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STATISTICAL SERVICE

HEALTH AND HOSPITAL STATISTICS 2017

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PREFACE

The “Health and Hospital Statistics” report is published annually since 1980 and its aim is to provide basic information with regard to medical services offered by the public sector and a comprehensive picture of the general level of health and morbidity in Cyprus.

The report, inter alia, provides data on in-patients (discharges), surgical operations, out-patient attendances, bed occupancy rates, information on medical, nursing and para-medical personnel, health indicators, as well as comparative data on previous years.

Due to lack of detailed data for the private sector, the data presented mainly refer to the public health services only. The only data available for the private sector refer to the number of doctors, dentists, nurses, clinics, beds, as well as the number of discharges, bed days, etc.

The report was prepared by Ms. E. Kyriacou and Ms. N. Petrou, under the supervision of Ms. K. Onisiforou, Head of the Division of Demography, Social Statistics and Tourism.

Sincere thanks are expressed to all Services of the Ministry of Health and to all persons who provided assistance for the collection and submission of the information necessary for the preparation of this report.

Stavros Karagiorgis
Director
Statistical Service

May, 2019

HEALTH AND HOSPITAL STATISTICS 2017

1. GENERAL

1.1 Coverage

Medical care in Cyprus is provided through the public and private health services. Most of the data in this report refer to the public sector only, due to lack of detailed information for the private sector.

The data presented refer to in-patients treated and discharged from the general and rural hospitals, surgical operations performed on in-patients and out-patients, out-patient attendances at the general hospitals, special hospitals, rural hospitals and health centres, bed occupancy rates, paramedical services, various health indicators, expenditure on health services, causes of death and health personnel. Due to the Turkish invasion in Cyprus, data from 1974 onwards refer to the Government controlled area only.

As in previous years, the analysis by diagnosis on data for 2017 was based on in-patient cases (discharges) reported to the Statistical Service of Cyprus from the IT unit of the Ministry of Health.

2. SUMMARY OF MAIN RESULTS

2.1 In-patients (Discharges)

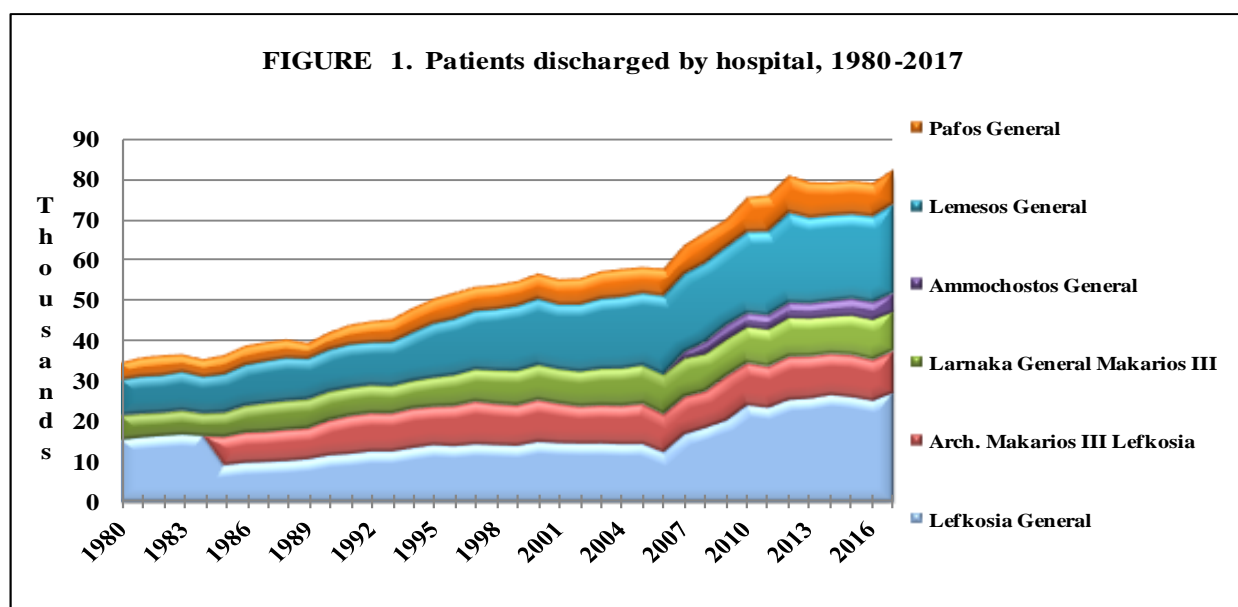
During 2017, 81.856 patients were treated and discharged from the general hospitals, compared to 78.486 in 2016, recording an increase of 4,3%. In addition, 1.556 patients were treated and discharged from Kyperounta and Polis Rural Hospitals in 2017 compared to 1.481 in 2016, recording an increase of 5,1%.

TABLE I. Patients discharged by hospital, 2015-2017

Hospital	2015		2016		2017	
	No.	%	No.	%	No.	%
TOTAL	80.552	100,0	79.967	100,0	83.412	100,0
Lefkosia General	25.733	31,9	24.838	31,1	26.817	32,2
Archb.Makarios III Lefkosia	10.349	12,8	10.027	12,5	10.245	12,3
Larnaka General Makarios III	9.778	12,1	9.944	12,4	9.767	11,7
Ammochostos General	4.272	5,3	4.448	5,6	4.639	5,6
Lemesos General	20.718	25,7	21.064	26,3	21.900	26,3
Pafos General	8.138	10,1	8.165	10,2	8.488	10,2
GENERAL HOSPITALS	78.988	98,1	78.486	98,1	81.856	98,1
RURAL HOSPITALS	1.564	1,9	1.481	1,9	1.556	1,9

Lefkosia and Ammochostos hospitals had a larger percentage of in-patients compared to their respective district population which was 38,9% and 5,5% respectively, while Lemesos General Hospital (Kyperounta Rural Hospital included) and Larnaka General Hospital Makarios III had a smaller percentage of in-patients than their respective population which was 28,0% and 17,0%. Paphos Hospitals (Polis Rural Hospital included) had the same percentage of in-patients compared to their district population which was 10,7%.

As far as general hospitals are concerned, in 2017, 32,8% of the patients were treated and discharged from Lefkosia General Hospital, 12,5% from Archbishop Makarios III Lefkosia, 11,9% from Larnaka General Hospital Makarios III, 5,7% from Ammochostos General Hospital, 26,8% from Lemesos General Hospital and 10,4% from Pafos General Hospital. Kyperounta and Polis Rural Hospitals accounted for 1,9% of the patients treated and discharged.



In general hospitals, the General Surgery Department had the largest share in the number of patients treated with 14,5%, followed by the Medical with 13,9%, the Paediatric with 10,3%, the Gynaecology-Obstetrics with 10,0%, the Haematology with 8,6%, the Orthopaedic with 8,2%, the Cardiology with 6,3%, the Pneumonology with 4,0%, and various other 24,2%.

The bed occupancy rate in 2017 for Lefkosia General Hospital was 82,7%, for Archbishop Makarios III Lefkosia it was 63,2%, for Larnaka General Hospital Makarios III it was 70,2%, for Ammochostos General Hospital it was 62,7%, for Lemesos General Hospital 77,3% and for Pafos General Hospital 78,9%. The bed occupancy rate in 2017 for Kyperounta Rural Hospital was 52,5% whereas for Polis Rural Hospital the rate was 49,3%.

The average length of stay of patients discharged from all general hospitals was 4,6 days, while in 2016 and in 2015 was 4,7 days. Patients at Lefkosia General Hospital, at Archbishop Makarios III Hospital Lefkosia and at Lemesos General Hospital stayed on average longer, 5,2, 4,6 and 4,5 days respectively, followed by Larnaka General Hospital Makarios III and Pafos General Hospital with 4,3 days and Ammochostos General Hospital with 3,6 days. The average length of stay of patients at rural hospitals was 6,2 days, whereas in 2016 it was 5,9 days.

TABLE II. Bed occupancy rates and average length of stay by hospital, 2015-2017

Hospital	Bed occupancy rate (%)			Average length of stay (days)		
	2015	2016	2017	2015	2016	2017
GENERAL HOSPITALS	74,7	73,1	75,6	4,7	4,7	4,6
Lefkosia General	81,9	78,9	82,7	5,2	5,4	5,2
Arch. Makarios III Lefkosia	65,6	61,2	63,2	4,7	4,5	4,6
Larnaka General Makarios III	70,7	73,5	70,2	4,3	4,4	4,3
Ammochostos General	59,7	58,7	62,7	3,8	3,6	3,6
Lemesos General	76,5	74,7	77,3	4,5	4,5	4,5
Pafos General	72,7	74,8	78,9	4,1	4,2	4,3
RURAL HOSPITALS	51,3	46,9	51,8	6,1	5,9	6,2

The age-groups of 55 years and over as well as the patients under 1 year old recorded the highest average length of stay in general hospitals. With regard to diseases, the longest duration of stay in hospitals occurred for diseases referring to the perinatal period, as well as for diseases referring to mental and behavioural disorders (13,0 and 10,5 days respectively), diseases of the circulatory system and injuries, poisoning and certain other consequences of external causes (6,2 days) and diseases of the nervous system (5,9 days).

Of the patients discharged from general and rural hospitals 60,2% stayed in hospitals up to 3 days, 23,9% for 4-7 days, 10,4% for 8-14 days, 4,1% for 15-30 days and 1,4% for 31 days or more.

Neoplasms have the highest share, 14,5% of the patients discharged from general hospitals, followed by diseases of the circulatory system with 9,7%, injuries, poisoning and certain other consequences of external causes with 9,5%, diseases of the digestive system with 8,9% and diseases of the respiratory system with 8,5%. All other disease categories account for the remaining 43,5%, whereas “Not stated” accounts for 5,4%.

TABLE III. Percentage of patients discharged from general hospitals by selected disease category, 2015-2017

Disease category	(%)		
	2015	2016	2017
ALL CATEGORIES	100,0	100,0	100,0
Neoplasms	12,9	13,3	14,5
Diseases of the circulatory system	9,5	9,3	9,7
Diseases of the respiratory system	8,4	8,0	8,5
Diseases of the digestive system	8,5	8,4	8,9
Diseases of the genitourinary system	6,9	6,9	7,0
Pregnancy, childbirth and the puerperium	6,2	6,2	6,3
Injury, poisoning and certain other consequences of external causes	10,0	9,3	9,5
Other diseases	27,5	28,4	30,2
Not stated	10,1	10,2	5,4

From the patients treated in general hospitals, 51,6% were males and 48,4% females.

Certain diseases, such as infectious and parasitic diseases occur mostly among young persons, while other diseases such as neoplasms, diseases of the eye and adnexa and diseases of the circulatory system occur among older persons. Diseases of the digestive system and diseases of the respiratory system and injuries, poisoning and certain other consequences of external causes, are more or less equally distributed among the various age-groups.

The highest mortality was recorded among patients of the oldest age-groups, 65 and over.

2.2 Surgical operations

During 2017, 33.214 surgical operations were performed at all general hospitals on in-patients and out-patients compared to 29.891 in 2016, recording an increase of 11,1%.

TABLE IV. Surgical operations by hospital, 2015-2017

Hospital	2015		2016		2017	
	No.	%	No.	%	No.	%
TOTAL	33.069	100,0	29.891	100,0	33.214	100,0
Lefkosia General	9.139	27,6	8.316	27,8	8.480	25,5
Archb.Makarios III Lefkosia	7.107	21,5	6.752	22,6	7.722	23,2
Larnaka General Makarios III	5.640	17,1	5.017	16,8	5.235	15,8
Ammochostos General	1.450	4,4	1.447	4,8	1.635	4,9
Lemesos General	6.013	18,2	5.892	19,7	6.405	19,3
Pafos General	3.720	11,2	2.467	8,3	3.737	11,3

Lefkosia General Hospital had the largest share with 25,5% of the surgical operations, followed by Archbishop Makarios III Lefkosia with 23,2%, Lemesos General Hospital with 19,3%, Larnaca General Makarios III with 15,8%, Pafos General Hospital with 11,3% and Ammochostos General Hospital with 4,9%.

TABLE V. Percentage of surgical operations performed on in-patients and out-patients at general hospitals by speciality, 2015-2017

Speciality	%		
	2015	2016	2017
TOTAL	100,0	100,0	100,0
General Surgery	27,9	25,7	27,3
Orthopaedic	17,6	18,5	17,6
Gynaecology & Obstetrics	11,8	13,3	11,9
Ophthalmology	15,0	15,9	18,5
Urology	10,4	8,4	8,7
Other specialities	17,3	18,2	16,0

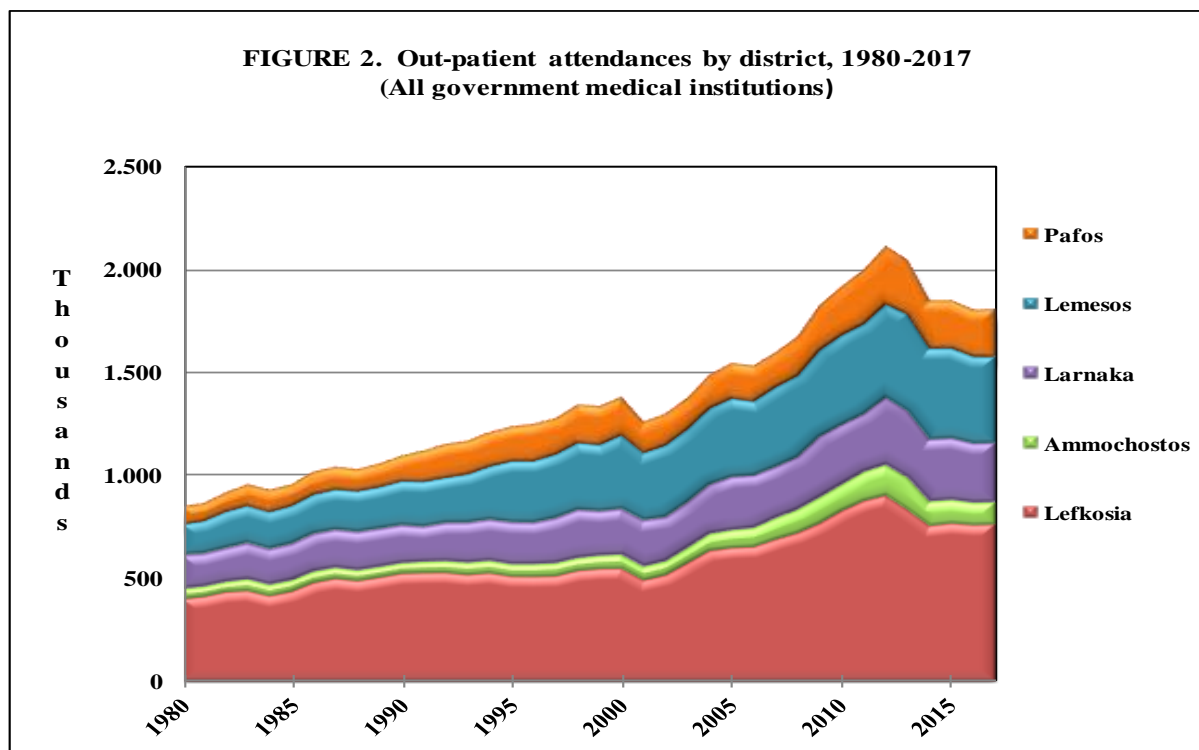
General surgery has the largest share in operations accounting for 27,3% of the surgical operations performed on in-patients and out-patients, followed by ophthalmology with 18,5%, orthopaedics with 17,6%, gynaecology and obstetrics with 11,9% and urology operations with 8,7%. All other specialities accounted for the remaining 16,0%.

2.3 Out-patient attendances

During 2017 a total of 1.800.016 out-patient attendances were recorded at the various hospitals and health centres, compared with 1.796.654 in 2016, recording an increase of 0,2%. Out-patient attendances at the general hospitals accounted for 50,9%, rural hospitals 2,8% and health centres 46,3%.

Among general hospitals, Lefkosia General Hospital recorded the largest share of out-patient attendances accounting for 26,8%, followed by Pafos General Hospital with 21,4%, Lemesos General Hospital with 18,9%, Larnaka General Hospital Makarios III with 12,3%, Archbishop Makarios III Hospital Lefkosia with 11,7% and Ammochostos General Hospital with 8,9%.

Hospitals and health centres of Nicosia, Ammochostos and Paphos accounted for a larger share of out-patient attendances than the proportion of population within the corresponding districts which was 38,9%, 5,5% and 10,7% respectively. On the other hand, hospitals and health centres of Larnaka and Limassol, had a smaller percentage of out-patient attendances than their respective population shares which were 17,0% and 28,0% respectively.



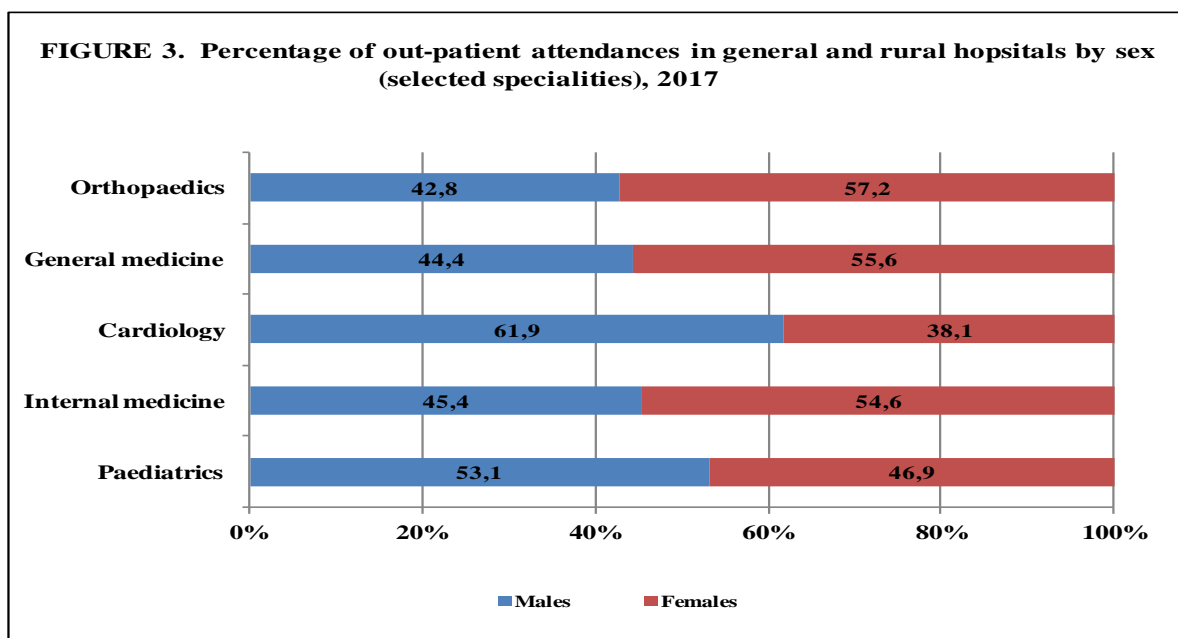
With regards to speciality, from the out-patient attendances in general and rural hospitals, a share of 15,6% refers to General Medicine, 10,6% to Internal Medicine, 8,9% to Paediatrics, 8,7% to Cardiology, 8,1% to Gynaecology-Obstetrics, 7,5% to Orthopaedics, whereas the remaining of 40,6% to other specialities.

TABLE VI. Percentage of out-patient attendances in general and rural hospitals by speciality, 2015-2017

Speciality	%		
	2015	2016	2017
TOTAL	100,0	100,0	100,0
General Medicine	15,5	15,7	15,6
Cardiology	8,9	9,1	8,7
Internal Medicine	10,2	10,4	10,6
Paediatrics	9,0	8,7	8,9
Gynaecology-Obstetrics	8,7	7,9	8,1
Orthopaedics	7,5	7,5	7,5
Other	40,2	40,7	40,6

Of the total number of out-patient attendances in hospitals and health centres 48,0% were persons aged 65 and over, 27,9% aged 45-64, 18,1% 15-44 years of age and 6,0% were under 15 years of age.

Attendances of female patients in the out-patient departments of general and rural hospitals outnumbered males with shares of 54,0% compared to 46,0%. These percentages differ depending on the speciality. Specifically, more men with percentage 61,9% and 53,1% visited the cardiology and paediatrics departments, compared to the respective percentages of women which were 38,1% and 46,9%. In other specialities, the attendances of female patients outnumbered those of males.



During 2017 a total of 277.394 patients visited the Casualty Departments of the general hospitals, as compared to 283.802 in 2016, recording a decrease of 2,3%.

Lefkosia General Hospital recorded the largest number of casualty attendances accounting for 31,9%, followed by Lemesos General Hospital with 23,3%, Larnaka General Makarios III with 18,9%, Pafos General Hospital with 15,6% and Ammochostos General Hospital with 10,3%.

Dental attendances during 2017 totaled 106.367, as compared to 109.391 in 2016. These figures include data for the mobile dental unit.

2.4 Hospital beds

In 2017 hospital beds totaled 2.968. A number of 1.562 beds were operating in the public sector (of which 1.379 in the general hospitals, 51 in rural hospitals and 132 in the Mental Health Hospital) and 1.406 in the private sector. These figures do not include beds of the Casualty Departments, Dialysis Units and Thalassaemia.

The number of persons per hospital bed was estimated at 290 in 2017, while in 2016 and in 2015 at 291. The number of hospital beds per nurse was 0,6 in 2017, while in 2016 and in 2015 was 0,7.

2.5 Personnel

2.5.1 Medical personnel

There were 3.338 doctors in 2017 as compared to 3.220 in 2016 and 3.507 in 2015. The public sector numbered 943 doctors of various specialities and the private sector 2.395, i.e. 28,3% and 71,7% respectively. The number of persons per doctor was 258 in 2017, 264 in 2016 and 276 in 2015.

Dentists increased from 880 in 2016 to 928 in 2017. The public sector employed 41 dentists and the private sector 887. The number of persons per dentist was 927 in 2017 compared to 966 in 2016 and 972 in 2015.

2.5.2 Nursing personnel

During 2017, 3.387 nurses of various grades were employed in the public sector and 1.344 in the private sector, compared to 3.319 and 1.248 respectively in 2016. The number of persons per nurse was 187 in 2017, while in 2016 and in 2015 it was 192.

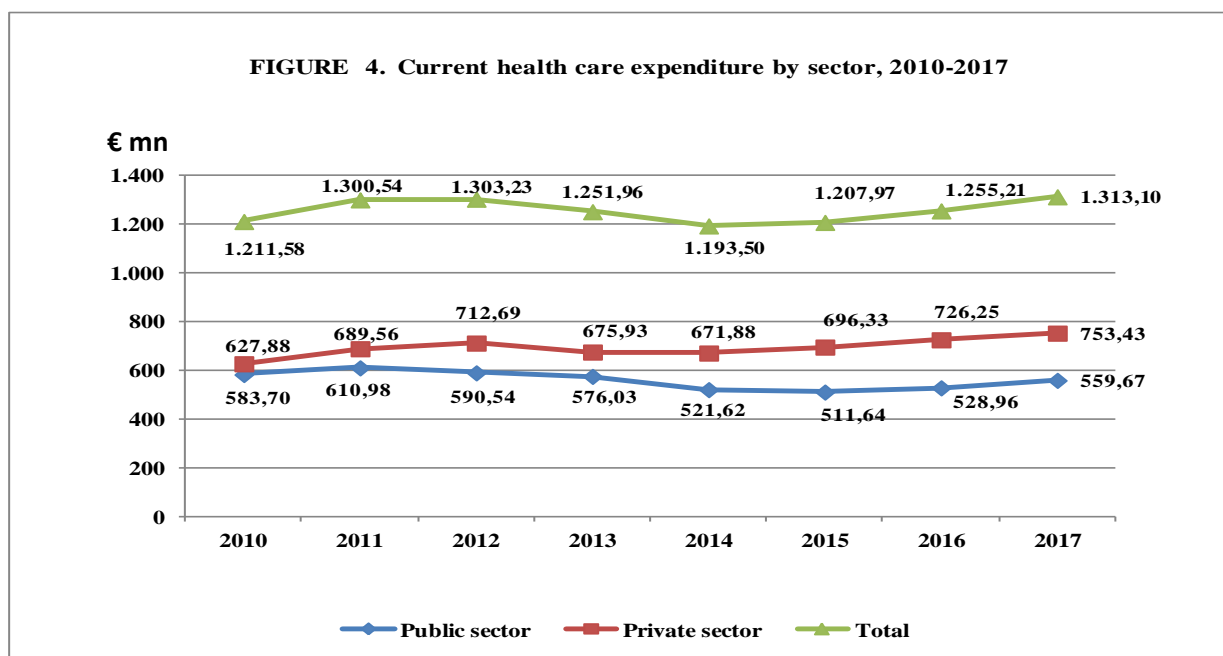
2.6 Health care expenditure

The analysis of health care expenditure is based on the methodology proposed by Eurostat and specifically on the manual of the System of Health Accounts (SHA2011). The figures on current health care expenditure refer to year 2017 and are provisional. The total health care expenditure is the result of the addition of current health care expenditure and capital formation. Due to the fact that, by the time of preparing this report the capital formation for year 2017 was not available, the total health care expenditure refer to year 2016.

2.6.1 Total and current health care expenditure

The current health care expenditure (not including capital formation) for 2017 is estimated at €1.313,10 mn of which €559,67 mn correspond to expenditure of the public sector and €753,43 mn of the private sector. The share of current expenditure on health as a percentage of GDP for year 2017 is 6,7%, while it remains stable during 2014-2016 (6,8%).

It should be noted that current health care expenditure in Cyprus as a percentage of GDP ranks among the lowest in the EU.



As it has already be mentioned, the total health care expenditure for 2017 is not available yet. Total health care expenditure for 2016 is estimated at €1.282,71 mn of which €542,26 mn represent expenditure of the public sector and €740,45 mn of the private sector. The share of total expenditure on health as a percentage of the gross domestic product (GDP) remains stable during 2014-2016 (6,9%).

2.6.2 Financing schemes

In 2017, 42,6% of current health care expenditure was channeled through government outlays. Household out-of-pocket payments were the largest source of funding in the system presenting a percentage of 44,7%, whereas voluntary schemes represented 12,7% (voluntary health insurance schemes and non-profit institutions serving households (NPISH) financing schemes).

2.6.3 Health care functions

In 2017, 62,3% of the current health care expenditure was spent for curative and rehabilitative care, 3,5% for long term care, 10,8% for ancillary services (medical and diagnostic laboratories), 20,2% for medical goods (pharmaceuticals, therapeutic appliances and other medical durable goods), 1,2% for preventive care and 2,0% for the governance and health system and financing administration.

2.6.4 Health care providers

As regards the health care providers, a share of 45,8% of the current health care expenditure refers to hospitals, 25,3% to ambulatory health care, 16,3% to retailers and other providers of medical goods, 6,9% to providers of ancillary services (medical and diagnostic laboratories), 2,0% to providers abroad, 1,2% to residential long-term care facilities, 2,0% to providers of health care system administration and financing and the rest of 0,5% to providers of preventive care.

2.7 Deaths by cause of death

In 2017, 6.188 deaths have been recorded, including all deaths of residents, as well as non-residents dying in Cyprus. A percentage of 52,9% of total deaths (3.274 deaths) refers to men, whereas 47,1% (2.914 deaths) refers to women. The main causes of death were diseases of the circulatory system (32,3%), neoplasms (23,7%), diseases of the respiratory system (9,7%), endocrine, nutritional and metabolic diseases (7,0%), as well as external causes of injury and poisoning (5,2%). Other causes of death follow with lower frequencies.

3. DEFINITIONS OF TERMS USED

In-patient: Is a person who has been through the full admission procedure in one of the general/rural hospitals and for whom a “Patient’s File” has been prepared and remained at the hospital for treatment for at least one night or admitted and discharged at the same day. Up to 2010, an infant born in hospital was not counted as a separate in-patient, unless treated as a “Special Care Baby”. From 2011 onwards, such cases are included only for Ammochostos General Hospital.

Discharge: Is the conclusion of a period of in-patient care, irrespective of whether the patient returned home, was sent to another hospital, left the hospital without medical advice or died.

Surgical operation: Is any therapeutic or major diagnostic procedure which involves the use of instruments or the manipulation of part of the body and generally takes place under operating theatre conditions.

Out-patient attendance: Is the visit of the patient to an out-patient department.

Bed-occupancy rate: It represents bed days in a given year expressed as a percentage of the total bed days which would have been obtained, assuming that all beds were occupied during the given year.

4. SOURCES OF DATA

This report is based on data collected from the general hospitals, special hospitals, rural hospitals and the health centres from the public sector.

4.1 In-patients (Discharges)

Data on patients who are admitted for treatment and discharged from the government hospitals (discharges) are collected in electronic form from all the hospitals. Micro databases are forwarded to the Statistical Service and the compilation, tabulation and analysis of data are performed by Statistics Officers.

It should be noted that data relates to hospital discharges and not to individual patients. This means that a single patient may therefore account for more than one discharge during the year.

From 2011 onwards, the coding of diseases is performed by nurses at the various hospitals. Prior to 2011, the coding of diseases was performed by personnel of the Statistical Service of Cyprus.

The following should be noted:

- For each discharge, only the department from which the patient was discharged is taken into account; other departments in which the patient may have stayed during the hospitalization are not reported.
- All bed days are assigned to the department from which the patient was discharged, irrespective of whether during hospitalization the patient stayed in other departments as well.
- The analysis of the data is based solely on the diagnosis at discharge of the patient.
- Included are all discharges performed during the reference year.
- For each discharge, the total number of bed days is taken into account, irrespective of whether some of them may refer to a previous year.
- The leave days, i.e. if a patient leaves the hospital for a few days but the bed is reserved, e.g. goes home for the weekend and returns back on Monday, are included in the number of bed days.
- The healthy newborns hospitalized in Ammochostos General Hospital are included in the in-patient discharges (such cases are not reported by other hospitals).

4.2 Surgical operations

As regards surgical operations, tables C1-C2 present the total number of operations performed on in-patients and out-patients by speciality, as obtained from the summary tables sent by hospitals. At a later stage, additional tables will be published, presenting selected surgical procedures, as obtained from the codification performed from hospitals, based on the international classification ICD9-CM.

4.3 Out-patient attendances

From 2010 onwards, the data on out-patient attendances in general and rural hospitals are sent to the Statistical Service of Cyprus for further processing and analysis in electronic form. Therefore, for the first time in 2010, the statistics are not based on a sample but on the total out-patient attendances in general and rural hospitals. Problematic records, i.e. males visiting gynaecology departments or adults visiting paediatric departments etc., have only been taken into account for weighting cases to the total.

As regards the health centres (H.C), the total number of out-patient visits as reported by all health centres has been distributed by speciality, sex and age according to the percentage distribution obtained from the electronic data extracted from the IT systems. The following health centres own an IT system: H.C Aglantzia, Lakatamia, Egkomi, Kaimakli, Strovolos, Agios Dometios, Klirou, Palaichori, Avgorou, Ormideia, Linopetra and Larnaka Old Hospital.

5. CLASSIFICATION SYSTEMS USED

5.1 Diseases

Data on the diseases (diagnosis) for in-patients and out-patients are coded according to the International Statistical Classification and Related Health Problems of the World Health Organization (Tenth Revision, ICD-10) at the three-character categories. Statistics are tabulated according to the 21 Chapters and the tabulation list for morbidity (298 diseases).

5.2 Surgical operations

Surgical operations are coded according to the International Classification of Procedures, Clinical Modification, of the World Health Organization (ICD9-CM). Statistics are tabulated according to the surgical procedures shortlist, as suggested by Eurostat.

6. EXPLANATION OF SYMBOLS

n.a.	Not applicable
...	Data not available
0	Zero or less than half of the unit
(000's)	Thousands
€(mn)	Million euro
incl.	Including
cont'd.	Continued
p	Provisional, preliminary data
e	Estimate
r	Revised data
b	Break in time series

7. DETAILED TABLES

The complete set of detailed tables referring to Health and Hospital Statistics 2017 are available in the relevant Excel files in the sections presented below, at the website of the Statistical Service, at the following link:

http://www.cystat.gov.cy/mof/cystat/statistics.nsf/populationcondition_23main_en/populationcondition_23main_en?OpenForm&sub=3&sel=2

- A. Summary Tables
- B. In-patients
- C. Surgical Operations
- D. Out-patient attendances
- E. Paramedical, Maternal and Child Health Services
- F. Health Personnel
- G. Health Care Expenditure
- H. Deaths by cause of death