MINISTRY OF PUBLIC HEALTH

NATIONAL INSTITUTE OF PUBLIC HEALTH

NATIONAL HEALTH ACCOUNTS IN TUNISIA

-2000-

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Introduction :

A number of studies conducted in Tunisia have contributed to understanding the health sector financing, especially the overall growth of health expenses and the financing of each according to sources.

Recognizing the importance of NHA's system of rational reorganization of health services and of more equitable and efficient utilization of avaiTheble resources, the MOH has put in place a system of NHA.

The current document shows the methodology adopted for data collection, the means, the estimates made in order to complete the corresponding matrices of NHA. A series of tables and corresponding graphs profiling the health sector expenses and as well as constraints and the limits of the feasibility of NHA will be equally shown in this document.

Overall, the collection of necessary data the we have targetted with our approach has permitted us to identify the difficulties (especially missing data) and the means to overcome them. In effect, our task consisted of, in the first place, assembling the relative data on expenses and sources of financing by examining the available resources and those allocated to the MOH, to other ministries, to the social securitty agencies and by the private practive physicians (private sector.)

The systematic analysis consisting of confronting the information generated by the NHA exercise with objectives of national health policy will be defined and ultimately made available.

Finally, we wish to convey in this document the importance of the feasibility of NHA, to identify the constraints of such a task and to test eventually the following methodology for collecting and estimating the data.

A/ Social-Health indicators :

A-1- Development of the principal demographic indicators

Year	1956	1966	1975	1984	1994	1996	1997
Populaetion	3,782,169	4,533,351	5,588,209	6,966,173	8,785,364	8,870,000	9,214,800
Rate of natural increase (in %)	3.5	3.01	2.60	2.58	1.70	1.6	1.32
Fertility Rate (%₀)	50	45.1	36	32.3	22.7	21.7	18.9
Mortality Rate (%₀)	25	15	10.0	6.5	5.7	5.1	5.6
Infant Mortality Rate (%₀)	200	120	76.9	51.4	30.6	30	-
Ratio of Fertility (child /woman)	7.2	7.15	5.79	4.64	2.90	2.67	2.38
Life expectancy (years)	47	51.1	58.6	67.1	71.4	71.4	72
Population under 15 years of age (%)	42.5	46.5	43.8	39.7	34.8	34.8	-
Illiteracy Rate	15.3 %	32.1	45.1	53.8	67		

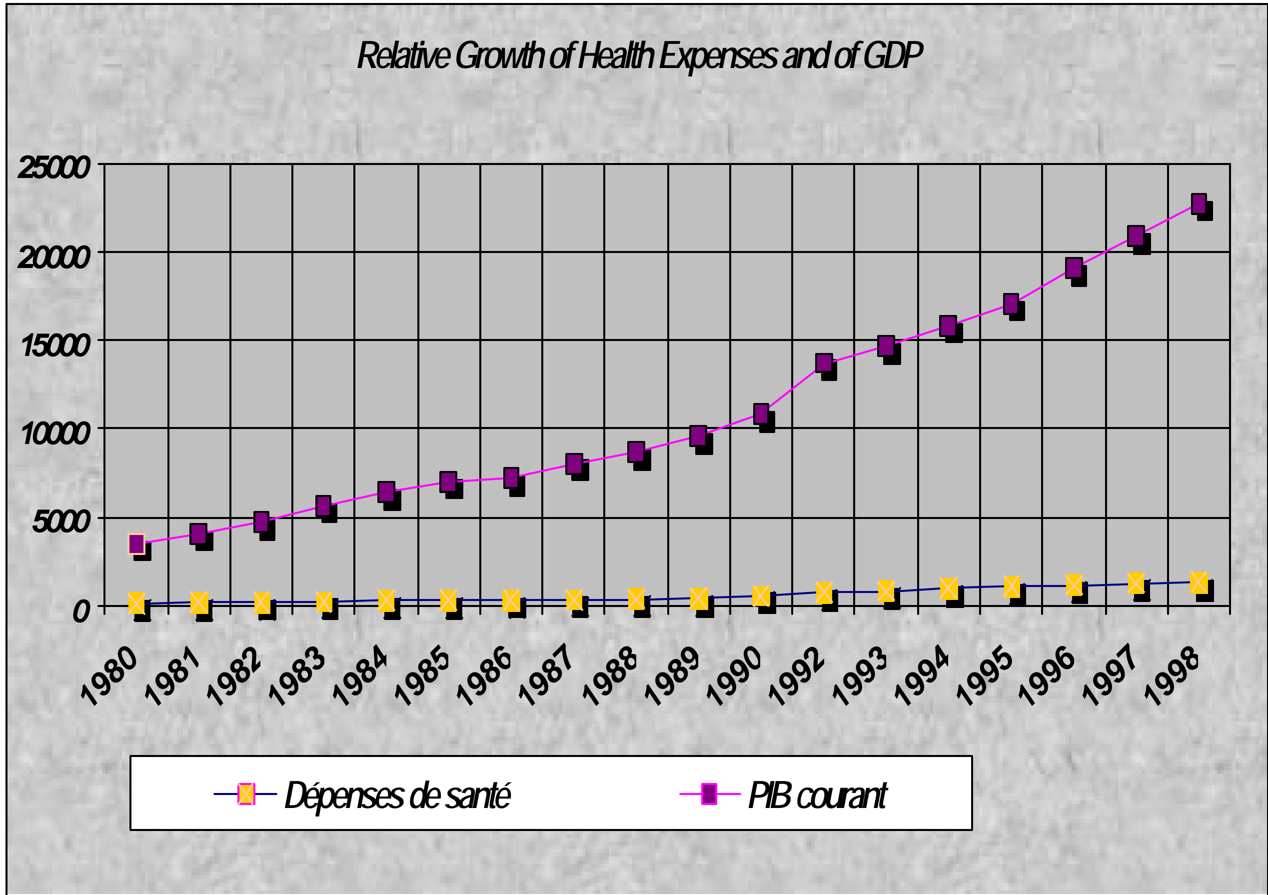
Source : ***Documents from the Ministry of Public Health and the National Institute of Statistics.***

A-2- Development of the structure by age group of the population of Tunisia

Age Group	1966	1975	1984	1995	2000	2010	2020	2030
0-4	18.6	16.0	14.6	11.0	10.1	8.9	8.2	7.3
5-14	27.9	27.8	25.1	23.8	21.2	17.6	16.0	14.8
15-59	48.0	50.4	53.6	56.9	60.1	64.7	64.6	62.9
60 and older	5.5	5.8	6.7	8.3	8.6	8.8	11.2	15.0

Source : ***National Institute of Statistics***

A-3-Health Financing in Tunisia : Trends and Perspectives



Growth of Health Expenditures in Tunisia according to financing source (1980-1998)

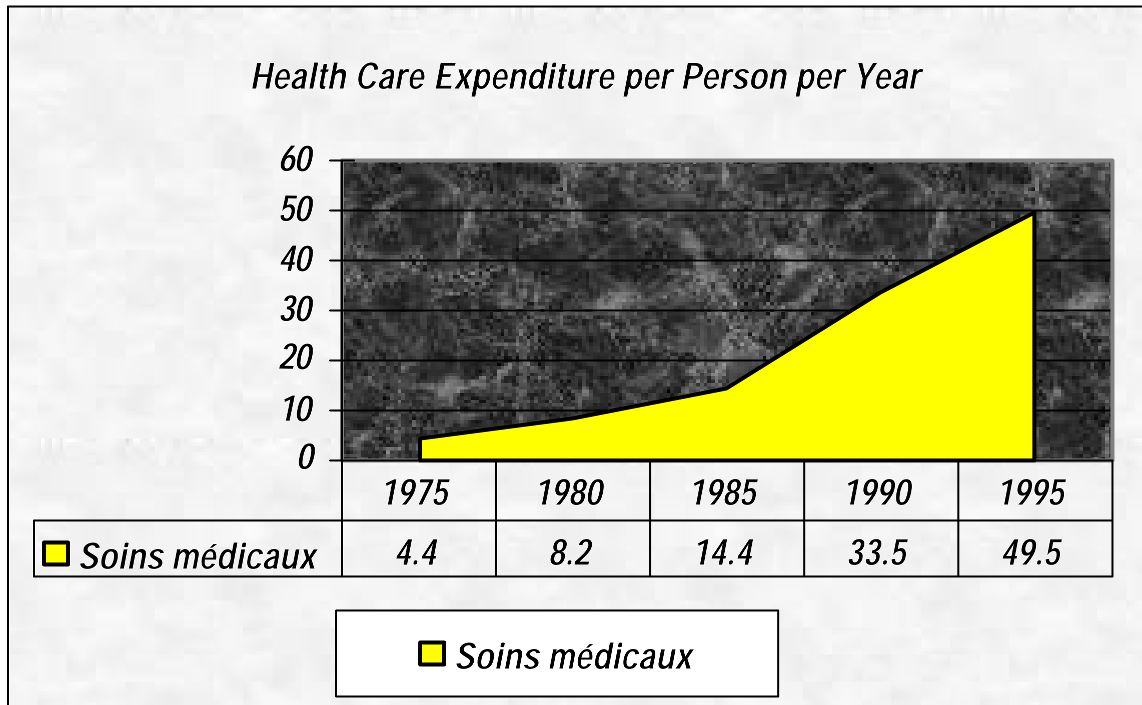
Pourcentages

100
80
60
40
20
0

1980
1982
1984
1986
1988
1990
1993
1995
1997

Etat
CSS
Ménages
Méd. Ent.

Anne



Annex 1 : Study of Case concerning the Development of financing the University Hospitals (Public Health Society) between 1991-1998.

A-4- Human Resources:

Annex 2 shows a summary table depicting the growth of the effect of general doctors and specialists and the ratio of doctor/citizen for the past five years.

B/ Profile of the Tunisian health system:

Services provided by the sub-systems of Health	*Health Insurance and covered portions of the population*	*Sources of Financing*	*Relations between Beneficiaires and Providers*
• Primary Health Care. • Secondary Health Care. • Tertiary Health Care.	• Social Security/Insurance: - CNSS - CNRPS • Associations (Mutuelles) • Insurance Groups • Payers	• Government Budget. • Public Employers. • Private Employers. • Households • Foreign Aid and Assistance.	• System of Co-payment • Direct Reimbursement. • Payment.
Public Health Services ***Ministry of Public Health :*** • ***Health centres and the primary health care (PHC):*** Health centers provide preventative and curative health care, and also health education activities. - Treatment of chronic illnesses. - Child survival, family planning. - Prevention and control of transmittable and contatious diseases, Vaccinations. - Medical treatements preschool, school age, and university level. - Health outreach/education by : - Health education, principals of hygiene and rules relating to environnmental protection. - Collection and use of statistical and epidemiological data - -	* Government employees benefit from health care offered by CNRPS. * Employees of the private sector benefit from health care offered by the CNSS. * The poor benefit from health care delivered by the Ministry of Social Affairs (under a system of health insurance free for families in need/ AMG I and AMG II).. * Ministry personnel at the MOH. * Payers.	* Government Budget (Ministry of Finance) - Title I = Operating Budget - Title II = Investment Budget . * Contribution of the social security agencies (CNSS, CNRPS) : - Annual fixed price. - System of billing. - Participation in the budget of hospital * Earnings from co-payments	• Co-payment • Payment. • Payment for service.

- .

- ***Area or Provincial Hospitals (Circumscription)***

These facilities treat the same types of cases seen at PHC centers, plus other general medical cases, such as maternity and emergency. They offer hospital beds and methods of diagnosis at the appropriate level and volume of their activity.

- ***Regional Hospitals :***

These facilities treat the same types of cases seen at PHC centers and the hospitals at the area or circumscription level, plus treatment for specialized care such as medical and surgical.

They have available hospital beds and disagnostics services at the appropriate level and volume of activity.

Certain health services at the regional hospitals can be recognized as university or teaching hospitals by the cooperation of the ministries of education and of sciences and the MOH, by way of their equipment and of the qualifications of staff who are in charge there.

- ***Health Establishments for Teaching/ Universities***

In addition to treating the same types of cases seem at PHC level and as the hospitals at the circumscription and regional level, these facilities have as their primary objective to treat highly specialized cases.

These facilities treat equally the findings of the university and post-university and making and participating in all the scientific research, especially in the areas of medical, pharmaceutical and dental.

***NB:* -** Taken together, these health facilities contribute to the medical and paramedical training activities as well as those activities of scientific research.

Ministry of National Defense : • Principal Military Instructional Hospital de Tunisia : provides the same types of medical services as availabe at the university hospitals of the MOH. • The hospital at the garrsion.	* Personnel of the ministry of defense (carnet de soins) * Agreement with the social security agencies. * Household expenditures	* Budget allocated by the minister of defense * * Income: co-payment * Income : (agreement with the agencies/insurers) * Direct Income (payers).	
Ministry of Interior : • Hospital for the National Security Forces (police)	* Personnel du ministry of Interior.	* Budget allocated by the Minister of Defense	
Ministry of Social Affairs : • House/Agency for the Protection of the Elderly. • House/Agency for the Protection of Infants/Childhood. • Labor (workers) Institute • Polyclinics of the CNSS. •	* National program to assist families in need, handicapped and the elderly (CNSS).	* Reimburseable by the CNSS.	
Ministry of Youth and Children National Center for Sports Medicine (youth centers)			

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<u>Semi-public subsystem (Insurance) :</u>
The National Social Security Agency:
• Granting free care with co-payments by patients in the appropriate MOH facilities (system of health care).
• Direct benefit of care by their own polycliniques (preventative and ambulatory care).
• Traditionally in charge of health care treatment in the public or private sector (ex. : kidney transplant, cardio-vascular surgery, TDM, hemodialysis and thermal treatments.
• Responsible for health care for foreigners.
• Reparation for damages resulting from work-related accidents and from professional illnesses. The benefits of security and of care and the provision of prothetic and orthopedic equipment for the victim.

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• Social insurance for the sector social organized according to 8 levels or categories:
- General category
- Category for students
- Category for salaried farmers
- Category for improved agriculture
- Category for non-salaried workers (Farm sector and farmers).
- Category for Tunisian workers abroad.
- Category under the Tunisian-French agreement.

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* Système de contributions/subscription : Rate de subscription in the health insurance is as follows:
Rate of Employers / Rate of workers
4.5139 % / 1.7361 %
2 D /person/year
0.9000 % / 0.3000 %
2.0000 % / 1.0000 %
4.0000 %
5.4000 %

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• C-payment.
• Contracts :
- CNSS- Cardio-vascular Clinic.
- CNSS- Centers for hemodialyses
- CNSS- Thermal Centres
- CNSS- Military hospitals.

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• <u>.Health</u>
The National Agency of Retirement and of Social Planning :
• Grants free health care with a patient contribution in the relevant MOH facilities (system of health care).
• Reimbursement of costs of care advanced by the insurance company.
• Responsible for health care for the foreigner.
• Reparation for damages resulting from work-related accidents and from professional illnesses. The benefit of security and of care and the provision of prothetic and orthopedic equipment for the victim.

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* Mandatory category .
* Optional Category.

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Free Medical Insurance: • Grants free health care with a patient contribution in the relevant MOH facilities (system of health care). • Responsible for health care for the foreigner (Ministry of Public Health). ***Associations/Mutuelles :*** • Reimbursement of costs of care advanced by the insurance company. • Medicine of businesses/organizations. ***Insurance Groups :*** • Remboursement des frais de soins avancés par	* Health care benefits provided by the Ministry of Socail Affaires. * 21 associations or mutuelles in the public sector cover the employees of the ministries and the employees of certain offices et national businesses (SONEDE, SNCFT, mandatory category). * 24 associations or Mutuelles covering the salaries of the private sector of service production	* Put in place by the MOH. * Put in place by the MOH * System of subscriptions of members and/or subsidies by organizations. The subscription rate does not exceed 2 % of base salary. The employer contribution is the most important. For example : the subscription rate for the mutuelle at the STEG is fixed at 2% at the price per person and at 3.25 % for organizations. * Reimbursement system.	• Contracts with insurance groups • Contract with individual insurance
<u>Private Health Services</u> • Private paramedical organizations. • General doctor's office • Medecal specialist's office • Dentist office • Multi-disciplinary clinic • Specialized clinic.	• Insurance group. • Mutual insurance company/organization • Optional insurance facultative managed by the CNRPS. • Payers.	* Subsciption system of salaries and contributions from employers.	* System of group contracts or individual contracts.

C- Summary of the practical difficulties encountered since the 1st NHA exercice, presented at the "2nd workshop" (Beirut , June 1999).

- Lack of certain stand alone data.

- Complexity of health care financing schemes and the inadequacy of the NHA matrices to reflect reality.

- Three categories of difficulties at the level of the household budget summary:

  - Lack of detailed data about the health care providers, especially in the « free practice » or private sector.

  - Problem of reimbursement of health care costs by the health insurance companies ⇒ risk of double counting.

  - Periods of fielding the surveys (every 5 years), which constitutes a contraint to the annual collection of NHA data.

  -

- Lack of detailed data concerning the semi-public system.

- Lack of a standardized classification of terms, grouping all the expense categories of players or organizations in the health system.

- As with the development of a standardized classification terms, the unresolved problem of differing definitions at the origin of errors of interpretation.

- Concerning the analysis :

  - Important risk of double counting.
  - Disparity among terms and their definitions.

D- Findings and recommendations coming out of the "2nd workshop".

- Target partners and of the nature of the data to be collected.

- Multiply efforts of data collection and allocation of tasks among the members of the team responsible for the NHA project.

- Continue the research, especially at the document level, periodically joining the directors of the institutions and public agencies.

- Continue the preparatory work of the national survey of the state of health and of the medical consumption (use) in Tunisia (Field work in September 2000).

- Estimate the missing data, based on historical data, in cooperation with certain heads of departments and with statistical data, as well as according to rates of growth of activities of health organizations.

E/ NHA by sub-system

In Tunisia, health care is essentially provided by the public, the semi-public and the private sector. At the level of the public sector our great interest will be directed at the services provided by the facilities of the MOH which constitutes the object of the following paragraph.

E-I/ Public Health Sector (Ministry of Public Health)

The budget of the Ministry of Public Health is broken down by position, such as personnel, materials, etc. Annually, this budget is subdivided into two parts:

- Operating expenses (Title I)
- Investment Expenses (Title II)

It will therefore be logical to think of collecting the necessary data for the NHA starting with the final budget documents of the MOH as well as the reports of the minister. But, it is still an effort to dissassociate and disagregate the existing data generated by above-mentioned sources in examining the basic data. For example :

- The number, type and size of installations and of equipement managed by the MOH.
- The distribution of drug supplies/medications among the regional facilities.

Complementary information will be researched under the management of certain agencies such as:

- The Office of Financial Affairs.
- The Office of Administrative Affairs.
- The Office of Equipment.
- The Office of Research and Planning.
- The Office of The Supervision of Hospitals.

These organizations often establish estimates about the distribution and provision of miscellaneous articles as well as personnel, etc.

We are going to present in this paper that follows certain tables and graphs regarding health expenses at the level of the MOH.

Development of public health expenses over the past few years:

	1985	***1990***	***1995***	***1996***	***1997***	***1998***	***1999***	***$TAAM_{85-95}$***	***$TAAM_{95-99}$***
Title I	136.3	210.3	351.4	379.3	409.0	337.6	471.7	9.9 %	7.1 %
Title II	24.6	29.1	52.6	58.5	63.1	62.5	69.2	7.2 %	7.1 %
Total Expnses	160.9	239.4	404	437.8	472.1	500.1	530.9		
Health Budget as a percent of the Government budget	5.6 %	5.8 %	6.1 %	5.8 %	5.8 %	5.5 %	5.6 %	9.6 %	7.1 %

We have been able to collect and estimate the allocation of relative health expenses at the MOH using the following methods:

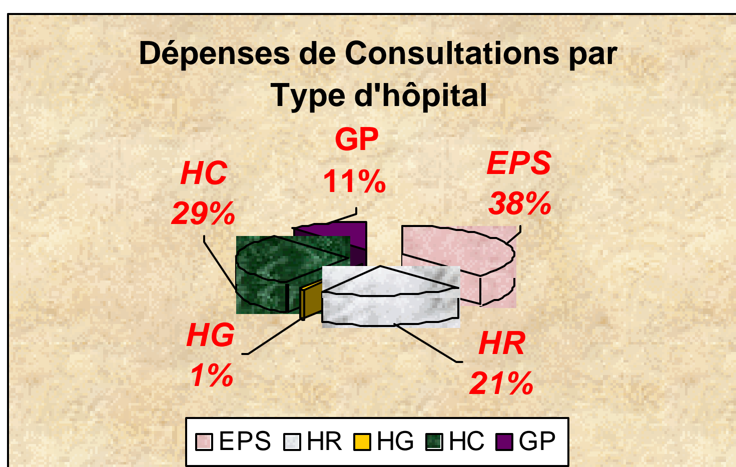
® Health expenses by the health facility level and by budget line items (refer to tables in ***annex 3***).

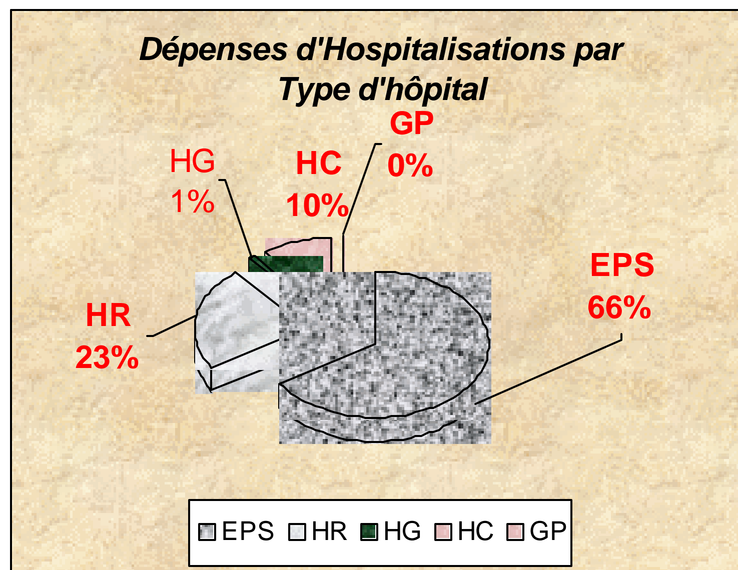
® Allocation of health expenses by facilities and nature. In effect, in order to obtain this matrix of hospitalization expenses and emergency consultations we have relied on historical data. This historical information has been separated in the hospital budget between expenses of consultations and hospitalizations according to function of the nature of the activities and of their magnitude, according to the following table:

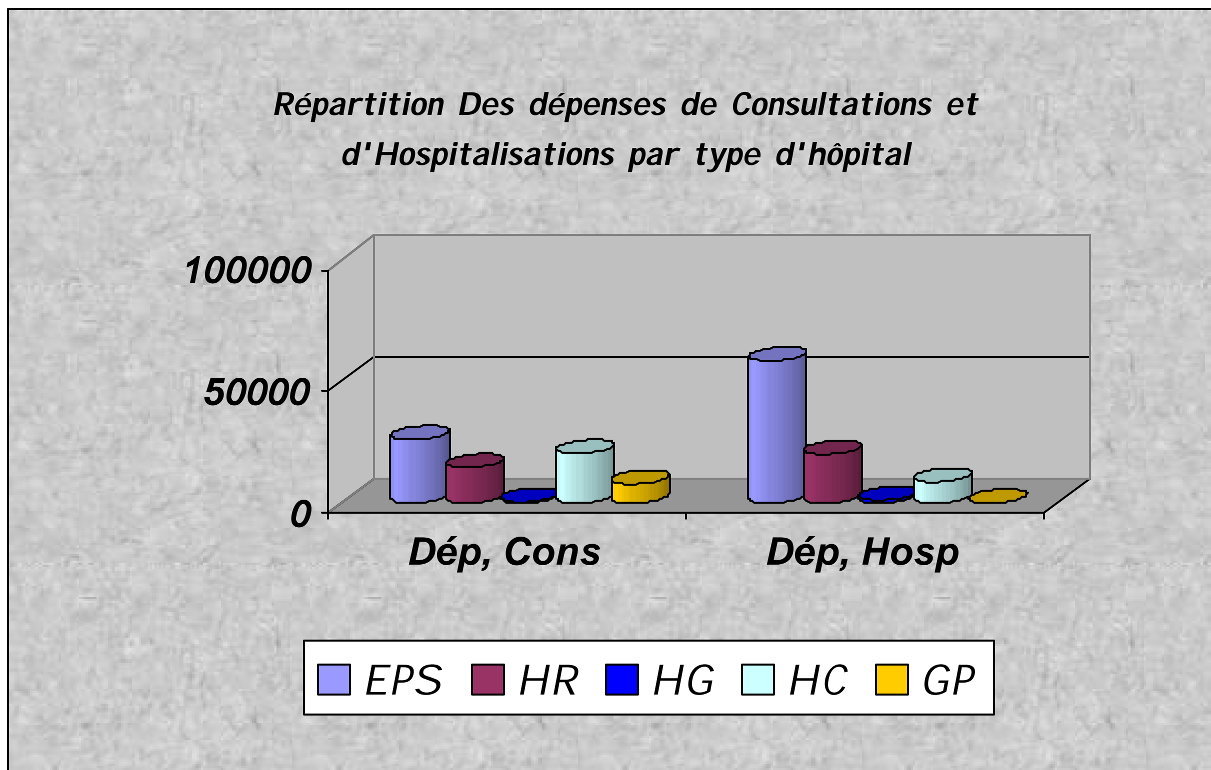
Category of Establishments	Consultations	Hospitalizations
University Hospitals	30 %	70 %
Regional Hospitals	40 %	60 %
Circumscription Hospitals	70 %	30 %
Primary Health Care Group.	100 %	0 %

These estimations were derived in cooperation with the directors of the health facilties and the directors at the central administration level, with an understanding of the apportioning of the budgetary allocations.

The following graphs illustrate the result of this procedure.







® Allocation of health expenses by health facility: In order to obtain these results, we determined two calculations/formulas :

$$1/\ D_i = C/JH_i \,.\, NJH_i$$
$$2/\ D_i = CL \,.\, NL_i$$

Where : D_i signifies expenses for hospitalizations in the Hospital service (i).

C/JH_i : The average cost of a day's hospitalization in the hosptial service (i), obtained on the basis of historic observations.

NJH_i : Number of days of hospitalizations in the hospital service i

CL_I : Annual average cost of a bed in the service i.

NL_i : Number of beds in the service i.

The formula which allows us to make the estimation more viable in approaching the budgetary total of the hospital will obviously be retained.

E-II/ Sub-system of Health: The Private Sector:

The relative health expenses in this sector are principally from :

- The national study of the « libéral health sector » or private sector; Dr. Said Hajem, Pr. Noureddine Achour, INSP : 15 septembre 1996/29 février 1997
- The National Institute of Statistics
- DPM for the matrix about drug supplies or medciations

The necessary information for the elaboration of these accounts will be obtained by relying on statements of taxes made by private sector professionnels, with the condition of having accounts which are eventually self-declaring. These national surveys of the private sector are to be recommended.

E-III/ Insurance groups :

Development of the premuims issued by Insurance Groups between 1996 and 1998.

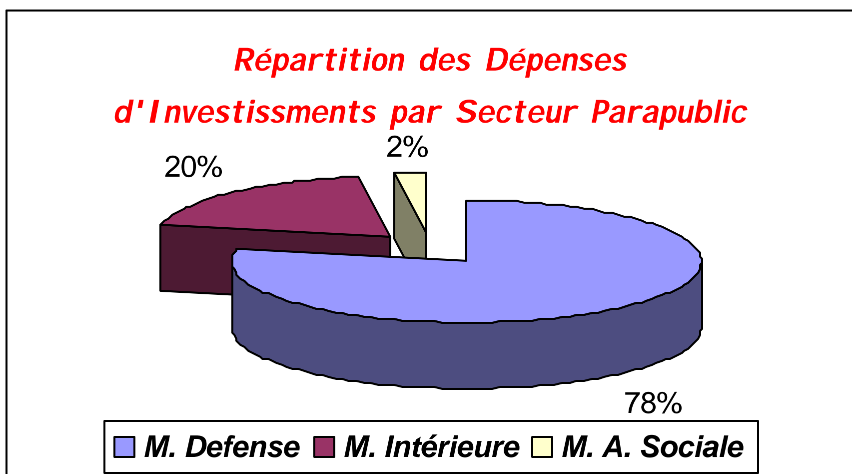
En MD

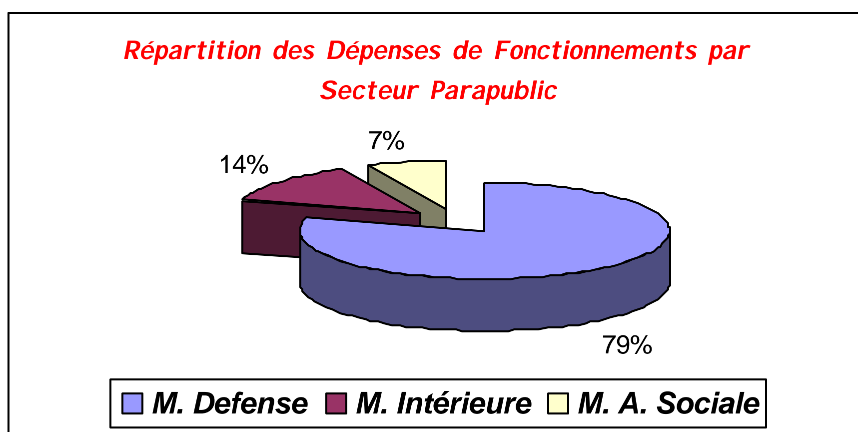
	1996	***1997***	***1998***
Premuims issued	**63,990**	**68,404**	**74,485**
Part of the premuims of the I.G. turnover	**20.06 %**	**19.79 %**	**20.24 %**

Concerning other detailed information about the premuims paid by businesses in the insurance groupe, the costs of creating and the reimurseable amounts are equally available. Accordingly, it remains to define the nature of the data required to complete the NHA analysis.

E-IV/ Semi-public Sector

Ministries of Defense, Interior and Social Affairs :





Allocation of health expenses at the ministry level for Defense, Social Affairs and Interior (1997) :

Amounts in 1000 Dinars

Health Care Facilties	*Ministry of National Defense*		*Ministry of Social Affairs*		*Ministry of Interior*		*Total*
	Oper. Exp.	*Invest. Exp.*	*Oper. Exp.*	*Invest. Exp.*	*Oper. Exp.*	*Invest. Exp.*	
Center for Medical Control of Aviation	284	66					
Military Centere for Blood Transfusions	784	397					
Medical Center for the Navy/Underwater Exploration	12	0					
Military Teaching Hospital in Tunis	9,286	787					
Military Hospital at Gabès	200	5					
School of Military Health	12	2					
School of Applications of Military Health	16	7					
SubTotal	523	1,264					
Institute for the Promotion of the Handicapped			733	98			
G. S. Educat. Insuffisants Moteurs Nabeul			62	2			
Institute of Health and Social Security			1,082	215			
SubTotal			1,877,878	315			
Hospital of the Internal Forces at La Marsa					954	35	
Total	10,954	1,264	1,877	315	954	35	***15,399***

Source : Documents from the Ministry of Finance & INS.

Polyclinics of the CNSS

The polyclinics of the CNSS are six in number, spread out across the territory of Tunisa. Their principal mission is to care for walk in or outpatient clients.

Breakdown of expenses by operating and investments

POLYCLINICS OF THE CNSS	CNSS	
	Operating Expenses	*Invest. Expenses*
El Omrane	**8,130,949**	**2,455,829**
Sousse	**5,347,813**	**1,561,491**
El Khadra	**4,705,522**	**2,138,940**
Bizerte	**7,194,109**	**2,168,285**
Sfax	**5,608,396**	**2,926,064**
MetTheoui	**2,347,850**	**2 364,665**
C.A.O.	**678,968**	
Total	***33,713,607***	**13,615,274**

Breakdown of Expenses for Consultations at the Polyclinics.

	No. of Consultations	*Avg. Cost Per Consultantation*	*Expenses of Consultations*
El Omrane	**360,371**	**16,651**	6,000,538
Sousse	**224,937**	**16,783**	3,775,118
El Khadra	**198,147**	**16,452**	3,259,915
Bizerte	**178,120**	**28,872**	5,142,681
Sfax	**287,484**	**16,291**	4,683,402
MétTheoui	**70,767**	**21,446**	1,517,669
Total	*1,319,826*	*15,144*	*2,082,026*

En Dinars

The average cost per consultation (CMC) is determined using the following formula:
CMC = (Expenses-Income or Receipts)/No. of consultations.
For all of the polyclinics, the CMC is equal to 15,775 Dinars.

F/ Explanation of NHA 1997/1998.

In light of the idea of E. P. Mach and B. Abel Smith (1984), that the "overall estimation often is enough in the majority of cases, as long as it rests on a rational basis, it is more valuable than a great void in a table of numbers". We have been able to construct the following matrices shown in ***annex 4.***

At this stage, the following valuable information will be clear.

G/ Critique of the NHA methodology :

- The methodology of deriving the matrices can be criticized in light of certain inserted values, which hide the actual relations between the different health care financing, those which deprive decisionmakers of this information. We mention for example: Households (source)- Ministry of Public Health.

- The system of matrices does not allow for a true representation of the health care financing system in Tunisia. For example : The relation between the MOH and the Social Security Agency, Households and the MSP.

- International comparision : the differences in the methodologies between that of Harvard and the member countries of the OECD(l'OCDE.)

Certain conclusions will be used by our decisionmakers. The most important ones are included in the paragraph below.

H/ NHA as a decisionmaking tool :

Starting with the NHA matrices for 1997, shown in ***annex 4***, we reveal the following observations or findings :

- Arbitrage (negotiation ?) in health care financing by ***: Taxes or fees vs. contributions***.

- Unequal distribution of budget allocated to different public health facilities (primary, secondary, tertiary levels).

- System of health insurance favors the use of the public sector.

- Increasing the problem of accessibility following the increase of portion of household health expenditures in health care financing.

- Cost recovery rate from treatment provided by the public hospitals (hospital) is still not viable.

- Problem of equity : the measure of the impact of the increase in patient contributions to health care costs in health care packages (CNSS, CNRPS, AMGII).

I/ Data Sources :

*/ Documents from the Ministry of Public Health :

- Budgets of the health care facilities and hospitals (Office of the Supervision of the hospitals, Office of Financial Affairs).
- Human Resources: (Health facilities (? ?Cartes sanitaires)/ Office of Research and Planning).

*/ Documents of the Ministry of Finance.
*/ Documents of the National Institute of Statistics.
*/ Annual Statistics of the CNSS.
*/ Documents de the CNRPS.
*/ Documents de the Tunisian Federation of insurance companies.

J/ Future Thoughts/Perspectives :

- Organization of an annual seminar for the presentation of data.

- A systematic analysis of NHA and an annual report on NHA.

- Continue the works of research which complement the information coming out of the NHA. For example, we mention :

- ® Cost/benefit analysis.
- ® Analysis of the demand for medical care in making use of the individual data from household consumption studies.
- ® Study of the performance of the health system: Productive efficiency of health care facilities.
- ® Study of the questions of decentralization and inter-regional disparities.
- ® Study of the l'effectiveness of the health insurance system.

- A standard classification of terms to establish by function the choices of different interventions in the health care system is necessary for the periodic feasibility of NHA.

- Institutionalization (annual) of NHA as well as a report.
- Creation of a commission responsible for monitoring, officailly created and named.

- Seminar for presentation of the data.

K/ Conclusions :

- The quality of the data varies according to the nature of the subject studied and the sources of information. Therefore, we were obliged to use some underestimates and/or to estimate of certain expenses according to available data.

- To make up for the differences in values according to the different sources of information, a comparison and a confrontation of the multiple data sources are often necessary in order to reflect reality.

- To complete this work, the following approaches need to be undertaken :

  - To complete the matrix by expense category and by function, we must propose uniform names or terms for all the interventions in the system.

- To assemble the necessary information nécessaire at the private sector level, two actions are necessary. It is necessary to highlight the importance of managing studies and the training of professionals in this sector in order to achieve NHA results.