDED TECHNICAL ASSISTANCE TO THE NURSING SECTOR

### Family Nurse-Practitioner Post-Basic Course<sup>1</sup>

The Ministry of Health has requested that three family nurse-practitioner (FNP) educators be recruited for the project if it resumes. Two will be tutors and one will be a "field supervisor." When the project was suspended in July 1981, the remaining FNP technician assisted the faculty of the National Health Institute (NHI) in pulling together a group of physicians and several Meharry-trained FNPs to complete the course for the 15 trainees released from service for one year. Ms. Cynthia Leisi, M.S., FNP, Emory University, returned from study overseas in December 1981, to take over the program in time for final examinations. Ms. Leisi, who had worked with two American FNP technicians during the initial stages of curriculum and program development before going abroad for further study, has been designated to head the FNP program, if it is resumed, according to the NHI's principal tutor, Mrs. Ngcongco.

Because of the paucity of doctors and others trained to provide clinical primary care, it is hoped that 60 FNPs will be trained in four years, as originally planned. Both the chief nursing officer for administration and the principal tutor see a need for inservice training for their respective staffs in physical assessment and basic diagnosis and treatment. This training is necessary, they believe, to increase the staffs' utility, because of the national emphasis on primary care and community-based services, and to facilitate acceptance, understanding of, and support for the use of nurses in an expanded role.

The principal tutor loaned to the assessment team a copy of the National Task Force on Family Nurse-Practitioner Guidelines (the work of an American group) and the results of efforts to date in adapting these guidelines to the FNP program in Botswana. For many reasons, and in contrast to the curriculum for the community health nursing (CHN) program, the FNP curriculum is only in the early stages of development and adaptation. Some essential information appears to be lacking. For example, the pediatric nutrition

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<sup>1</sup> Thirteen FNPs from the first course completed work in March 1982; one works at a health center, the remainder in hospital clinics.

Five FNPs were trained at Meharry and posted to hospital clinics and town council clinics (Selebi-Pikwe Government Hospital and Selebi-Pikwe Town Council Clinic, Princess Marina OPD, Athlone Hospital in Lobatse, and Jubilee Hospital in Francistown).

One M.S. (Emory), FNP, is on the NHI faculty.

section lists "food fads" and "junk food" as problems, but fails to mention diseases caused by vitamin deficiencies (these are well outlined in the CHN curriculum), major diseases from deficiency of proteins or calories, and the incidence and cause of stunted growth, which is seen in drought areas. Also included is a section on geriatric sexuality; in a country where life expectancy is less than 60 years, such information may be pertinent, but it should be a low priority, given the existing age pyramid and the demand for health care. A nurse-practitioner familiar with the developing-country setting and skilled in curriculum development is needed to work with a Botswana counterpart to adapt the current guidelines.

Six FNPs, including Ms. Leisi, have been trained overseas; five others have been trained at Meharry and are working in the outpatient departments of hospitals. The 13 FNPs who successfully completed the FNP program in March 1982, have been placed primarily in the hospitals from which they were recruited; they, too, are working in outpatient departments. At least one FNP is in a rural health center. It is intended that the next group of trainees (there are already 23 applicants, in spite of the uncertainty of the program) be drawn equally from hospital and non-hospital settings.

The first class of FNPs is widely scattered. These FNPs will have to be used as preceptors for student FNPs while they are developing their new practices and gaining experience--a time when they themselves would benefit greatly from experienced supervision and support. For this major reason, two technicians should be provided to work with Ms. Leisi in the teaching program, and teaching and field supervision should not be separated. The students need competent role models, the instructors need feedback on the relevance and adequacy of their teaching, which can be evaluated only in the field, and the new FNPs need continuing support and clinical supervision.

A third major area that deserves the attention of the teaching team is the development of protocols on treatment that FNPs can follow in the absence of a physician. Protocols on the treatment of the most common conditions (e.g., respiratory and gastrointestinal problems) and illnesses requiring continuous monitoring (e.g., tuberculosis, hypertension, and growth failure) should be prepared first. There are many models and approaches from which to choose. Participants at the FNP seminar in Gaborone, held in June 1980, began work on protocols. Field-testing and continuous revision will be necessary as the protocols are taught and tried. (See Chapter III.)

The trainee practitioner requires close supervision while learning her role. Skills in clinical observation and assessment are not developed easily in a classroom. The time spent in practical exercises must be equal at least to the time devoted to theory, and the instructor must provide close supervision. No more than five students per instructor is recommended. The FNP faculty will have to be both role models and clinical instructors to a much greater extent than are the basic nursing or CHN faculty.

The FNP teaching team also needs to address staff development and inservice training. Several years ago, Meharry provided an eight-week course in maternal and child health and family planning (MCH/FP) for more than 500 (a majority) personnel of the nursing service. The chief nursing officer for administration envisions a similar course in physical assessment for her staff to prepare them to recognize abnormal conditions for referral. The principal tutor would like certain physical assessment skills to be integrated into the basic nursing course; she feels her faculty should have an inservice course before this effort is made so that they can support the proposed changes in the curriculum and reinforce the teaching.

The cooperation of the FNP faculty is needed to support joint teaching of the "core" courses included in the CHN and FNP post-basic programs. Several courses lend themselves to this approach; they are:

- primary health care and providers (outlined in the FNP curriculum);
- the family and community;
- certain aspects of nutrition; and
- physical assessment.

In "core" courses, time is saved, better use is made of teaching resources, and the cooperation of different categories of nurses can be elicited. (See Chapter III.)

The involvement of each member of the faculty in each of these efforts will strengthen the program, and field supervision and support, and facilitate adaptation of the FNP program to actual teaching and service conditions. If one person assumes responsibility for most of the classroom instruction, while another does the field supervision and still others develop the curriculum and teaching materials, efforts to obtain feedback and ensure the coordination required for adaptation, revision, and development of the FNP program will be hampered.

The designated counterpart in the FNP program, Ms. Leisi, is reported to be highly skilled and interested in the program and familiar with its history, achievements, and problems. The nurse-educator consultant agrees with the principal tutor and Ms. Leisi that the provision of only one American FNP technician will not be sufficient to develop, at a reasonable rate and with equitably distributed tasks, the program's tremendous potential.

To summarize, the following tasks must be accomplished to produce a program and FNPs appropriate and adequate to meet the health service needs of Botswana:

- curriculum development and adaptation;
- classroom and clinical teaching, including "core" courses;
- field supervision, including development and support of preceptor sites and performance as a role model (e.g., operation of demonstration nurse-practitioner clinics);
- development, adaptation, and revision of protocols for diagnosis and treatment; and
- inservice and continuing education in physical assessment for NHI faculty and MOH nurses.

To accomplish these tasks, it is strongly recommended that two additional FNP technicians be provided by the project to work with the Botswana counterpart of the NHI.

#### Community Health Nurse Post-Basic Course<sup>2</sup>

The MOH has requested that one CHN tutor work with a Botswana counterpart to teach this one-year course. Daisy Mosieman, the counterpart for Eleanor Voorhies, who completed the last two months of the first course after Ms. Voorhies had to leave, is scheduled for graduate study this fall and will not be available to orient students or assist program staff at this time. Mrs. Ngcongco states that there will be a replacement qualified to work as a counterpart to the requested technician, but this individual has not yet been named.

The curriculum developed before the project was suspended was well done (a few suggestions for modification and implementation are given in Chapter III). According to original project plans, it was intended that 15 CHNs would be produced each year, for a total of 60 FNPs in four years. Because of the stage of development of the curriculum, the characteristics of the training program, and the opportunity to teach several "core" courses as part of the FNP program, it is recommended that one CHN tutor be provided, as requested by the MOH.

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<sup>2</sup> Thirteen CHNs from the first course completed work in January 1982; most are working with regional health teams, although three are at health centers and two are at clinics, according to the chief nursing officer for administration.

University of Botswana Bachelor of  
Education (Nursing) Program<sup>3</sup>

The faculty consists of two nurse-educators, Mrs. Serara Kupe, formerly the chief nursing officer for administration, MOH, and Mrs. Tloe. The students are state-registered nurse-midwives (SRNMs) who have been admitted to the second year of the four-year bachelor of education program. This program requires courses in education, nursing, and basic and social sciences.

The first class graduated six persons, all from the NHI, in 1981. Subsequent classes have ranged from seven to 14, with several persons from neighboring countries. One outstanding student is selected from each graduating class to be a "staff development fellow." This person assists in teaching and prepares for subsequent overseas graduate study; the first such fellow will leave for Columbia University this fall.

The faculty of nursing also gives a course for non-nursing students in "health and the health care system." The two faculty members have completed some preparatory work in community health. Mrs. Kupe has cited the desperate need for an additional tutor prepared in another specialty (e.g., psychiatric, adult, or MCH nursing).

The program is in its infancy, struggling to establish its place in the university and in nursing education. It needs assistance and support. It is recommended that one nurse-educator, prepared in an area other than community health nursing, be provided for two years to the University of Botswana to assist the educational program.

Enrolled Nurse Program<sup>4</sup>

The principal tutor at the NHI has requested one nurse-educator to complete the task begun by Ms. Winnie Evans before the project was suspended. This person will be expected to complete the revision of second-year components of the training program, including "simple diagnostic and treatment skills," then take the revised program, which is being tested at Molepolole, to the remaining three enrolled nursing schools (Lobatse, Francistown, and Serowe) to "standardize course plans."

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<sup>3</sup> Approximately 13 nurse-educators have been graduated from the university program to date; annually, the number is 8-12. Many students come from neighboring countries.

<sup>4</sup> Approximately 600 ENs have been trained (1980).

Three-year training is provided at Lobatse, Molepolole, Serowe, and Francistown; 60-80 persons complete the training each year; 40 ENs complete midwifery training each year.

An evaluation of the project, conducted in February 1981 (before suspension), indicated that much progress had been made in revising the curriculum for enrolled nurses (ENs). However, there is some discussion at this time about the dissatisfaction of enrolled nurses, whose jobs frequently overlap those of the state-registered nurses, in spite of the considerable difference in salaries. The chief nursing officer for administration and the principal tutor both feel that job descriptions for both levels of nurses need to be defined clearly. Because training programs must be based on the jobs to be performed, it is recommended that resources be channeled to other components of the project until the MOH has the opportunity to examine the current use and needs of all nursing personnel to clarify training needs. (See Chapter III.)

SRN Basic Nursing Program, NHI<sup>5</sup>

No assistance has been requested for the basic registered nurse program. Ms. Teresita Finlay is currently completing an evaluation of that program, begun under the project and now being administered through direct-hire arrangements with the MOH.

All SRNs, including male nurses, are required to take midwifery training, according to the chief nursing officer for administration. This training lasts one year; thus, the entire training period for SRNMs is four years.

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<sup>5</sup> Approximately 500 SRNMS have been graduated (1980).

Three-year training is given at the NHI, Gaborone. One year of midwifery training is provided at Gaborone and other district hospitals; 40-50 persons complete training each year. New classes have 80-90 students.

### III. ADDITIONAL RECOMMENDATIONS

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#### Demonstration Nurse-Practitioner Clinics

The faculty of the post-basic FNP courses should offer demonstration clinics to provide practical demonstrations in clinical teaching and role models for student nurse-practitioners. As these clinics continue and patients are seen over a period of time, the nurse-practitioners' patient-monitoring and -management skills, rather than the "M.D.-screening/referral," skills which are emphasized in hospital outpatient settings, can be demonstrated and evaluated. Examples of problems of patients which can be managed effectively in a nurse-practitioner clinic are hypertension and diabetic follow-up, continuing care of tubercular cases, family planning counseling and method-monitoring, malnutrition, and high-risk infants (e.g., newborn twins). With three tutors and 15 students, it should be possible for the faculty to handle monthly clinics at Princess Marina, Mochudi, and Molepolele (e.g., on the first Tuesday of the month at one clinic, on the second Tuesday at another clinic, etc.). This approach would enable faculty to cover for one another whenever necessary and would give students the opportunity to observe different clinical settings and communities.

The students need competent role models and close supervision as they develop their new, more independent clinical skills. The instructors need feedback on the relevance and adequacy of their teaching, which can only be properly evaluated in the field. Faculty-supervised nurse-practitioner clinics would provide an excellent opportunity to achieve both objectives.

#### Core Courses for FNP and CHN Post-Basic Programs

Teaching several courses conjointly or concurrently as "core" courses for the FNP and CHN programs has at least two major advantages: teaching resources (i.e., tutors, time, classroom space, and learning materials) can be used efficiently, and cooperation can be demonstrated and knowledge can be shared among health personnel to improve health care delivery in Botswana. In several areas, this approach would be appropriate; for example:

- primary health care (the concept of PHC services, manpower, etc.);
- family and community (e.g., the impact of the family and the community on health and the provision and use of services);
- nutrition; and
- beginners' skills in physical assessment.

Physical assessment in the current CHN curriculum will be taught in the third term and will focus on "identifying and describing variations from the normal." This skill should be taught at the beginning level and be covered in the first term of the FNP course. In fact, all the above examples of "core" courses, if taught conjointly in the first term of both programs, could provide an appropriate context and enable student FNPs and CHNs to acquire the beginners' skills they would need for subsequent specialization. The CHNs' role in physical assessment will be focused on the ability to distinguish between normal and abnormal conditions as a basis for referral. When protocols are established, this role could be expanded to include management of minor illness (the CHNs will have supervisory responsibilities for lesser-trained health workers at the periphery of the health care delivery system). The FNPs could build on this beginning level in subsequent courses for further assessment (i.e., diagnosis) and management (i.e., treatment) of common acute and chronic health problems. Similarly, the basic nutrition core course could address subsequently the FNPs' role in treating clinical problems and the CHNs' role in the community and the implications of their work.

It is assumed that the courses will begin at approximately the same time, and that there will be cooperation and coordination among the two faculties.

The sharing of knowledge and skills among the FNPs and CHNs would, it is hoped, lead to appreciation of and cooperation with different categories of nursing personnel. Appreciation of others' roles and cooperation are difficult to teach in a classroom, but in a joint project assignment, there is opportunity for an invaluable learning experience. For example, two-person teams (one student FNP and one student CHN) could be assigned to follow monthly, for the duration of the course, a family selected from among the patients seen at the nurse-practitioner clinics. The two students could do an initial history and family assessment together; the student FNP could examine each family member, and the student CHN could do a family and community assessment. Together and with the family, they could develop a plan to meet the family's health needs--and improve the family's health--and present a report on the family and an evaluation of their plan at the end of the course. The classroom presentation would provide an opportunity for other students to learn and make suggestions for other approaches and resources.

#### Protocol Workshop

A frequent problem in health care is that service and training responsibilities are so overwhelming that the two branches do not have sufficient time or information to coordinate their efforts. The result can be a lack of congruence between service conditions and expectations and what personnel are trained to do. A similar problem could result in training and deploying FNPs, unless the nurses now in service understand and accept their projected role.

To facilitate understanding and acceptance and to meet a major need for non-physicians who can provide a variety of health care services, a national workshop should be held to develop protocols for diagnosing and treating the most common health problems in Botswana. The points at which referral would be indicated for each condition and category of health worker should be included; these would have to be realistic, given the present conditions of health care in Botswana (e.g., if a four-year-old's respirations are more than 60 per minute, and the nearest hospital is six hours away, what else should be considered in the decision to refer?). Major input from those actually providing service would be required. Many levels of health personnel diagnose and treat patients without such guidelines, without access to a physician, or in the absence of a supervisor. (This may explain, in part, why a committee of doctors and nurses was formed to develop guidelines on the use of common medications available in Botswana.)

One possible approach to the development of relevant protocols is described below. A one-week workshop to develop protocols could be arranged for FNPs (approximately 20) and an equal number of senior SRNMs. In the first two days, after an introduction to the concept of protocols, the participants would compare the 10 principal causes of morbidity and mortality for different age groups (see Annual Report, Ministry of Health, 1978-1979, pp. 78-79, and p. 81, attached) and identify where intervention might help and what assessment skills would be required. The participants would then be divided into groups, according to experience and interest, and begin work on draft protocols in adult and pediatric care, obstetrics and gynecology, and trauma and emergency. This exercise would signal the first efforts to begin to understand others' roles and provide a base for further development of protocols. Assignments could be made to test and further refine the protocols, and an advisory group, selected from the participants, could be appointed to meet several times in the next six months to produce final drafts.

The cooperation of the medical profession would be essential at each stage of protocol development. The presence at the opening of the session of a medical doctor who has worked with some of the FNPs, lending support, and the co-opting of a doctor for the advisory group would be crucial to the success and acceptance of the effort.

In June 1980, a FNP seminar was held to seek the assistance of FNPs trained overseas in planning the proposed FNP program at the NHI. Protocols were discussed, agreement was reached on an initial format, and assignments were given to prepare protocols for upper respiratory infections, abdominal pain, hypertension, diarrhea, and diabetes. These drafts should be located and used as a resource at the proposed protocol workshop. There are several examples of differing successful approaches for protocols in Africa, including the standing orders for family health clinics of the Nigerian Institute of Child Health and Dr. Dan Fountain's algorithms, developed in Zaire. Several samples should be available at the protocol workshop to aid the selection of a format which is easy to use and can be learned in Botswana.

### Continuing Education

The MOH recognizes the need for and is committed to the provision of continuing education for nursing personnel. The MOH and Menarry mounted a major--and successful--effort several years ago to provide eight-week courses in MCH/FP to a majority of the nursing personnel in service at that time.

Both the chief nursing officer for administration and the principal tutor at the NHI have expressed a need for inservice training for their respective staffs in physical assessment and basic diagnosis and treatment. This training is necessary, they believe, to increase the staffs' utility, because the national program emphasizes primary care and community-based services, and to ensure the understanding, acceptance, and support of the use of nurses (i.e., the FNPs) in an expanded role. They want to provide short courses in physical assessment to enable staff to acquire beginning-level skills (i.e., to recognize signs of abnormal conditions), thereby upgrading nursing practice and teaching.

It is suggested that the participants selected for four-week courses in physical assessment be drawn from both the service and training units (i.e., MOH and NHI faculty). This approach will maximize use of teaching resources and offer an opportunity for and create an environment in which those now providing services and those in training can share their ideas.

### CHN and FNP Curricula

The curriculum prepared for the one-year post-basic CHN program is well done. It has now been published by the government's printing office for distribution. Some of the outstanding features are the family health study guide, the guide to community assessment, field practice objectives, and the nutrition course. One weakness is that the concept of primary health care is only mentioned once by name, in the introduction, where it is quoted as the first objective of the national development plan in health. The FNP curriculum has a section on primary health care issues and providers which could be integrated into the CHN curriculum and taught as part of the recommended "core" course for both groups.

The FNP curriculum is less complete and less adapted to Botswana in general than the CHN curriculum. For example, the section on pediatric nutrition lists "food fads" and "junk foods" as problems, but fails to mention diseases caused by vitamin deficiencies (these are well outlined in the CHN curriculum) or major diseases caused by protein-calorie deficiencies. A section on geriatric sexuality is included also, but in a country where life expectancy is less than 60 years, the topic may be relevant but should be a low priority, given the limited teaching resources (both time and faculty) and the existing age pyramid and its implications for health services.

There are many other "Americanisms" in the FNP provisional curriculum which need to be adapted to Botswana's culture, health, and service conditions, such as "role resocialization" and "role negotiation," "hidden agendas," and "complementary and crossed transactions."

The CHN bibliography should be a good source for reference materials in the NHI library. The FNP bibliography needs considerable thinning and weeding; perhaps three reference texts and three to five articles on each content area should be selected and made available in the library for student assignments.

### Nursing and Manpower Study

The MOH, it is reported, will be undertaking a manpower study in the near future. The effort would give the Botswana nursing establishment the opportunity to examine objectively nursing needs and resources, present and future, in preparation for and cooperation with the study group. There is considerable overlap in the functions performed by nurses with varying levels of preparation and experience, even among non-nursing personnel. For example, at the periphery of the national health care system--the health post--one might find an enrolled nurse with two years of hospital-based training, and perhaps an additional year of midwifery training, or a family welfare educator (FWE) with 11 weeks of training that emphasizes community health education. In some areas, either person might be working alone each day, receiving only weekly visits (or even less frequent visits) from the regional health team supervisor. In health centers and hospitals, enrolled nurses often perform the same tasks and have the same responsibility as the SRNs, yet they receive significantly less pay.

Because of the numbers of nurses and the interests involved, the tendency has been to add on courses in response to changing needs, pressures, and trends. This action accounts, in part, for the production of nurses capable of teaching anywhere in the nurses' training system. The breakdown, in years of training, is:

	<u>Number of Years</u>
Basic SRN Course	3
Midwifery	1
Post-Basic Community Health Nursing	1
Post-Basic Family Nurse-Practitioner	1
Post-Basic Community Mental Health Nursing	1
Bachelor of Education, Nursing, University of Botswana	<u>3</u>
TOTAL	10 Years

Ten years of postsecondary education are required to produce the "complete" nurse--more time than it takes to train a general surgeon. It can be argued that the nurse is more relevant to Botswana's health care needs. With careful study of health care needs and manpower resources and options, a more cost-beneficial system could be developed.

For the manpower study, a list of tasks might be compiled which the most peripheral, and thus the least closely supervised, health worker would be required to perform. Such a list should include the assessment of risk for pregnant women (the rate of population increase was estimated in the 1981 national census to be almost 4 percent). After the tasks have been compiled, it should be determined whether a new category of worker needs to be trained, or if an existing cadre could be more efficiently prepared, either through orientation or modifications in training.

One alternative, based on experience with "community nurses" in Nigeria, who receive two years of training in nursing and midwifery, might be chosen. If the Botswana MOH decides that enrolled nurses should constitute the basic cadre for delivering health care to the periphery, it should be possible to convert the current three-year program in nursing and midwifery to a two-year program emphasizing primary care skills in nursing (e.g., nursing procedures, minor lab, minor treatment, and triage) and midwifery (e.g., low-risk obstetrics, high-risk screening, and monitoring and management using protocols). An example of primary care skills in triage for this level would be recognition of infant respiratory distress (the signs are increased respiratory rate, nasal flaring, and chest retractions), and not differential diagnosis of bronchitis, bronchiolitis, or bronchopneumonia.

A summary of this approach is provided in a report by Rachel Marshall, a World Health Organization (WHO) adviser who examined some aspects of nurse-training in Botswana in 1980. As she stated in her report:

The "health services manpower development" concept (HSMD) means the health manpower process would serve the development of health programmes and services in all its elements within the national health system and, through it, the essential health problems of the country instead of creating fragmented and overcurative or medicalized training programs.

BIBLIOGRAPHY

- Botswana Health Services Development Project (633-0078). "Project Evaluation Summary." February 1981.
- Government of Botswana. Annual Report, 1978-1979. Gaborone, Botswana: Ministry of Health.
- \_\_\_\_\_. Manual of Health Services. Gaborone, Botswana: Ministry of Health, July 1978.
- Marshall, Rachel E. "Training of Nursing Personnel in Botswana: Report on a (WHO) Mission" (confidential). October 1980.
- National Health Institute. One-Year Post-Basic Community Health Nursing Programme. Gaborone, Botswana, 1981.
- USAID. Botswana Project Paper Health Services Development 633-0078. Washington, D.C., 1978.

## APPENDICES

**Appendix A**  
**LIST OF CONTACTS**

Appendix A  
LIST OF CONTACTS

USAID/Washington

Ms. Diane Blane  
Dr. Stewart Blumenfeld, ST/N  
Dr. Richard Brown  
Mr. Art Harding  
Ms. Karen Nurick  
Mr. Leonard Pompa, Desk Officer, Southern Africa

Government of Botswana

Mrs. I. Bagai, Family Nurse-Practitioner (FNP), Palapye Health Center  
Mrs. S. Kupe, Chairman, Department of Nursing, Faculty of Education,  
University of Botswana  
Ms. C. Leisi, FNP Nurse-Tutor, National Health Institute (NHI)  
Dr. P. Mashalaba, Head, Family Health Division, Ministry of Health (MOH)  
Mrs. K. Makhwade, Chief Nursing Officer (Administration), MOH  
Dr. Moffat, Medical Officer, Princess Marina Hospital, Gaborone  
Ms. D. Mosieman, CHN Nurse-Tutor, NHI  
Mrs. N. Ngcongco, Principal Tutor, NHI  
Ms. Rose Pula, Nurse-Tutor, Institute of Development Management (IDM)  
Rankgomo, FNP, Princess Marina Medical Referral Clinic, Gaborone  
Mrs. C. Vuma, Sister-in-Charge, Palapye Health Center

USAID/Botswana

Mr. L. Cohen, Director  
Dr. C. Debose, Regional Health Officer, USAID/Swaziland

Mr. J. Gantt, Education and Human Resources Officer

Mr. P. Guidet, Deputy Director

Dr. A. Mackie, REDSO/EA

Dr. L. Mailloux, Project Officer

Mr. P. Tuebner, Design Officer

Others

Dr. J. Beattie, Regional Medical Officer, Serowe

Dr. J. Bennett, United Nations Children's Fund (UNICEF)

Mr. Bocker, Director, Office of Netherland Volunteers

Dr. J. Finlay, Health Educator, Ministry of Health (MOH)

Mrs. T. Finlay, Nurse-Tutor, NHI

Mr. J. Hunter, Director, Institute of Development Management

Mr. A. Manyindo, Resident Program Officer, UNICEF

Dr. P. Rojas, Resident Adviser, World Health Organization (WHO)

Mrs. E. Rush, Co-Director, Peace Corps, Botswana

Ms. P. Sweeney, Nurse, Peace Corps Office, Gaborone

Ms. B. Upchurch, Nurse, American Embassy Health Unit

**Appendix B**

**SCOPE OF WORK FOR NURSE-EDUCATOR**

## Appendix B

### SCOPE OF WORK FOR NURSE-EDUCATOR

Position: Nurse-Educator, Health Services Development Project, Botswana

#### Objectives

The objectives are to determine whether the problems which prevented the nurse-clinician training program from continuing have been resolved, and whether a favorable climate for resuming the project now exists, so that the project can be redesigned, based on current conditions. The project aims to develop a one-year training program for nurse-clinicians, health educators, nutrition educators, and health administrators.

#### Duties

##### A. Assessment Phase

The nurse-educator will participate in the assessment of the willingness of the nursing division of the Ministry of Health (MOH) of Botswana and the training institutions to proceed with the training program for nurse-clinicians. She will help to review the organizational issues, curriculum and teaching methods, the educational setting, the supervisory system, lines of authority, and the relationship between nurse-practitioners and the health system. The nurse-educator will report on the issues raised earlier and determine whether they have been resolved. She will make her written report on findings and conclusions to the team leader.

##### B. Design Phase

In helping to design the nurse-clinician program, the nurse-educator will:

- a. Assess the task of the nurse-clinician, based on the population's most common health problems.
- b. Assess the work situation of the nurse-clinician, clinic, community, supervision referral chain, physical facility, etc.
- c. Develop educational objectives for the nurse-clinician program and reach agreement on these objectives with health and training institutions. The nurse-educator will also write a draft curriculum for these educational objectives, with learning and teaching objectives related to the health problems of Botswana

and the working conditions of the nurse-clinician. She will write an outline of the course content in general detail (i.e., with topic headings).

- d. Recommend teaching methods to carry out the curriculum.
- e. Describe evaluation methods for:
  - classroom teaching;
  - preceptorship; and
  - post-training assessment following job assignment.
- f. Prepare a report describing and justifying all the recommendations.

#### Qualifications

A master's degree or doctorate in nursing education, with 3-5 years of recent experience in teaching nurses, preferably nurse-clinicians or other graduate nurses working in primary health care in the U.S. or abroad, is required. Several years of direct field experience in developing countries, especially Africa, are highly desirable. In the absence of long overseas experience, extensive contact with educational institutions and U.S. Government programs would be particularly important.

Appendix C  
PROJECT EVALUATION SUMMARY

Appendix C

PROJECT EVALUATION SUMMARY

49

PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

1. PROJECT TITLE  Botswana Health Services Development			2. PROJECT NUMBER 633-0078	3. MISSION/AID/W OFFICE USAID/B
4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY)			5. REGULAR EVALUATION <input checked="" type="checkbox"/> SPECIAL EVALUATION <input type="checkbox"/>	
6. KEY PROJECT IMPLEMENTATION DATES			7. ESTIMATED PROJECT FUNDING	7. PERIOD COVERED BY EVALUATION
A. First PRO-AG or Equipment FY 78	B. Final Obligation Expires FY 85	C. Final Input Delivery FY 83	A. Total \$ 7,253,000 B. U.S. \$ 5,531,000	From (month/yr.) Nov. 1979 To (month/yr.) Jan. 1980 Date of Evaluation Review 26/1/81-6/2/81
8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR				
A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., program, SPAR, PIQ, which will present detailed report.)			B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
1. If clarification of roles for health administrators is not accomplished, then other ways to strengthen this component should be sought and financial input for this area reprogrammed.			MOH and MLGL	Aug. 1981
2. The services of a short-term consultant should be secured to work with the project advisers and related Ministry personnel on improving educational communications.			MSCI	July 1981
3. The health educational planning which is now being accomplished within the Unit will allow for some additional funding for essential services, consultancies not previously foreseen or selected commodity purchases. These areas should be detailed, costed and related to specific objectives prior to being reviewed and authorized.			COP and AID	Sept. 1981
4. Upon departure of the current Project Coordinator, the position should revert to that described in the PP and be filled by a Motswana.			MSCI and AID	Jan. 1982
5. Incoming personnel should be selected so that an individual capable of serving as COP as well as having necessary technical skills is hired.			MSCI	Feb. 1982
6. There appears to be no reason to extend the tours foreseen for individual advisers.			MSCI and MOH	Feb. 1982
7. The support components promised by MOH for the nursing component, typists, and drivers should be secured as soon as possible.			MOH	April 1981
9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS			10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT	
<input type="checkbox"/> Project Paper <input type="checkbox"/> Financial Plan <input type="checkbox"/> Logical Framework <input type="checkbox"/> Project Agreement <input type="checkbox"/> Implementation Plan e.g., CPI Network <input type="checkbox"/> PIQ/T <input type="checkbox"/> PIQ/E <input type="checkbox"/> PIQ/P <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Other (Specify) _____			A. <input checked="" type="checkbox"/> Continue Project Without Change B. <input type="checkbox"/> Change Project Design and/or <input type="checkbox"/> Change Implementation Plan C. <input type="checkbox"/> Discontinue Project	
11. PROJECT OFFICER AND HOST COUNTRY OR OTHER BANKING PARTICIPANTS AS APPROPRIATE (Name and Title)			12. Mission/AID/W Office Director Approval	
Anita Mackie, REDSO/EA Connie Collins, USAID/S Ndiki Ngcongco, MGH Thaelo Kebaagetse, MFDP			Signature  Type Name Louis A. Cohen Date	

487 1286-16 12-78

## 13. SUMMARY

At the end of the first operational year the project has made good progress towards meeting its objectives. The first classes have commenced for training family nurse-practitioners and public health nurses. "The curriculum for the enrolled nurses has been strengthened with particular attention to improved teaching from enlarged guidelines, and is now being tested at one nursing school." The building has been completed for the Health Education and Nutrition Units and has opened in time for the first class to train Health Education/Nutrition Assistants in a two-year program. The technical advisers have completed the curriculum and are assisting with its teaching. The human nutritionist has strengthened this component of all teaching programs for paramedical personnel as well as at the primary school level. Assistance has also been given to the National Food and Nutrition Committee.

The component which has not advanced is to train health administrators for senior-level positions in hospitals and local government staffs at the Institute for Development Management. This objective remains important, and every effort should be made to solve the current problems of inappropriate roles, salaries and job descriptions for the graduates. The project would also be strengthened by improved communications both among team members and with interacting agencies.

#### 14. EVALUATION METHODOLOGY

The evaluation was conducted at the end of the first year of operational activities. The grant agreement was signed on September 28, 1978, but the FRP was not sent out until March, 1979. The first advisers arrived in Botswana in November, 1979. The majority of the team had arrived by January, 1980.

The end-of-first-year evaluation is an opportune time to review the Project Paper (PP), written three years ago, and review the entire Project for its applicability in the light of any internal or external changes occurring. Thus major attention was paid to suitability of design, policy changes related to the project components, adequacy of inputs, progress on outputs, implementation problems, and adequacy of performance of all parties (AID, the contractor, the advisers and the MOH).

The evaluation team consisted of Dr. Anita Mackie from REDSO/EA, Ms. Connie Collins, Regional Health Development Officer, AID, Mrs. Ndiki Ngcongco, Principal Tutor at the National Health Institute, MOH, and Mr. Thaelo Kebaagetse, Planning Officer in the Ministry of Finance and Development Planning. Dr. Mackie served as Team Leader.

The team reviewed the Project Paper and background documents on the Project. Interviews were conducted with all members of the Project team, most counterparts and related Ministry personnel. The team members were interviewed by Dr. Mackie and Mr. Kebaagetse, since Mrs. Ngcongco was intimately involved with administrative relationships to the team and implementation of nursing activities. Ms. Collins had made numerous prior professional visits and was already well acquainted with the team members and the project. A site visit was made to the new Health Education and Nutrition Unit, and the AID engineer reviewed its status. The formal opening was scheduled to occur soon after the completion of the evaluation. In response to a request by the MOH, the entire evaluation had to be completed.

The team had the advantage of having Ms. Patricia McGrath, Project Manager for Management Services, Inc., available as a consultant to the team, and of being assisted by Ms. Nancy Pielemeier, Chief of Party, who made the logistical arrangements and provided a historical perspective. Both participated in selected areas of the evaluation.

## 15. EXTERNAL FACTORS

The area which had least specificity in the PP was the training for health administrators. The reason was that the scope of work for personnel working in this area had not been defined both in the Ministry of Local Government and Lands and in the Ministry of Health. Additionally, the Institute of Development Management had no prior experience in teaching this cadre.

Both Ministries are aware of the problems caused by lack of a suitable job description and defined interrelationships between the administrator and the technical health staff. A recent investigation of the duties and salary levels of all civil servants will partly clarify the hierarchy within which health administrators work. A committee has been appointed to consider these issues, but after a year has only collected information from various concerned parties and has not reached any conclusions or made recommendations.

The need for health administrators does not seem to be an issue with either party. The appropriate training institute exists in-country. The Project is willing to support the training program. If the appropriate roles, functions and salaries cannot be agreed upon within six months by the two Ministries involved, then the COP should investigate alternatives for reprogramming this funding. It would seem desirable for two senior officials from the MOH and MLGL to address the problem, make a determination of the broad outlines of a resolution, and delegate the task of working out details to responsible individuals on their staffs.

16. INPUTS

I. Nursing - Inputs appear to be adequate in the nursing component. One FNP was delayed 8 months due to recruiting difficulties; however, this had not created a delay in the training plan.

II. Health Administration - Due to problems in creating a job description and posts for health administrators, the inputs for this training may not be used. If these problems are not resolved by the 18th month of the project, the funding will be diverted to other project activities.

III. Health Education - Inputs are adequate and have been available on a timely basis. Due to an increase in the MOH capacity for health education planning, the consultancy time for this activity may have been overestimated. If this proves to be the case, this time will be utilized for areas where there is no technical competency.

IV. Nutrition - Inputs are adequate. Some inconveniences have been experienced, due to the delayed arrival of commodities; however, this has not delayed planned project activities.

V. Project Administration - There have been no problems with inputs in this component.

See Annex A for further details.

## 16. INPUTS

Nursing Component

2 Nurse-Practitioners: 2 FNPs were nominated by MSCI at Project outset. One of them was not accepted by the MOH and MSCI had to recruit a replacement candidate. The subsequent recruitment, nomination, and orientation process resulted in 7 months delay before the second FNP position was filled. However, the second FNP appears to have adjusted to her responsibilities quickly and has substantially made up for the lost time.

1 Public Health Nurse: Fielded on time.

2 Nurse Educators: Fielded on time. Planned input of one nurse educator at UBS has been eliminated from the project (cf. Project Implementation Letter 18).

1 Trainee to serve as Nurse-Practitioner Educator: Enrolled in FNP program at Emory.

2 SRNMs to be trained as Nurse Educators: One enrolled at University of Nairobi.

2 participants to acquire BSc degrees in Nursing to be followed by Masters degrees in Nursing Service Administration: Activity not yet underway.

Three SRNM participants to acquire Masters degrees in Nursing Service Administration: Activity not yet underway.

Nursing Commodities

home visiting bags - acquired

reference books - acquired

anatomical models - acquired

audio-visual aids - acquired

vehicles - acquired

Health Administration Component

Administration program at IDM: Activity delayed due to external factors.

One BA graduate of UBS to acquire an MS degree in Health Planning: Trainee enrolled at University of Michigan and progressing satisfactorily.

Four Botswana statistical assistants to receive short-term training in statistics and statistical analyses: Activity not yet underway.

Health Education Component

(part-time) Health Educator/Planner: Not yet requested.

Health Educator/Curriculum Specialist: Fielded on time.

Graphic Artist: Peace Corps Volunteer never provided.

Trainee for BSc in Health Education: Now at East Tennessee.

Candidate for Masters in Health Education Planning: Completed MPH at Berkeley.

Diploma trainee in graphic arts: Now at Pratt-Phoenix.

Commodities for HE unit:

darkroom equipment - received, but not all functional

camping equipment - received

vehicles - received

Nutrition Component

Nutrition Planner: Fielded on schedule.

Human Nutritionist: Fielded on schedule.

Nutrition Consultants: Only about 1 person-month of available time used to date.

Candidate for BSc in Nutrition: Now at NYU.

Candidate for MS in Nutrition: Not yet identified.

Commodities:

wall charts - ordered but not yet delivered

other visual aids - received

Project Administration

Project Coordinator: Fielded on time.

Station wagon for coordinator required.

Project office furnished, and staffed with secretary and driver.

Construction

New Health Education/Nutrition unit constructed and occupied. Some finishing details not yet completed (see darkroom).

Technician housing constructed and occupied.

Botswana counterparts provided.

A share of long-term participant trainees provided (6 of 16).

MOH provides office space for project office and technician's facilities at NHI are available to the technician.

Facilities at UB5 are not (?) available to the technicians.

The GOB contributed land for the new Health Education/Nutrition Unit.

Summary

The quality, quantity and timeliness of such project inputs as commodities, technical services, and participant trainees appear to be satisfactory, overall. Some attention may need to be given to the identification of ten additional long-term participants to ensure that all may complete their intended courses of study by the anticipated project termination date.

## 17. OUTPUTS

Nursing for Health ServicesLogframe Output

1. Curricula for one-year, diploma level in-country training program for SRN's to function as family nurse-practitioners and public health nurses developed, in use and directed by Botswana personnel.

2. Educator/teaching positions for these two programs filled by Botswana, all of whom are presently in training.

3. Enrolled Nurse curriculum revised and in use in government and mission EN training schools.

4. Nurse educator positions for this program filled by Botswana.

5. Three year BEd in Nursing program at UBS assisted and strengthened.

6. Foundation established, including curriculum development for possible future transition to BSc in Nursing program.

7. Nursing service administrators trained to direct the delivery of health care by health personnel on the central, regional and district levels.

Health Administration

1. Health administrators trained for senior-level positions in hospitals, on local council staffs and in the MOH.

Progress

Satisfactory. Both curricula developed. Entering classes of 15 students to FNP program and 12 students to PHN program.

5 NP trained overseas not working in hospitals. Satisfactory number of candidates available

Satisfactory progress. Curriculum detail expanded and now being used at one school for testing.

1 counterpart working with technician for 11 months. 5 being trained under Meharry project.

Not done by request of UBS.

Not done by request of UBS.

1 Mofswana in training for health planning. Unsatisfactory progress on IDM training due to lack of role clarification.

Logframe OutputProgressHealth Education

1. A national health education plan developed and in the process of being implemented.

Plan being developed by health education staff.

2. Capability developed to provide training in health education.

Senior health educator returned from training and functioning in unit. 2 trainees away.

3. Training program developed for health educators.

Curriculum developed. Class of 10 expected.

4. Health education positions of MOH Health Education Unit filled by Botswana.

5. New facility for Health Education Unit built and in use.

Building completed, being furnished. Staff moved in January, 1981.

Nutrition

1. Nutrition research conducted with the results analyzed and considered in the design of nutrition programs.

Not yet underway.

2. A national nutrition program developed and in process of implementation.

National Food and Nutrition Committee meets regularly with technical assistance provided.

3. Nutrition positions in the MOH Nutrition Unit filled by Botswana.

Motswana Home Economist is functioning on Unit staff. 1 trainee away.

4. New facility for Nutrition Unit built and in use.

Building completed, being furnished. Staff moved in January, 1981.

## 18. PURPOSE

a) Definition

"The purpose of this four-year project is to increase the capacity of the GOB Ministry of Health to provide comprehensive health services to the people of Botswana, with an emphasis on the rural and peri-urban populations." (BHSD Project Paper, p. 17)

b) Progress toward each End of Project Status (EOPS) condition

Conditions expected at the end of the project include:

EOPS (1) "a reorientation of nursing training in Botswana to produce a nurse cadre effectively prepared to provide comprehensive health services to the rural and peri-urban population"

EOPS (2) "nurse-practitioners, public health nurses, nursing service administrators, and clinical specialists in place, supervising primary health care workers, and performing preventive and curative services within the health delivery system, in accordance with the personnel targets in the Fourth National Development Plan."

Progress toward the achievement of EOPS conditions 1 and 2 has been substantial, and if it continues at the present rate, both conditions will be substantially attained. Training of nursing service administrators will have lagged behind other programs, but by the EOP the MOH should be in a position to achieve its goals in this area.

Post-Basic Nursing Courses

Curricula for two one-year, diploma-level in-country training programs for family nurse-practitioners (FNPs) and Community Health Nurses (CHNs) have been developed. Care has been taken to ensure that these curricula are suited to the Botswana health context and the role anticipated for courses.

--Thirteen SRNMs have begun training in the CHN course.

--Fifteen nurses have been accepted for the FNP course, and are to begin their training 1 February, 1981.

--Two Botswana counterparts, one for the FNP program and one for the CHN program, have been involved in the development of the two post-basic programs, thus enabling them to carry on the programs after the termination of the U.S. nurse educators.

- Physicians serving various parts of Botswana have been engaged to serve as preceptors for the clinical training of the FNP students, and numbers of the tutors at NHI and other MOH personnel have volunteered to give lecture series or serve as resource persons for the program. These arrangements are expected to continue after the departure of the U.S. nurse educators. The Motswana FNP counterpart began a two-year Master's degree program in Family Nurse Practice at Emory University in September, 1980.
- Another Motswana nurse began a two-year diploma program in Nursing Education at the University of Nairobi in October, 1980.

#### Enrolled Nurse Education

- The Enrolled Nurse curriculum was reviewed and found to be appropriate for the needs and activities of the EN cadre; but teaching in the EN schools was found not to reflect the objectives set out in that curriculum.
- The Project Nurse Educator TA, her counterpart, and the Principal Tutor at NHI have been developing a syllabus more in accord with the EN curriculum. A format for course outlines was developed, and half of the courses have been completed and are being tested at the Molepolole demonstration site. Completion of the as yet unfinished EN courses is scheduled for early 1981.
- The Nurse Educator TA has made and maintained contact with all seven EN schools and plans to develop a newsletter in 1981 to further reinforce communication between schools in the areas of expressed need at the Molepolole site. She also helped to develop a public health practicum, and nutrition workshops for EN students.
- The Nurse Educator TA has also promoted the use of teaching/learning aids and the use of library resources.

#### Evaluation and Reorientation of Basic Nursing Course

- A literature review of nursing curriculum evaluation was carried out by the Senior Nurse Educator in the first half of 1980.
- A modified Slater Competency Scale was developed and administered to third- and fourth-year students and analysis of the results is underway.

- A faculty interview schedule was developed and is being administered to faculty at NHI.
- Observation of teaching and learning at NHI and at affiliated clinical settings has been undertaken.
- The Senior Nurse Educator has been engaged in teaching activities at NHI throughout the year.
- The Senior Nurse Educator served as the Project Nursing Team Leader through the first ten months of 1980, and as liaison between the project nurses and the Principal Tutor and Chief Nursing Officer, as specified in her job description. She also provided technical support for the nurse educators developing the post-basic courses, and will assist in their teaching.
- The Senior Nurse Educator has been unable to assist or strengthen the three-year Bachelor of Education in Nursing Program at the University because UBS declined to accept her services. This planned project activity was in the process of implementation by a Botswana national hired under an OPEX contract before the Senior Nurse Educator arrived. (See Project Implementation Letter 18, June 30, 1980.)

Other Comments on EOPS Condition 2

Nursing Service Administration. The five participants scheduled for graduate training in nursing service administration will depart later in the project as no candidates will be available until the first class of UBS Bachelor of Science in Nursing Education graduates in 1981. Due to the shortage of qualified participants, this training will be phased over the next three years of the project.

EOPS (3) "administrative capacity for providing health services increased by placement of approximately 90 percent of health administrators required at the central, regional, and local levels."

To this end:

- A UBS graduate began a two-year masters program in health planning at the University of Michigan in August, 1980. Her first semester academic record gave her a B+ average, and it is expected that at the end of her course she will serve in an administrative capacity at the central level of the MOH.
- Local training programs for the 32 Health Administrators (HA) have not been developed mainly due to problems in defining the role of the health administrator under the Ministry of Local Governments

and Lands, where the majority of the HAs will be employed. As the MOH has little control over this situation, alternate ways in which health administration can be strengthened will be explored if the situation is not resolved.

EOPS (4) "preventive and promotive health services improved through health education (programs implemented and staff in place)."

- The Health Educator TA, in cooperation with his counterpart, the project nutritionist, nutrition planner, and an Advisory Committee, developed a two-year training program in health . . . . developed for the first part of the course, which will begin in February, 1981.
- 35 training candidates applied from Botswana's health assistants and enrolled nurses, and 12 candidates have been accepted for the first course.
- The Health Educator has also provided inservice health education training for a variety of health cadres in Botswana.
- A Motswana employed in the Health Education/Nutrition Unit completed an MPH degree in Health Education at the University of California at Berkeley, and will soon resume professional responsibilities in the Health Education Unit.
- A Motswana from Francistown began a BSc course in Health Education at East Tennessee State University in January, 1981.
- A Motswana employed in the Health Education Unit began a two-year course in illustration at the Pratt-Phoenix School in New York in August, 1980. It is anticipated she will return to the Health Education Unit with an enhanced capability for health education, communication and outreach activities.
- Health education planning is an ongoing activity in the unit and outside consultants are not needed at this time.

EOPS (5) "a national nutrition program planned and in process of implementation by trained personnel."

To this end:

- The Human Nutritionist TA has developed syllabi for the nutrition training of all levels of health workers in Botswana, and has actively taught these courses, together with her counterpart, the Head of the Nutrition Unit. Courses have been designed and taught for the following cadres: Family Welfare Educators, Enrolled Nurses, Health Assistants, Laboratory for the CHN post-basic course and assisted in the development of nutrition content for the health education/nutrition worker training program.

- The Human Nutritionist assisted with inservice nutrition training in seven health regions and in workshops for Health Assistants, Assistant Community Development Officers, and Village Development Assistants.
- The Human Nutritionist participated in the WHO intercountry Nutrition Workshop in Gaborone, and helped in the pilot testing of the FAO Field Programme Food and Nutrition Course.
- The Human Nutritionist helped develop the nutrition component of the Botswana primary school science syllabus and completed a survey of nutrition training programs in Africa, the U.K., and the U.S. appropriate to the training needs of Botswana.
- A Motswana student began a four-year BSc degree program in Nutrition at New York University.
- The Nutrition Planner TA has helped set up an Interministerial Food and Nutrition Committee and has been involved in a number of projects related to IFNC activities and the development of a national nutrition strategy. These have included:
  - development of a proposal for a weaning food feasibility study,
  - data collection for the Urban II project,
  - research on Botswana's wild growing foods,
  - research and reporting on nutrition surveillance,
  - development of a proposal for a Comprehensive Library of Nutrition Experiences,
  - collaboration on a study of the Consumption Effects of Botswana's Agricultural Policy,
  - compilation of data on vulnerable group feeding,
  - compilation of height and weight data,
  - revision of Nutrition Unit reporting forms.

### Summary

Progress toward the EOPS is satisfactory in every component except Administration, where no progress has been made in defining the role of the health administrators, thus delaying the development of an appropriate local training course and recruitment. As district-level health administrators fall under the health services of the Ministry of Local Governments and Lands (MLGL), the MOH has only an advisory role in this activity. If

these issues are not resolved within the next six months the funds for the training should be used for other purposes. Health administration remains a priority area, but if outstanding problems are not able to be resolved in a timely fashion, other avenues should be considered.

## 20. BENEFICIARIES

The primary focus of the project involves investment in the development of human resources, and as such has both direct and indirect beneficiaries. At the end of the first year the primary beneficiaries have been those who have been trained abroad. Additionally, counterparts have worked with experienced technicians in-country and gained valuable practical experience on various aspects of implementing new programs. The new training curricula which have been developed are already in use and will upgrade the quality of education in several programs for students ranging from post-basic nursing students to primary school children who have an improved nutrition component.

The secondary beneficiaries are the people of Botswana who will receive an improved quantity and quality of health services delivered by people trained by the project. These services will include both curative and preventive elements and can be expected to improve the quality of life for both rural and urban people in the long run. The project terminates after four operational years and its effects on the first two measures of goal attainment (decline in infant and maternal mortality rates, and decline in the incidence of endemic and communicable diseases) will probably not be seen for several years after the project's termination date.

## 22. LESSONS LEARNED

The lessons learned in this project would primarily improve the design of similar sized projects:

- a) Development of a team identity and spirit would have been desirable prior to arrival in the field. A week for the team at a suitable conference site in the U.S. would have been desirable. At that time items which should have been clarified include the roles and functions of AID, the contractor, the field support office, the Chief of Party and the Ministry of Health.
- b) For relatively large projects of a technical nature, the local AID office should be prepared to provide adequate backstopping. In this case regular visits of a health officer are necessary if there are none on the local staff.
- c) When projects involve numerous parties such as the Ministry of Health (including several interested individuals), teaching institutions, AID, and the technical advisory team, regular meetings with an agenda should be convened from the start of the project.

SUMMARY TABLE  
BHSD PROJECT INPUTS

Project Component	Inputs	Status
1. Nursing	A. <u>Technical Assistance</u>	
	1 Nurse-Practitioner (NP) - 48 mos.	Arrived January 1980
	1 Nurse-Practitioner - 48 mos.	Arrived August 1980
	1 Public Health Nurse - 48 mos.	Arrived November 1979
	1 Senior Nurse Educator - 24 mos.	Arrived January 1980
	1 Nurse Educator - 48 mos.	Arrived January 1980
	1 Nurse Educator - 24 mos.	ETA January, 1982
	B. <u>Participant Training</u>	
	1 MS in Nursing Education	Not Placed
	1 Diploma Nursing Education	Departed
	1 NP MA	Departed
	2 SRNMs BSN/MA Nursing Administration	Not Placed
	3 SRNMs MA Nursing Administration	Not Placed
	C. <u>Commodities</u>	
	Vehicles	All Received
	Books	Partially Received All on Order
	Training Aids	Partially Received All on Order

Project Component	Inputs	Status
II. Health Administration	A. <u>Participant Training</u>	Training Delayed
	632 person-years of Health Administration Training at IDM Botswana for 32 participants	See Sections 15 and 17
	1 MS degree in Health Planning	Departed August 1980
	Short-term training in statistics for 4 Statistical Assistants	Not Placed
	1 Health Education Planner - 15 mos.	Need to be determined
	B. <u>Participant Training</u>	
	1 Masters Health Education Planning	Completed January 1981
	1 BSc Health Education	Placed January 1981
	1 Diploma Graphic Arts	Placed August 1980
	C. <u>Commodities</u>	
	Vehicles	Received
	AV Equipment	Partially Received All on Order
	Camping Equipment for Mobile Units	Received
D. <u>Other</u>		
Construction Health Education/Nutrition Unit	Completed January 1981	
IV. Nutrition	A. <u>Technical Assistance</u>	
	1 Nutrition Planner, 48 mos.	Arrived January 1980
	1 Human Nutritionist, 48 mos.	Arrived November 1979
	Nutrition Consultants, 30 mos.	As Required 1 Month Used 1980

Project Component	Inputs	Status
	B. <u>Participants</u>	
	1 BSc Nutrition	Placed August 1980
	1 MSc Nutrition	Not Yet Placed
	C. <u>Commodities</u>	
	Training Aids	Ordered, Not Received
	D. <u>Other</u>	
	Construction Health Education/Nutrition Unit	Completed January 1981
V. Project Administration	A. <u>Technical Assistance</u>	
	1 Project Coordinator, 48 mos.	Arrived January 1980
	1 Project Driver	Employed February
	C. <u>Other</u>	
	Project Office	Supplied by MOH
	Vehicle	Received
	Technician Housing	Available as Required
	Technician Support	USAID, Support Office

**Appendix D**

**EXCERPTS FROM ANNUAL REPORT, 1978-1979  
BOTSWANA MINISTRY OF HEALTH  
(Statistical Documentation)**

## Appendix D

EXCERPTS FROM ANNUAL REPORT, 1978-1979  
BOTSWANA MINISTRY OF HEALTH  
(Statistical Documentation)TABLE XIX MAIN CAUSES OF IN-PATIENT MORBIDITY & MORTALITY, 1979  
ALL AGE GROUPS

IN-PATIENT MORBIDITY				IN-PATIENT MORTALITY			
BASIC TABULATION LIST CODE	CAUSE GROUP	IN-PATIENT DISCHARGES		BASIC TABULATION LIST CODE	CAUSE GROUP	IN-PATIENT DISCHARGES	
		NO.	%			NO.	%
17-16	Injury and poisonings	6 019	9.8	02	Tuberculosis	199	20.5
19	Direct obstetric causes	4 031	6.6	45	Certain conditions of pregnancy in the perinatal period	310	13.8
01	Intestinal infectious diseases	3 379	5.5	24-01	Diseases of the circulatory system	213	10.9
02	Tuberculosis	1 711	2.8	01	Intestinal infectious diseases	301	10.1
45	Certain conditions of pregnancy in the perinatal period	1 140	1.9	121	Typhoid	148	7.5
13	Abortion	1 007	1.7	24-11	Malignant neoplasms	115	6.3
142	Measles	1 041	1.7	47-16	Injury and poisonings	94	4.8
121	Typhoid	1 050	1.7	191	Nutritional marasmus	47	2.4
24-10	Diseases of the circulatory system	1 776	2.9	150	Sepsis, nephrotic syndrome & nephrosis	16	0.8
123	Trichinosis, echinococcosis and ascariasis	1 290	2.1	167	Chr. liver disease & cirrhosis	45	2.3
01	Mental disorders	818	1.4	042	Measles	38	1.9
15	Diseases of the urinary system	699	1.1	14	Congenital anomalies	28	1.4
	Causes specified above	29 041	49.0		Causes specified above	1 447	25.1
	All other diseases & conditions	15 800	22.6		All other causes	287	14.7
	Normal deliveries	17 376	28.4		All causes	1949	100.0
	Totals: all diseases & conditions	61 137	100.0				
	Totals: special admission & infants	18 071					
	Totals: all discharges	79 208					

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TABLE XXX MORBIDITY IN INFANCY AND EARLY CHILDHOOD  
IN-PATIENT DISCHARGES, 1979

AGE GROUP: UNDER 1 YEAR				AGE GROUP: 1 - 4 YEARS			
BASIC TABULATION LIST		IN-PATIENT DISCHARGES		BASIC TABULATION LIST		IN-PATIENT DISCHARGES	
CODE	CAUSE GROUP	NO.	%	CODE	CAUSE GROUP	NO.	%
45	Certain conditions originating in the perinatal period	3 140	46.0	01	Intestinal infectious diseases	1 205	19.7
01	Intestinal infectious diseases	1 166	17.1	042	Measles	882	14.4
321	Pneumonia	545	8.0	47-56	Injury and poisonings	874	14.3
323	Bronchitis, emphysema & asthma	283	4.1	321	Pneumonia	540	8.8
042	Measles	257	3.8	19	Nutritional deficiencies	330	5.4
47-56	Injury and poisonings	139	2.0	323	Bronchitis, emphysema & asthma	280	4.6
19	Nutritional deficiencies	125	1.8	02	Tuberculosis	197	3.2
44	Congenital anomalies	98	1.4	24	Diseases of ear & mastoid process	79	1.3
02	Tuberculosis	49	0.7	35	Diseases of urinary system	72	1.2
35	Diseases of urinary system	47	0.7	052	Malaria	63	1.0
	causes specified above	5 849			Causes specified above	4 522	
	Other causes	980			Other causes	1 595	
	All diseases and conditions	6 829	100.0		All diseases and conditions	6 117	100.0

D-2

TABLE XXXI IN-PATIENT MORBIDITY, 1979

AGE GROUPS 5-14 YEARS AND 15-44 YEARS

AGE GROUP: 5-14 YEARS				AGE GROUP: 15-44 YEARS			
BASIC TABULATION LIST		IN-PATIENT DISCHARGES		BASIC TABULATION LIST		IN-PATIENT DISCHARGES	
CODE	CAUSE GROUP	NO.	%	CODE	CAUSE GROUP	NO.	%
47-56	Injury and poisonings	1 321	27.1	39	Direct obstetric causes	3 869	10.9
042	Measles	573	11.7	47-56	Injury & poisonings	2 746	7.7
02	Tuberculosis	306	6.3	38	Abortions	1 855	5.2
321	Pneumonia	190	3.9	02	Tuberculosis	1 308	3.7
01	Intestinal infectious diseases	178	3.6	21	Mental disorders	561	1.6
323	Bronchitis, emphysema & asthma	144	3.0	25-30	Dis. of the circulatory system	534	1.5
25-30	Dis. of the circulatory system	109	2.2	01	Intestinal infectious diseases	514	1.4
43	Dis. of the musculoskeletal system	95	1.9	321	Pneumonia	354	1.0
21	Mental disorders	60	1.6	323	Bronchitis, emphysema & asthma	309	0.9
35	Dis. of urinary system	60	1.6	35	Dis. of urinary system	297	0.8
052	Malaria	69	1.4	43	Dis. of the musculoskeletal system	254	0.7
24	Dis. of the ear & mastoid process	66	1.4	06	Venereal diseases	203	0.6
	Causes specified above	3 211			Causes specified above	12 804	
	Other causes	1 668			Normal deliveries	17 361	48.7
	All diseases & conditions	4 879	100.0		Other causes	5 453	
					All diseases and conditions	35 618	100.0

TABLE XXXII IN-PATIENT MORBIDITY, 1979

AGE GROUPS 45-64 YEARS AND 65 YEARS AND OVER

AGE GROUP: 45-64 YEARS				AGE GROUP: 65 YEARS & OVER			
BASIC CODE	TABULATION LIST CAUSE GROUP	IN-PATIENT DISCHARGES		BASIC CODE	TABULATION LIST CAUSE GROUP	IN-PATIENT DISCHARGES	
		NO.	%			NO.	%
02	Tuberculosis	766	17.7	25-30	Dis. of the circulatory system	375	17.2
47-56	Injury and poisonings	587	13.6	02	Tuberculosis	306	16.8
25-30	Dis of the circulatory system	585	13.5	23	Dis of eye & adnexa	217	9.8
08-14	Malignant neoplasms	233	5.4	47-56	Injury & poisonings	190	9.0
323	Bronchitis, emphysema & asthma	168	3.9	08-14	Malignant neoplasms	117	5.4
01	Intestinal infectious dis.	154	3.6	01	Intestinal infectious dis.	92	4.2
23	Dis. of eye & adnexa	154	3.6	35	Dis. of the urinary system	79	3.6
21	Mental disorders	122	2.8	323	Bronchitis, emphysema & asthma	71	3.3
321	Pneumonia	104	2.4	321	Pneumonia	66	3.0
35	Dis. of the urinary system	104	2.4	360	Hypertrophia of prostate	53	2.4
43	Dis. of the musculoskeletal system	80	1.8	43	Dis of the musculoskeletal system	49	2.3
152	Benign neoplasm of uterus	72	1.7	21	Mental disorders	30	1.4
	Causes specified above	3 129			Causes specified above	1 706	
	Other causes	1 202			Other causes	468	
	All diseases & conditions	4 331	100.0		All diseases & conditions	2 174	100.0

D-4

TABLE 3

 DEMOGRAPHIC DATA - POPULATION STRUCTURE  
 (Results of Census in 1971)

AGE GROUP (years)	TOTAL BOTSWANA			URBAN AREAS			RURAL AREAS		
	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE
0 - 4	98173	48293	49880	8676	4228	4448	89497	44065	45432
5 - 9	91036	45207	45829	6922	3242	3680	84114	41965	42149
10 - 14	75321	37033	38288	5592	2246	3346	69729	34787	34942
15 - 19	55305	24467	30838	6159	2437	3722	49146	22030	27116
20 - 24	37756	13313	24443	6444	2912	3532	31312	10401	20911
25 - 29	31428	11862	19566	5458	2782	2676	25970	9080	16890
30 - 34	27007	10997	16010	4399	2433	1966	22608	8564	14044
35 - 39	24988	10264	14724	3506	1989	1517	21482	8275	13207
40 - 44	21535	9519	12016	2744	1681	1063	18791	7838	10953
45 - 49	21469	9544	11825	2249	1350	899	19220	8294	10926
50 - 54	16431	7936	8495	1536	960	576	14895	6976	7919
55 - 59	13712	6417	7295	975	589	386	12737	5826	6909
60 - 64	11372	5282	6090	712	395	317	10660	4887	5773
65 - 69	10073	4657	5416	461	248	213	9612	4409	5203
70 - 74	7472	3518	3954	351	189	162	7121	3329	3792
75 +	13513	5621	7892	499	215	284	13014	5406	7608
Unknown	17503	8091	9412	2042	1102	940	15461	6989	8472
All Age Groups	574094	262121	311973	58725	28998	29727	515369	233123	282246

TABLE 4 CERTAIN SELECTED VITAL POPULATION STATISTICS

POPULATION CENSUS , 1971

Crude Mortality Rate	13.7
Infant Mortality Rate	
- males	103
- females	91
Child Mortality Rate (under 2 years)	
- males	136
- females	116
Expectation of life at birth	
- males	52.5
- females	58.6
Number of males per 100 females	
- in the de facto population	84
- in the total population	93
Percent population	
- under 15 years of age	46

## MATERNAL MORTALITY RATE

Year	Rate/1000 LB
1974	2.1
1975	1.7
1976	0.7
1977	0.9
1978	1.0

Rates based on maternal deaths  
reported to Ministry of Health

## ESTIMATES PREPARED BY UN STATISTICAL OFFICE

Selected Vital Statistics	1970-75	1975-80
Crude Death Rate	19.35	17.41
Expectation of life at birth		
- Total	45.06	48.34
- Males	44.27	46.72
- Females	47.50	50.00

TABLE 6 HEALTH PERSONNEL BY CATEGORY - ACCORDING TO EMPLOYER.  
BOTSWANA 1979

CATEGORY	TOTAL	TOTAL	MINISTRY OF HEALTH	LOCAL GOVERNMENT	MISSION	INDUSTRIES	OTHER (Incl. PRIVATE)
	31.12.78						
PROFESSIONAL MEDICAL							
DOCTORS	89	100	67		9	6	18
INTERNS	3	3	3				
PROFESSIONAL DENTAL	7	8	3		2	1	2
PROFESSIONAL NURSING							
REGISTERED NURSE	390	426	250	114	40	21	1
ENROLLED NURSE	501	558	340	137	64	17	
HOSPITAL ORDERLIES	164	188	128	1	59	...	
OTHER PROFESSIONAL/TECHNICAL							
PHARMACIST	12	13	6				7
PHARMACY TECHNICIAN	7	14	14				
DISPENSER	6	20	15	1	2	2	
DENTAL THERAPIST	4	6	6				
LAB TECHNICIAN	16	19	13		5	1	
LAB ASSISTANT	11	6	5	1			
RADIOGRAPHER	6	2	2				
X - RAY TECHNICIAN	4	9	6		2	1	
PHYSIOTHERAPIST	2	4	4				
OCCUPATIONAL THERAPIST	1	1	1				
HEALTH INSPECTOR	13	15	8	6		1	
HEALTH ASSISTANT	63	70	67		3		
HEALTH EDUCATION OFFICER	6	8	8				
NUTRITION OFFICER	1	1	1				
STATISTICS & PLANNING OFFICER	5	6	6				
SOCIAL WELFARE OFFICER	7	8	8				
FAMILY WELFARE EDUCATOR	404	422	12	388	20	1	1
OTHER PROFESSIONAL TECHNICAL	54	58	58				
ADMINISTRATION							
ADMINISTRATION/FINANCE/PERSONNEL	8	16	11		5		
ADMINISTRATIVE/OTHER	164	99*	81		14	...	4
OTHER	803	868**	582	139	121	26	

\* Includes Administrative and Clerical Staff only.

\*\* Does not include Kasane and Tlokweng Districts.

TABLE 8 HEALTH MANPOWER TRAINING IN BOTSWANA  
STUDENTS GRADUATED DURING 1977 - 1979  
ACCORDING TO COURSE

TRAINING COURSE		NUMBER OF STUDENTS GRADUATED		
TYPE	DURATION (YRS)	1977	1978	1979
PROFESSIONAL NURSE (RN)	3	34	35	46
PROFESSIONAL NURSE MIDWIFE (RN (M))	1	23	23	27
ENROLLED NURSE (NR)	2	44	59	56
ENROLLED NURSE MIDWIFE	1			
NURSE ANAESTHETISTS	1		1	1
NURSE PRACTITIONER				
PUBLIC HEALTH NURSE				
NURSE EDUCATORS	4			
HEALTH ASSISTANTS	2	12	10	12
DENTAL THERAPIST	3		1	1
PHARMACY TECHNICIANS	3			11
LABORATORY ASSISTANTS	2			
HEALTH EDUCATORS				
HEALTH ADMINISTRATORS				
NUTRITIONIST				
MISSION				
PROFESSIONAL NURSE MIDWIVES	4	4*	...	...
ENROLLED NURSE	2	18*	...	...

\* Provisional

TABLE 9 FELLOWSHIPS AWARDED AND STUDENTS IN TRAINING ABROAD ACCORDING TO COURSE AND SPONSORING AGENCY - 1979

COURSES	NO. OF STUDENTS IN TRAINING				TOTAL	SPONSORING AGENCY							STUDENTS				
	January 1979		Awarded 1979			BOG	WHO	INTRAP	SIDA	CIDA	CFTC	USAID	OTHER	Completed in 1979		In training 31.12.1979	
	M	F	M	F										M	F	M	F
MEDICINE	6	3	5	2	16	5	1	4	2			4			11	5	
DENTISTRY		1		1	2	1			1							2	
OPHTHALMOLOGY			1		1							1			1		
NURSING																	
M.Sc.				1	1						1					1	
M.Sc. (Psychiatric)				1	1						1					1	
D.Sc.		1		1	2						2			1		1	
Diploma (FHN)		3			3		3							3			
Primary Health Care				1	1							1		1			
Family Nurse Practitioner		1			1											1	
PHARMACY		1			1				1							1	
NUTRITION		1		2	3	1					2					3	
OCCUPATIONAL HEALTH SAFETY			1		1							1			1		
MEDICAL RECORDS				2	2							2				2	
LABORATORY TECHNOLOGY	1	6	1	2	10				6	3		1			2	8	
HOSPITAL ADMINISTRATION				4	4							4		4			
MEAT INSPECTION			2		2							2		2			
HEALTH INSPECTION	2				2				2					2			
TOTAL - ALL COURSES	9	17	10	17	53	7	4	4	4	8	3	7	16	4	9	15	25

NOTE  
 BOC - GOVERNMENT OF BOTSWANA  
 INTRAP - INTERNATIONAL AFRICAN UNIVERSITY SCHOLARSHIP PROGRAMME  
 CFTC - COMMONWEALTH FUND FOR TECHNICAL CO-OPERATION

**Appendix E**

**ORGANIZATION OF THE MINISTRY OF HEALTH  
(1979)**

ORGANIZATION CHART

Ministry of Health  
SU/12/76

MINISTER

Botswana Nursing Council  
Medical Advisory Board  
Medical Health Board  
Nursing Education Board

Coordinating  
Committee

Permanent  
Secretary

International  
Health

Chief Medical Officer

1976  
Executive  
Coordination

Minister  
Health

Principal Medical Officer  
of Health

Principal Medical Officer  
Family Health Division

Chief Pharmacist

Nursing Service

Under Secretary

Regional  
Health Teams  
&  
Health  
Centres  
Epidemiology  
Unit  
Special Health  
Services  
Laboratory  
Services  
Medical  
Statistics

Chief Health  
Inspector  
Senior Health  
Inspector  
Epidemiological  
Surveillance  
Health Inspectors

Coordinator  
for the  
Handicapped  
Senior Social  
Welfare Officers  
Social  
Welfare Officers  
Special Health

Maternal  
and Child  
Health  
Nutrition  
Unit  
Health  
Education  
Unit  
Family  
Planning  
Expanded Program  
for Immunization  
Family Welfare  
Education Planning

Purchasing  
Central  
Medical  
Stores

Senior  
Pharmacist  
Pharmacist  
Pharmacist  
Technicians

Medical Officers  
in Charge  
Medical Officer  
Government  
Hospitals  
Health  
Centres

Chief Nursing  
Officer  
Administration  
Nurses  
Nurses

Chief Nursing  
Officer  
Planning  
National Health  
Institute

Senior Planning  
Officer  
Planning  
Officers  
Ministry of  
Finance and  
Development  
Planning

Senior Health  
Administrator

Personnel  
Officer

Officer  
Accounting  
Unit

BEST AVAILABLE DOCUMENT

**Appendix F**

**JOB DESCRIPTION: COMMUNITY HEALTH NURSE**

Appendix F

JOB DESCRIPTION: COMMUNITY HEALTH NURSE

1.0 JOB IDENTIFICATION:

1.1 JOB TITLE: Community Health Nurse

1.2 MINISTRY: Health

1.3 DEPARTMENT: Nursing

LOCATION: Regional Health Team  
Clinic Setting  
Health Center

2. ORGANIZATIONAL RELATIONSHIPS:

Responsible To: Regional Medical Officer  
Nurse-In-Charge, Health Center  
Nurse-In-Charge, Clinic

Responsible For: Supervision of Nursing Personnel  
Operating in Clinics and Health Centers  
Supervision of Family Welfare Educators

3. PURPOSE OF THE JOB:

The community health nurse is prepared to contribute to the improvement of health in Botswana by providing, both directly and indirectly, comprehensive health care which prioritizes prevention and health promotion; focuses on rural, peri-urban, and urban populations; and is integrated into the primary health care system (approach).

The community health nurse is responsible to the team leader and contributes to the development of the regional health program by providing community health services in the area or community to which she is assigned.

4. DUTIES:

1. She becomes knowledgeable about the community in which she is working in relation to:

--environmental factors

--demography;

--health and medical problems;

- culture;
  - community organization; and
  - resources, etc.
2. She identifies the health needs and strengths of the community by:
    - analyzing data about the community;
    - participating with community member groups, etc.; and
    - participating with the health group.
  3. She plans for the improvement of health in the community, and collaborates with others in carrying out these plans by:
    - providing leadership and encouraging good and productive relationships between the health care delivery system and the community while attempting to effect change;
    - providing health education, inservice education, orientation, conferences, meetings, workshops, etc., to clinic staff, FWEs, the community, schools, teacher-training colleges, etc.; and
    - supervising programs of prevention and health promotion within the community, including immunization programs, school programs, nutrition programs, maternal and child health programs, and adults.
  4. She participates in a functional role by coordinating and giving professional guidance in all matters related to community health nursing.
  5. In relationships with other team members, and by working closely with other health staff, she acts as adviser to the council on all community health nursing matters.
  6. She may, from time to time, or periodically, have to provide certain preventative or curative services when, because of staff shortages or other constraints, such services may not be rendered by the base clinic to out-stations.
  7. She maintains close contact with the matron of the regional hospital and the regional matron and referral centers on various health matters in the region.

8. She holds regular meetings with clinic staff. She participates in epidemiological work in the community. She identifies health problems and makes referrals as indicated. She involves the community in its own health care. She is responsible for ensuring an accurate recording and reporting system. She participates in program planning and policy development. She facilitates the promotion of good health in the community by collaborating and coordinating with appropriate individuals, organizations, and groups.
9. She keeps abreast of new knowledge and research findings and applies information appropriately. She submits reports that may, from time to time, be required by a higher authority.
10. She evaluates health services in relation to quality and effectiveness. She provides an opportunity for ongoing evaluation of health care delivery to the community.
11. She performs any other tasks assigned by the team leader.

Appendix G

JOB DESCRIPTION: FAMILY NURSE-PRACTITIONER

Appendix G

JOB DESCRIPTION: FAMILY NURSE-PRACTITIONER

1.0 JOB IDENTIFICATION:

1.1 JOB TITLE: Family Nurse-Practitioner

1.2 MINISTRY: Health

1.3 DEPARTMENT: Nursing

LOCATION: Clinics  
Health Centers  
Outpatient Departments

AREA OF OPERATION:

The family nurse-practitioner will:

- Deliver nursing care, as a member of the nursing team, in an ambulatory setting.
- Take patients' histories, do physical examinations, and manage common acute and chronic problems through the use of jointly established protocols.
- Refer patients to the wards for admission.
- Work closely with the designated physician in the joint management of specific patients.
- Make appropriate referrals to other health care providers.

2. ORGANIZATIONAL RELATIONSHIPS:

Responsible To: Team Leader in a Given Setting

Supervision and Legal Coverage:

Officers are responsible to the nursing supervisor in the institution. Medical backup for the nurse-practitioners is provided by a medical officer in the institution or region where they work. Protocols, consultations, and referrals are the means to providing this support.

Relationship:

The family nurse-practitioner is:

- A member of the nursing team.
- Cooperates with members of the health team and agencies.
- Has an expanded role in working with medical practitioners.

3. PURPOSE OF THE JOB:

The family nurse-practitioner is a generalist who provides primary health care services to all age groups with a variety of health care needs.

4. DUTIES:

1. The family nurse-practitioner develops an awareness of community and family culture, lifestyles, resources, and needs.
2. She assesses the health status of individuals and families by:
  - a. Gathering and interpreting relevant data.
  - b. Developing and implementing appropriate therapeutic measures.
  - c. Evaluating outcomes.
3. She appropriately collaborates with, or refers clients to, other health care providers or agencies.
4. She provides continuity of care among and between health care providers or agencies.
5. She is flexible, creative, and ready to develop professionally to meet current and future needs.
6. She collaborates in the development and improvement of protocols.
7. She participates in preceptorships and the clinical teaching of students.

8. Specific activities include:

- a. History.
- b. Physical examination.
- c. Ordering or performing and interpreting of laboratory studies.
- d. Regulation of medications and diet in the treatment of common acute and chronic problems by appropriate use of protocols.
- e. Cooperation with medical practitioners in the treatment of some referred patients.
- f. Teaching and counseling in health maintenance and disease prevention, including mental health and family planning concepts.

**Appendix H**

**COURSE DESCRIPTION: HEALTH CARE ADMINISTRATION**

## HEALTH SERVICES MANAGEMENT

### Certificate in Health Care Administration

This programme is designed for present or potential Senior Health Care and Hospital Administrators of public and private institutions and people involved in the planning or delivery of personal or community health and medical care services. Participants who successfully complete the requirements of the programme will be awarded a Certificate in Health Care Administration.

The curriculum focuses on specific needs of health care administrators in the developing countries of Central and Southern Africa.

The curriculum includes:

- Principles of administration
- Hospital administration - organization
- Hospital departmental management
- Community health care administration
- Personnel management
- Social and economic aspects of health
- Health care in developing countries and health services organization
- Communication skills and interpersonal relations
- Legal aspects of health
- Psychological factors of health
- Planning and evaluation
- Planning of support systems and ancillary services accounting.

Other elective courses may be offered according to need and availability of lecturers.

Prerequisites: Candidates should possess educational qualifications equivalent to those required for university entrance. Candidates with lesser educational qualifications and with considerable relevant experience will be considered. A firm commitment to a career in health care administration will also be an important consideration.

The programme covers eight months (32 weeks of residential course work and practical experience). During the periods between the residential sessions, the participants will be assigned to various health care organizations to undertake relevant work and practical projects under the guidance of IDM staff and appointed supervisors.

Twenty-four weeks of residential sessions:

Part I Botswana 4 May to 27 August, 1982

Part II Swaziland 1 November to 30 December, 1982

Eight-week internship:

Swaziland 7 September to 29 October, 1982

### Certificate in Nursing Administration

This programme is directed toward present or potential Matrons, Assistant Matrons, and other Senior Nursing Administrators in public and private institutions, agencies and programmes involved in the planning or delivery of personal or community health and medical care services.

This programme will run parallel to the Health Care Administration Programme. Participants from both programmes will share the general courses. This will provide an opportunity for all participants to interact with one another and benefit from each other's experience. Participants who successfully complete the requirements of the programme will be awarded a Certificate in Nursing Administration.

The curriculum includes:

- Principles of administration
- Hospital administration - organization
- Hospital departmental management
- Community health care administration
- Personnel management
- Social and economic aspects of health
- Health care in developing countries and health services organization

- Communication skills - interpersonal relationships
- Legal aspects of health
- Psychological factors of health
- Planning and evaluation
- Nursing service administration
- Nursing service budget
- Nursing unit planning and design.

Other elective courses may be offered according to need and availability of lecturers.

Prerequisites: Candidates should have a number of years of administrative and/or supervisory nursing experience in a health care setting. A strong commitment to a career in Nursing Administration will be an important factor in the selection of candidates.

This programme covers a 32-week period of residential course work and practical experience. During the period between the residential sessions, the participants are assigned to various health care organizations in order to perform relevant work and to undertake practical projects under the guidance of IDM staff and appointed supervisors.

Twenty-four weeks of residential sessions:

Part I Botswana 4 May to 27 August, 1982

Part II Swaziland 1 November to 30 December, 1982

Eight-week internship:

Swaziland 7 September to 29 October, 1982

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Source: Institute of Development Management, Prospectus, 1982.

**Appendix I**

**UPDATE ON BOTSWANA  
(Department of Information)**



**LANGUAGES**

The official language of the country is English; the national language is Setswana. A number of other languages are spoken.

**HEAD OF STATE**

The President, Dr Quett Ketumile Jone Masire, was born July 23, 1925 in Kanye. He was Vice President and Minister of Finance and Development Planning from the time of Botswana's independence until the death of Botswana's first President, Sir Seretse Khama. Dr Masire was officially installed as president on July 18, 1980.

**GOVERNMENT**

Within the guidelines of the Constitution and the established laws, the country is governed through the National Assembly. The National Assembly consists of the President, 32 constituency members, and four specially elected members chosen by all members of the assembly, the Attorney General and the Speaker.

The Speaker presides at meetings, which are normally held three times a year, with each session lasting about a fortnight, except for the budget session which runs four weeks. There is a House of Chiefs whose function is to advise the government, especially in matters pertaining to traditional law and custom.

**CABINET**

After a cabinet re-shuffle effective March 1, 1982 the cabinet consists of the following members:

President, H.E. Dr. Q.K.J. Masire  
 Vice President, Hon. L.M. Seretse  
 Minister of Finance and Development Planning, Hon. P.S. Mmusi  
 Minister of Public Service and Information, Hon. D.K. Kweiagobe  
 Minister of External Affairs, Hon. A.M. Mogwe  
 Minister of Health, Hon. L. Makgagane  
 Minister of Agriculture, Hon. W. Mosewe  
 Minister of Local Government and Lands, Hon. L.M. Seretse  
 Minister of Works and Communications, Hon. C. Blackbeard  
 Minister of Commerce and Industry, Hon. M.P.K. Nwako  
 Minister of Mineral Resources and Water Affairs, Hon. Dr. G.K.T. Chiepe  
 Minister of Education, Hon. K.P. Moraa  
 Minister of Home Affairs, Hon. E.L. Diale  
 Assistant Minister of Finance and Development Planning, Hon. O.I. Chiseme  
 Assistant Minister of Local Government and Lands, Hon. J.L.T. Mochlamele  
 Assistant Minister of Agriculture, Hon. G.U.S. Maitshaphiri  
 The Attorney General is the Hon. Moleki Mokama and Speaker of the National Assembly is the Hon. J.G. Haakum.

**POLITICAL PARTIES**

There are four recognized political parties in Botswana. These are: The Botswana Democratic Party (the ruling party since independence), the Botswana People's Party, Botswana National Front, and Botswana Independence Party.

**DIPLOMATIC MISSIONS**

Botswana's diplomatic missions abroad are the following:

Permanent Mission of the Republic of Botswana to the United Nations  
 466 Second Avenue  
 New York, N.Y. 10017, USA  
 Telephone 719-6187, Telex BOTREP 620512  
 Ambassador: Mr Joseph Legwale

Embassy of the Republic of Botswana  
 Suite 404 4301 Connecticut Avenue N.W.  
 Washington, D.C. 20008, USA  
 Telephone 244-8990, 244-2991; Telex BOTWASH 64221  
 Ambassador: Dr M.J. Molamu

High Commission of the Republic of Botswana  
 142 Buckingham Palace Road  
 London S.W. 1 W97J, England  
 Telephone 81-730-3716; Telex BOTHC0 362997  
 High Commissioner: Mr S. Mputshane

High Commission of the Republic of Botswana  
 P.O. Box 1910,  
 Lusaka, Zambia  
 Telephone 28804; Telex BOTCOM 41718  
 High Commissioner: Mr M. Modisa

Botswana Embassy and Mission to the European Community  
 109, Avenue de Tervueren  
 1150 Brussels, Belgium  
 Telephone 735-20 70, T.Jax BOTEUR 22849  
 Ambassador: Mr G.O. Garebamono

## ECONOMY

**Agriculture:** During 1980 exports of beef and beef products constituted 9 per cent of Botswana's total exports. With the eradication of foot and mouth disease and the re-opening of the European Economic Commission's market to Botswana's beef during 1981 it is estimated that beef and beef products will amount to about 23 per cent of Botswana's exports during 1981. Official figures are not yet available.

**Minerals:** Minerals constitute the largest portion of Botswana's exports, with diamonds and copper-nickel matte comprising 81 per cent of total exports during 1980. Exports of diamonds declined dramatically during 1981, however, reducing the export value of the mineral sector to about 65 per cent of total.

- In addition to diamonds and copper-nickel, which are all exported, Botswana produces coal (for local consumption) and small quantities of talc, granite, sand and gravel.

**Banking and currency:** The central bank, the Bank of Botswana, was established by act of Parliament on July 1, 1975. This enabled Botswana to create her own currency, the Pula, which replaced the South African Rand on August 23, 1976. It was initially pegged to the U.S. dollar. The rate of exchange in 1976 was one Pula to one dollar and fifteen cents in U.S. currency. This rate was revised in April 1977 and again in September 1979. On June 2, 1980, the Pula was detached from the U.S. currency and pegged to a basket of international currencies. The rate of exchange was re-adjusted in November, 1980. On 19th April, 1982, the exchange rates for one Pula were as follows: South African Rand 1.1173; U.S. dollar 1.0602; Pound Sterling 0.616; Deutsch Mark 2.5598; Zimbabwe dollar .7900

The Pula is divided into 100 thebe. Pula notes are issued in denominations of P1, P2, P5, P10 and P10. Coins are made in denominations of 1t, 2t, 5t, 10t, 25t, 50t and P1. The twelve-sided bronze two-thebe coin was first issued on October 16, 1981.

Normal banking facilities are offered by two commercial banks, Barclays Bank of Botswana and Standard Bank of Botswana. Other financial institutions offer specialized services: The Botswana Building Society accepts deposits and offers mortgage loans. The National Development Bank provides loans mainly to farmers and small businessmen. The Post Office Savings Bank accepts deposits on savings accounts only. The Financial Services Company of Botswana deals with leasing and hire purchase financing. The Botswana Co-operative Bank does not normally deal directly with the public; its customers are co-operatives and their aid loan societies.

Hours of business in banks are 0815 to 1245 Mondays through Fridays, and 0815 to 1045 on Saturdays. There are foreign exchange facilities in the major hotels; these have more flexible hours.

## SOCIAL SERVICES

**Communications:** Botswana has approximately 15,000 kilometres of roads, out of which approximately 8,027 are gazetted or soon to be gazetted. These are the responsibility of the central government for construction and maintenance. By the end of 1981, 1,202 kilometres of roads were surfaced with bitumen; 1,626 kilometres were gravel surfaced and over 3,199 were earth or sand roads.

A railway line passes through Botswana from South Africa (Mafeking) to Zimbabwe (Bulawayo). The portion of the railway within Botswana is 714 kilometres in length, including a freight spur of 29 kilometres to Selebi-Phikwe and another of 14 kilometres to Morupane.

Scheduled direct airline flights link Botswana to Harare (Salisbury), Zimbabwe; Lusaka, Zambia; Maseru, Lesotho and Johannesburg, South Africa. (The Maseru flight goes only on Fridays; flights to Zimbabwe are on Mondays, Wednesdays and Fridays.) Scheduled internal services connect the main population centres within the country. Chartered aircraft can be arranged to fly visitors to places of interest throughout Botswana, and there are numerous small airstrips used for emergency medical services, inspection tours and surveys.

**Health:** New figures from the Ministry of Health have re-classified some of the health facilities for 1980 (the most recently available figures). These state that there are 13 general hospitals; one mental hospital; 22 clinics with maternity wards and 71 without; 203 health posts with permanent buildings and 12 without; and 341 mobile health stops. There were 111 professional doctors, 6 interns, 10 dentists, 471 registered nurses and 600 enrolled nurses.

**Education:** Total enrolment in primary schools in 1980 was 172,000, an increase of 9.6 per cent over 1979. There was an increase of 3 per cent in number of primary schools during the same period, making a total of 415 in the nation. There were 13,824 secondary school students enrolled in 1980; 1741 vocational school students; 644 students in teachers' training colleges; 928 full-time degree, diploma and certificate enrolments at the University College of Botswana; Botswana students in foreign universities and other institutions abroad numbered a total of 558.

**MASS MEDIA**

The Department of Information and Broadcasting is responsible for publishing Botswana's only newspaper, **DIKGANG TSA GOMPIENO-DAILY NEWS**, which was formerly issued separately in two languages, English and Setswana, but which has been combined as one bilingual edition since March 3, 1982. The newspaper, a four-page tabloid, appears daily except weekends and public holidays. Other regular publications of this department include a monthly magazine, **KUTLWANO**; a glossy annual, **BOTSWANA MAGAZINE**; a leaflet, **RADIO BOTSWANA PROGRAM GUIDE**; and this fact sheet, **BOTSWANA UP TO DATE**.

Radio Botswana, based in Gaborone, broadcasts daily on medium wave, short wave and VHF FM. Broadcasting hours are 0500 to 2300. A full range of programme, is broadcast in English and Setswana. Programmes include local and world news, music - both traditional and modern - and a variety of educational programmes. Religious programmes feature prominently, especially on Sunday.

**TOURISM AND TOURIST ATTRACTIONS**

In 1980 there were 83,532 tourist arrivals to Botswana. Among the major tourist attractions in the country are the designated wilderness preserves, comprising one eighth of the country's area. These preserves are Chobe National Park; Moremi Game Reserve; Central Kalahari Game Reserve (open to the public only by special permit); Khutae Game Reserve; Gemabot National Park and Mabuasehube Game Reserve.

In addition to the designated preserves there are many other places of interest. Of particular note is the Okavango River delta, a vast inland system of waterways interspersed with islands. The Okavango river drains into the sands of the Kalahari instead of into the sea, as most rivers do. The delta's remoteness, the presence of tsetse flies and its scant human population have kept it virtually unspoiled by human activity. The juxtaposition of riverine habitats with dry land savannah provides a diversity of environments which support a great variety of wildlife species. (Moremi Game Reserve encloses a part of the delta system).

Tourist accommodation ranges from luxurious hotels to simple campsites. Gaborone has three hotels, the Holiday Inn, the President Hotel and the Gaborone Hotel. There are some excellent safari lodges and tented camps in and around the Okavango delta and at other places of interest.

**USEFUL ADDRESSES:****Tourism Information:**

Division of Tourism  
Private Bag 0047,  
Telephone 53024  
Gaborone, Botswana

**Air Botswana**

P.O. Box 92  
Telephones 51647/51921; Telex 2413BD  
Gaborone, Botswana

**Maps:**

Department of Surveys and Lands  
Private Bag 0037  
Telephone 53251  
Gaborone, Botswana

**Visas, residence permits:**

Department of Immigration  
P.O. Box 942  
Telephones 5555/6/7  
Gaborone, Botswana

**Philately:**

Philatelic Bureau  
P.O. Box 000  
Telephone 53304  
Gaborone, Botswana

**Information, philately, post cards and handicrafts:**

National Museum and Art Gallery  
P.O. Box 114  
Telephone 53792  
Gaborone, Botswana

**Traditional and contemporary handicrafts from Botswana:**

BotswanaCrafts  
P.O. Box 486  
Telephone 53792  
Gaborone, Botswana

Statistics  
 Central Statistics Office  
 Private Bag 0024  
 Telephone 55298/55407  
 Gaborone, Botswana

#### PUBLIC HOLIDAYS 1982

New Year's Day	Friday, 1st January
Public Holiday	Saturday, 2nd January
Good Friday	Friday, 9th April
Saturday following Good Friday	Saturday, 10th April
Easter Monday	Monday, 12th April
Ascension Day	Thursday, 20th May
President's Day	Monday, 12th July
Public Holiday	Tuesday 13th July
Botswana Day	Thursday 30th September
Public Holiday	Friday, 1st October
Christmas Day	Saturday, 25th December
Boxing Day	Sunday, 26th December
Public Holiday	Monday, 27th December

Publisher's note: This bulletin is intended to give general information which is as up to date as possible. While we have tried to ensure the greatest possible accuracy, undertakes to order to keep the information correct we have had to use preliminary figures. Official figures are published by the Central Statistics Office, Private Bag 0024, Gaborone, Botswana.

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 Edited: Ellen Dreda  
 Copyright: 1982 Statistics

## WELCOME TO BOTSWANA!

### LOCATION

Botswana is a land-locked country in the southern part of Africa. It straddles the line demarcating the Tropic of Capricorn - approximately one third of the country lies in the temperate zone, while the northern two thirds are in the tropical belt. Botswana's mean altitude is 1 000 metres (the highest point is 1 491 m at Otse mountain, and the lowest point is 518 m on the northeastern border of the country). These factors combine to produce a climate which is never extreme - it does get hot in the summer (October-February) but not unbearably so; and the coldest months (May-August) may produce frosty nights but warm, sunny days invigorated by a cool breeze, like the best of weather in the mountains.

### RAINFALL

The climate is further modified by the seasonal rainfall pattern. The rain usually begins in October, peaks in December-January, and tapers to an end in May. During the rainy season Botswana's semi-desert vegetation flourishes and humidity is high. Many of the unimproved roads become impassable due to heavy erosion, and game viewing is hampered by the thickness of the vegetation and the fact that the animals are scattered throughout the countryside rather than concentrated near sources of permanent water as many of them are during the dry season. The rainy season is the best time to see Nxai Pans National Park and Makgadikgadi Pans Game Reserve, however, for at this time there is water in the pans and vast herds of plains game are attracted. Annual rainfall can reach 750 mm in a good year but there is much variability from one year to the next.

### ROADS

Botswana offers the last truly unspoiled wilderness in Africa, with some of the largest herds of game left in the world. Part of the reason for the unspoiled aspect is the relative lack of development in roads. Few of the roads have been graded, and even fewer have been surfaced with tarmac. Most of the roads are mere tracks through heavy sand. (The Kalahari desert comprises 84% of the total area of the country, and Kalahari sands can reach depths of 100 m in some places.) Thus anyone who wishes to visit the remote areas in Botswana should either arrange with an experienced safari company to fly or be driven in the company's transport, or else be prepared to be almost entirely self-sufficient, with a four-wheel drive vehicle, extra petrol, plenty of water for both passengers and vehicle, and any spare parts anticipated to be necessary. Newcomers to the country are advised to take a local guide if they go off the main routes, as it is easy to get lost and rescue can take time. Petrol is available at the major towns but unreliable in the smaller towns and non-existent elsewhere.

### CLOSED SEASON

Visitors are welcome and can find interesting things to see throughout the year in Botswana, but during the rainy season many of the roads are not usable and hence some of the northern areas such as Chobe and Moremi may be closed. In Moremi, the flooding of the Okavango river delta may hinder travel even after the rainy season has ended, thus making Moremi accessible only by boat or small aircraft. It is best to inquire at the Department of Wildlife, National Parks and Tourism, or with one of the safari companies, well in advance of one's planned trip into these areas, especially during the rainy season.

### DRESS

Dress in Botswana is casual and informal. Light weight clothing for the warmer months and winter days is recommended, with a warm coat, socks and long trousers for winter nights, where temperatures drop rapidly at sundown and can go below freezing point as night deepens. Light blue clothing is said to discourage the tsetse fly, which is found in the vicinity of the Okavango delta. Long trousers and long-sleeved cotton shirts provide some protection against the tsetse as well as against mosquitoes, which are prevalent during the warmer months. Comfortable walking shoes, a sun hat, sun lotion and insect repellent are advised. Malaria and sleeping sickness are found in the northern part of Botswana; the former can be prevented by means of malarial suppressants which should be started prior to arrival, and the latter disease, which is rare, can be easily cured if given early diagnosis and treatment.

### PURPOSE OF THE MAP

The map overlaid is meant to give an indication of the major roads in Botswana, with current road conditions to be provided by the Tourism Division of the Department of Wildlife, National Parks and Tourism. Gravel surfaces are generally negotiable by ordinary saloon car. For other roads and tracks it is advisable to have a four-wheel drive vehicle or at least a heavy-duty vehicle with high road clearance, as the ruts in the roads may be very deep and one may easily get stuck in deep sand. This map is meant to provide general information on current conditions, and is not a detailed road map which is meant for use alone. Visitors who plan to drive extensively in Botswana are advised to purchase a detailed road map, available at the Tourism Division or at the Department of Surveys and Lands, Private Bag 0037, Gaborone, Botswana.

While every effort has been made to provide accurate information, the visitor is advised that this department can not be held responsible for any mishaps which tourists may encounter as a result of inadvertent error.

Dept. of Wildlife, National  
Parks and Tourism

Appendix J

"BOTSWANA 1980"  
(African Index, November 3, 1980)

## Botswana, 1980

When the British protectorate of Bechuanaland became independent Botswana in 1966, the new republic seemed destined (by virtue of the usurpation of nearly two-thirds of its land area by the Kalahari desert, the dependence of the vast majority of the population on a cattle-focused pastoral economy, food insufficiency, lack of known resources on which to build a modern sector, and a web of relationships going back to the nineteenth century) to become a de facto appendage of neighboring South Africa.

In striking contrast to the press notices at Botswana's birth, the *Financial Times* (London) described the country at the time of the death of President Sir Seretse Khama in July 1980 in these terms: "Dr. Quett Masire . . . has inherited one of Africa's sturdiest economies . . . In terms of government revenues and foreign exchange earnings, [Botswana] has never been stronger. Tax and customs receipts are expected to total Pula 265 million [\$336 million] in 1980-81, three times the level four years ago. Foreign exchange reserves are now Pula 280 million [\$355 million], more than twice as much as they were 18 months ago."

While the discovery of diamonds has been a major factor in the spectacular shift in Botswana's economic prospects, credit is also given to an improvement in

beef export prices during the 1970s, a canny pragmatism in external relationships and in organization of the economy that has encouraged massive private sector investment, and a political-economic conjunction that has found South Africa unexpectedly willing to make concessions to potentially friendly black states on its borders and a range of Western nations prepared to bless Botswana with what has added up to the highest per capita economic aid flowing to any African nation.

Botswana has many unresolved economic problems. These include an epidemic of foot-and-mouth disease reportedly spread by infected livestock smuggled across the border during the Zimbabwean civil war that ravaged herds and is expected to halve beef export earnings in 1980; difficulties in translating the new-found wealth into education, jobs, and higher living standards for the 90+ percent of the country's 820,000 people who are still outside the "formal" sector; an unemployment crisis resulting from the drop in recruitment of workers by South African mines from 40,400 in 1976 to 19,000 in 1979; and a continuing dependence on South Africa for more than two-thirds of vital imports, including substantial amounts of food grain. Even so, the credit side of the ledger is the envy of many better-situated African states. Some examples:

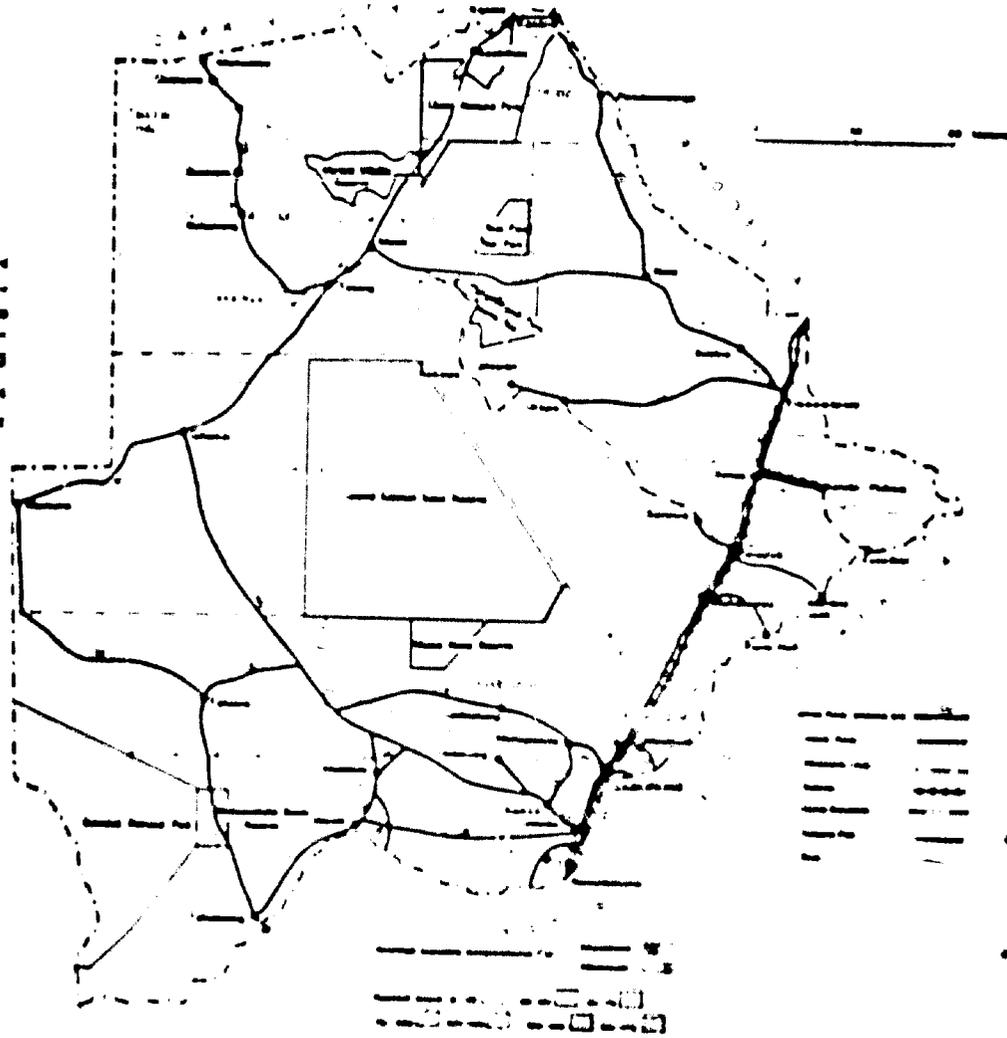
- Formerly categorized as one of the world's 29 poorest nations, Botswana now has a per capita GNP in excess of \$600, which places it in the middle-income range.
- The rate of real economic growth (averaging over 10 percent per annum since 1966) is double the average for all countries categorized as "middle income" by the World Bank.
- Botswana is now the world's fourth largest diamond producer, and production is expected to double after the opening of a new mine at Jwaneng in 1982.
- The copper/nickel mine at Selebi-Pikwe (in which Amax and Anglo American have substantial interests) had a troubled start due to technical problems and a price decline that dampened hopes that the project will be profit-making in the near term. However, the mine's smelter is said to be one of the most economical in the world because of the availability of local coal, and there are reports that substantial new ore bodies have been found nearby.
- Botswana's coal reserves are now believed to be "very large" (some estimates run as high as 100 billion tons) and the quality equals that of South Africa.
- An airborne survey in 1977 revealed that geophysical conditions in the southwestern portion of the country are indicative of possible oil and gas deposits. ■

**Appendix K**  
**ROAD MAP AND CLIMATE CHART**

Appendix K

ROAD MAP AND CLIMATE CHART

**BOTSWANA ROAD MAP AND CLIMATE CHART**



	11	20	21	30	31	32	33	34	35	36	37	38	39	40
11	11	12	13	14	15	16	17	18	19	20	21	22	23	24
21	25	26	27	28	29	30	31	32	33	34	35	36	37	38
31	39	40	41	42	43	44	45	46	47	48	49	50	51	52
41	53	54	55	56	57	58	59	60	61	62	63	64	65	66
51	67	68	69	70	71	72	73	74	75	76	77	78	79	80
61	81	82	83	84	85	86	87	88	89	90	91	92	93	94
71	95	96	97	98	99	100	101	102	103	104	105	106	107	108
81	109	110	111	112	113	114	115	116	117	118	119	120	121	122
91	123	124	125	126	127	128	129	130	131	132	133	134	135	136
101	137	138	139	140	141	142	143	144	145	146	147	148	149	150

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