

**NIGER HEALTH SECTOR SUPPORT PROJECT**  
**MANPOWER PLANNING DEVELOPMENT**

---

**MAY 1988**

PD-114-048

**NIGER HEALTH SECTOR SUPPORT PROJECT  
MANPOWER PLANNING DEVELOPMENT**

---

**EVALUATOR**

**Sif Ericsson, Management Consultant**

**IQC Contract No. PDC-1406-I-05-7113-00**

**Project Number: 683-0254**

**May 1988**

## BACKGROUND

One of the major policy aims of the Niger Health Sector Support Program is to improve the management of existing human and material resources. The expected inputs include a reallocation of financial and human resources which will lead to an improvement of services at the primary level with a positive impact on morbidity and mortality, and also to better resource management, including better trained and supervised staff from hospital to village health worker level.

To achieve these goals, the Government of Niger is committed to:

1. Prepare a report on the deployment of health personnel and an action plan for readjustment of staffing among existing facilities as necessary.
2. Establish quotas for recruitment in each category of health personnel for 1987 to 1990, based on budget projections.
3. Establish an annual in-service training program for all health personnel, keyed to child service technologies.

This report will try to address these three objectives and provide recommendations for the additional inputs needed in order to provide accurate and positive recommendations which will lead to further achievement of the goals stated for the project.

The report first defines the methodology that needs to be used in order to develop a health manpower plan. Then the databases are examined, to ascertain that sufficient information is available to carry out the development of the plan.

The examination of the databases shows conclusively that with the information available at this time it is not possible to develop a health manpower plan which would be useful for planning the deployment of personnel. Recommendations are thus given for obtaining such information and making it accessible in such a way that a plan can be developed. In addition, analyses are carried out with the available information in order to demonstrate the need for complete information and how a manpower plan may be used for planning. As a final recommendation a work plan was developed which defines the tasks which have to be completed in order to obtain a health manpower plan which could assist the government in meeting the two first goals stated above.

## METHODOLOGY

### Introduction

A health manpower plan is developed in order to assess current use of personnel and future needs. To determine how many and what kind of personnel are needed, an analysis is performed of the current use of personnel and of decreases in the work force which can be expected during the period for which the planning is done. The results of that analysis are then compared with the needs which have been determined based on another analysis of what personnel are needed in each facility with regard to speciality and number of each speciality. The difference between the two analyses determines the number of personnel which must be hired each year within each category if needs are to be met.

However, there may be constraints on the number of people

who can actually be hired. The two most important factors in that respect are the availability of properly trained personnel and funds. Thus, a health manpower plan also analyzes availability of personnel and budgetary constraints. Based on these, the number of people actually hired may be reduced, and priorities established based on decisions considering manpower policies, the manpower plan and the constraints that have been identified.

Once a manpower plan has been developed, the plan will be used for distribution of personnel according to the needs identified and listed in the plan. In addition, each year for which the plan is in effect, the projected staffing needs will be compared with the actual situation, in order to ensure that the objectives set in the plan are actually carried out. The last year the plan is in effect a new manpower plan should be developed for the next time period.

#### Types of manpower plans

The analyses required for a health manpower plan can provide information in more or less detail. The level of detail is determined by the objectives for the study. The administrative level at which personnel decisions are made will be a main determinant of the objectives and thus of the level of detail. The first plan developed for a country should be produced at the most detailed level in order to check that the current staff are distributed according to the personnel policies that have been established.

Plans can be produced with the following levels of detail for each year of the health manpower plan:

1. Number and type of personnel needed at each facility.

Usually a national health manpower plan is not produced with this level of detail. Despite the fact that a main plan may have been produced at a different level, a manpower plan may contain specific plans for facilities which have staffing needs not shared by other facilities in the country. Thus, in Niger for example, a specific plan could be established for Niamey hospital with a more general plan for the rest of the country.

A national plan would be carried out to this level if there are reasons to believe that the current distribution of personnel is uneven and that some facilities have more staff than others. In that case, a main objective of the health manpower plan is redistribution of personnel in order to provide better coverage.

When plans are produced at this level, the analysis of current deployment of personnel by facility and a comparison with the staffing needs at each facility estimated for that year have to be repeated annually in order to ascertain that the objectives of health manpower planning are achieved.

Because of the level of detail, the monitoring of plans developed to this level requires more detailed analyses. National plans to this level are thus very cumbersome.

2. Number and type of personnel needed per department.

This level is used in those instances when the departmental administration is responsible for distributing the personnel within the department. Generally, this requires that each department establishes a manpower plan (on level 1) for use

within the department within the framework of national manpower policies.

An annual analysis of the current situation is then carried out to the departmental level. The results of this analysis are then compared with the projected staffing needs for each department. When a new manpower plan is established projected staffing needs will be obtained from the departmental administration.

### 3. Number and type of personnel needed by type of facility.

This level is most useful when there is little variation in staffing levels within types of facilities. Such would be the case when a decision is made to only provide the minimum staffing needed for the services provided at a given type of facility, or when facilities are distributed in such a way that facilities of the same type also have approximately the same case load. To achieve such homogeneity among the types of facilities, further subdivisions can be made within the overall types of facilities. For example, staffing norms may be different for rural and urban dispensaries.

The annual review of the plan would then require an analysis of current deployment of staff by type of facility.

### 4. Total number of health personnel needed in the country by category.

Most health manpower plans would provide information only on this level. The plan is used to set levels of people in training, project personnel costs for budgetary purposes, annual recruitment of personnel, etc. It carries with it an implicit assumption that the current distribution of personnel is adequate, and is most appropriate in a situation where growth in health services is the main reason for the development of the plan. The document produced in 1985 to project personnel needs (Etude sur les besoins de mise en formation des cadres du Ministère de la Santé Publique et des Affaires Sociales, 1985) is an example of this type of plan.

A plan of this type would not permit an analysis of how well the staff are distributed according to need, and it could not be used for precise placement of health workers.

To monitor the use of this plan an annual analysis of the nationwide deployment of personnel per type is carried out and compared to the projected staffing needs.

It should be pointed out that once a plan is produced on the first level, information can be aggregated to produce health manpower plans at all the other levels. Each directorate of the MSP/AS can then select to use a plan at the level of detail required for its specific planning purposes.

## Information requirements for the development of a health manpower plan

### CURRENT USE OF PERSONNEL

In order to determine the current use of personnel, the following data are necessary:

1. Number and types of facilities.

This includes a list of current facilities and new facilities which will need to be staffed during the period the health manpower plan is to be in effect.

The Directorate of Health Infrastructures (DIS) maintains a database of current infrastructures which includes facilities under construction.

2. Personnel currently employed.

For each person the following information should be available:

- A. Personal identification, i.e., name, surname, ID number
- B. Place of assignment
- C. Category, i.e., grade and specialization
- D. Function at the facility.
- E. Pay rate and anticipated pay increases.

The information is currently organized in the personnel database which contains the minimum information outlined above and some additional information.

#### CURRENT STAFFING NEEDS

In order to determine the needs for personnel, the following data are necessary:

3. Staffing pattern at each facility.

Staffing patterns are determined based on a policy deciding what services each facility should offer, and what types of personnel are required to provide these services. Generally, facilities can be categorized by type, and a policy established which determines staffing patterns for each type.

Staffing patterns for each type of facility have not yet been determined for Niger. Two documents exist, however, which can be used as a basis for the establishment of such patterns. The first one, "Seminaire national sur la definition des fonctions des formations sanitaires et des attributions du personnel de santé" (Tahoua 1985), describes functions to be performed at each facility and the type of person needed to perform each function. The second document (Etude 1985), establishes norms for the types of personnel needed at each facility. Of these two documents, the Tahoua document will be most useful as a guideline for establishing a policy for staffing patterns at each facility.

4. Performance norms for each health worker.

Staffing patterns establish minimum staffing levels for each type of facility. However, since case loads vary among facilities, staffing patterns should not be used alone to establish staffing needs.

Norms have to be established for how much work can be performed by one person in each category taking into account all assigned tasks. For example, how many patients can one nurse see a day, how many tests can a laboratory technician carry out, etc. The level of detail necessary for determining these norms also

must be decided, since these norms can either be determined based on average case load per facility or an detailed analysis of the time required to perform each task and an estimation of how many times the task is performed in a given time period.

For Niger at this time, norms should be established based on average case load per facility. Norms based on operational research in other countries are already available for such determinations. However, such norms will have to be evaluated and decisions made regarding realistic work loads for one person at each type of facility. This analysis will then permit policies to be established determining when another person of the same category should be added to a facility's staff.

5. Service statistics.

The number of patients presenting at each facility is used in order to determine the average case load per facility.

It would be very difficult to use service statistics to determine average case load at this time since no computerized database exists. Thus, such a database should be established.

6. Population statistics.

Population statistics are used to estimate changes in case loads over the plan's time span and to determine how many people to assign to facilities that are put in use during the period the manpower plan is in effect.

Population statistics can also be used to estimate current case loads or to check if a facility is underutilized.

At present it is not possible to use population statistics to accurately determine either current or future work loads, since the last census was carried out in 1977 and accurate population statistics are not available. When data are available from the census scheduled to be carried out this year, such data can be used to estimate case load increases.

## ATTRITION

The following data are necessary for estimation of attrition over the plan's time span.

7. Number of people who will retire each year.

This is determined by the policies established for retirement and is usually tied to either year of birth or years of service. In Niger the retirement age is set at 55, independent of the number of years of service. Thus, information about year of birth should be included in the personnel database.

8. Number of people who will leave for other reasons each year.

Such information is usually obtained by using retrospective data and assuming that the average number of health workers in each category who left during a year over a representative period accurately predicts how many will leave each year the health manpower plan is in effect. The representative period is chosen based on such factors as yearly differences in the number of health workers who leave, absolute size of such attrition, and

the time span for which the health manpower plan will be in effect.

At this time such information is not easily accessible at the Ministry.

#### PERSONNEL AVAILABLE FOR RECRUITMENT

9. Number of people available for recruitment in each category. Since all health service personnel in Niger are employed at this time, only people in training will be available to fill the hiring needs identified in the manpower plan. Thus the following data have to be available:

A. Number of people in training at the MSP/AS schools by category and year of availability.

B. Number of doctors in training in the medical school by year of availability.

C. Number of MSP/AS staff currently in training by type of speciality and year of availability.

#### CONSTRAINTS

10. Budgetary projections.

For this, information about personnel costs have to be available for the current budget year and either actual budget projections for the life of the health manpower plan, or information to allow for estimates (percent increase allowed in the personnel budget).

#### Steps in the development of a health manpower plan.

It should be noted here that if the information listed above is not accessible, the manpower plan cannot be developed. In addition, the information has to be accurate, up-to-date and reasonably easy to use. If some of the information is available, but requires extensive work in order to render it in such form that it can be used for the analyses, the development of the plan will be delayed.

An important first step in the development of a health manpower plan then becomes a review of the different databases which provide the necessary planning data. If such a review shows that some or all of the databases have to be completed, brought up-to-date or transformed in such a way that they can be used for the analyses, such work should be completed before the health manpower plan is developed.

A. Determine the current use of personnel

1. Obtain a list of all health facilities currently in use and planned for the period the health manpower plan.
2. Obtain a list of personnel at each facility, indicating name, function, type of training, and retirement date.

3. Depending on the level of detail required prepare the following compiled lists:

- A. Number of each type of personnel per department.
- B. Number of each type of personnel per type of facility.
- C. Number of each type of personnel nationally.

B. Determine staffing levels currently needed

Establishment of a staffing pattern will determine the minimum staffing level for each facility in order for all services to be provided. However, since the actual work load for the personnel will vary at each facility, it also have to be determined how many of each category of personnel are necessary to deliver the services. Thus, staffing levels have to be set.

The steps in the analysis are as follows:

1. Establish a list of minimum staff for each facility.
2. Establish a list of case loads for each facility.
3. Compare the two lists and with the use of the norms established indicate for which facilities additional personnel are needed, i.e., establish which facilities need additional manpower.
4. For each facility add the number of additional personnel required.

C. Estimate staffing levels for each year of the plan.

5. Estimate case loads for each facility based on current population.
6. Estimate the percentage of increase in case loads based on population growth rates.
7. Compare the results of step 2 and 5.
8. If step 2 and 5 have produced approximately the same results, the current case loads (obtained in step 2) can be used to estimate future staffing levels. In that case, estimate the annual case load increase with help of the percentage obtained in step 6.  
If the case loads estimates obtained in step 5 substantially exceed those obtained in step 2, assume that case loads will increase faster than is warranted by the population increase and adjust the percentage accordingly.
9. Compare case loads for each year with the norms and add personnel as necessary to the staffing level.
10. For each new facility, go through steps 1, 5, 3, and 4 to establish the staffing level for the first year the facility is used. Adjust the staffing levels as necessary using step 6 for the remainder of the plan's time span.

The result of this analysis should be a list of current staffing needs by category, with projected staffing needs for each year of the plan, for each facility.

Depending of the level of detail required by the analysis

produce the following compiled lists for each year of the plan:

1. Number of each type of personnel required by department.
2. Number of each type of personnel required by type of facility.
3. Number of each type of personnel required nationally.

D. Determine staffing needs

1. Compare the current use of personnel (Step A) with the staffing level needed (Step B). The detail required by the objectives for the health manpower plan will determine which two lists are compared (basic lists, A and 1, B and 2, or C and 3).
2. Make a table of the differences between the two lists.
3. Add up the differences by type of personnel to establish current needs. If a positive result is obtained in any category, no more personnel are currently needed. If the result is negative, the number will indicate how many of this type of personnel will have to be hired to fill the need.
4. Go through steps 1 to 3 for each year of the plan.
5. Establish a list of the the number of additional personnel needed each year for each category. Since step 4 for each year includes the cumulative need from previous years, these have to be subtracted in order to establish the additional needs.
6. For each year calculate how many in each category will retire.
7. Calculate how many people in each category will leave each year. This number should also include the number of people who will leave their post for further training.
8. Add the results of steps 6 and 7 to the list in step 5.

The result of this analysis should be a list which indicates how many additional people have to be hired each year in order to deliver adequate health services, given the available facilities.

E. Determine how to fill the needs for personnel

It is assumed that the only personnel available are the people currently in training. The following steps have to be carried out:

1. For each category of personnel create a list of the number of people who will be available, and when.
2. Compare that list with the list for personnel needed.
3. Starting with year 1988, distribute the personnel according to pre-established criteria, according to the level of analysis performed.
4. Calculate the residual need, if any, and add it to the following year (1989).
5. Go through steps 2 to 4 for each year in the manpower plan in which people currently in training will enter the program.
6. The residual need for personnel, when all persons currently in training have been distributed can be used

to plan recruitment for training if budgetary constraints permit.

#### F. Determine budgetary constraints

Given the current situation budgetary constraints will mainly affect the recruitment for additional training. These may either limit or totally prohibit the training of the additional personnel needed. However, before a manpower plan based on the analysis outlined above exists, it is impossible to determine how to adjust the plan to meet the budgetary constraints so that a final, workable plan can be produced.

\* \* \*

In the sections below the databases are examined and recommendations given for improving them to permit the development of a manpower plan. In addition, analyses are carried out with the available information in order to demonstrate both the need for complete information and how a manpower plan may be used for planning.

### CURRENT USE OF PERSONNEL

#### INFRASTRUCTURE DATABASE STATUS

The country is divided into 7 departments and 31 arrondissements. Each department has a departmental administrative unit (DDS), a hospital, a unit responsible for sanitation and mobile services (EDHMM) and a unit responsible for repairs of equipment (SERPA). The hospitals in Niamey and Zinder are designated national hospitals. Each main town in a department and each arrondissement has a medical center (CM). In addition, there are maternities, PMIs, medical posts, community clinics and pharmacies in each department. Table 1 below shows the distribution of the health facilities in the country based on DIS infrastructure database.

Table 1: Distribution of health facilities by department (based on DIS database).

Departement	DDS	HOP	EDHMM	CAT	SERPA	CM	PM	MAT	PMI	DR	Pharm
Agadez	1	1	1		1	3	4	7	1	12	3
Diffa	1	1	1		1	3	3	4	1	10	4
Dosso	1	1	1	1	1	5	3	9	4	31	13
Maradi	1	1	1	1	1	7	2	11	4	38	8
Tahoua	1	1	1	2	1	7	5	9	2	34	6
Zinder	1	1	1	1	1	6	2	11	5	45	10
Tillabéri						6	7	14	7	50	17
Niamey(ville)	1	2	1	1	1	1	0	5	8	14	3
TOTAL	7	8	7	6	7	38	26	70	32	234	64

In addition, FAN has both a PMI and a clinic in Agadez and in Zinder, respectively, as well as a hospital and a PMI in the city of Niamey. CNSS has one facility in each of Dosso, Maradi and Tahoua, a PMI in Maradi, Tahou, and Zinder, and in addition to the central administration two PMIs and a clinic in the city of Niamey.

There are also four private hospitals (two in Agadez, one in Maradi and one in Tahoua). Private clinics are located in Agadez (3), Maradi (2), Tahoua (2), and the city of Niamey (9). In Niamey there are also a center for family health (family planning research and services), a center for leprosy control and 3 private pharmacies. MSP/AS also operates two paramedical schools, one in Zinder (ENICAS) and one in Niamey (ENSP).

#### PERSONNEL DATABASE STATUS

The MSP/AS has entered all the personnel currently employed into a computerized database. This has made it possible to easily assess the current distribution of personnel and the analyses below are based on this database. Some problems which limit the reliability of these analyses are described below.

For each person employed by MSP/AS the database contains a record which provides information about 27 different items (fields) for each person. For example, by looking at the record, it is possible to ascertain a person's education, post, salary, birth date, sex, etc. The database contains 2932 records. Of these, 2922 represent personnel actually employed by the MSP/AS. The others are either duplicates or contain information in some fields. However, since there is no name given for the person they may be removed from the database.

Whenever a new database is established mistakes will occur in the entry of data. Thus, a certain amount of time will have to be spent in refining the database so that it will provide accurate and complete information for planning purposes.

A close inspection of the database reveals that there are a certain, but small, number of duplicate records. In addition, there are some typing mistakes, as shown by, for example, infrastructure code entries which do not correspond to a facility included in the DIS's infrastructures database.

Inconsistencies in the spelling of names and occasions where "prenom" is coded as "nom" and vice versa cause problems with searches for a record unless the ID number is known. Searches without ID numbers may be required, for example, in order to find the posts for persons who have already received training in a specific area. Standardization of the order of name and surname and attention to using the same spelling on every list of personnel prepared by the MSP/AS would simplify the entry of records into the database. New or changed records should also be checked periodically to eliminate typing errors.

To simplify summary reports of the data records it is also necessary to provide standardization of entries in fields which are not coded. Instead of recording the "corps" as, for example, Techn. de Lab, Tech. de Lab, Tech Lab, Tech Labo, etc., one of the variants should be selected and used exclusively. Alternatively, codes could be established for some of these fields. The current database needs to be revised to achieve such standardization.

There are a considerable amount of missing data which vary among the fields. When information is missing, the field is either left blank or a question mark is entered. This inconsistency means that there is no way to determine if the information is missing due to lack of entry of available information or due to lack of information.

In terms of planning, the missing data in the fields "code" (which indicate the facility at which the person works), "birthdate" and "annret" (year of retirement) are the most important. In the field "code" 237 fields (8.1 %) are missing or incomplete. For "birthdate," the percentage is 43.2, and for the field "annret" the percentage is 100, i.e, no data are available.

For maternities and PMIs, which are usually associated with other facilities, the personnel are sometimes coded with the main facility (CM, PM, etc.), sometimes separately. This makes it impossible to accurately assess the number of people who work at maternities and PMIs, especially in the rural areas. At the same time it makes it difficult to compare staffing patterns at the main facilities, since some include more personnel because the maternity and/or the PMI has been coded as belonging to that facility.

Information about staff is also missing for some rural dispensaries, which seems to indicate that the distribution of personnel within the department is not correctly reflected in the database. A quick comparison with the actual situation at a few facilities indicates that there are differences between who is actually at the post and what the database indicates. This seems to be due not only to delay in data entry at central level (recent transfers) but also to lack of passage of information from the periphery, or some other mistake. Discussions with MSP/AS personnel revealed that the only transfers which are reliably entered in the database are those that originate at the MSP/AS level, while intradepartmental transfers are not always reported to the MSP/AS, and thus not necessarily recorded in the database. Hence the assignment of personnel to a department, rather than to an actual post within the department, is at present more likely to be accurate.

It is recommended that regular reviews with the DDS be instituted of the assignment of personnel in order to have accurate information available. Similarly, the list of codes used should be checked on a regular basis with the list of infrastructures which will identify facilities for which no staff are listed in the database.

For more efficient use of the database some information currently in the database may be eliminated since it duplicates other information. Also, some fields may be added which would simplify the use of the database. It is recommended that the following fields be added.

A. A field which automatically registers the date a record is changed. Such a field is especially useful if more than one person works on the database, since it could provide information about what changes were last entered into the database.

B. A field which indicates which function the person occupies within the facility. This is most important for the large facilities, i.e., hospitals. Such a field could be easily tied to positions required at the facility, and provide information about which positions are currently not filled and what additional personnel is needed.

C. Currently, if a person leaves or retires from the service, the record is deleted from the database, which makes it impossible to trace the changes in the database from year to year. Instead the record should either be coded in such a way that it comprises a subset within the current database or transferred to a separate database.

Thus, in order to use the current database for planning purposes it is imperative that the database be "cleaned up," i.e., that inaccurate information be changed, and completed, i.e., that missing data, especially "code" and "birthdate" be entered for each record.

#### RECOMMENDATIONS

1. Review each record, and with the data available, complete as many fields as possible. At the same time duplicate and other unnecessary records should be eliminated.
2. Standardize the entries of names and other uncoded fields.
3. Tie the "annret" field to the birthdate (by adding the retirement age to the birthdate).
4. Include a field which automatically adds current date whenever the record is edited.
5. Include a new field which indicates the function the person occupies, or use one of the existing fields for this information.
6. Review printouts of the information regularly and frequently and compare them with infrastructure and other relevant lists to eliminate obvious errors.
7. Prepare lists of personnel within each department, and require that the departmental administrative units (DDS) review the information and make any changes/additions which are necessary. Since intradepartmental transfers occur and are not regularly reported to the central level, such reviews should be instituted on a regular basis.
8. Create a new subdivision of the database (or a new database) to which records are transferred when a person retires or otherwise leaves the service.

#### ACCESS TO OTHER DATABASES

To accurately plan distribution of facilities and personnel or training and recruitment needs it is necessary to know if and to what extent health services are provided by private or other government agencies. In order to determine how many persons at any given time are involved in health delivery within the country, MSP/AS should have access to the following databases:

1. All the expatriates which are currently working within the country. The database should include, at least, name, function, position, place of assignment, starting date and expected time in the country.
2. All health personnel which are employed by other governmental agencies. This includes at least the CNSS, ONPPC, and FAN.
3. All health personnel which are in private practice.
4. All persons which are currently studying to occupy a position in the health field. Currently, the database includes only those who are on leave from their post for studies.

Although access to these databases is necessary, the MSP/AS

does not have to establish or maintain duplicate databases if such a database is maintained by another ministry or agency.

#### RECOMMENDATIONS

1. MSP/AS should investigate the feasibility of obtaining, on a regular basis, information about these health personnel and their postings from other government and private agencies. If feasible, such information should be obtained at least annually for planning purposes. MSP/AS should also require from these agencies, the anticipated need for new personnel in order to plan the annual intake of trainees at the two schools for training of paraprofessionals (ENSP and ENICAS).
2. MSP/AS should re-establish and maintain the database of the expatriates currently providing assistance in the health field.
3. MSP/AS should establish a database including all persons studying for a health profession and their anticipated graduation date.

#### ANALYSIS OF CURRENT USE OF PERSONNEL

##### Methodology

To assess the current personnel situation, a printout was made of all records in the database. This list was arranged by facility and type of personnel which made it possible to make charts indicating number of each type of personnel per department and type of facility. These charts were entered on a spreadsheet using the Lotus program. Based on this spreadsheet the following charts were prepared (See appendices and below):

1. Staffing pattern at each type of facility by department. The city of Niamey was separated from the department of Tillabéri in order to study separately the services in Niamey.
2. Staffing pattern at each type of facility (combining all departments).
3. Total staff by department according to grade (A1, A2+3, B, C, D, and others).
4. Total staff by type of training (university, nursing, midwifery, laboratory, social action, hygiene and sanitation, and others).
5. Number of facilities of each type by department for which at least one individual is recorded as being currently employed (number of "reported" facilities).

A separate computer run simply counting the number of personnel records for each coded facility provided the basis for the graphs showing the distribution of number of personnel by type of facility.

These charts were then reviewed and different analyses performed to explore health coverage and use of personnel.

The section which follows below demonstrates how even without a complete manpower plan an analysis of the current situation can assist in identifying problems with service coverage and distribution of personnel.

It should be noted beforehand that due to the status of the personnel database, the analyses carried out below are not based on data which are reliable enough to permit the MSP/AS to act on

the information which has emerged from the analyses. When accurate and up-to-date information is available, the analyses should be repeated.

### Distribution of personnel

#### Distribution per facility

When the personnel database was examined it was found that certain facilities listed in the DIS infrastructure database do not appear at all in the personnel database. Although actual reasons for this discrepancy cannot be established it may be due to any of these causes:

1. The staff for that facility do not have a code entered for the facility at which they are employed (8.1 % of the records are not coded for facility),
2. The record for the individuals at the facility contain a code for a facility other than the one to which they are currently assigned,
3. None of the staff at that facility has a record in the database (i.e., there are personnel employed by MSP/AS not included in the database), and
4. No individual is assigned to that facility.

In addition, there are some entries for facilities which should not be staffed by MSP/AS since they are private facilities or are managed by another government agency. A specific list should be made of these people and reviewed to ascertain that these assignments have been made according to official policy.

Table 2: MSP/AS facilities with citations in the personnel database.

Departement	DDS	HOP	ELHMM	CAT	SERPA	CM	PM	MAT	PMI	DR	Pharm
Agadez	1	1	1		0	3	4	3	1	12	1
Diffa	1	1	1		0	3	3	1	1	7	0
Dosso	1	1	1	0	0	5	3	5	4	29	0
Maradi	1	1	1	0	0	7	2	7	4	26	0
Tahoua	1	1	1	0	0	7	5	4	1	26	0
Zinder	1	1	1	0	0	6	2	5	5	37	0
Tillabéri						6	8	5	2	36	0
Niamey(ville)	1	2	1	1	1	1	0	4	7	12	0
TOTAL	7	8	7	1	1	38	27	34	25	186	1
DIF:	0	0	0	-5	-6	0	+1	-36	-7	-48	-63

Note 1: DIF = difference between facilities listed in the infrastructure and the personnel database.

Note 2: MSP/AS facilities which are unique, i.e., only one of this type exist in the country (e.g, ENSP, ENICAS, CNSF, and CAL) are not included in the table.

Table 2 indicates the number of facilities for which a citation is entered into the personnel database. Pharmacies are generally staffed by ONPPC personnel and in general should not have any MSP/AS personnel assigned to them. The CAT centers are

usually located at either a hospital or CM. The records for their staff are probably given the code for the main facility. SERPA personnel are included in a second auxiliaries database together with non-medical personnel employed by MSP/AS. For PMs, the personnel database has 27 codes cited rather than 26 in the infrastructure database. No explanation is available.

As discussed above, the maternities and the PMIs are usually associated with another health facility (hospital, CM, PM or DR) and the staff may either be coded as working at that facility or at the maternity or the PMI. This could account for the fact that records exist for only 49 % of the maternities and 78 % of the PMIs.

The DDS can probably provide information about staffing for the 48 dispensaries (21 %), which according to the personnel database have no staff.

#### Distribution according to sex

Table 3 shows the number of health workers in each department and their relative distribution by sex. The totals in the table do not include the ministry.

Table 3: Sex distribution by department.

Departement	Hommes	Femmes	Total	A:H	A:F	B:H	B:F	B:T
Agadez	97	70	167	58.1	41.9	7.1	5.8	6.5
Diffa	92	48	140	65.7	34.3	6.7	4.0	5.4
Dosso	122	80	202	60.4	39.6	8.9	6.7	7.8
Maradi	144	105	249	57.8	42.2	10.5	8.7	9.7
Tahoua	151	104	255	59.2	40.8	11.0	8.6	9.9
Zinder	225	168	393	57.3	42.7	16.4	14.0	15.3
Tillabéri	94	67	161	58.4	41.6	6.9	5.6	6.3
Niamey ville	446	561	1007	44.3	55.7	32.5	46.6	39.1
Total	1371	1203	2574	53.3	46.7			

A:H = Percentage of male health workers in the department.

A:F = Percentage of female health workers in the department.

B:H = Percentage of male health workers in the department as a function of the total number of male health workers in the country.

B:F = Percentage of female health workers in the department as a function of the total number of female health workers in the country.

B:T = Percentage of health workers in the department as a function of the total number of health workers in the country.

It is evident that the city of Niamey, as the capital and reference center for the rest of the country also has a larger proportion of the health personnel (39.1 %). It should also be noted that although nationally women comprise 46.7 % of the work force, in Niamey the percentage of women is 55.7 %. Actually, 46.6 % of all women employed in the health services work in Niamey. In addition, 300 women work in the administrative center of the departments so that 71.6 % of the women work in an urban

or semi-urban area.

Since practically all health workers trained specifically in obstetrics and for PMI activities are females (midwives and social workers), this implies that women in many rural areas have limited or no access to the specialized care these women can give. This maldistribution is a function of a policy which MSP/AS so far has not been able to adjust. It is evident, however, that if the current policy continues, it may be impossible for MSP/AS to adequately provide maternal and PMI services in the rural and semi-rural areas.

#### Distribution per department

Table 4 (page 17) shows the percentage of the total number of staff within each department employed in different categories. As can be seen from the table, nationally the majority of the personnel are paraprofessionals employed in categories B, C and D. Niamey has a relatively larger proportion of doctors and better trained paraprofessionals (category A) in comparison with the other departments. Although Zinder has the other national hospital in the country, its proportion of personnel in category A versus in the other categories is lower than Agadez.

It should also be noted that there is a very low percentage of administrative cadre in all departments. Since this category includes all personnel (without medical training) engaged in administration from hospital administrators to secretaries it seems to indicate that most administrative duties are performed by medically trained personnel, who are listed according to the type of training they have received.

Table 4 also shows the percentages of the paraprofessional personnel with training in different medical specialties. As can be expected approximately 70 % are nurses. When compared with the departments the city of Niamey also has a greater proportion of midwives and laboratory technicians, while the departments have a higher proportion of social assistants.

Table 5 (page 18) shows the percentages of different types of personnel by department as a function of the total number of personnel within this category. Thus, Niamey has 40.5 % of all professionals, followed by Zinder with 8.5. Similarly, 44.6% of all specially trained paraprofessionals are in Niamey with 10.4% in Zinder.

It should be noted that although Niamey has approximately the same proportion of administrative cadre as the departments (Table 4), the percentage of all administrative cadre employed by MSP/AS which is employed in Niamey is much higher than in the departments. The percentage of the available administrative personnel employed in Niamey (not counting the Ministry) is approximately the same as in the rest of the country.

When Table 5 is examined with regard to the different types of paraprofessional workers it is evident that laboratory technicians and midwives are concentrated in Niamey and the social workers are mainly employed in the departments. The department of Zinder has about 20 % of this type of personnel. The majority of the social workers are women, trained at ENICAS in Zinder, which may account for the relatively higher percentage of this personnel in Zinder. Actually, half of all social workers are employed either in Niamey or the department of Zinder.

It could be argued that due to the size of the city and the specialized services in Niamey that the city has a need for more

table 4  
page 17

table 5  
page 18

table 6  
page 19

and better trained health personnel than other areas of the country. However, even with this special need Niamey may be overserved in terms of its population when compared with the rest of the country. Thus, the health service personnel were compared with population estimates from 1987. Table 6 (page 19) shows the number of personnel per 100,000 inhabitants.

The department of Tillabéri can be seen as representing the situation in non-urban areas, since with the city of Niamey removed there is no urban area in the department. The numbers point out the obvious and well known fact that the rural and semi-rural areas are as a whole underserved when compared to urban or semi-urban areas. This is especially true for higher trained and specialized personnel. But even for paraprofessionals involved in direct curative care this is true. Tillabéri has approximately 10 nurses per 100,000 inhabitants, while the other departments with a mixture of rural and semi-urban areas vary between 14 and 89 per 100,000.

This analysis suggests that the best served department is Agadez (which in addition has 2 private hospitals). Among the most populated departments the most underserved department is Maradi. Although Agadez and Diffa have fewer health workers totally, due to their smaller populations, health coverage seems to be better in those two departments than in the others. Even with the second national hospital, Zinder still has less than the national average for both professionals and paraprofessionals. This analysis also seems to indicate that Niamey is better served than the rest of the country.

For example, when compared with the four most populated departments (Dosso, Maradi, Tahoua, and Zinder), the city of Niamey has 12 times as many specially trained paraprofessionals, 6 times as many nurses, 9 times as many midwives and 5 times as many social workers per 100,000 inhabitants.

What this may mean in terms of total workload may be illustrated by looking specifically at the relationship between number of births and number of midwives. Deliveries, PMI services, and care of young children which constitute the main services provided by the midwives are directly dependent on the number of births. Given an estimated birthrate of 52/1000, there are on the average about 270 births per midwife in Niamey and approximately 2600 per midwife in the other four most populated departments (Dosso, Maradi, Tahoua and Zinder).

Since actual service statistics are available for Niamey (source: Dr. Dominique Huguet, DSMI) the actual average case load in 1987 per midwife can be estimated for Poudrière, Lamordé and Centrale Maternités and for the total number of midwives in Niamey. Similarly, the number of prenatal visits in 1987 can be used to estimate average case loads for the personnel working at PMIs in Niamey.

As expected, the actual case loads at the maternities in Niamey are less than the ones using a crude birth rate for the estimation (Table 6A, page 20). The conclusion that the maternities may be overstaffed still holds. There is also great variation in work loads among the three maternities in Niamey, with more attended births per midwife at Poudrière (twice as many as Lamordé and 1.6 as many as Centrale).

This suggests that when new maternities are opened in Niamey, staff can be transferred from Lamordé or Centrale instead of from the departments. It also seems that no more midwives

**Table 6A: Comparison between case loads (1987) and staffing levels at maternities and PMIs in Niamey.**

	Cadre	Accouch. maternité		Accouch. enregist.		Consultations Prénatales	
		Tot.	/SF	Tot.	/SF	Tot.	/cadre
Centrale	40	7241	181	8315	207	--	--
Lamordé	10	1312	131	1509	151	--	--
Poudrière	29	8132	281	9681	334	--	--
Tot. Matern.	79	16685	211	19505	247	--	--
Tot. PMIs	138	--	--	--	--	48903	354

Accouch. Maternité: Births attended by midwives.

Accouch. enregist.: Attended births plus births for which the mother has brought the baby in after the delivery.

Cadre: For the maternities the given number is for midwives, for the PMI the number is total staff with medical training at the PMIs in Niamey.

should be transferred to Niamey until the case loads have increased at the maternities. How much they should increase before new staff are added would be a matter of MSP/AS policy.

For the PMIs the number of prenatal visits gives only a rough estimate of the actual case loads, since the personnel there also carry out consultations of well and sick babies. However, the number of prenatal visits per medical person at the PMIs is still small (on the average one per day) which leads to the conclusion that even the PMIs in Niamey may be overstaffed in relationship to the PMIs in the rest of the country.

#### CURRENT STAFFING NEEDS

Levels and types of staff for each health facility are generally determined by two variables:

1. type of services provided at the facility (staffing pattern), and
2. actual case load (staffing levels).

Although case loads are the main determinant of levels of staffing, in a situation where health services are expanding and are not generally meeting the actual needs of the population, anticipated case loads may be estimated and used to assign personnel to different facilities if the number of people in the service area is known.

To determine the current staffing needs 4 different sets of information/databases are thus necessary:

#### Staffing pattern at each facility.

No document exists which outlines in detail what services are actually delivered at each facility. It is possible to obtain such data, however, by compiling information from a variety of sources, such as the service statistics.

However, staffing patterns should be determined based on a comprehensive national policy outlining the services which should be delivered. Such a national policy has not been clearly spelled out and rendered in such a form that it can be used to determine what types of staff should be assigned to each facility.

It should be pointed out, that the absence of a clear national policy does not mean that the distribution of personnel is done randomly. However, the lack of an explicitly stated policy will mean that the distribution of personnel is uneven and that as a result service coverage will not meet the needs of the population.

When services are not defined for each facility (or type of facility) personnel distribution will tend to depend on factors which are related more to perceived needs rather than actual needs. How well the perceived needs reflect the actual needs will in turn be determined by the quality of the available information and the decision-maker's ability to use the information which is available.

An important point to make is that the process to define the types of services and what types of health workers are needed to deliver such services, should be carried out without considering whether or not personnel are currently available. The factors determining the policy should be actual health needs in the service area.

Even though no comprehensive policy exists at this time, documents are available which contain the basis for such a policy. The analysis of types of services to be provided at the different MSP/AS facilities which was carried out in Tahoua in 1985 could be a starting point for a national policy. Appendix 3 summarizes the functions and staffing needs identified by this analysis.

#### RECOMMENDATION

1. Establish a comprehensive national policy for minimum staff (by personnel category) for each type of facility.

#### Performance norms for each health worker

Performance norms for each health worker are necessary in order to determine which of the facilities will need more than the minimum staff identified for each facility. These performance norms will determine how much work a health worker filling a certain function in a facility can handle and therefore when a new health worker in the same category has to be added.

Currently, there is no explicit policy defining the performance expected by each category of health worker per facility. A policy has also not been established to indicate when the work load is such that another health worker should be assigned to the facility.

Even though actual staffing is probably to some extent determined by implicit performance norms, a definite policy would enable an analysis of whether or not the staffing levels accurately reflect work load. Based on such analysis a redistribution of personnel may be possible in order to provide better service coverage.

A definite policy would also simplify the distribution of newly hired personnel, since they could be assigned to facilities

which are most in need of personnel.

Performance norms could be determined by studying the performance of the health workers in the field. However, since performance norms already exist for different categories of health workers based on operational research in other countries, such norms could be evaluated and modified as needed before they are adopted.

#### RECOMMENDATION

1. Establish performance norms for each category of health worker by type of facility, including limits which indicate when a new worker has to be hired.

#### Service statistics

Service statistics are used together with the performance norms to determine if a facility needs more than the minimum number of personnel as defined by the staffing pattern.

The service statistics have not yet been computerized which makes it very difficult to establish the case load for each facility. Since staffing patterns and performance norms still have to be established for each facility, no attempt was made to use service statistics to establish the staffing levels for each facility.

Table 6A (page 20) demonstrates indirectly how service statistics may be used to establish staffing levels. If service statistics had been used as the basis for allocating midwives among the three maternities in Niamey, Poudrière would probably have more midwives than Centrale, while Lamordé would have the minimum staff necessary as determined by the staffing pattern.

#### RECOMMENDATION

1. Develop a computerized service statistics database.

#### Population statistics

In the process of establishing current staffing needs population statistics can be used instead of service statistics to establish the staffing needs at the different facilities. This is done when service statistics are not easily accessible, or are incomplete or out-of-date. In addition, population growth rates are used to estimate future case loads for the life of the manpower plan.

Population statistics are at this time unreliable. The last nationwide census was conducted in 1977 and although in certain departments local censuses have been performed, it is difficult to use the current population estimates to assess the unserved needs of the population depending on a given health facility. When the results of the planned census are available, the population statistics can be used to complement the service statistics and to provide estimates of increases in case loads over the period covered by the health manpower plan.

#### ATTRITION

In order to determine attrition, two databases need to be available, one that provides information about how many people

will retire each year, and one which estimates how many people will leave the service for other reasons.

Given the information currently available it is impossible to estimate how many people will retire or otherwise leave the service each year. It should be noted that there are very few who leave the service to take up other positions. The number of private services are very few, and although other government agencies employ medical personnel it is a comparatively small number. Thus, even with the current policies providing incentives for governmental personnel to leave, very few of MSP/AS's personnel will take advantage of such an opportunity. In addition, even though birth dates are not given for half of the personnel in the data base, there are few who have reached the age of retirement.

The document projecting personnel needs in 1990 (Etude 1985) uses an estimated rate of 5 % over the five-year period for its calculations of how many will leave the services. Using the same rate, about 30 people will leave each year. Although that number is not negligible, it will not substantially affect staff projections (and thus planning). It should be noted, however, that even if the rate of retirement is not high at this time, it will increase with time as the work force ages.

In order to accurately project how many will leave the service each year it is necessary to enter the year of birth for each record in the personnel database, and to tie this to the retirement year. For planning needs in the future, it is also necessary to create a way of following the changes in the database from year to year. This could be easily accomplished if rather than removing people from the database when they leave MSP/AS they were moved to an inactive file, which could be accessed for planning purposes.

#### RECOMMENDATIONS

1. Enter year of birth in the personnel database where such information is missing and provide a function which automatically fills the field "annret."
2. Establish a section of the database into which staff who leave the service are entered.

#### PERSONNEL AVAILABLE FOR RECRUITMENT

As mentioned earlier, only personnel currently in training will be available for recruitment. The discussion below is based on the information available at MSP/AS at this time.

MSP/AS currently trains TSSIs, TSSOs, IDEs, SFs, Techs Lab, and Assts Soc. at the ENSP in Niamey and ICs and Techs AH at ENICAS in Zinder. Doctors are trained at the university. In addition, according to the list (Nov. 1987) kept by DFEPS of other trainees, 115 people are in training programs abroad, their training financed by scholarships and salary payments. A summary of people currently in training and the year they will start working is given in Table 7 (Page 25).

The list of trainees which have received scholarships for training abroad does not accurately reflect the actual status of such training. Some people (at least two) have already returned

from their training program, and some of the ones listed have not yet left for their training program. However, as a general guide, the list provides an estimate of what specialized personnel will be available and when.

Table 7: List of trainees by category and year they will enter service.

	-85	-86	-87	-88	-89	-90	-91	-93	-94	Tot
A l'etranger										
Médecin (Spéc.)			9	6	7	6	3			31
Médecin (Gen.)								2	1	3
Spéc. P. Méd.	2	1		10	13	7				33
IDE				13	11	18				42
Asst. Soc.				4	2					6
Médecin								40+	50	
ENSP										
TSSI				17	8					25
TSSO				14	9					23
IDE				26	53	60				139
SF				18	21	20				59
Asst Soc.				18	19	20				57
Tech Lab				16	21	23				60
ENICAS										
IC				61	60					121
Tech AH				15	23	23				61

Note 1: No recruitment for TSSI and TSSO at ENSP is planned since the training has been discontinued.

Note 2: At the schools, the anticipated recruitment this year is 60 for IDE (graduation 1991) and IC (grad. 1990) and approximately 20 in the other categories (grad. 1991).

The personnel database also lists 107 people as currently being in training. Only 76 people are included on both lists. An attempt was made to find in the personnel database the 39 trainees who are on the DFESP list but are not listed as trainees in the personnel database. This proved to be a very difficult task, due to the fact that some names as entered on the DFESP list were not entered in the same way in the database.

For the 31 doctors listed on the DFESP list 15 were correctly classified in the database as in training, 1 as working in Dosso, 10 in Niamey, 2 in Zinder, and 3 were not found in the personnel database.

It would simplify planning if all trainees were entered in a database, either in the personnel database or in a separate database linked to the personnel database. The trainee database should contain both people on scholarship abroad and trainees at the two schools and at the university. Information should include for trainees abroad, apart from personal information, speciality, when scholarship is received, the actual date of departure and anticipated return date. For other trainees personal information and anticipated graduation date should be included. The database

should be updated monthly, and compared regularly with the personnel database (if separate).

If trainees are entered in the personnel database, a separate code could be established to denote at which school they are studying. Thus, on graduation the only change that would be required would be a change in the field "code" indicating their new place of assignment. If a separate database is established, linking the two databases would enable easy transfers of people from one database to the other.

#### RECOMMENDATION

1. Establish a trainee database.

\* \* \*

The analyses of the available databases carried out for the development of a manpower plan have clearly shown that it is impossible to establish current staffing needs. In addition, the analysis of the current deployment of personnel is not based on reliable data. Attrition rates can also not be established and the data on people available for recruitment suffer from the fact that questions can be raised regarding the reliability of the data in the personnel database concerning MSP/AS personnel in training. Thus, to attempt to carry out an analysis comparing staffing needs and current use of personnel would not at this time result in a useful health manpower plan.

However, to demonstrate the methodology and to show the utility of such a process the section below tries to compare staffing needs with the current use of personnel. The analysis is carried out by type of facility. In order to have some basis for the comparison, an attempt is made to establish staffing patterns for each type of facility based on the Tahoua document. This minimum staffing level is then compared to the actual situation as presented in the personnel database.

### Actual and projected staffing patterns

#### Rural Dispensaries

Currently, the policy calls for one nurse (IDE or IC) at each rural dispensary (Appendix 3). The Tahoua document does not provide specific staffing patterns for urban dispensaries. However, the main difference between dispensaries in urban and rural areas seems to be the staffing level. There are very few urban dispensaries with the majority located in Niamey.

Even though the current official policy calls for one nurse at each dispensary, it has been generally acknowledged that the tasks assigned to this nurse in actuality require a staffing level of at least two nurses at such health facilities. Thus, an effort has been made to assign one more nurse to each dispensary. Currently (Graph 1), 58 or 36.6 % of the dispensaries for which information is available have 2 or more individuals assigned to the facility.

Table 25 in appendix 2 shows the types of personnel actually assigned to dispensaries at this time. It can be seen from this table that some rural dispensaries have not only nurses but also

other personnel. In the different departments, 7 dispensaries have midwives, 4 have a social worker and 1 has a sanitation worker. Since activities normally associated with PMIs and maternities are also carried out at dispensaries, consideration may be given to placing midwives and social workers at more dispensaries if sufficient numbers are available.

#### Medical Posts

The Tahoua document defines 7 different functions at the medical post (Appendix 3). These would require an absolute minimum of 2 individuals, a nurse and a midwife. But as at the dispensary, two nurses should probably be assigned to each post. Thus, the actual minimum of personnel needed at a medical post is probably three, a midwife and two nurses. According to table 24 in Appendix 2 at this time 15 midwives are assigned to the medical posts. However, in addition 4 maternities associated with medical posts are reported separately. Thus, 19 of the 27 (70%) have a midwife. One of these and 2 other posts have only one individual. Thus 9 medical posts do not have the minimum personnel required to adequately carry out the functions assigned to the staff at this type of facility.

At this time, however, it is impossible to determine if in reality there are medical posts which are understaffed since a relatively large percentage of the staff in the personnel database are not assigned to a post.

#### Medical centers

Fifteen different functions are defined for the medical centers (Appendix 3). A review of the functions indicates that an absolute minimum of 6 people are necessary, two nurses, a midwife, a laboratory technician, a sanitation worker and a secretary. Only 5 (13.2 %) of the centers have administrative personnel (Table 22). In addition, only 16 (42.1 %) of the centers have a laboratory technician. Thus, the majority of the centers are not staffed adequately to carry out the functions defined in the Tahoua document.

However, a better minimum staffing pattern for the centers would probably include 1 doctor, 2 nurses, 1 laboratory technician, 1 sanitation worker, 1 midwife, 1 social worker and 1 secretary for a minimum of 8 people. At this time, 12 (31.6 %) of the centers have a doctor assigned to them. Four of the centers have less than 8 people (graph 3).

Given the currently available information, it seems that at a minimum the 38 centers will need an additional 26 doctors, 22 laboratory technicians, 10 sanitation workers and 33 secretaries to adequately carry out the functions assigned to them. More nursing personnel may also be needed once case loads are determined for the centers.

#### Departmental hospitals

For departmental hospitals, 7 administrative positions are defined, of which 3 are filled by personnel with medical training. In addition, there are 9 specialized medical functions and 2 functions defined for general service delivery. Thus, it may seem that a hospital could be staffed with a minimum of 19 persons. However, there are some obvious omissions in the definition of functions. For example, each hospital also needs staff for clinic activities, for care of hospitalized patients.

and for surgical care. Thus, with the current definition of functions, minimum staff cannot be defined for a departmental hospital. It should be noted that currently the minimum staffing (in Diffa) is 41.

However, it is possible to establish if each hospital has the specialized staff necessary to adequately deliver its services. Table 8 combines information from Tables 11-15 in Appendix 1.

Table 8: Distribution of selected specialized personnel at departmental hospitals.

	Agadez	Diffa	Dosso	Maradi	Tahoua
Médecin Chef	x	x	x		x
Pharmacien	x	x	x	x	x
Dentiste	x				
FSSI		x	x	x	x
Radiologie	x			x	
Anesteth.	x			x	
Kinésith.			x	x	
Proth. Dent.	x				
TS Lab	x			x	x
Asst. Soc.	x	x	x		x
Asst. Soc.	.	x			
Lic. Gest. Hosp.					
Contr. Trésor (Adj.)		(x)*			(x)*
Adjoint Admin.	x	x		x	
Sec. Sténo Dact.					

\* Both hospitals have an Adjoint Contrôleur de Trésor.

Note: One of the doctors assigned to the DDS in Maradi actually serves as the Medicin Chef of the hospital.

Although some functions for which these types of personnel are specified may currently be performed by others, table 8 gives an overview of the lack of specialized personnel available at the hospitals. For example, Agadez is the only hospital which provides dental care, and only Maradi and Agadez seem to have surgical capabilities.

With regard to the administrative functions which should be filled with non-medical personnel table 8 above points out that not enough administrative support is available to the personnel at the hospital. The lack of qualified hospital administrators, secretaries and accountants is especially obvious. Thus all the hospitals need additional administrative personnel for adequate functioning.

#### EDHMM

For the EDHMM 13 different functions are defined. The minimum personnel required may be set at 7. This would include 1 doctor, 2 nurses responsible for vaccinations, 1 sanitation worker, 1 laboratory technician, 1 nurse responsible for medical care at the schools and 1 nurse responsible for leprosy control. It should be noted that no administrative functions such as a

secretary are defined for the EDHMM.

The staffing levels varies from 10 in Diffa to 22 in Zinder (Graph 7). However, like for the other types of facilities specialized personnel are lacking. Only two of the six (Maradi and Zinder) are fully staffed given the functions defined in the Tahoua document. The others lack doctors and laboratory technicians. It should also be noted, that although only one function is defined for sanitation workers the staffing level for these varies from 2 (Agadez) to 8 (Zinder). Thus, it may seem that some function(s) are missing.

#### DDS

Six functions are defined for the DDS which would all have to be filled by different people. In addition, one person has been added with responsibility for service statistics. Thus seven people, 2 doctors, 1 Chef de Bureau, 3 paraprofessionals, and one secretary would be necessary for the proper functioning of the departmental administration. The staffing level for the DDS according to the personnel database varies between 10 and 24 (Graph 8).

However, personnel assigned to the DDS for distribution within the department have been cited with the DDS code and it is therefore impossible to tell what the actual staffing levels are at the different DDSs.

All DDSs lack appropriate administrative personnel. Two administrative functions were defined as being filled by non-medical administrative personnel -- the Chef de Bureau and the secretary. The actual distribution is as follows (Tables 11 to 18 in Appendix 1):

Agadez: 1 adjunct administrator  
Diffa: 1 adjunct administrator  
Dosso: 1 hospital administrator (who may be at the hospital)  
Maradi: 1 chef de bureau and 1 secretary  
Tahoua: 1 chef de bureau  
Zinder: None  
Niamey: 1 secretary.

As in other facilities where administrative personnel is missing, medical personnel have to assume their functions. This raises the question whether this is an appropriate use of trained medical personnel. It may be better to hire administrative personnel to fill such functions in order to free the medical personnel for the tasks they have been trained to perform.

#### Urban maternities

The Tahoua document lists 8 administrative functions, of which 4 are filled by midwives (1 TSSO), 1 by a social worker and 3 by non-medical personnel (2 Adj. Adm. and a secretary); 5 service functions which would require a minimum of 8 people, 2 doctors and 6 midwives and/or nurses; and 5 functions for the surgical block. Since only Maternité Centrale in Niamey has a surgical block, this would at the other urban maternities require a staffing pattern of 2 doctors, 10 midwives and/or nurses, 1 social worker and 3 administrative people.

The staffing levels at the urban maternities vary between 6

and 43, not counting Maternité Centrale (Graph 5). There are only 2 TSSOs, 3 social workers, and one Adj. Adm. assigned to maternities (Table 26, Appendix 2). Thus, the maternities show the same lack of administrative personnel as the other facilities.

The staffing levels for rural maternities which are cited in the personnel database vary between 1 and 4 (Table 26).

#### Urban PMIs

Although the Tahoua document does not make any distinction between urban and rural PMIs, only the urban PMIs will be discussed in this section. Most of the rural PMIs are staffed by one to three persons. Since the document defines 15 functions, including a laboratory technician and a secretary, with other functions requiring at least 3 to 4 other people, all rural PMIs are understaffed if the staffing pattern in the Tahoua document is taken as a guide. Even without the Tahoua document a quick glance through the listings shows that most rural PMIs are understaffed, since many of them have no midwife. In terms of primary health care this may be more serious than is evident by the activities at the PMI, since the tasks performed at the PMIs are very necessary and required.

A minimum staffing pattern at a PMI would probably require one doctor, 2 nurses, 1 midwife, 1 social worker, 1 laboratory technician and 1 secretary (7 people). Staffing levels at the urban PMIs varies between 2 and 24. Of these the two PMIs staffed by only two people are certainly understaffed. Apart from the PMIs in Niamey, only 2 PMIs have a doctor, and 2 have laboratory technicians. No secretaries are employed at PMIs.

The best staffed urban PMIs are the ones in Niamey and Zinder. It may even be possible to decrease the staff at some of them in order to strengthen PMIs in other areas of the country since 7 of them have more than the functions defined in the Tahoua document would require (14 not counting the secretary).

#### Speciality centers

For CAL the Tahoua document specifies 9 different functions. No citation is made against this code in the personnel data base.

For CNAT 5 functions are given, one doctor, 1 social worker, 1 laboratory technician and two nurses. The personnel database indicates that 1 TSSI, 7 nurses, 1 laboratory technician, and 1 social worker are assigned to this center (Table 28). In addition, services are provided at the hospital. Thus, this center seems to be adequately staffed, although no doctor is assigned directly to the center.

CNSF has a total staffing level of 31 persons, including 2 doctors, 10 midwives, 4 social workers, 13 nurses, and 2 laboratory technicians (Table 28).

The Tahoua document specifies 3 administrative positions, 12 service positions and a research team. The service positions would require one doctor, 4 midwives, 2 nurses, 3 social workers, 1 laboratory technician and one pharmacist. Thus apart from the lack of a qualified accountant and a pharmacist the center seems to be adequately staffed.

#### National hospitals

Without knowing the functions filled by the personnel assigned to the hospital it is impossible to decide the adequacy

of the staffing at the national hospitals. It would seem, however, that the hospital in Niamey is more adequately staffed than the one in Zinder. Zinder needs at least a dentist, a hospital administrator, 2 adjunct administrators, and some secretaries (Table 16). The hospital in Niamey also needs administrative personnel (Table 18) with only a hospital administrator, one adjunct administrator, one administrative assistant and 4 secretaries. More administrative personnel would free the medical personnel for more appropriate tasks.

It is recommended that an analysis be made of how the personnel are utilized at the hospitals in Niamey and Zinder in order to appropriately carry out an analysis of the staffing needs at these two facilities.

#### Summary

The analysis above has focused mainly on the needs for specialized personnel, since the staffing levels for nurses are difficult to determine without some indication of the case load at the different facilities, calculated either with the help of service or population statistics. In addition, since in the database about 8% of the staff are not cited as working at a specific facility, and some of the personnel assigned in the database to the DDS should be cited at another facility, it is hazardous to make any estimates of the needs for additional nurses even at the dispensaries. The pattern seems to be, however, that nurses are needed at such facilities and that more personnel giving curative care are needed in the rural areas.

For specialized personnel, the lack of laboratory technicians is evident, especially in the departments. Given this staffing pattern a majority of the medical centers cannot perform the diagnostic laboratory tests which may be necessary for proper treatment. In actuality, this implies that the curative care given at the medical centers may not be substantially better than the one given at the dispensary even though the staff have more experience and are more qualified. It also necessitates more referrals to the next higher level.

The lack of midwives in the rural areas is also evident. Of the medical posts 8 lack midwives, and at some of the medical centers there is only one midwife. In addition, 7 dispensaries have midwives (Table 25). Although staffing the dispensaries with midwives is not considered at this time some of the dispensaries in the most populated areas probably cover a sufficiently large population to justify the need for a midwife at the dispensary. When accurate population figures are available, an analysis can be performed with this in mind.

This lack of midwives in the rural areas can be contrasted with the low case load evident at the maternities in Niamey. Although, it may not be feasible to transfer midwives from Niamey to the rural areas, MSP/AS should seriously consider not assigning or transferring any more midwives to Niamey.

The lack of midwives becomes even more evident when the need for midwives at the PMIs are considered. At most of the medical centers and posts the midwives assigned to the maternity also works at the PMI. This is certainly true when only one midwife is assigned to the center or post.

For professional staff and specialized nurses, the need is evident. Priorities should be established for assignments of specialized personnel (including laboratory technicians and

others with specialized training) in order to first provide staff in those facilities where they are most needed. Such a list of priorities can only be established thorough an analysis of case loads and staffing patterns at the different facilities.

The Tahoua document tried to establish the need for administrative personnel at the different facilities. Even with the minimum administrative functions specified in the document, there is a serious lack of such personnel at practically all facilities for which such personnel have been defined. Given the goals of the current project for cost recovery at the hospitals, and the strengthening of the management and supervisory functions at all levels, this lack of administrative personnel will cause a serious problem for the MSP/AS.

### Staffing levels

Graphs 1 to 8 show the staffing levels at the different types of facilities according to the personnel database. Staff at rural maternities and PMIs cited separately in the personnel database have been included with the staff at the facility with which the PMI or maternity is associated, in order to provide a more adequate comparison of staffing levels at these facilities. Thus, the two graphs for maternities and PMIs include only staffing levels for urban facilities. In addition, no attempt has been made in Graph 1 to differentiate between urban and rural dispensaries.

Although it is impossible to determine with the currently available information, to some extent staffing levels seem to be associated with case load. Thus of the dispensaries (186) for which information is available in the personnel database 43 or 23.1 % have a staff of 2 persons, and 25 or 13.4 % have more than 2 individuals.

Similarly, staffing levels at medical posts vary between 1 and 8, at medical centers between 5 and 30 (not including Niamey), and at the departmental hospitals between 41 and 61. Urban maternities and PMIs show even greater variation. As discussed above, given the functions defined for various facilities, many of them lack some types of personnel and are thus a priori understaffed even though the staffing level may be adequate for the case load the facility has.

A further examination of the graphs shows that 50 % of the medical posts have 4 or more health workers, and 50 % of the medical centers have 11 or more.

The staffing levels at the DDS are artificially increased due to the fact that personnel assigned to the DDS for distribution within the department have been entered as working at the DDS. Since the last such distribution was made in July 1987 when new graduates from ENICAS and ENSP were available, there has been ample time to find out and enter their actual assignments. With the available information it is impossible to determine the actual staffing levels at the DDS.

The staff at the EDHMM in Niamey are not included in graph 7 since in the personnel database no citation is entered for that code. Instead the personnel assigned to EDHMM Niamey are cited with the DHMM code since in actuality the two work together from the same facility.

Manpower plans have to be evaluated regularly in order to ascertain that the objectives set in the plan have been met. If not, activities based on the plan have to be adjusted in order for the objectives to be accomplished.

The section below demonstrates with the help of the plan prepared in 1985 (Etude, 1985) how such an evaluation can be carried out and why such an evaluation is necessary.

#### Evaluation of a health manpower plan

The document (Etude 1985) estimates the number of health workers needed in each category in 1990. In order to do so, staffing levels in 1990 are established for each type of facility. The document indirectly takes into account that among facilities of the same type there are considerable differences in terms of case loads but since it is not based on a systematic analysis of staffing levels at each facility the number of paraprofessionals needed in each category is probably underestimated.

Unfortunately, there are also discrepancies in the document in that for some facilities personnel are not included. One obvious example is that in trying to decide the need for paraprofessionals in the country no provision is made for staffing the two paraprofessional schools which at this time employ a total of 53 people. Thus the document probably undercounts the number of people actually needed in most categories.

Table 9 below gives a comparison of the projected staffing needs (1990) and the staff currently available for some selected categories of personnel.

Table 9: Projected staffing needs (1990) and currently available staff (1988).

Categorie	1990	1988	Catégorie	1990	1988
Médecins	368	129	Pharmaciens	11	16
Dentistes	16	4	Ing. Sanit.	11	4
TSSI	93	92	TSSO	75	19
TS Lab	26	25	TSAS	46	25
IDE	782	831	SF	270	236
Tech Lab	165	108	Asst. Soc	162	52
Tech Ah	109	71	IC	1200	809
AAAS	131	181	AHA	38	44
Secrétaires	141	8	Cont. Trésor	36	5

The list excludes personnel included in the projections but employed by other governmental agencies or in private practice. The projections for 1990 have also been adjusted to exclude personnel assigned to the Ministry, since the people working for the Ministry are not included in the 1988 figures.

As mentioned above, the numbers in these projections can be seen as minimum needs. Even so, two years before the plan's anticipated termination date, it can be seen that for the professional categories only for pharmacists will the objective be met (exceeded). For specialized paraprofessionals there will

probably not be a sufficient number of midwives who will have received specialized training. For other paraprofessionals there will probably be a lack of nurses (ICs), laboratory technicians and social assistants.

Table 9 also points out the lack of administrative personnel. These were included in the projections, although they are not trained by the MSP/AS. It is evident that strengthening of the administrative capabilities is urgently needed.

Table 10 below attempts to compare projected staffing needs with actual staff per type of facility. Maternities and PMIs are not included, since it is impossible to ascertain the actual staffing levels at these facilities. It should be noted, however, that a total of 42 midwives are projected for the maternities in Niamey. Currently, 79 midwives are assigned there.

Table 10: Projected staffing needs (1990) and actual staff (1988) per type of facility.

Formation	Médecin		(A2) P. Méd.		(B) P. Méd.	
	90	88	90	88	90	88
Niamey Hôp.	61	18	18	28	207	276
Zinder Hôp.	36	5	12	10	108	86
FFS	8	5	10	8	27	42
DDS (7)	37	12	14	18	0	97
EDHMM (7)	10	5	10	4	105	128
CHD (5)	53	8	20	21	215	193
CM (38)	38	15	80	11	608	443
PM (25)	--	--	0	2	175	94
Disp (220+20)	--	--	0	2	520	303

Note 1: The number of facilities is given in parentheses after the type of facility.

Note 2: The 1988 figures for DDS include people assigned for distribution within the department, who are not working at the DDS.

Note 3: The 1988 figures for dispensaries include staff at 186 dispensaries.

Table 10 points out the problems with using average numbers and the risk of forgetting categories of workers when such an approach is taken. It also does not take into account patient loads and the fact that some facilities may actually need more personnel than others in the same category. The table seems to indicate that the FFS and Niamey hospitals, as well as EDHMMs, have more paraprofessionals than necessary. This is probably not correct, but only a study of the actual staffing at the facilities can tell whether the projections are correct.

The lack of doctors is obvious. However, since there is an undetermined number of expatriate doctors working at the hospitals, the actual coverage is probably better than it appears at first glance. However, the policy should probably be to place newly trained doctors primarily at the departmental hospitals and at the medical centers.

A superficial comparison of the projections with the current staffing pattern would indicate that a redistribution of the

paraprofessionals would resolve some of the obvious needs at the more underserved facilities. However, a more realistic approach would probably be to assign priorities for distribution of newly trained personnel. Since at present it is not possible to link case loads to staffing levels, a preliminary priority list could be to try to assign at least two nurses to each facility which currently has only one, and to place midwives, laboratory technicians and social workers first at these facilities which do not have any, and which according to the staffing pattern defined for that facility should have such personnel.

It is recommended, however, that a study be made of the staffing patterns at the national hospitals and of case loads at the different facilities in order to work out an appropriate plan for assignment of personnel.

Given the current situation budgetary constraints will mainly affect the recruitment for additional training. These may either limit or totally prohibit the training of the additional personnel needed. However, before a manpower plan based on the analysis outlined above exists, it is impossible to determine how to adjust the plan to meet the budgetary constraints so that a final, workable plan can be produced.

## CONCLUSIONS

All the information needed to develop a health manpower plan is not currently available. The information which is available needs to be modified so that it is reliable and timely.

Since all the necessary information is not available, the report has focused on carrying out a sufficient number of analyses to demonstrate the methodology for producing a health manpower plan. In addition, supplementary analyses have been carried out to demonstrate how a health manpower plan may be used and evaluated during the period it is in effect.

To develop a manpower plan it is necessary to first ensure that sufficient, accurate information is available. It will involve, not only improving the reliability and timeliness of the information in the current databases, but also creating others.

More importantly, it will also necessitate several important policy decisions. It cannot be stressed enough that explicit national personnel policies are necessary for development of manpower and training plans. The absence of such policies does not mean that decisions are made in a vacuum, since implicit policies exist and are used each time a decision is made. However, since such policies have never been made explicit, they are not subject to evaluation and changes may occur in a policy which have effects that were never intended or even desired.

Even more critical is the fact that in the absence of explicit policies, decision-makers interpret the implicit policy in different ways. This may lead to not only uneven distribution of personnel but also to unnecessary conflicts among decision-makers.

Without explicit personnel policies planning becomes very difficult. This report has established that planning the distribution of personnel requires openly stated, agreed-upon

policies which can be used in the development of a plan.

If a manpower plan is developed without clear personnel policies, the manpower planner has to set such policies. If his interpretation of the implicit policies is considered incorrect by one or more of the decision-makers, the plan will not be used.

The workplan attached to this report outlines the tasks which need to be completed in order to obtain a health manpower plan. This workplan also establishes a time frame for the work.

The analyses in this report have been based on insufficient and unreliable data. Thus, even though the analyses have pointed to some problems for which solutions have to be found, it is premature to recommend actions to resolve these problems. However, even without a manpower plan, discussions about possible options to solve the problems may be initiated.

The main problems which have surfaced are the lack of administrative personnel, the maldistribution of midwives and the lack of specially trained paraprofessionals. The last problem will require a training plan and has to await the development of the manpower plan. The two others may require policy changes, and thus studies of policy options and discussions are more important in order to provide feasible solutions.

Budgetary constraints have been mentioned in the report but they have not entered into the analyses. When a manpower plan is finally developed, such constraints will assume an important role in decisions about how the plan is implemented.



pour les entreprises cotées à la Bourse (COTED)

10. Établir une base de données de part et d'autre par région et par date (trimestre, année).

11. Intégration des statistiques des entreprises dans une base de données informatisée.

12. Noter les résultats expérimentaux que donnent les outils disponibles.

13. Faire une étude rétrospective du nombre d'agents de la santé avant, pendant et après le service durant les 10 dernières années.

14. Faire une étude rétrospective du nombre d'agents par type en analysant les cinq dernières années.

15. Mettre en place une base de données informatisées des entreprises.

16. Développer une planification du personnel de la santé triennale pour les 5 années à venir.

17. Répartir le personnel en fonction de la planification du personnel de la santé.

18. Surveiller les progrès de la planification du personnel de la santé.

19. Effectuer une nouvelle planification du personnel au même département et pour les 5 années à venir.

20. Répéter les étapes 10 à 19 pour les entreprises

et les établissements de soins de santé. L'étape 12 ne sera pas effectuée.

PROJET 101

Noter les données de part et d'autre par région et par date (trimestre, année).

Base de données informatisées des statistiques de l'emploi.

Statistiques de la population.

Données

Données d'attribution et DTEPS

Base de données informatisées des entreprises.

Planification du personnel de la santé

Répartition du personnel

Planification du personnel de la santé

Planification du personnel de la santé

PROJET 102

Données

DTEPS et DTEPS

DTEPS

Données

Données et DTEPS

DTEPS

DTEPS

DTEPS et DTEPS

DTEPS, DTEPS et DTEPS

DTEPS

ANNEXE 3  
TAHOUA: DEFINITION DES FONCTIONS DES FORMATIONS SANITAIRES

DISPENSARE RURAL

Responsable (IDE ou IC)

POSTE MEDICAL

Chef de Poste	(IDE)
Tri et Comprimés	(IC)
Pansements et Collyres	(IC)
Injections	(IC)
Soins aux hospitalisés	(IDE ou IC)
Responsable de Maternité	(SF)

CENTRE MEDICAL

Chef de CM	(Médecin ou IDE)
Adjoint	(IDE)
Major	(IDE ou IC)
TRI	(IC)
Pansements	(IC)
Collyres	(IC)
Comprimés	(IC)
Injections	(IC)
Laboratoire	(Tech Lab)
Pharmacie	(IDE ou IC)
Hyg. et Assn.	(Tech AH)
Soins au Hospitalisés	(IDE ou IC)
Responsable de Maternité	(SF)
Responsable de PMI	(SF, Asst Soc, IDE)
Secrétariat	(Sec Dact)

L'EQUIPE DEPARTEMENTALE DE L'HYGIENE ET DE LA MEDECINE MOBILE

Chef de l'EDHMM	(Méd. Sp. Santé Publique)
Adjoint Chef	(Asst. Santé Publique)
Chef Section Vaccination	(IDE)
Vaccinateurs	(IC)
Pharmacie	(IDE)
Chef de AH	(Tech AH)
Laboratoire	(Tech Lab)
TRI (MST, Scolaire)	(IDE)
Collyre, ..	(IC)
Injections	(IC)
Petite Chirurgie	(IC)
Contrôleur Lèpre	(IDE)
Contrôle Lèpre	(IC)

## LA DIRECTION DEPARTEMENTALE DE LA SANTE

Directeur Départemental de la Santé	(Méd. Sp. Santé Publique)
DDS Adjoint	(Méd.)
Responsable chargé de la gestion	(Chef de Bureau)
Responsable de PMI	(Méd., IDE, Asst Soc ou SF)
Responsable des E. S. V.	(Asst. Santé Publique)
Secrétariat	(Sec. Sténo Dact.)

## LE CENTRE HOSPITALIER DEPARTEMENTAL

### Administration

Directeur	(cadre A1, formé gest. hosp. ou admin.)
Médecin Chef	(Médecin, sp. ou Méd. Gén)
Surveillant général	(TSSI)
Secrétariat	(Sec. Sténo Dact.)
Econome	(Adjoint Admin. ou Asst. Soc)
Bureau de admissions	(Asst. Soc.)
Bureau de la perception	(Contrôleur du Trésor)

Service (1 poste mentionné ci-dessous pour chaque service)

Médecin Chef de service	(Méd. Sp. ou Gén.)
Major	(IDE)

### Cadre Spécialisé

Kinésithérapie	(TSSI, Sp. en Kin.)
Prothésiste Dentaire	(TSSI, Sp. en P.D.)
Pharmacien	(Pharmacien)
Service Social	(Asst. Soc.)
Hygiène et Assn.	(Tech AH)
Directrice de maternité	(SF)
Soins de maternité	(IDE ou IC)
Laboratoire	(Pharmacien, TS Lab ou Tech Lab)
Major de radiologie	(Manipulateur de Rad.)

## MATERNITES URBAINES

### Administration:

Directrice	(SF, diplôme Enseignement ou Administration)
Surveillance	(TSSO)
Economat	(Agt. d'Admin)
Secrétariat	(Sec. Méd.)
Etat Civil	(SF)
Etat Civil	(Adj. Admin)
Service Social	(Asst Soc ou AAAS)
Poste d'Archivés	(Documentaliste ou SF)

### Services:

Médecin Chef	(Médecin, sp. gyn.)
Adjoint au médecin chef	(Médecin, sp. gyn.)
Grossesses et des suites de couches path.	(SF ou IDE)
Salle d'Accouchement	(TSSO ou SF)
Des suite de couche phys.	(SF ou IDE)

### Bloc Chirurgical

Chirurgie	(Médecin, sp. gyn.)
Aide opérateur	(IDE ou IC)
Anesthésie	(Médecin, sp. anesth. ou aide anesth.)
Pharmacie	(SF, IDE, ou IC)
Major en chirurgie	(IDE)

### CENTRE SOCIAL ET DE PROTECTION MATERNELLE ET INFANTILE (PMI)

Responsable du centre	(Médecin, SF ou IDE)
Major	(IDE)
Tri enfants malades	(IDE)
Petites chirurgies	(IC ou IDE)
Injection	(IC)
Collyres	(IC)
Pharmacie	(IC)
Consultation	(SF)
Coûs. nourrisson sains	(SF, IDE ou Asst. Soc.)
Recupération nutr.	(Asst. Soc., IC ou AAAS)
Vaccinations	(AAAS ou IC)
Enseignement ménager	(AAAS, enseign. ménagère, ou couturière)
Laboratoire	(Tech Lab)
Suivi Enf. en risque	(IDE, SF ou Asst. Soc.)
Secrétariat	(Sec. sténo dact.)

#### LE CENTRE LEPRE

Médecin Chef	(Médecin, sp. dermato-lèpre)
Médecin Chef Adjoint	(Médecin, sp. dermato-lèpre)
Consultation lèpre	(IDE, sp. lèpre)
Tri des malades	(IDE)
Comprimés	(IDE ou IC)
Injections	(IDE ou IC)
Soins aux hospitalisés	(IDE ou IC)
Pansements	(IC)
Laboratoire	(Tech Lab)

#### CENTRE NATIONAL ANTITUBERCULEUX

Médecin Chef	(Médecin pneumo-physiologue)
Major	(IDE)
Service Social	(Tech AS)
Soins infirmiers	(IC ou IDE)
Laboratoire	(Tech Lab)

#### LE CENTRE NATIONAL DE SANTE FAMILIALE

##### Administration

Directeur	(Médecin, sp. gyn.)
Economat	(Contr. adj. du trésor)
Chef du personnel	(Asst. Santé Publique ou Chef de bureau)
Poste de recherche	(Equipe multidisciplinaire)

##### Services

Consultation de gyn.	(Médecin, sp. gyn.)
Sage-femme en chef	(SF ou TSSO formée en PF)
Espacement de naissance	(TSSO ou SF formée en PF)
Salle de tri enfants	(IDE ou TSSI formée en PF)
Salle de tri adultes	(SF, formée en PF)
Poste de tri adultes	(IC ou AAAS)
Suivie de grossesse H.R.	(TSSO ou SF)
Service Social	(Asst soc. ou TSAS)
Pharmacie	(Pharmacien)
Soins infirmiers	(IDE ou IC)
Radiologue et échographe	(Tech Lab)
Accueil	(AAAS)

## L'HOPITAL NATIONAL

### Administration

Directeur	(Cadre A1, sp. admin. et gest. hosp.)
Médecin Chef	(Médecin sp.)
Surveillant général	(TSSI)
Surv. Gén. Adjoint	(TSSI)
Statistiques Hôp.	(Asst Santé Publique ou IDE)
Secrétariat	(Sec. méd. ou sec. sténo dact.)
Service Social	(TSAS)
Hygiène et assn.	(Tech AH)
Economat	(Adj. Admin. ou Asst de Santé)
Admission	(Asst. de santé ou IDE)
Bureau de percept.	(Contrôleur de trésor)
Nutrition	(Nutritioniste)
Secrétaire (2)	(Sec. Méd.)
Magasinier	(Agt. Admin.)

### DEPARTEMENT DE MEDICINE ET SPECIALITES MEDICALES

Médecin Chef du départ.	(Médecin sp. en médecine interne)
Major général du départ.	(Asst. Soc. ou IDE)
Chief de Service Tri	(Médecin gén)
Major de service Tri	(IDE)
Centre récupérer. nutr.	(IDE ou IC)

(Au moins 1 poste mentionné ci-dessous pour chaque service)

Médecin Chef de service	(Méd sp. en un spécialité Méd.)
Major de service	(IDE)
Chief d'unité de soins	(IDE ou IC)

### DEPARTEMENT DE CHIRURGIE ET SPECIALITES CHIRURGICALES

Chirurgien Chef du départ.	(Médecin sp. en Chirurgie)
Chief de service Anest.	(Médecin sp. en anesthésie)
Major général du dept.	(Asst. de Santé ou IDE)

(Au moins 1 poste mentionné ci-dessous pour chaque service)

Chief de Service de Chir.	(Méd. sp. en un spécialité Chir.)
Chief de unité de soins	(IDE ou TSSI)
Soins externes	(IDE ou IC)

### Bloc opératoire

Major de bloc opér.	(IDE)
Aide opérateur	(IDE ou IC)
Instrumentistes	(IDE)
Urgences	(IDE ou IC)
Stérilisation	(IDE ou IC)

### Cadre Spécialisé

Kinésithérapie	(TSSI, Sp. en Kin.)
Orthopédie	(TSSI, Sp. en orth.)
Prothésiste Dentaire	(TSSI, Sp. en P.D.)

### DEPARTEMENT DES SERVICE MEDICO-TECHNIQUES

Chef de départ. (Biolog., Radiolog., Médecin, ou Pharmacien)

#### Laboratoire de microbiologie

Chef de service	(Médecin ou Pharmacien biologiste)
Major de service	(TS lab ou Tech Lab)

#### Sections (5)

Responsable (5)	(Biol., Pharm., Méd. sp. ou TS Lab)
Unité de serologie	(Tech Lab)
Unité de bacteriologie	(TS lab ou Tech Lab)
Unité de banque de sang	(Tech Lab)
Unité d'hématologie	(Tech Lab)
Unité de parasitologie	(Tech Lab)
Bur. d'accueil (Banque de sang)	(AAAS ou IC)
Salle prép. (parasitologie)	(Aide Lab)

#### Service de radiologie

Médecin Chef	(Médecin Radiologiste)
Médecin Radiologiste	(Médecin Radiologiste)
Major	(Manipulateur de Radiologie)
Manipulateur	(IDE ou IC)

#### PHARMACIE

Pharmacien Chef	(Pharmacien ou Biologiste)
Adjoint au pharmacien chef	(Pharmacien)
Biochimie	(Biochimiste ou Pharmacien bioch.)
Laverie - stérilisation	(IC)
Responsable de magasin	(IDE)