



**The Hashemite Kingdom of Jordan**  
**High Health Council/ General Secretariat**

**National Human Resources for Health Observatory**  
**Annual Report, 2013**



## **High Health Council/ General Secretariat**

### **National Human Resources for Health Observatory Annual Report, 2013**

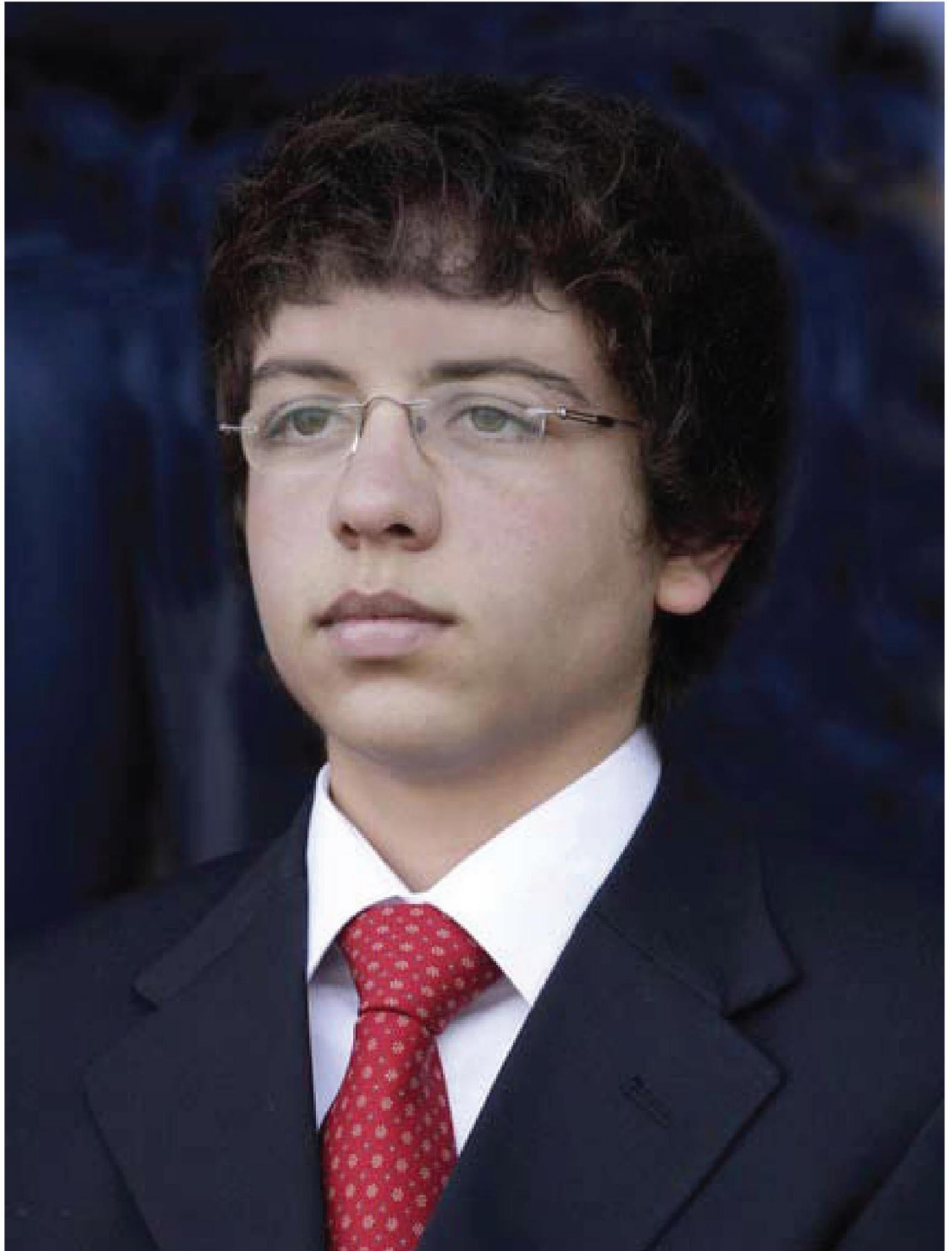
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**June, 2014**



**His Majesty King Abdullah II Ibn Al-Hussein**



**His Royal Highness Crown Prince Al-Hussein Bin Abdullah II**



**"We have invested profoundly in developing our greatest national fortune- our people. In this world of knowledge economy, human resources are the real asset for a sustainable economy, and according to our judgment these capacities constitute the capital of Jordan's future."**

**Quotes by His Majesty King**

**Abdullah II Ibn Al-Hussein**

## **Forward**

Human Recourses for Health (HRH) constitute valuable capital and are a key factor in the progress and improvement of the health status of any nation. Investing in HRH is a strategic necessity in Jordan in order to attain quality healthcare services. Political commitments at the highest levels were made clear to support related activities and interventions.

Although HRH has been improving at a quick pace in terms of production and education, there are still challenges that hamper further development. To tackle these challenges on sound basis, we need abundant data, information, and evidence.

The High Health Council (HHC) has placed HRH as a priority concern, thus we - as a general secretariat for the HHC- are honored to host Jordan National HRH Observatory (NHRHO) at our premises based on a cooperative initiative between MOH, HHC, and WHO. The NHRHO of Jordan helps in providing reliable and instant data and information necessary to develop informed policies and evidence-based decisions.

The HHC developed the National Health Strategy for the years (2008-2012), the Strategy is consistent with the goals of the “National Agenda” and the "We are all Jordan" documents. Within the Strategy, the health sector in Jordan was analyzed and the priorities were set after reviewing all documents, studies, and reports related to health in Jordan. Human workforce constitute a main theme in this strategy; an action plan & monitoring indicators with contributions of all concerned sectors were developed within this theme after the situation was analyzed and objectives were identified.

This second technical HRH report tried to analyze the distribution patterns of the health workforce among health sectors in Jordan and between different governorates for the year 2010. All stakeholders were greatly involved in the success of NHRHO, moreover they are encouraged to take advantage and benefit from its potential.

Finally I would like to express my gratitude to WHO in EMRO and Jordan for providing continuous technical and financial support, and a special appreciation to all members of the National Coordinating Policy Forum and to the focal points all over Jordan's governorates for their heavy efforts in the process of field data collection, also I would like to thank the NHRHO team at the HHC for development of this report that I hope it will benefit all concerned parties and policy makers in filling the gaps that were identified in the field of HRH in Jordan.

**Secretary General of the HHC**  
**National HRH Team leader**  
**Dr. Hani AL-Kurdi**

## 1. Introduction

Jordan is a small lower-middle income country with limited natural resources. Its surface area is about 89,300 square kilometers, of which only 7.8% is arable land. Its population is about 6.3888 million of whom 82.6 % live in urban areas (1). The population is distributed among 12 governorates over three regions (North, Middle, and South). The majority of the population lived in Amman governorate (38.7%), followed by Irbid and Zarqa governorates (17.8%, 14.9% respectively). The southern region which includes four governorates (Karak, Tafilah, Ma'an and Aqaba) is considered to be the least developed compared to the other two regions. The State of Jordan's Population indicated that the Kingdom's population almost doubled from 2.1 million people in 1979 to 4.2 million in 1994 and continued to grow to reach 6.388 million people in 2013, with an average annual population growth rate of 2.2%. (2)

Significant achievements have been made in the country in meeting the Millennium Development Goals over the last three decades making Jordan stand as one of the best countries in the region. Jordan has approached development from a holistic perspective, realizing that poverty, illiteracy and health, form a triangle which must be addressed together. Advances in the struggle against poverty and illiteracy, in addition to the spread of sanitation, clean water, adequate nutrition and housing have been combined to work for future Jordanian citizens.

Health status in Jordan is among the best in the Middle East, this is due largely to the Kingdom's stability and to a range of effective development plans and projects which have included health as a major component. This is reflected in the kingdom's basic health indicators which are considered to be good and are improving steadily. The overall average life expectancy reached 73 years, (71.6 for males and 74.4 for females), the infant mortality rate declined from 23 in 2009 to 17 in 2013, also the probability of mothers dying because of pregnancy and delivery declined from 800 per 100,000 deliveries in 1969 to 19.1 in 2008. The crude birth rate and the crude death rate per 1000 population were 28.1 and 7.0 respectively in 2013. Varieties of national health programs have dramatically cut the risk of infectious disease in recent years and there have been no recorded cases of either polio or croup since 1995. (3)

The total fertility rate (TFR) is relatively high in Jordan, although it has declined steadily in recent years to reach 3.5 in 2013 (4). The declining mortality rate and the high total fertility rate have contributed to overall population growth. From the other side Jordan found itself in a position to host millions of refugees in successive waves; the last was from Syria this caused high rates in population growth and urban expansion. All of this imposed great stress on Jordanian society, infrastructure and limited natural resources, with a negative impact on the socioeconomic development and health of the country.

The economic situation in Jordan has faced several crises, many of which are beyond its will and ability to cope. The high population growth rate, the epidemiologic transition, the rising cost of health care, and the growing expectations of people pose challenges to the health care system in the country. Given the economic situation, sustaining this level of spending, let alone increasing it, constitutes a huge burden and may deprive other sectors from funds needed for a balanced social and economic development (5).

According to the National health Account (NHA) 2011, Jordan spent approximately JD 1.580 billion (US\$2.233 billion) on health, or JD 252.9 (US\$357.2) per capita. This total health expenditure represented 7.72% of Jordan's GDP. The public sector is the largest source of health funding (61.95%), followed by the private sector (34.42%) and the donors (3.63%) (6). While providing basic health care services throughout the kingdom continues to be a major concern for the government, treating non-communicable illnesses, which are often the result of rapidly changing lifestyles, has presented a new challenge facing health expenditure in recent years.

## 2. Health Policy in Jordan

The general health policy in Jordan is being formulated by the High Health Council (HHC) according to its law number 9 for the year 1999, The HHC is headed by the Prime minister with the Minister of health being as the Vice president, it includes in its membership the Minister of finance, Minister of planning, Minister of Social Development, Minister of labor, the director of Royal Medical Services, the president of Jordan Medical Association, Dean of one of the medical faculties replaced every two years, the head of a health related association appointed by the president, the owners of the Private Hospitals Association and two experts from the health sector appointed by the president every two years. According to its Law the objective of the HHC is to draw the general policy of the health sector and to put forward the strategy to achieve it and to organize and develop the health sector as a whole so as to extend health services to all citizens according to the most advanced methods and scientific technology.(7)

To achieve these objectives the HHC set The **National Health Strategy** (NHS) in the years 2008 in which it endorses four main themes that constitute the input of health care, and comprehensively reflect the performance of the health care sector. The theme of "**manpower**" is considered the main pivot of service provision. "Process" is the theme through which evaluation of the service provision takes place. The "financial" theme is the main sponsor in strengthening sustainability of the health system by directing expenditures and perfectly utilizes the available resources. In addition, there is the "customer" theme which is the prime target of the health system, (8). Now the HHC is in the process of formulating a **National Strategy for the Health sector** for the years 2014-2016 aiming at studying the impact of the Syrian crises on the health system; this strategy will include the human resources as one of the main six building blocks of any health system.

The new HHC strategy will be consistent with the goals of the "National Agenda" , "We are all Jordan", the Government action plan for the years 2013-2016 and all other health and health related sub sector strategies and plans.

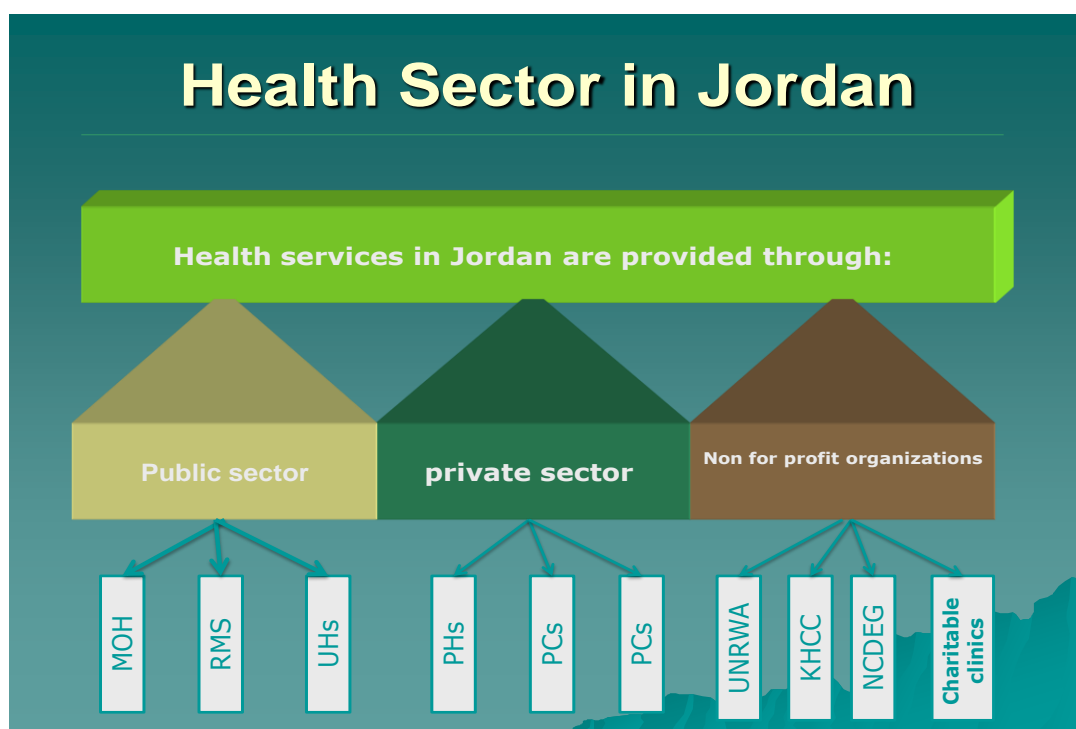


The Jordanian National Agenda was developed in 2005 to determine the kingdom's political and socio-economic reform policies and programs over the next 17 years. It emphasized the need for structural reforms to promote private investment and employment generation, along with emphasis on education, health development and poverty alleviation. (9)

### 3. Healthcare system in Jordan

Jordan's health care system has improved dramatically over the last two decades and is ranked as one of the best systems in the Middle East. It is a complex amalgam of three major sectors: public, private, and non for profit organizations. **Graph (2)**

**Graph (2): Components of health sector in Jordan**



#### 3.1 Public Sector

The public sector consists of the Ministry of Health (MOH), Royal Medical Services (RMS) in addition to two smaller public university-based programs which are Jordan University Hospital (JUH) and King Abdullah Hospital (KAH).

##### 3.1.1 Ministry of Health

The **MOH** is the largest sub-sector in term of the size, operation and utilization as compared to other sub-sectors. It undertakes all health affairs in the Kingdom with the following tasks and duties (10):

- A.** Maintaining public health by offering preventive, curative and health control services.
- B.** Organizing and supervising health services offered by the public and private sectors.
- C.** Providing health insurance for the public within available means.

**D.** Establishing and controlling the management of health educational and training institutes and centers according to relevant provisions of the legislations enacted.

The MOH provides primary, secondary, and tertiary services. Primary health care services are mainly delivered through a network of health centers (95 comprehensive centers, 375 primary centers, 205 Village Clinics, 488 Maternal and Child Health centers and 387 oral health clinics). Secondary and tertiary health care services are provided through 31 MOH hospitals in 11 governorates with 4597 beds representing over one third of hospital beds in the country (38%). (3)

The MOH is responsible for managing the Civil Health Insurance Program (CHIP) which covers civil servants and their dependents. Individuals certified as poor, disabled, children below the age of six years, and blood donors are also formally covered under the CHIP, which covers about 44.13% of population. Recently the MOH opened its services for the entire population, part of which the refugees, so any individual can receive any available health service from any MOH facility with highly governmental subsidized charges (15 to 20 % of the total costs). (11)

### **3.1.2 Royal Medical Services**

The **RMS** mainly provides secondary and tertiary care services. It has 12 hospitals (7 general and 5 specialist), the total number of hospital beds in RMS is 2439 (20%) of hospitals beds in Jordan for the year 2013. RMS is responsible for providing health services and a comprehensive medical insurance to military and security personnel. Beneficiaries include active and retired staff and their dependents, staff of the Royal Court, Royal Jordanian Airlines, Aviation Academy, Mu'ta and Al Al-Bait Universities and others.

RMS acts also as a referral center through providing high quality care, including some advanced procedures and specialty treatment to Jordanians and non-Jordanian patients. It plays a major role politically through contributing in providing health services in disasters and conflict areas through medical teams and field hospitals. There are also 8 military health centers and clinics distributed all over the country.

### **3.1.3 University Hospitals**

The two university hospitals (**UHs**) are: the Jordan University hospital (**JUH**) and King Abdullah Hospital (**KAH**), they provide health insurance and services for university employees and their dependents, as well as serving as referral centers for other health sectors and as teaching centers for medical students.

JUH is one of the most specialized and high-tech medical center in the public sector, it has 534 beds (4% of the total beds) for the year 2013. (3)

KAH was established in 2002 by Jordan University of Science and Technology (JUST). It has 501 beds (4% of the total number of hospital beds in Jordan) for the year 2013. The hospital serves as a teaching hospital to the Faculty of Medicine at JUST and as a referral hospital for all public sectors in the Northern Region. (3)

## **3.2 Private sector**

The private sector provides primary, secondary, and tertiary services through a network of private clinics (**PCs**), private centers (**PCs**) and private hospitals (**PHs**). The private sector has 61 hospitals with nearly one third of the hospital beds in the country (3989 beds represents about 33% of the total beds). The majority of the hospitals as well as private clinics are in the capital of Jordan. The private sector contains much of the country's high tech diagnostic capacity and it continues to attract significant numbers of foreign patients from nearby Arab nations. The World Bank ranked Jordan as being the top medical tourism destination in the Middle East and North Africa. (12)

### **3.3 Non for profit organizations**

#### **3.3.1 United Nation Relief and Works Agency**

The United Nation Relief and Works Agency (**UNRWA**) is responsible for providing a healthy living environment for 2.10 million Palestine refugees, guided by the Millennium Development Goals on health and by the standards of the World Health Organization (WHO). The mandate of UNRWA on health is to protect and promote the health status of Palestine refugees living in Jordan to achieve the highest attainable level of health as indicated in the first Human Development Goal, "A Long and Healthy Life", of the UNRWA Medium Term Strategy 2010-2015. It delivers primary health care services through 24 primary health care facilities which deal with over 2.3 million visits each year. These services include dental care, medical care, physiotherapy, environmental health, pre-conception, ante-natal, post-natal care, and family planning, disease prevention and control, health protection and promotion, partial reimbursement for hospitalization and/or advanced diagnostic services at government hospitals with a scaling of JD 150 for refugees under safety network and woman with high risk pregnancy, while it is JD 100 for the ordinary refugee and the remaining part of the bill is sustained by the beneficiary. So although UNRWA mainly focuses on primary health care, it also helps refugees' access secondary and tertiary care services as a financer and provider of health care but not as insurer.

#### **3.3.2 King Hussein Cancer Center**

The King Hussein Cancer Center (**KHCC**) is a specialized center for cancer care in Jordan and the region with 167 beds represents about 1% of the total beds. KHCC became the first center outside the United States to have Disease Specific Accreditation. It also works to improve access to education, training, public awareness and research in order to decrease mortality and alleviate suffering from cancer in accordance with the highest standards and quality of care. The KHCC has established programs that focus on all stages of comprehensive cancer care: from prevention and early detection, through diagnosis and treatment, to palliative care.

The King Hussein Cancer Foundation (**KHCF**), founded in 1997, undertakes various fundraising activities to support and maintain the mission of KHCC as a comprehensive cancer center of excellence. KHCF is a free-standing, independent, non-governmental, established by a Royal Decree to combat cancer in Jordan and the Middle East region.

#### **3.3.3 The National Center for Diabetes, Endocrinology and Genetics**

The National Center for Diabetes, Endocrinology and Genetics (**NCDEG**) is an independent non for-profit Organization that was established in 1996 as one of the centers affiliated by the Higher Council for Science and

Technology. The main goal of NCDEG is to provide high quality care, education and training in the fields of diabetes, endocrinology and genetics.

### **3.3.4 Other charitable clinics**

The non-for-profit organizations include also about 44 charitable clinics distributed all over the country.

The health sector study of 1996 found that Jordan had performed better than most countries in the region in terms of accessibility of services and outcomes but also concluded that the system was costly, inefficient, and suffering from geographic mal distribution of human resources.

## **4. HRH Stakeholders in Jordan**

HRH governance functions in Jordan are performed by multiple public, semi-public, private and nongovernmental organizations. The governance functions of other organizations and authorities are of prime importance for the assessment of HRH governance. Some Ministries and organizations from outside of the health sector have direct impact on the performance of the HRH in Jordan. Below are the main health stakeholders and the main governance functions for each :(13)

### **1. The Parliament**

- a) HRH Legislation.
- b) Monitoring health policy implementation.

### **2. The Cabinet (Council of Ministers)**

- a) Proposing and initiating HRH laws and by-laws (through Legislative Bureau.)
- b) Enforcing regulations and monitoring performance of the health sector.
- c) Providing broad policy and strategic directions.
- d) Approval of senior position assignments in the MOH (i.e. undersecretary).
- e) Defining the terms and conditions of public sector employment and the relationship between central and local governments and providers of health services.

### **3. Ministry of Health**

- a) Developing HRH policies and strategies with cooperation of the HHC.
- b) Regulating and monitoring health services provided by public sectors and private sectors.
- c) Direct management of human resources employed by the MOH (about 30% of HRH in Jordan)
- d) Licensing, monitoring and regulating all health professions and institutions.
- e) Participating in the provision of pre –service and continuing education for HRH.
- f) Setting and controlling health professionals' fees in coordination with other stakeholders.
- g) Setting standards of care and investigating malpractice cases.
- h) Collecting and disseminating HRH statistics.

### **4. High Education Council**

- a) Formulating the general policy of High education including HRH.
- b) Endorsing the establishment of new education institutions.
- c) Monitoring the quality of HRH education.
- d) Determining the basic admission requirements at HRH education institutions.

### **5. Ministry of High Education and Scientific Research**

- a) Implementing the general policy of high education.

- b) Coordinating between high education institutions and public and private centres for consultations and research.
- c) Recognizing foreign institutions of HRH education and equating certificates issued by them.

#### **6. High Education Accreditation Commission**

- a) Setting accreditation standards of high education institutions including HRH, amending and developing them in light of the general policy of High education.
- b) Monitoring the performance of high education institutions and their commitment to accreditation standards.

#### **7. High Health Council**

- a) Proposing and initiating national HRH policy and strategic plans.
- b) Coordinating the major issues related to HRH within health subsectors (MOH, RMS, university hospitals, private health sector, etc....).
- c) Proposing reforms and proposals to strengthen HRH.
- d) Adopting of health system research agenda and facilitating the implementation of this agenda.

#### **8. Health Professionals Associations (Jordan Medical Association, Jordan Registered nurses Association, Jordan Dentists Association, Jordan Pharmacists Association)**

- a) Registration of health professions (with MOH).
- b) Monitoring practice and professional conduct.
- c) Setting practice standards.
- d) Conducting continuing education programs for health professionals.
- e) Setting professional fees (with MOH).
- f) Investigating malpractice cases and professional misconduct and imposing professional penalties.
- g) Maintaining data base for health professionals.

#### **9. Civil Service Bureau**

Its charges includes setting regulations for hiring, compensating, promoting, retirement and monitoring performance of all civil servants including HRH working in MOH.

#### **10. Jordan Medical Council**

- a) Setting standards and conditions for teaching hospitals.
- b) Certifying facilities as teaching hospitals.
- c) Regulating and monitoring residency programs in teaching hospitals.
- d) Certifying physicians as general practitioners and specialists.

#### **11. Jordanian Nursing Council**

- a) Setting and promoting nursing care standards.
- b) Developing and disseminating criteria for nursing professional classification (professional ladder).
- c) Certifying registered nurses as general practitioners, specialists or consultants.

#### **12. RMS, University Hospitals, Private Hospitals, UNRWA, Philanthropy Health Sector**

- a) Direct management of HRH employed by each sector.
- b) Providing continuing medical education.
- c) Provides information about HRH.

d) Participating in national HRH policy formation and planning through their representatives in the HHC.

### **13. Consumer Protection Society**

- a) Defending and promoting patients' rights and interests.
- b) Monitoring adherence of health professionals to formal fees schedules.

### **14. International Health Organizations and Donors**

- a) Planning HRH development projects, programs and interventions in collaboration with national stakeholders.
- b) Financing, organizing, implementing and monitoring HRH training projects and studies sponsored by international agencies with partnership of local organizations.

## **5. Situation of health workforce in Jordan**

Jordan is a country with limited natural resources, thus human resources development has been made as one of the most valuable assets and strategic pillars for the efficient function of the country's health system. The Jordanian government has stated on many occasions the importance of the Human Resources for Health as a key element in the provision of equitable high quality healthcare services. This is manifested clearly in the speech of his majesty King Abdullah II Ibn Al-Hussein in many occasions.

According to the World health Report 2006, Jordan was not classified to be from the eight HRH crisis countries (14). Compared to other countries in the Arab region, the density of healthcare providers (doctors, registered nurses, and midwives) at the national level in Jordan is considered to be in good position although it has been declined in the year 2011 for certain categories (physicians , pharmacists, assistant nurses and midwives) as shown in table (1). For every 10,000 Jordanians, there are 25.5 doctors, 9.8 dentists, 12.6 pharmacists and 43.7 nurses (all categories) (3). At the sub-national level, HRH Report for the year 2011 showed a great disparities in health workforce distribution between different governorates. Currently, The national HRH Observatory Forum identified this issue as a priority area for addressing. So as a first step “Retaining MOH Physicians in remote areas in Jordan” was analyzed in depth through developing a policy brief in which some policy options and recommendations were suggested.

The nurse to doctor ratio in the health sector as a whole remains very low and is among the lowest group of countries in the world. Currently the ratio is approximately 1.30 nurse to 1.0 doctor. (11)

**Table (1): Trend of Human Resource Ratio Development (2007-2013)**

<b>Year Profession</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>Physicians</b>	24.9	24.5	26.5	25.5	27.1	28.6
<b>Dentists</b>	8.7	7.3	9.3	9.8	10.0	10.4
<b>Pharmacists</b>	13.2	14.1	15.0	12.6	16.3	17.8
<b>Registered nurses</b>	16.3	20.3	23.1	25.6	29.1	27.2
<b>Associated nurses</b>	5.7	5.8	6.1	6.7	7.0	7.3
<b>Assistant nurses</b>	7.9	9.9	9.3	8.2	7.0	6.5
<b>Midwives</b>	3.3	3.0	3.4	3.2	3.5	3.8

Source: Annual statistical book, MOH, 2013

Jordan, as in many other countries, is faced with a shortage in certain categories such as some medical specialties and female nursing workforce. As a response to this challenge, the government established some new nursing colleges and encouraged students to specialize in this field by offering incentives for nurses and giving priority in employment for the Jordanian nurses. In 2009, some nursing policies were adopted such as the increase in the educational grants for the female students, offered from students support funds of the ministry of higher education and scientific research for nursing in Jordanian universities, and the increase in the proportion of acceptance of females in the nursing programs in the lists of exceptions (the military honor, less fortunate, etc). (15)

The HHC analyzed the health sector in Jordan and set the priorities after reviewing all documents, studies, and reports related to health in Jordan. The following are the **main HRH challenges** (8):

- Inadequate training plans.
- Deficient endorsed job descriptions.
- Poor investment in human resources development.
- Difficulty in attracting and retaining qualified personnel.
- Lack of a clear career path for most of the healthcare professions.
- Skill mix, gender and facility mal-distribution of human resources across the country.
- Weak effective HRH information system especially that of private sector.
- Inadequate generation of evidence-based HRH decisions.

Because the **National Agenda** in Jordan is considered as the advanced and updated referral document that maps the road ahead for modern Jordan for all sectors including the health sector, The HHC endorsed different HRH initiatives within the national agenda including (16):

1. Establish a national body to regulate the medical and nursing staffs who work abroad.
2. Modify the financial and administrative systems to ensure attracting and sustaining qualified health personnel inside the country.
3. Ensure equitable distribution of salaries and performance linked incentives among health staff working in the public sector.
4. Develop an educational policy that takes market needs of different health specialties into consideration.
5. Expand and institutionalize the continuing professional development to involve all health workforces.
6. Develop the necessary legislation to regulate, support and upgrade the nursing professions.
7. Improve the administrative capacity and leadership skills among all workers in the health sector.

The HHC also adopted the HRH initiatives within the **Executive Developmental plan** for the years 2011-2013. This plan was derived from the National Agenda to identify the challenges, objectives, policies and programs according to the national health priorities. Improving the efficiency of human resources working in the health sector was one of the main objectives of this plan which leads to sectoral and sub-sectoral policies, these policies are then translated into allocative plans or programs of work, and finally became operational or activity plans. The Human Resource Development (HRD) policy is part of the general health policy. Thus, the linkage between overall health and HRH policies is therefore ensured, and HRD is recognized as being crucial and central to health system development. (17)

HRH issues were also identified to be one of the top national health research priorities in Jordan for the years (2009-2013). (18)

## **6. National HRH Observatory in Jordan**

The regional political instability over the past few decades resulted in substantial harm for the national economy included the over utilization of the public health sector in Jordan. Given the fact that the population of the country is expected to double within the next 15 years, chronic health conditions are increasing, the population is aging, burden on the health services in the public sector is increasing, expanding the problem of HRH brain drain and migration, and in order to respond to HRH challenges, the policymakers made paramount efforts to address challenges concerning human resource for health. **National HRH Observatory (NHRHO)** in Jordan was established and launched in July 2009 as an endeavour to identify HRH gaps and to develop effective plans for crucial HRH problems.

### **6.1 Definition of NHRHO**

NHRHO is a cooperative initiative among relevant stakeholders for the purpose of monitoring the trends in patterns of the health workforce. It provides reliable and instant data and information needed for evidence-based decision-making and policy development.



## **6.2 Objectives of NHRHO**

1. Establishing a national resource with reliable and up-to-date information pertaining to major dynamics of the health workforce in Jordan
2. Establishing a national platform for effective and coherent coordination among stakeholders for policy dialogue aimed at addressing and collectively solving HRH challenges.
3. Promoting and using evidence based planning and decision making processes regarding HRH issues.
4. Installing monitoring and evaluation system to track progress overtime according to HRH related baseline and benchmark indicators.
5. Sharing best lessons and experiences with regional and global HRH observatories.
6. Strengthening the national capacities to produce well qualified and skilled health workforce cadres.

## **7. Annual HRH Report**

### **7.1 Aim of the report**

This fourth annual report was prepared by the HRH observatory team at the HHC to serve as a tool for providing a comprehensive picture of the health workforce situation in Jordan at both the national and sub-national levels in a comparable way to help monitoring HRH stock and trends, and so identify inequitable geographical distribution of the health workforce in Jordan if any.

### **7.2 Design of the study**

A cross-sectional point prevalence type of data collection method was adopted. Descriptive and analytical methodologies based mainly on HRH data collected for the year 2013 were used.

### **7.3 Data collection Methods**

Data collection tools were designed in both Arabic and English languages by the Jordan Observatory team at the HHC. The tools included two main forms; one for collecting data from the public sector (**Annex 1**) and the other for collecting data from the private sector (**Annex 2**), other specialized tools for collecting data from certain institutions were also designed. These tools were reviewed and discussed with the NHRHO Policy forum and focal points. Modification took place according to their feedback. The tools provided information about number and distribution of the main HRH national categories (doctors, dentists, pharmacists, registered nurses and midwives) by governorate, categories, specialties, qualifications, sex, nationality and place of work.

According to the availability of data from their sources, HRH information was collected using two levels:

- a. The central level: here the information was collected from the MOH central directorates, RMS, the two university hospitals (UHs), NCDEG, KHCC, JAFPP, JPD and UNRWA workforce reports.

**b. The peripheral level:** here the HRH information from both public and private sectors were collected directly from the field in the twelve governorates of Jordan through appointed focal points.

Thirty five focal points for the purpose of data collection were appointed from different governorates and institutions as follows:

- two focal points from each of the 12 governorates in Jordan (one is responsible for collecting data from the public sector and the other from the private sector), except for Amman Governorate where three focal points were appointed due to the huge number of HRH workforce concentrated in this governorate.
- One focal point from each of the independent institutions as MOH central directorate, JUH, KAUH, JFDA, NCDEG, KHCC, JAFPP, JPD, UNRWA, Jordanian Nursing Council, Jordan Medical Association, Jordanian Dental Association, Jordan Pharmacy Association and Jordan Nurses & Midwives Association.

Information was also collected from the Ministry of Higher education and Scientific Research on number and distribution of first year enrollees and graduated students from different health faculties in both public and private universities of Jordan.

Training of these focal points on the data collection tools and methodology took place through a national workshop which was held 10 days before starting the process of data collection .

Process of data collection started in the 12 governorates at the same time through these well-trained focal points using the following methods:

1. Available HRH reports and records
2. Phone calls.
3. Fields visits

#### **7.4 Data management and statistical analysis**

Data entry and verification started immediately after data collection. Data entry, cleaning, and statistical analysis were performed by the Jordan Observatory team at the High Health Council. Initially, the data were checked for data entry errors. Detected errors were corrected. Descriptive statistics were obtained through excel program and results were presented by tables and graphs.

#### **7.5 Duration of data collection**

Fieldwork for data collection took around 12 weeks and the process of data reviewing and tabulation took another 4 weeks.

#### **7.6 Operational definitions**

For the purpose of this report , the following definitions were used:

**Public Sector:** is the sector that involves MOH, RMS, the two university hospitals (JUH and KAH), JFDA and JPD.

**Private sector:** is the sector that involves all institutions that are not included in the public health sector such as private hospitals, clinics, twenty-four hours working centers, pharmacies, universities, colleges, schools, in addition to the Non for profit organizations as KHCC, JAFPP and UNRWA.

**Physician:** is a physician who is found to practice medicine inside Jordan during the period of data collection (whether being a general practitioner or a specialist in any

medical field) in spite of his/her nationality, working place or working field (technical or administrative). In this report the internship physicians are not included.

**Dentist:** is a dentist who provides services inside Jordan during the period of data collection (whether being a general dentist or a specialist in any field of dentistry) in spite of his/her nationality, working place or working field (technical or administrative). In this report the internship dentists are not included.

**Pharmacist:** is a pharmacist with a Bachelor, Masters or Doctorates degree of pharmacy who was working in any health sector inside Jordan during the period of data collection in spite of his/her nationality, working place or working field (technical or administrative). In this report the pharmacists assistants are not included.

**Registered nurse:** is a health care professional who was certified from any accredited nursing university college (holding either Bachelor, Masters or Doctorates degree of nursing) and was working in any health sector inside Jordan during the period of data collection in spite of his/her nationality, working place or working field (technical or administrative). In this report the associated, assistant or auxiliary nurses are not included.

**Midwife:** is a health care professional who was certified from any accredited midwifery college ( study for 2 years after secondary school) and was working in any health sector inside Jordan during the period of data collection in spite of her nationality, working place or working field (technical or administrative).

### 7.7 Strategies for quality assurance

To insure high quality of collected data , the following strategies were insured:

- 1- The designed tools for data collection were reviewed and discussed with the NHRHO Policy forum and focal points and were modified accordingly.
- 2- The methodology of data collection was discussed with all HRH stakeholders through a national workshop . Suggested modifications in the methodology were performed accordingly.
- 3-Operational definition for each health sector and health workforce category was identified and assured.
- 4- Training of the focal points on the data collection tools and techniques was conducted to assure standardized methodology and good quality of data.
- 5- Each completed form was reviewed by the data entry team at the HHC to ensure completeness and consistency of data before starting the analysis phase.
- 6- Double and even triple check of data was performed by obtaining the same data from different sources.
- 7- Data entry, cleaning and analysis was performed by the investigators themselves

### 7.8 Limitation of the study:

1. Presence of variation in the same HRH information between different sources.
2. Lack of accurate and updated information about health work force in the private sector.
3. The data about distribution of private physicians in Amman governorate was obtained from 2013 survey that was conducted by the HHC to study the distribution of private physicians in Amman governorate.

## 8. Results

### • HRH stock

#### 8.1 Health workforce at the public sector:

##### 8.1.1 Health workforce at MOH

**Table (2)** shows that physicians working at the MOH for the year 2013 are mainly males (85% vs.15%). The table also shows that more than half of the dentists at MOH are males, while more than two thirds of the pharmacists and more than half of the registered nurses are females (69%, 58% respectively).

**Table (2): Health workforce at MOH by category and gender, 2013**

Cadre	Gender				Total
	Male	%	Female	%	
Physicians	3804	<b>85%</b>	672	<b>15%</b>	4476
Dentists	441	<b>58%</b>	320	<b>42%</b>	761
Pharmacists	150	<b>31%</b>	334	<b>69%</b>	484
Registered nurses	1968	<b>42%</b>	2718	<b>58%</b>	4686
Midwives	0	<b>0 %</b>	1455	<b>100%</b>	1455

**Table (3)** shows the distribution of different health workforce categories at both the central level (MOH main directorates) and the peripheral level (Governorates) for the year 2013. Less than 5% in all categories (except for pharmacists) work at the central level.

**Table (3): Health workforce at MOH by category and work place, 2013**

Cadre	Central directorates		Governorates		Total
	No.	%	No.	%	
Physicians	184	<b>4%</b>	4292	<b>96%</b>	4476
Dentists	18	<b>2%</b>	743	<b>98%</b>	761
Pharmacists	74	<b>15%</b>	410	<b>85%</b>	484
Registered nurses	73	<b>2%</b>	4613	<b>98%</b>	4686
Midwives	17	<b>1%</b>	1438	<b>99%</b>	1455

### 8.1.2 Health workforce at Royal Medical Services

**Table (4)** shows that 81% of physicians and 72% of dentists at the RMS are males, while about three quarters of pharmacists and of registered nurses are females (75% and 70% respectively).

**Table (4): Health workforce at RMS by category and gender, 2013**

Cadre	Gender				Total
	Male	%	Female	%	
Physicians	1200	81.2%	278	18.8%	1478
Dentists	207	72.1%	80	27.9%	287
Pharmacists	83	42.2%	256	75.5%	339
Registered nurses	960	30.4%	2193	69.6%	3153
Midwives	0	0.0%	172	100.0%	172

**Table (5)** shows that RMS services are distributed over 8 governorates. The high percent of health workforce from different categories present in Amman governorate, followed by Irbid and then Zarqa governorates. The least are present in Ma'an governorate.

**Table (5): Health workforce at RMS by category and governorate, 2013**

governorate	Physicians		Dentists		Pharmacists		Registered nurses		Midwives	
	No.	%	No.	%	No.	%	No.	%	No.	%
Amman	1038	70.2%	145	50.5%	276	81.4%	2052	65.1%	68	39.5%
Irbid	130	8.8%	40	13.9%	11	3.2%	345	10.9%	49	28.5%
Zarqa	104	7.0%	20	7.0%	19	5.6%	234	7.4%	17	9.9%
Mafraq	25	1.7%	14	4.9%	3	0.9%	7	0.2%	0	0.0%
Karak	53	3.6%	22	7.7%	10	2.9%	227	7.2%	11	6.4%
Aqaba	68	4.6%	19	6.6%	13	3.8%	161	5.1%	19	11.0%
Ma'an	5	0.3%	7	2.4%	0	0.0%	13	0.4%	0	0.0%
Tafiela	55	3.7%	20	7.0%	7	2.1%	114	3.6%	8	4.7%
Total	1478	100.0%	287	100.0%	339	100.0%	3153	100.0%	172	100.0%

### 8.1.3 Health workforce at Jordan University Hospital

**Table (6)** shows that about two thirds (67%) of both the physicians and the dentists (64%) are males. Nearly three quarters of the registered nurses (72%) at the JUH are females, while the majority of the pharmacists (83%) are females. There is only one mid wife working at JUH.

**Table (6): Health workforce at JUH by category and gender, 2013**

Cadre	Gender				Total
	M	%	F	%	
Physicians	355	67%	176	33%	531
Dentists	38	64%	21	36%	59
Pharmacists	5	17%	25	83%	30
Registered nurses	133	28%	345	72%	478
Midwives	0	0%	1	100%	1

#### 8.1. 4 Health workforce at KAUH

**Table (7)** shows that 72% of physicians, 56% of the dentists and 44% of the registered nurses at the KAUH are males, while 82% of the pharmacists are females.

**Table (7): Health workforce at KAUH by category and gender, 2013**

Cadre	Gender				Total
	M	%	F	%	
Physicians	276	72%	109	28%	385
Dentists	5	56%	4	44%	9
Pharmacists	9	18%	40	82%	49
Registered nurses	202	44%	259	56%	461
Midwives	0	0%	14	100%	18

#### 8.1.5 Health workforce at JFDA

**Table (8)** indicates that the health workforce working at the JFDA are mostly pharmacists, more than three quarters of these pharmacists are females. There are only three physicians working at the JFDA with no dentists, nurses or midwives.

**Table (8): Health workforce at the JFDA by category and gender, 2013**

Cadre	Gender				Total
	M	%	F	%	
Physicians	2	100%	0	0%	2
Pharmacists	20	24%	64	76%	84
Total	22	26%	64	74%	86

#### 8.1.6 Health workforce at Joint Procurement Department (JPD)

**Table (9)** indicates that the health workforce working at the JPD are only pharmacists and they are mainly females (73%).

**Table (9): Health workforce at the JPD by category and gender, 2013**

Cadre	Gender				Total
	M	%	F	%	
Pharmacists	3	27%	8	73%	11
Total	3	27%	8	73%	11

## 8.2 Health workforce at the private sector

Private sector according to this report means the non-state sector which involves all institutions that are not included in the public health sector, it is well-known that the private health sector attracts experienced health professionals from the public sector (i.e. MOH, RMS, university hospitals). High percentage of medical consultants, qualified nurses and technicians who are working in the private sector were employed by the public sector mainly RMS. Therefore, the public health sector in Jordan is considered the main supplier of highly trained and well experienced health professionals for the private sector.

**Table (10)** shows that physicians, dentists and registered nurses working in the private sector are mainly males, while more than two thirds of the are females.

**Table (10): Health workforce at the Private Sector by category and gender, 2013**

Cadre	Gender				Total
	M	%	F	%	
Physicians	3649	85%	645	15%	4294
Dentists	3492	62%	2141	38%	5633
Pharmacists	2071	33%	4206	67%	6277
Registered nurses	6445	74%	2265	26%	8710
Midwives	0	0.0%	856	100%	856

### 8.2.1 Health workforce at UNRWA

**Table (11)** shows that physicians, dentists and pharmacists working at UNRWA are mainly males, while registered nurses are almost females (96%).

**Table (11): Health workforce at UNRWA by category and gender, 2013**

Cadre	Gender				Total
	M	%	F	%	
Physicians	90	80%	22	20%	112
Dentists	23	77%	7	23%	30
Pharmacists	4	100%	0	0%	4
Registered nurses	3	7%	43	93%	46
Midwives	0	0%	34	100%	34

### 8.2.2 Health workforce at the Jordanian Association for Family Planning & Protection (JAFPP)

**Table (12)** shows that all the working manpower at the JAFPP (Physicians and registered nurses ) are only females; this is due to the nature of services that are delivered by JAFPP which are mainly family planning services.

**Table (12): Health workforce at JAFPP by category and gender, 2013**

Cadre	Gender				Total
	M	%	F	%	
Physicians	0	0%	22	100%	22
Registered nurses	0	0%	21	100%	20

**Table (13)** shows that JAFPP services are distributed over 9 governorates (AL-Balqa, Ma'an & AL-Tafeilah governorates don't have JAFPP clinics). The same table shows that about half of these health workforce are found in Amman governorate.



**Table (13): Health workforce at JAFPP by category and governorate, 2013**

governorate	Physicians		Registered nurses	
	No.	%	No.	%
Amman	11	55%	9	45%
Zarqa	2	50%	2	50%
Madaba	1	50%	1	5%
Irbid	3	50%	3	50%
Mafrq	1	50%	1	50%
Jarash	1	50%	1	50%
Ajloun	1	50%	1	50%
Karak	1	50%	1	50%
Aqaba	1	50%	1	50%
<b>Total</b>	<b>22</b>	<b>52%</b>	<b>20</b>	<b>48%</b>

### 8.2.3 Health workforce at the National Center for Diabetes, Endocrinology and Genetics

**Table (14)** shows that half of the physicians, 70% of the registered nurses and all the pharmacists working at the NCDEG are females. There are no dentists or midwives working at the NCDEG as this is a specialized center for Diabetes, Endocrine and Genetic diseases only.

**Table (14): Health workforce at NCDEG by category and gender, 2013**

Cadre	Gender				Total
	M	%	F	%	
Physicians	4	50%	4	50%	8
Pharmacists	0	0%	12	100%	12
Registered nurses	7	30%	16	70%	23

### 8.2.4 Health workforce at KHCC

**Table (15)** shows that more than three quarters (76%) of the physicians and 52% of the registered nurses working at KHCC are males while 96% of the pharmacists are females. It also shows that there are only three dentists and no midwives working at KHCC.

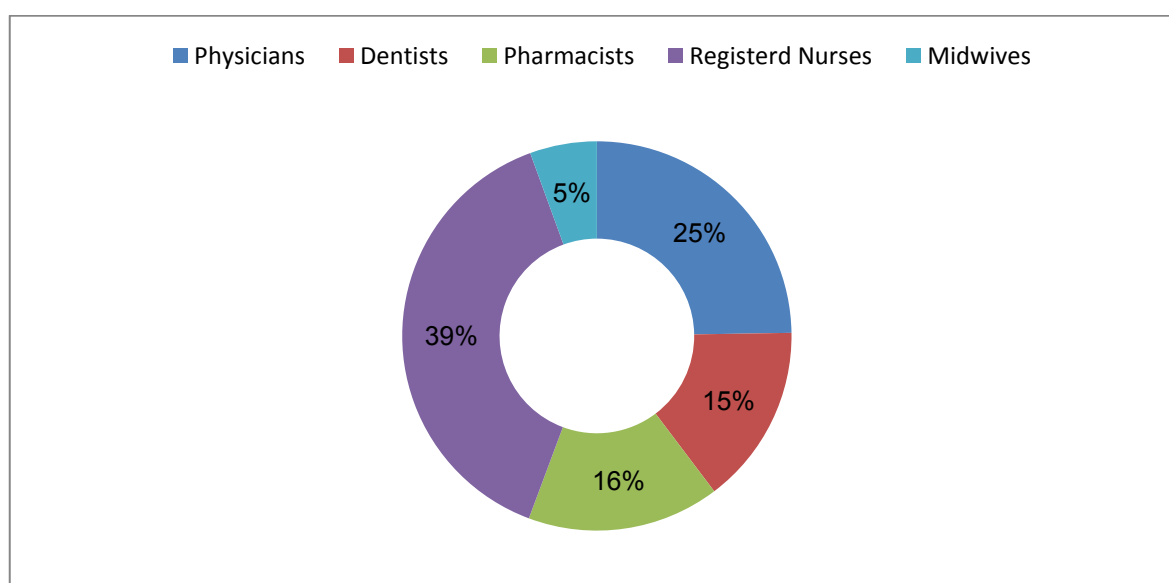
**Table (15): Health workforce at KHCC by category and gender, 2013**

Cadre	Gender				Total
	M	%	F	%	
Physicians	217	76%	70	24%	287
Dentists	0	0%	3	100%	3
Pharmacists	2	4%	45	96%	47
Registered nurses	247	52%	226	48%	473
Midwives	0	0%	0	0%	0

### 8.3 Distribution of Health Workforce at the National Level

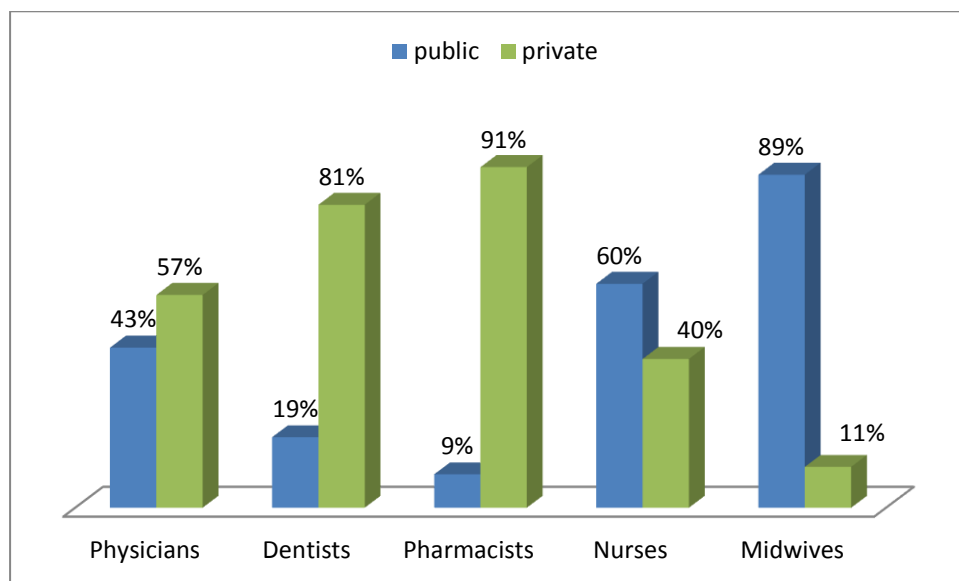
The graph below illustrates that most of the health professionals working in Jordan are registered nurses (39%) followed by physicians (25%), then pharmacists(16%) and dentists (15%) while the least are midwives (5%).

**Graph (3): Distribution of National Health Workforce by category in Jordan, 2013**



**Graph (4)** shows that the vast majority of physicians, dentists and pharmacists work at the private sector (57%, 81% and 91% respectively), while the majority of registered nurses and midwives work at the public sector (60% and 89% respectively).

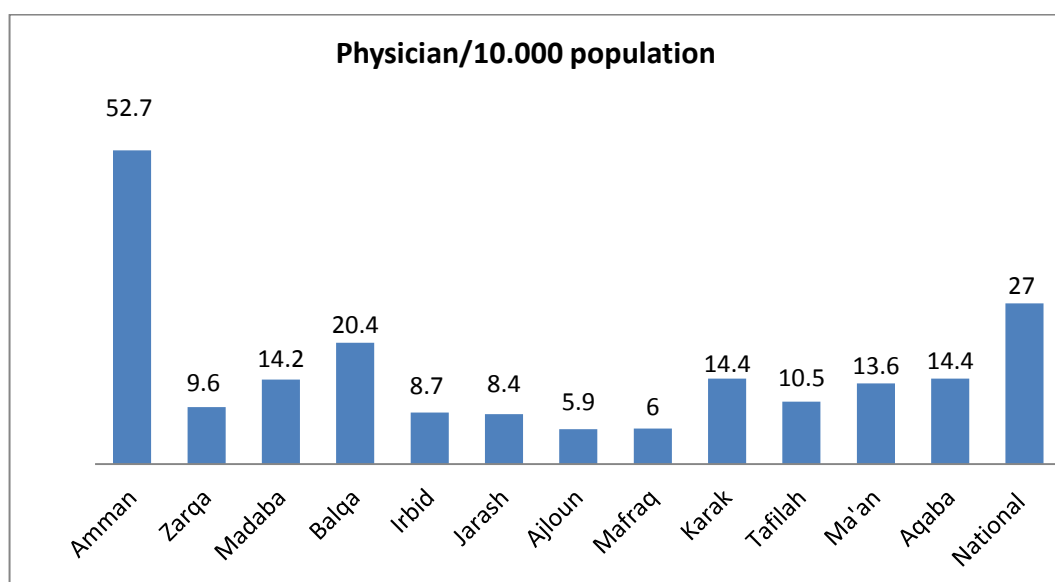
**Graph (4): Distribution of the national Health workforce by Sector, 2013**



#### 8.4 Health workforce indicators at the sub national level:

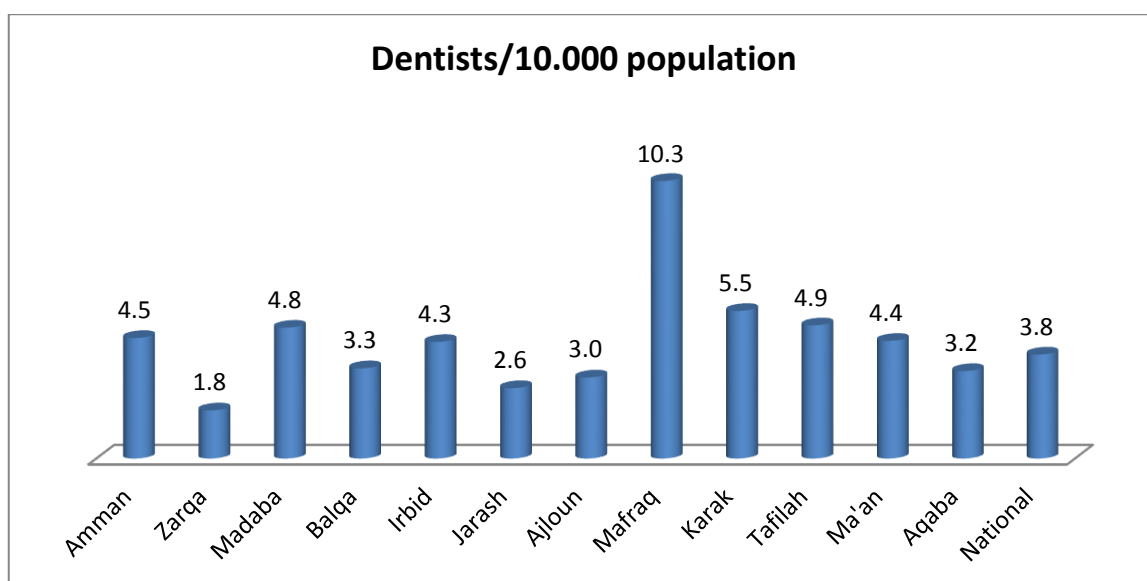
**Graph (6)** shows that the highest ratio of physicians per 10000 population is found in Amman reaching nearly 53, while the second highest was recorded at 20 in Balqa. Meanwhile the lowest ratio was recorded in Ajloun and Mafraq at nearly 6 per 10000 population.

**Graph (6): Ratio of physicians per 10000 population by governorate, 2013**



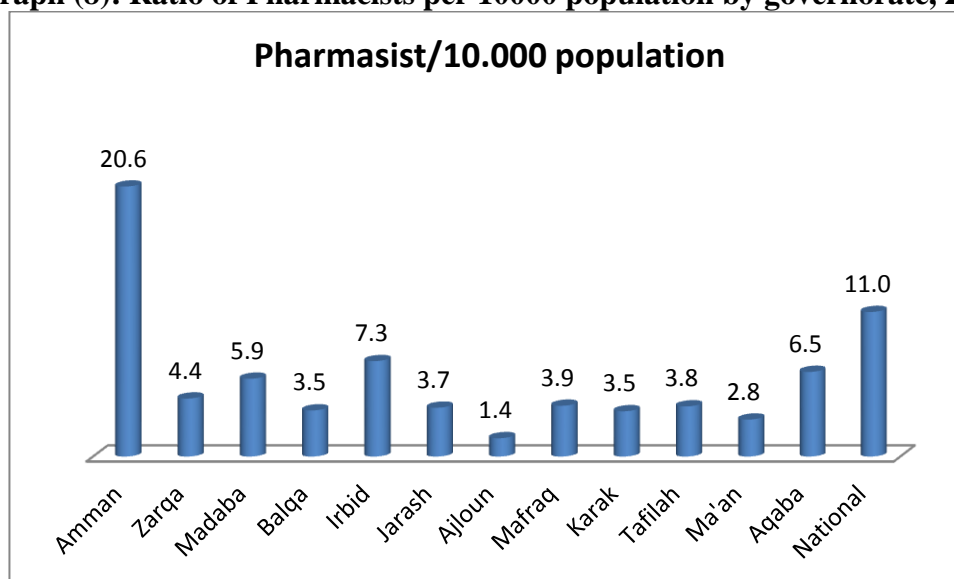
**Graph (7)** shows that the highest ratio of dentists per 10000 population is recorded in Amman reaching nearly 20.8, while the lowest ratio of about 2.7 was recorded in Zarqa.

**Graph (7): Ratio of dentists per 10000 population by governorate, 2013**



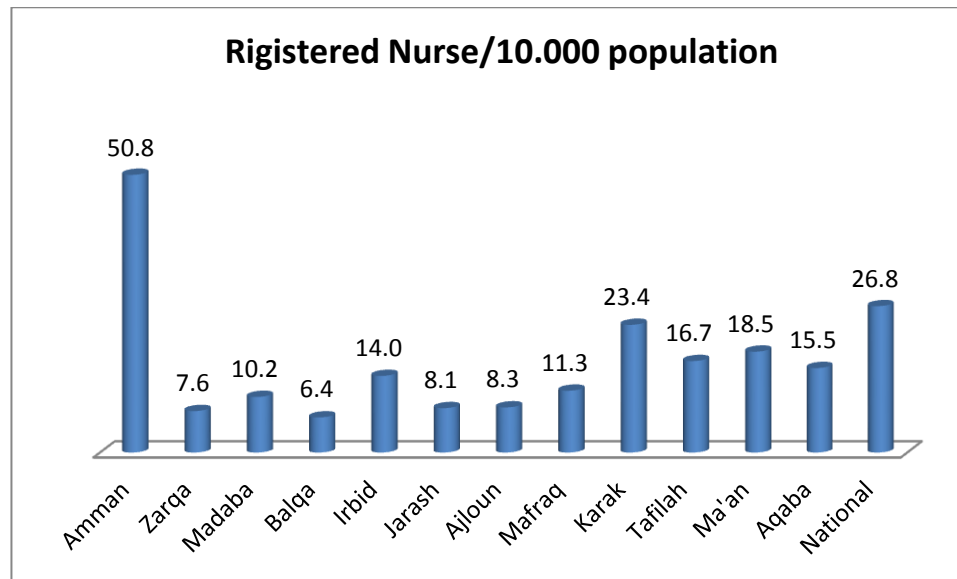
**Graph (8)** shows that the highest ratio of pharmacists per 10000 population is recorded in Amman (20.6) while the lowest ratio was found in Ajloun at less than 2 followed by Ma'an (2.8) .

**Graph (8): Ratio of Pharmacists per 10000 population by governorate, 2013**



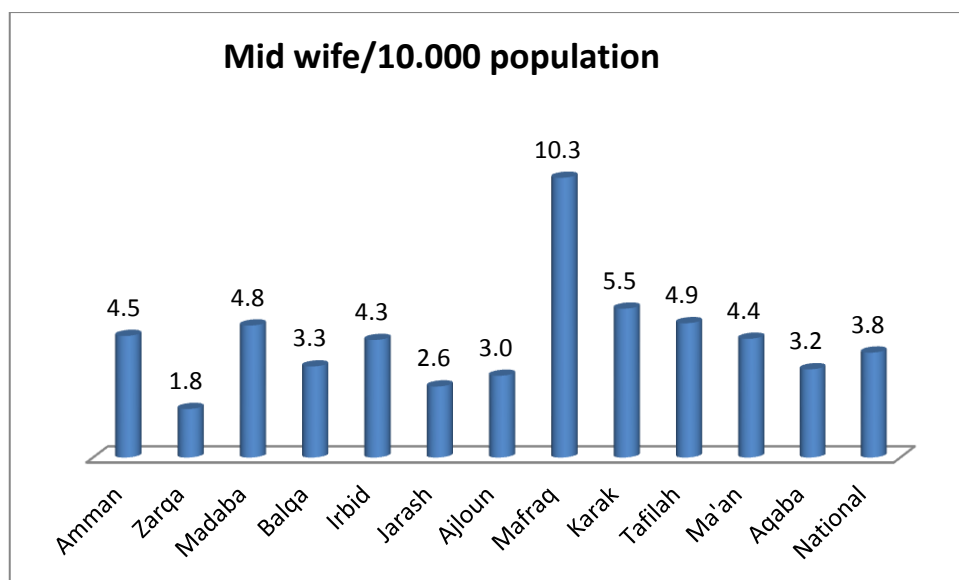
**Graph (9)** shows that the highest ratio of registered nurses per 10000 population is found in Amman reaching nearly 51 followed by Karak. The least was found in Balqa followed by Zarqa (the national figure was 26.8).

**Graph (9): Ratio of Registered nurses per 10000 population by governorate, 2013**



**Graph (10)** shows that the highest ratio of midwives per 10000 population was recorded in Mafraq at 10.3. The lowest was recorded in Zarqa (1.8) and the Jarash (2.6). At the national level it was 3.8

**Graph (10): Ratio of Midwives per 10000 population by governorate, 2013**



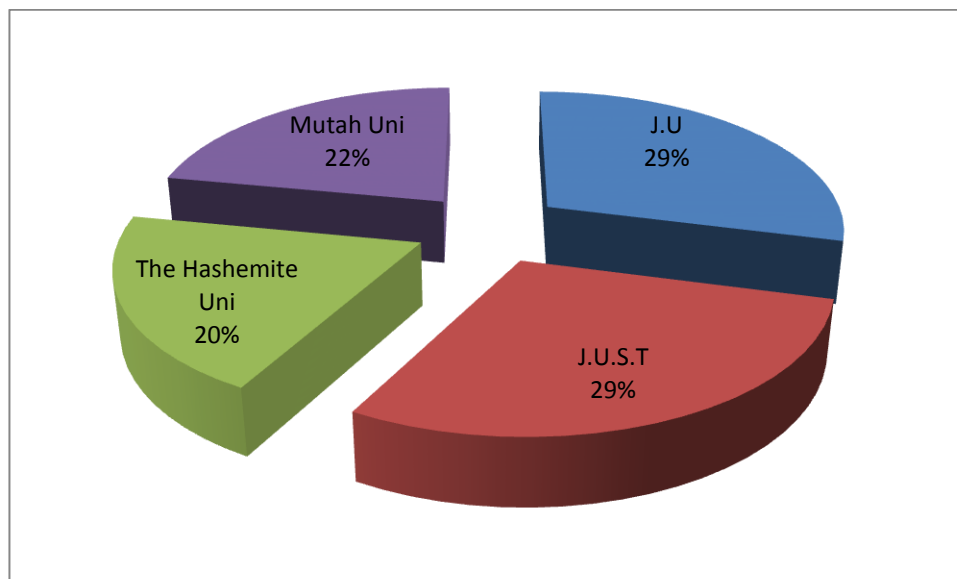
- **HRH Production**

Health Universities in Jordan conduct Under-graduate programs of 4-6 academic years leading to a Bachelor's degree for physicians, dentists, pharmacists, and Registered nurses, in addition to post-graduate programs. There are six main public universities that graduate the majority of health educated professionals in Jordan which are the University of Jordan (J.U), the Jordan University of Science and Technology (J.U.S.T), the Hashemite University, Mutah University, Yarmouk University and Al-Hussein Bin Talal University, in addition to the presence of a good number of private universities as Philadelphia University, Al-Isra University, Applied Science University, University of Petra, Al al-Bayt University, Al-Zaytoonah University, Zarqa University, Jerash University, Irbid Uni, AL-Hussein University and Al-Ahliyya Amman University.

### **9.1 Admitted and graduated students from Medicine Faculties for the year 2012/2013**

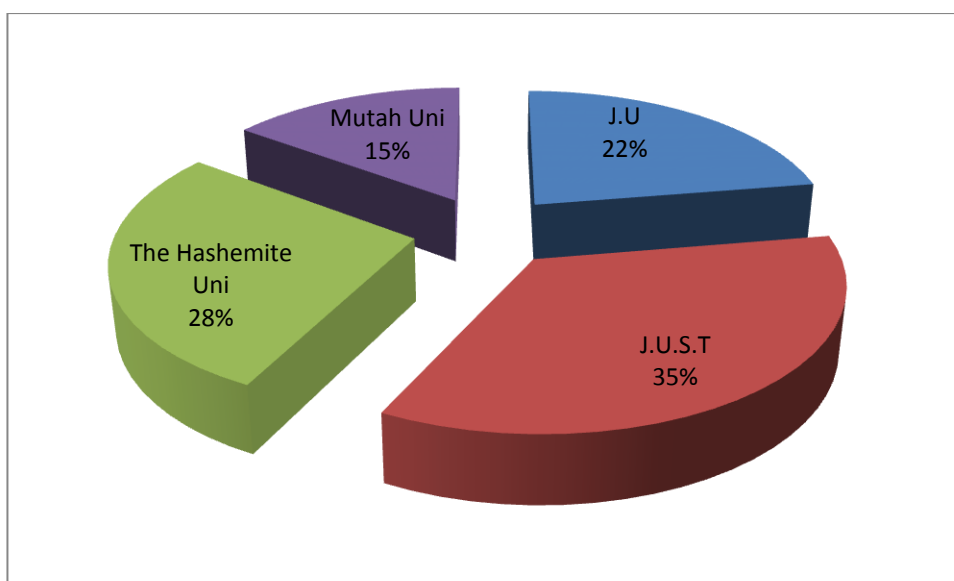
Jordan has four Medicine Faculties (the University of Jordan, the Jordan University of Science and Technology, the Hashemite University and Mutah University), AL Yarmouk University opened a newly medical faculty in the last year . During the year 2013, the Hashemite University graduates its medical students for the second time, they accounted for 20% from the total medical students that were graduated during the same year as shown in **Graph (11)** . It is noticed from the same graph that more than half of the medical students (58%) were graduated from the University of Jordan and J.U.S.T. while the rest (22%) were graduated from Mutah University.

**Graph (11): Graduates from Medicine Faculties in Jordan Universities(Jordanian) , 2013**



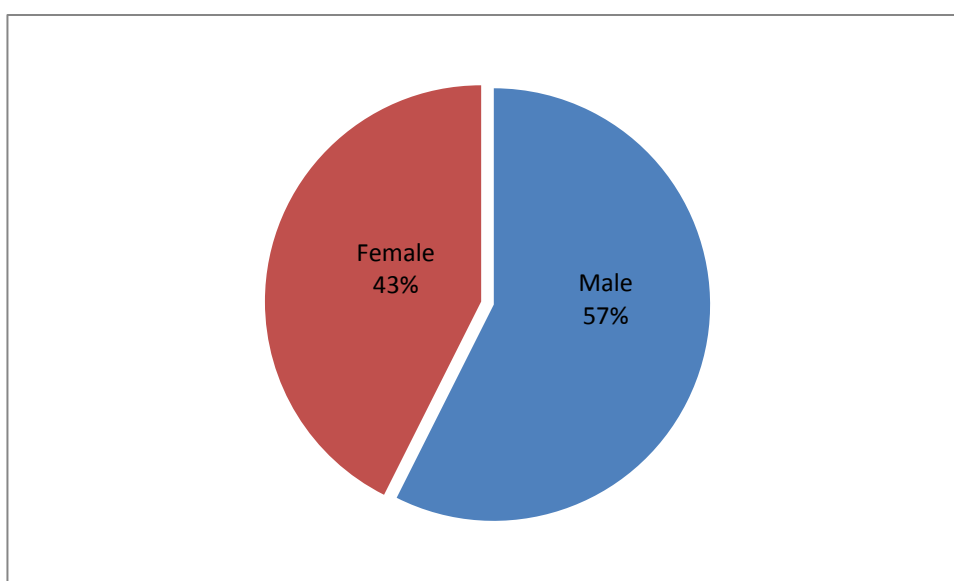
Regarding admitted students to Medicine Faculty, the majority (35%) were accepted in J.U.S.T. Twenty eight percent were admitted to the Hashemite University and more than one fifth (22%) were admitted the J.U. The rest (15%) were admitted to Mutah University. **Graph (12)**

**Graph (12): First year Enrollees at Medicine Faculties in Jordanian Universities(Jordanian), 2012/2013**



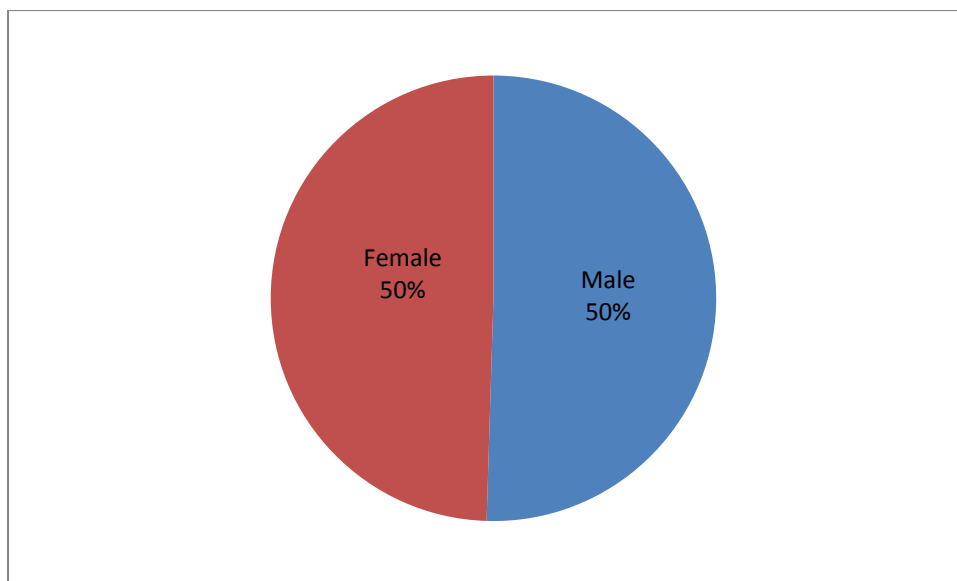
**Graph (13)** shows that about 57% of graduates from Medicine Faculties are males compared to 43% females.

**Graph (13): Graduates from Medicine Faculties by gender (Jordanian), 2013**



**Graph (14)** shows that half (50%) of the enrollees in the Medicine faculties are males.

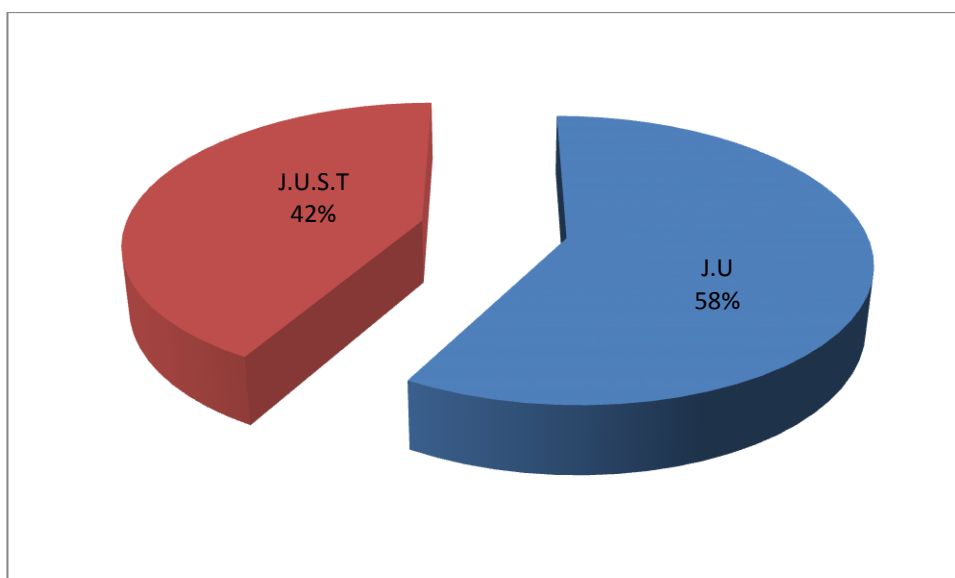
**Graph (14): First year Enrollees(Jordanian) at Medicine Faculties by gender, 2012/2013**



## **9.2 Admitted and graduated students from Dentistry Faculties for the year 2011/2013:**

Jordan has only two Dental Faculties in two public universities (J.U and J.U.S.T). It is noticed from the graph below (15) that the majority of dentists (58%) were graduated from J.U.S.T while the remaining 42% were graduated from J.U.

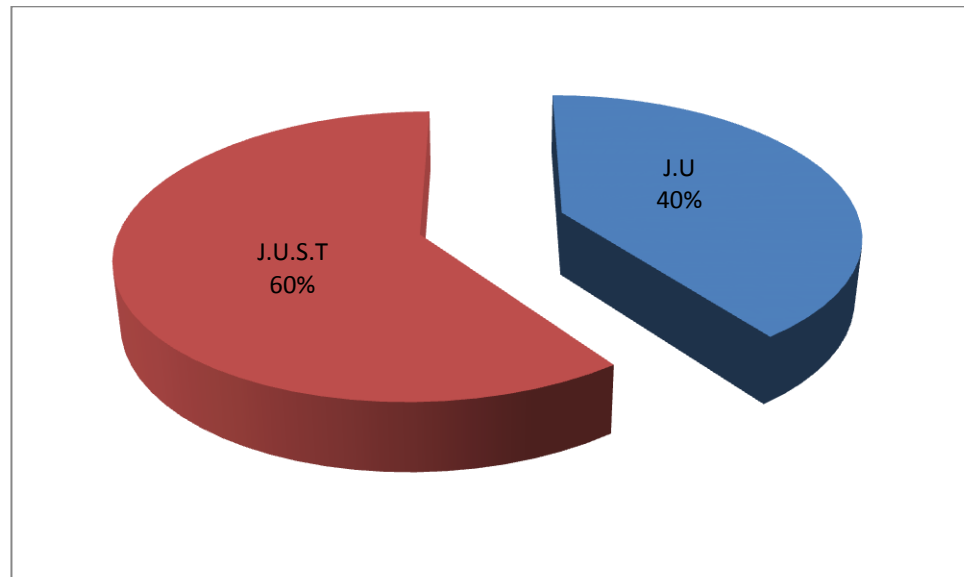
**Graph (15): Graduates from Dentistry Faculties in Jordanian Universities (Jordanian), 2013**





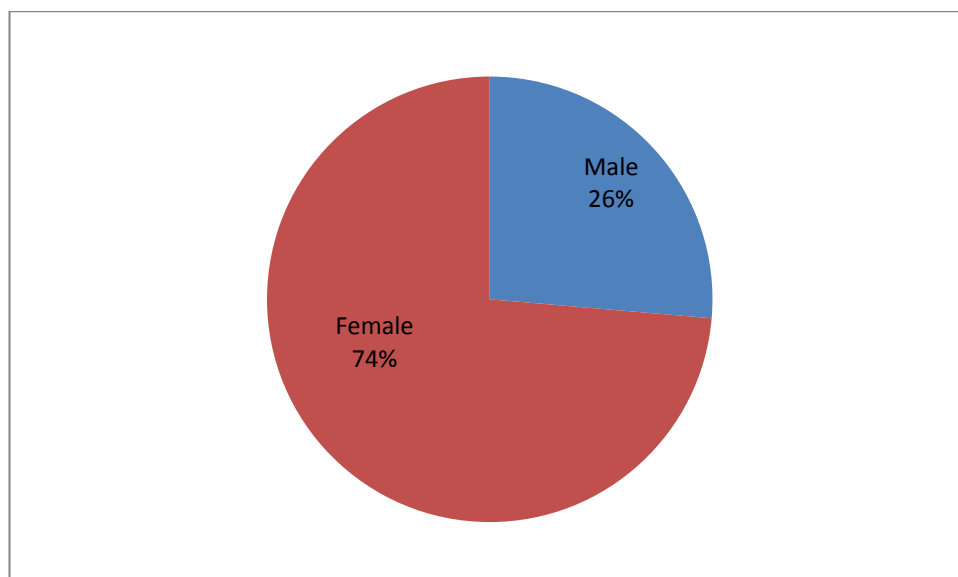
Regarding the admitted students to Faculties of Dentistry, 60% were admitted to J.U.S.T while the remaining 40% were admitted to the J.U. **Graph (16)**

**Graph (16): First year Enrollees at Dentistry Faculties in Jordanian Universities(Jordanian), 2012/2013**



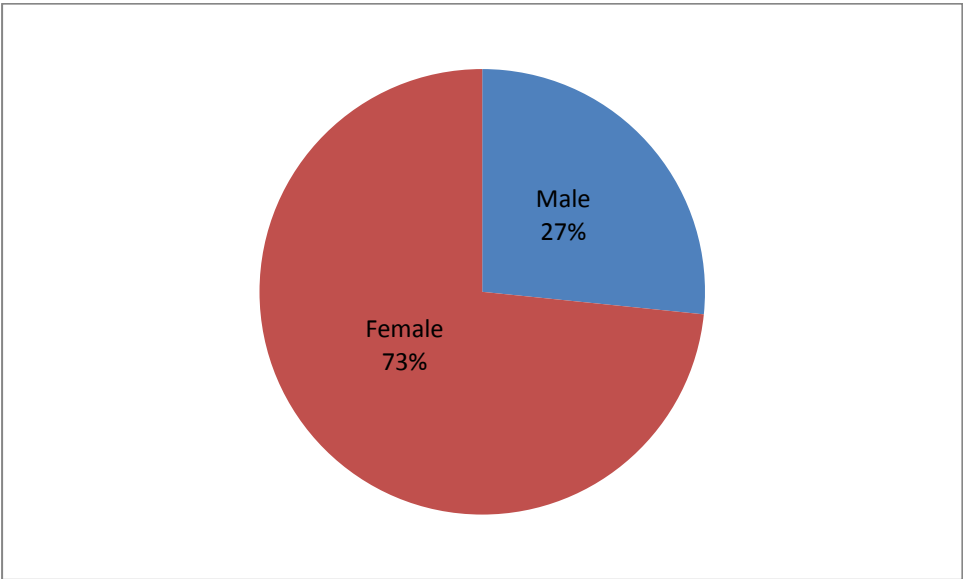
**Graph (17)** shows that about three quarters (74%) of graduates from the Faculties of Dentistry in Jordan were females compared to one quarter (26%) males.

**Graph (17): Graduates from Dentistry Faculties by gender(Jordanian), 2013**



**Graph (18)** illustrates that around one quarter of the enrollees in the Faculties of Dentistry for the year 2012/2013 are males.

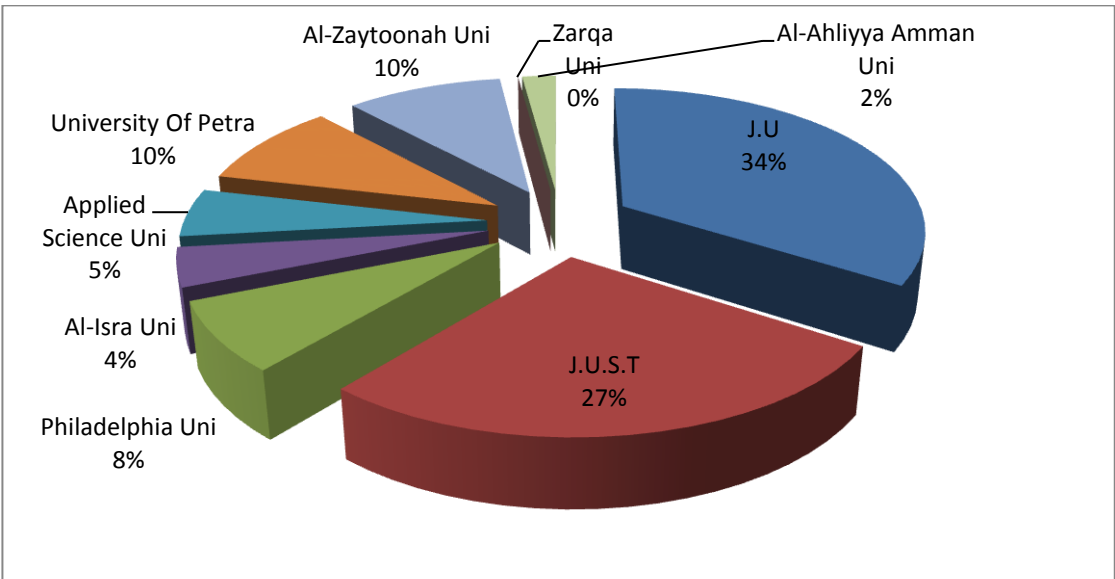
**Graph (18): First year Enrollees in Dentistry Faculties by gender(Jordanian), 2012/2013**



**9.3 Admitted and graduated students from pharmacy Faculties for the year 2010/2011**

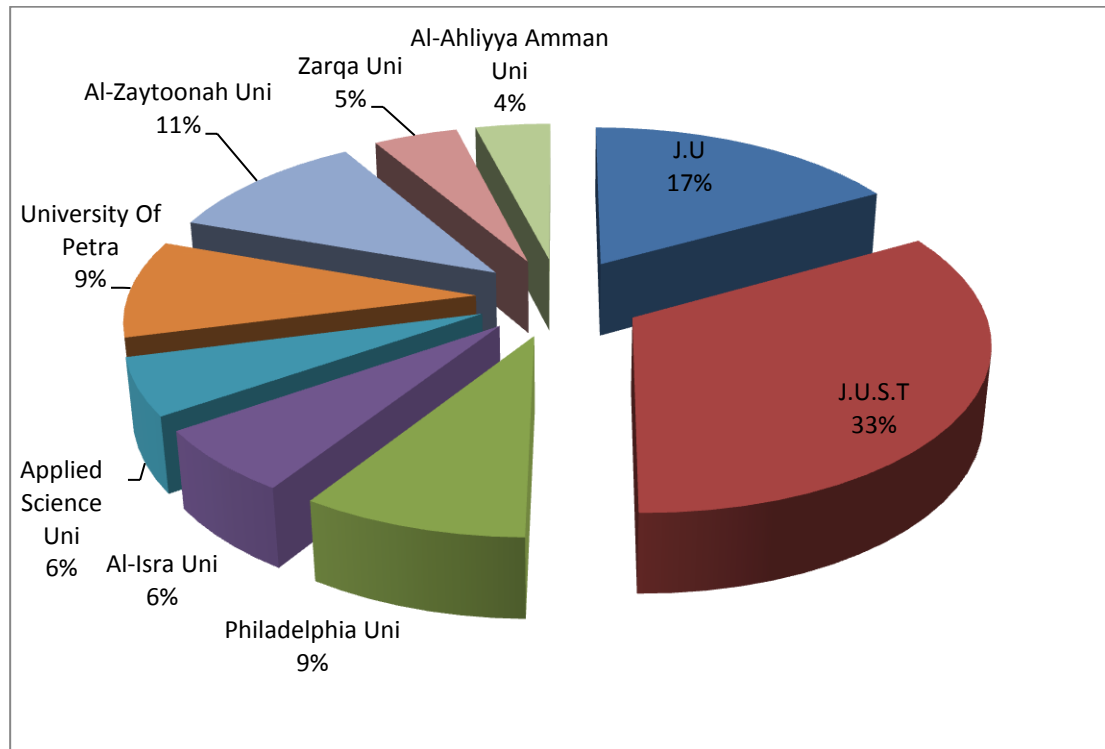
There are 9 pharmacy Faculties in Jordan (two public universities and seven private universities). It is noticed from the graph below that more than half (61%) of the pharmacy students were graduated from the two public universities (J.U and J.U.S.T).

**Graph (19): Graduates from Pharmacy Faculties in Jordanian Universities (Jordanian), 2013**



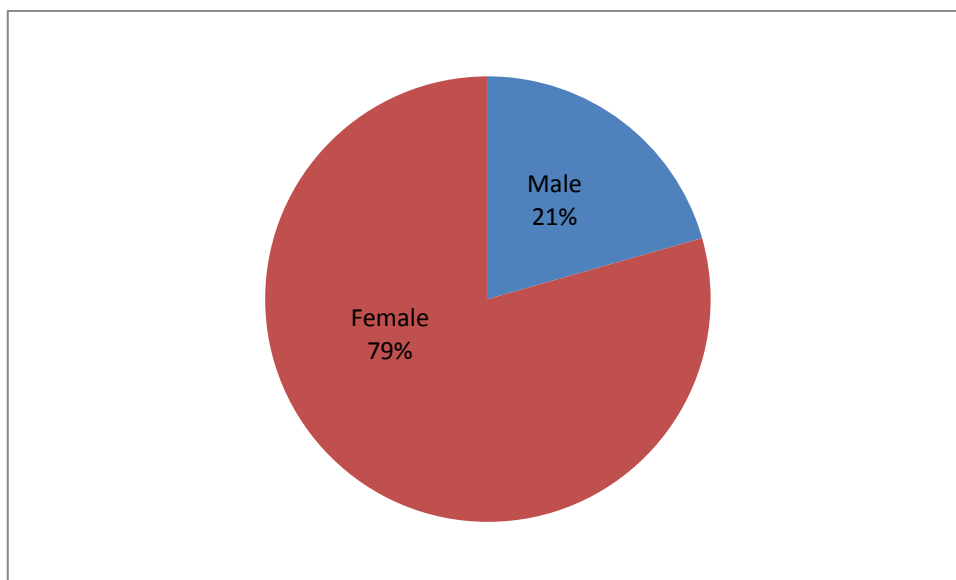
Regarding the admitted students to Pharmacy Faculties, there are 9 pharmacy Faculties in Jordan (two in the public universities and seven in the private universities) about 46% of students were accepted in the two public universities (J.U and J.U.S.T). **Graph (20)**

**Graph (20): First Year Enrollees at Pharmacy Faculties in Jordanian Universities (Jordanian), 2012/2013**



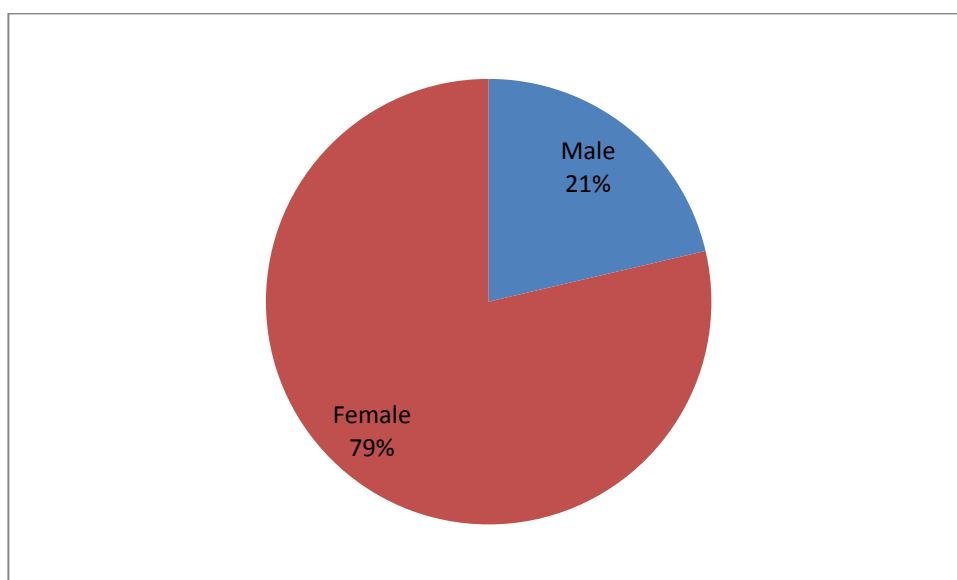
As shown in **Graph (21)** about 79% of graduates from the pharmacy faculties in Jordan are females compared to one fifth (21%) males.

**Graph (21): Jordanian Graduates from Pharmacy Faculties by gender, 2013**



**Graph (22)** shows that also about 79% of graduates from the pharmacy faculties in Jordan are females compared to one fifth (21% )males.

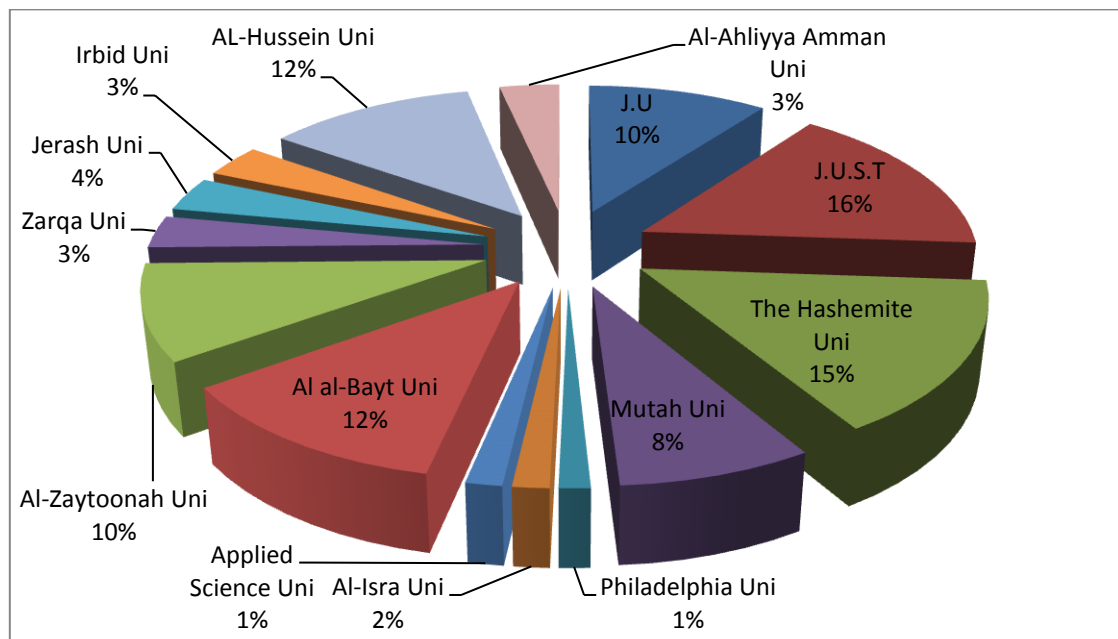
**Graph (22): First year Jordanian Enrollees in Pharmacy Faculties by gender, 2012/2013**



#### 9.4 Admitted and graduated students from Nursing Faculties for the year 2011/2013:

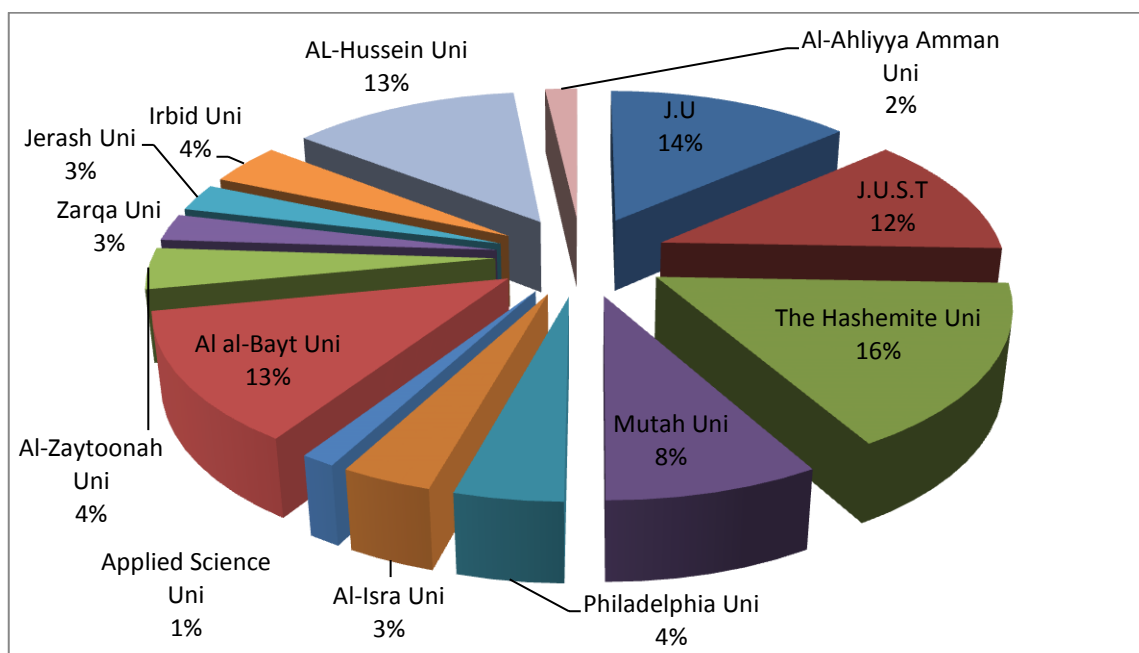
Five public universities and nine private universities are now offering BSc in nursing. **Graph (23)** shows the distribution of graduates from these nursing faculties. About 61% of the nursing students were graduated from the five public universities (J.U, J.U.S.T, Hashemite University, Al-Hussein University and Mutah University)

**Graph (23): Jordanian Graduates from Nursing Faculties in Jordanian Universities(& non-Jordanian), 2013**



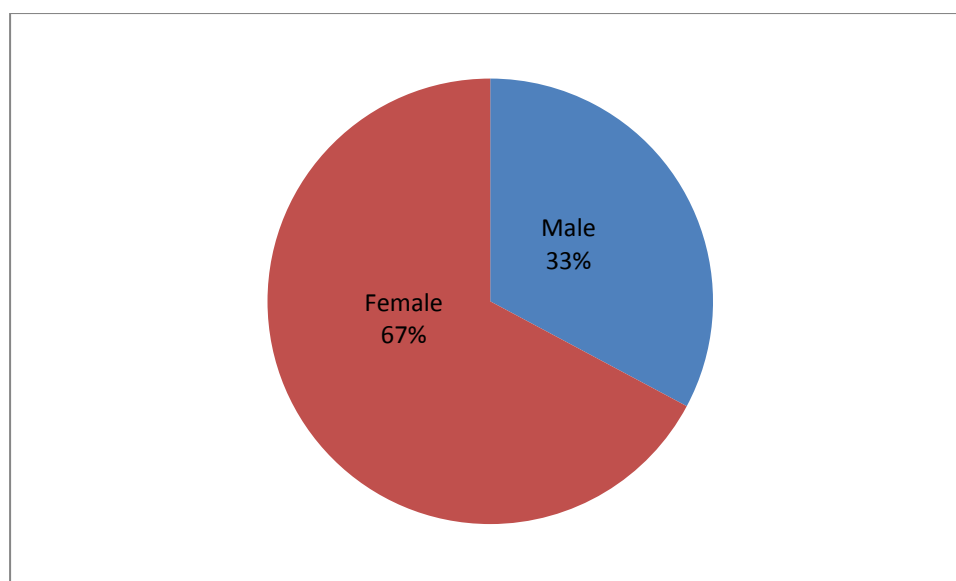
Regarding the admitted students to nursing faculties, about 63% were accepted in the public universities. **Graph (24)**

**Graph (24): First Year Jordanian Enrollees at Nursing Faculties in Jordanian Universities, 2012/2013**



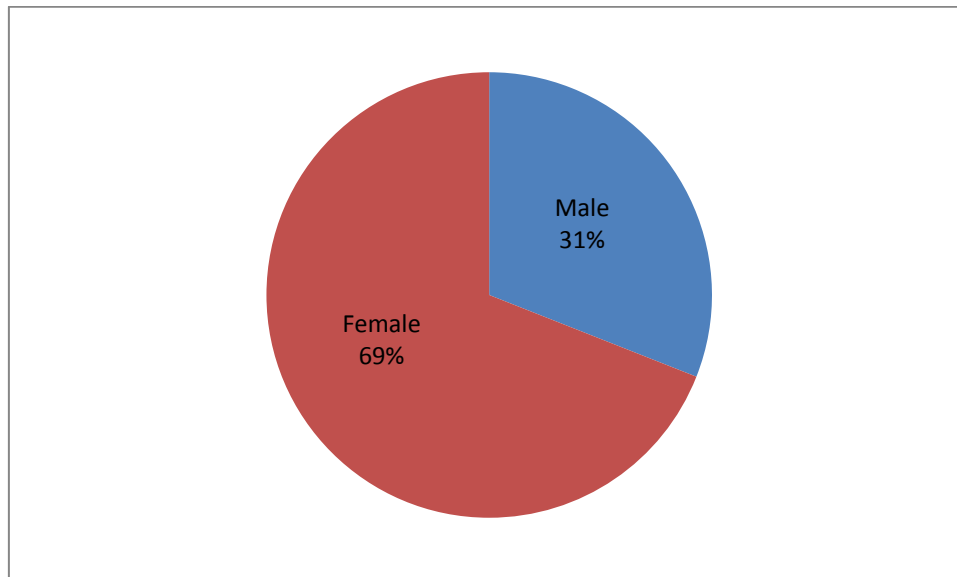
**Graph (25)** shows that two thirds (67% ) of graduates from the nursing faculties in Jordan are females compared to one third males.

**Graph (25): Jordanian Graduates from Nursing Faculties by Gender, 2013**



As a response of female nursing shortage in Jordan, a policy recommendation of accepting more female students in the nursing faculties was implemented (30% males:70% females), **graph (26)** emphasizes the implementation of this policy, about 69% of the admitted students to nursing faculties were females compared to 31% males.

**Graph (26): First year Jordanian Enrollees in Nursing Faculties by gender, 2012/2013**



## 10. Recommendations

- Develop an active HRH computerized surveillance system to monitor intra and inter sectoral health workforce movement.
- Develop appropriate strategies to ensure equitable workforce distribution among different governorates in the country as geographical disparities in the distribution of health personnel was obviously noticed.
- Continue conducting a survey in Amman Governorate to obtain an accurate data about dentists working in the private sector because the reliability of this type of information was not guaranteed due to the lack of a monitoring system that update such information in the professional associates and the infeasible field data collection in this governorate.
- Implement appropriate policies to attract and retain health workers to the public sector in general and to remote areas in specific.
- Encourage midwives and registered nurses to work at the primary care level in the private sector as an acute shortage of them was identified.
- Review universities' acceptance regulation regarding Jordanian enrollees to fill the gap between health professionals' supplies and actual market needs.
- Reconsider the gender in the universities' acceptance regulations in general and among the same specialties according to market needs.
- Develop appropriate strategies to motivate enrollment of females in nursing faculties to meet the shortage in their number.

## 11. References

1. Department of Statistics (DOS), **Statistical year book**, Jordan, 2012
2. Higher Population Council, **The State of Jordan's Population Report** 2010.
3. Ministry of Health, **Annual Statistical Report**, 2013.
4. Department of Statistics (DOS), **Demographic and Health Survey**, 2013.
5. Anwar Bateiha, **Situation Analysis of Health Sector in Jordan**, 2002.
6. High Health Council, **Jordan National Health Accounts**, Technical Report No.5, 2012.
7. High Health Council, **High Health Council Law** Number 4, 1999.
8. High Health Council, **National Health Strategy** 2008-2012.
9. Jordan Government, **Jordan National Agenda**, 2022.
10. Government of Jordan. **Public Health Law** No.47 for 2008.
11. Musa Ajlouni, Health Systems Profile, a country study submitted to WHO/EMRO, 2010
12. UNDP: <http://hdrstats.undp.org/en/countries/profiles/JOR.html>
13. Musa Ajlouni, Human Resources for Health Country Profile, a country study submitted to WHO/EMRO, 2010
14. World Health Organization, **World Health Organization Report** in 2006. Geneva
15. [www.jnc.gov.jo/](http://www.jnc.gov.jo/) ( Jordanian Nursing Council web site)
16. High Health Council, Jordan National Agenda, **Progress Report** (2005-2011)
17. Ministry of Planning and International Development, the **Executive Developmental plan** 2011-2013
18. Ministry of Health, **National Health Research Priorities** in Jordan, 2009-2013.



## **12. Annexes**

**Annex (1):** First Year Enrollees & Graduates at Medicine Faculties in Jordanian Universities by Gender (Jordanian & non-Jordanian), 2011/2013

**Annex (2):** First Year Enrollees & Graduates at Dentistry Faculties in Jordanian Universities by Gender (Jordanian & non-Jordanian), 2011/2013

**Annex (3):** First Year Enrollees & Graduates at Pharmacy Faculties in Jordanian Universities by Gender (Jordanian & non-Jordanian), 2011/2013

**Annex (4):** First Year Enrollees & Graduates at Nursing Faculties in Jordanian Universities by Gender (Jordanian & non-Jordanian), 2011/2013

**Annex (5):** Distribution of public health sector professionals Form in Jordan, 2013

**Annex (6):** Distribution of private health sector professionals Form in Jordan, 2013

**Annex (1): First Year Enrollees & Graduates at Medicine Faculties in Jordanian Universities  
by Gender (Jordanian & non-Jordanian), 2012/2013**

Specialization	Medicine											
University	Graduate						Admitted					
	M	%	f	%	T	%	M	%	F	%	T	%
Jordan University	90	53%	80	47%	170	29%	95	46%	111	54%	206	22 %
J.U.S.T	113	67%	55	33%	168	29%	165	51%	156	49%	321	35%
The Hashemite Uni	60	53%	53	47%	113	20%	133	52%	122	48%	255	28%
Mutah Uni	70	54%	59	46%	129	22%	71	52%	66	48%	137	15%
<b>Total</b>	333	57%	247	43%	580	100%	464	50%	455	50%	919	100%

**Annex (2): First Year Enrollees & Graduates at Dentistry Faculties in Jordanian  
Universities by Gender(Jordanian & non-Jordanian), 2012/2013**

Specialization	Dentistry											
University	Graduate						Admitted					
	M	%	F	%	T	%	M	%	F	%	T	%
Jordan University	22	29%	53	71%	75	58%	26	26%	73	74%	99	40%
J.U.S.T	12	22%	42	78%	54	42%	40	27%	109	73%	149	60%
<b>Total</b>	34	26%	95	74%	129	100%	66	27%	182	73%	248	100%

**Annex (3): First Year Enrollees & Graduates at Pharmacy Faculties in Jordanian Universities by Gender (Jordanian & non-Jordanian), 2012/2013**

Specialization	Pharmacy											
University	Graduate						Admitted					
	M	%	F	%	T	%	M	%	F	%	T	%
<b>Jordan University</b>	35	12%	256	88%	291	<b>34%</b>	31	11%	264	89%	295	<b>17%</b>
<b>J.U.S.T</b>	29	12%	203	88%	232	<b>27%</b>	96	17%	484	83%	580	<b>33%</b>
<b>Philadelphia Uni</b>	20	30%	46	70%	66	<b>8%</b>	42	27%	114	73%	156	<b>9%</b>
<b>Al-Isra Uni</b>	19	51%	18	49%	37	<b>4%</b>	36	33%	73	67%	109	<b>6%</b>
<b>Applied Science Uni</b>	10	22%	36	78%	46	<b>5%</b>	17	18%	80	82%	97	<b>6%</b>
<b>University Of Petra</b>	34	42%	47	58%	81	<b>10%</b>	56	34%	109	66%	165	<b>9%</b>
<b>Al-Zaytoonah Uni</b>	26	31%	58	69%	84	<b>10%</b>	52	27%	140	73%	192	<b>11%</b>
<b>Zarqa Uni</b>	0	0%	0	0%	0	<b>0%</b>	19	24%	60	76%	79	<b>5%</b>
<b>Al-Ahliyya Amman Uni</b>	3	17%	15	83%	18	<b>2%</b>	23	33%	47	67%	70	<b>4%</b>
<b>Total</b>	176	21%	679	79%	855	<b>100%</b>	372	21%	1371	79%	1743	<b>100%</b>

**Annex (4): First Year Enrollees & Graduates at Nursing Faculties in Jordanian Universities  
by Gender(Jordanian & non-Jordanian), 2012/2013**

Specialization	Nursing											
University	Graduate						Admitted					
	M	%	F	%	T	%	M	%	F	%	T	%
University of Jordan	29	20%	118	80%	147	10%	35	16%	186	84%	221	14%
J.U.S.T	57	25%	172	75%	229	16%	50	26%	145	74%	195	12%
The Hashemite Uni	71	32%	148	68%	219	15%	95	36%	168	64%	263	16%
Mutah Uni	34	30%	78	70%	112	8%	33	24%	103	76%	136	8%
Philadelphia Uni	3	17%	15	83%	18	1%	47	68%	22	32%	69	4%
Al-Isra Uni	9	43%	12	57%	21	1%	31	53%	27	47%	58	3%
Applied Science Uni	3	14%	18	86%	21	1%	3	14%	19	86%	22	1%
Al al-Bayt Uni	60	35%	110	65%	170	12%	71	34%	136	66%	207	13%
Al-Zaytoonah Uni	87	63%	51	37%	138	10%	5	8%	61	92%	66	4%
Zarqa Uni	3	6%	44	94%	47	3%	7	16%	36	84%	43	3%
Jerash Uni	27	54%	23	46%	50	3%	20	45%	24	55%	44	3%
Irbid Uni	16	33%	32	67%	48	3%	26	39%	41	61%	67	4%
AL-Hussein Uni	60	35%	110	65%	170	12%	71	34%	136	66%	207	13%
Al-Ahliyya Amman Uni	13	27%	36	73%	49	3%	10	34%	19	66%	29	2%
Total	472	33%	967	67%	1439	100%	504	31%	1123	69%	1627	100%

High Health Council / General Secretariat  
National HRH Observatory In Jordan

Annex (5): Distribution of Public Health Sector Professionals Form in Jordan, 2014

Cadre	Cadre in Arabic	(الجنس)Gender				(الجنسية)Nationality				(العمل مكان) Work Place						Total
		m	%	f	%	J	%	N.J	%	H	%	C	%	D	%	
G.Ps & Internship Physicians	الأطباء العامين وأطباء الامتياز															
Internship Physician	طبيب عام امتياز															
General Physician	طبيب عام															
Total																
Medical specialties	أطباء الاختصاص															
Radiology	أخصائي أشعة															
Obstetric	أخصائي نسائية وتوليد															
Forensic Medicine	إحصائي طب شرعي															
Internal Medicine	أخصائي باطني															
Dermatology	أخصائي جلد															
Otolaryngology	أخصائي انف واذن وحنجرة															
Neurology	أخصائي أعصاب															
Orthopedics	أخصائي عظام															
Nephrology	أخصائي كلي باطني															
Physical Therapy & Rehabilitation	أخصائي علاج طبيعي وتأهيل															
Ophthalmology	أخصائي عيون															
Anesthesiology	أخصائي تخدير															
General Surgery	أخصائي جراحة عامه															
Family Medicine	أخصائي طب اسره															
Pediatrics	أخصائي أطفال															
Medical lab	مختبرات طبية															
Cardiac Surgery	أخصائي جراحة قلب															
Cardiology	أخصائي باطني قلب															
Plastic Surgery	أخصائي جراحة تجميل															
Psychiatry	أخصائي نفسيه															
Pulmonology	أخصائي صدرية															
Gastroenterology	أخصائي جهاز هضمي															
Urology	أخصائي جراحة كلي ومسالك بوليه															
Emergency doctors	أخصائي طوارئ															
Public Health/Community Medicine	طبيب أخصائي طب مجتمع / صحة عامه															
Total																

Cadre	Cadre in Arabic	(الجنس)Gender				(الجنسية)Nationality				(مكان العمل) Work Place						Total
		m	%	f	%	J	%	N.J	%	H	%	C	%	D	%	
Residency	الإقامات															
Radiology	طبيب مقيم أشعه															
Obstetric	طبيب مقيم نسائيه وتوليد															
Forensic Medicine	طبيب مقيم طب شرعي															
Internal Medicine	طبيب مقيم باطني															
Dermatology	طبيب مقيم جلديه															
Otolaryngology	طبيب مقيم انف واذن وحنجرة															
Neurology	طبيب مقيم أعصاب															
Orthopedics	طبيب مقيم عظام															
Nephrology	طبيب مقيم كلي															
Physical Therapy & Rehabilitation	طبيب مقيم علاج طبيعي وتأهيل															
Ophthalmology	طبيب مقيم عيون															
Anesthesiology	طبيب مقيم تخدير															
General Surgery	طبيب مقيم جراحه عامه															
Family Medicine	طبيب مقيم طب أسرہ															
Pediatrics	طبيب مقيم أطفال															
Medical lab	طبيب مقيم مختبرات طبيه															
Cardiac Surgery	طبيب مقيم جراحة قلب															
Cardiology	طبيب مقيم باطني قلب															
Plastic Surgery	طبيب مقيم جراحة تجميل															
Psychiatry	طبيب مقيم نفسيه															
Pulmonology	طبيب مقيم صدریه															
Gastroenterology	طبيب مقيم جهاز هضمي															
Urology	طبيب مقيم كلي ومسالك بوليہ															
Emergency doctors	طبيب مقيم طوارئ															
Public Health/Community Medicine	طبيب مقيم طب مجتمع / صحة عامه															
Total																
Community Medicine Diploma	دبلوم طب مجتمع															
Public Health Masters	ماجستير صحة عامه															
Hospital Administration Masters	ماجستير إدارة مستشفيات															
Health Service Management Masters	ماجستير إدارة خدمات صحیه															
Public Health/Community Medicine	طبيب مقيم طب مجتمع / صحة عامه															
Total																

Cadre	Cadre in Arabic	Gender (الجنس)				Nationality (الجنسية)				Work Place (مكان العمل)						Total
		m	%	f	%	J	%	N.J	%	H	%	C	%	D	%	
Dentists	أطباء الأسنان															
Internship Dentist	طبيب أسنان امتياز															
Dentist (General Practitioner)	طبيب أسنان عام															
Total																
Dental Specialties	طبيب أسنان اختصاص															
Prosthodontics	أخصائي تركيب أسنان															
Orthodontics	أخصائي تقويم أسنان															
Maxillo-Oral Surgery	أخصائي جراحة فم وفكين															
Pediatric dentistry	أخصائي أسنان أطفال															
Endodontics	أخصائي معالجة لبية															
Conservative treatment	أخصائي معالجة تحفظية															
Periodontics	أخصائي لثة															
Total																
Pharmacists	الصيدالة															
Pharmacist	صيدلاني															
Pharm D	دكتور صيدلي															
Pharmacy Master	ماجستير صيدلة															
Pharmacy Doctorate	دكتوراه صيدلة															
Assistant Pharmacist	مساعد صيدلي															
Total																
REGISTERED NURSES	التمريض															
Staff Nurse	تمريض قانوني															
Patient care Nurse	رعاية منزلية															
Associated Nurse	تمريض مشارك															
Practical Nurse	تمريض مساعد															
Nurse Aid	عامل تمريض															
Midwives	قابله قانونية															
Total																

High Health Council / General Secretariat  
Annex (6): Distribution of private health sector professionals Form in Jordan, 2013

Cadre	cadre in Arabic	m	%	f	%	J	%	N.J	%	اللواء
G.Ps & Internship Physicians	الأطباء العامين وأطباء الامتياز									
Internship Physician	طبيب عام امتياز									
General Physician	طبيب عام									
<b>Total</b>										
<b>Medical specialties</b>	<b>اطباء الاختصاص</b>									
Radiology	أخصائي أشعه									
Obstetric	أخصائي نسائية وتوليد									
Forensic Medicine	إحصائي طب شرعي									
Internal Medicine	أخصائي باطني									
Dermatology	أخصائي جلديه									
Otolaryngology	أخصائي انف واذن وحنجرة									
Neurology	أخصائي أعصاب									
Orthopedics	أخصائي عظام									
Nephrology	أخصائي كلي باطني									
Physical Therapy & Rehabilitation	أخصائي علاج طبيعي وتأهيل									
Ophthalmology	أخصائي عيون									
Anesthesiology	أخصائي تخدير									
General Surgery	أخصائي جراحه عامه									
Family Medicine	أخصائي طب أسرہ									
Pediatrics	أخصائي أطفال									
Medical lab	مختبرات طبيه									
Cardiac Surgery	أخصائي جراحة قلب									
Cardiology	أخصائي باطني قلب									
Plastic Surgery	أخصائي جراحة تجميل									
Psychiatry	أخصائي نفسيه									
Pulmonology	أخصائي صدریه									
Gastroenterology	أخصائي جهاز هضمي									
Urology	أخصائي جراحة كلي ومسالك بوليہ									
Emergency doctors	أخصائي طوارئ									
Public Health/Community Medicine	طبيب أخصائي طب مجتمع / صحة عامه									
<b>Total</b>										



Cadre	cadre in Arabic	m	%	f	%	J	%	N.J	%	اللواء
<b>Residency</b>	الإقامات									
Radiology	طبيب مقيم أشعة									
Obstetric	طبيب مقيم نسائية وتوليد									
Forensic Medicine	طبيب مقيم طب شرعي									
Internal Medicine	طبيب مقيم باطني									
Dermatology	طبيب مقيم جلدية									
Otolaryngology	طبيب مقيم أنف وأذن وحنجرة									
Neurology	طبيب مقيم أعصاب									
Orthopedics	طبيب مقيم عظام									
Nephrology	طبيب مقيم كلي									
Physical Therapy & Rehabilitation	طبيب مقيم علاج طبيعي وتأهيل									
Ophthalmology	طبيب مقيم عيون									
Anesthesiology	طبيب مقيم تخدير									
General Surgery	طبيب مقيم جراحه عامه									
Family Medicine	طبيب مقيم طب أسره									
Pediatrics	طبيب مقيم أطفال									
Medical lab	طبيب مقيم مختبرات طبية									
Cardiac Surgery	طبيب مقيم جراحة قلب									
Cardiology	طبيب مقيم باطني قلب									
Plastic Surgery	طبيب مقيم جراحة تجميل									
Psychiatry	طبيب مقيم نفسيه									
Pulmonology	طبيب مقيم صدرية									
Gastroenterology	طبيب مقيم جهاز هضمي									
Urology	طبيب مقيم كلي ومسالك بوليه									
Emergency doctors	طبيب مقيم طوارئ									
Public Health/Community Medicine	طبيب مقيم طب مجتمع / صحة عامه									
<b>Total</b>										
Community Medicine Diploma	دبلوم طب مجتمع									
Public Health Masters	ماجستير صحة عامة									
Hospital Administration Masters	ماجستير إدارة مستشفيات									
Health Service Management Masters	ماجستير إدارة خدمات صحية									
Public Health/Community Medicine	طب مجتمع / صحة عامه									
<b>Total</b>										
<b>Internship Dentist</b>	طبيب أسنان امتياز									
<b>Dentist (General Practitioner)</b>	طبيب أسنان عام									
<b>Total</b>										

Cadre	cadre in Arabic									اللواء
		m	%	f	%	J	%	N.J	%	
<b>Dental Specialties</b>	طبيب أسنان اختصاص									
<b>Prosthodontics</b>	أخصائي تركيب أسنان									
<b>Orthodontics</b>	أخصائي تقويم أسنان									
<b>Maxillo-Oral Surgery</b>	أخصائي جراحة فم وفكين									
<b>Pediatric dentistry</b>	أخصائي أسنان أطفال									
<b>Endodontics</b>	أخصائي معالجة لبية									
<b>Conservative treatment</b>	أخصائي معالجة تحفظية									
<b>Periodontics</b>	أخصائي لثة									
<b>Total</b>										
<b>Pharmacists</b>	الصيدالة									
<b>Pharmacist</b>	صيدلاني									
<b>Pharm D</b>	دكتور صيدلي									
<b>Pharmacy Master</b>	ماجستير صيدلة									
<b>Pharmacy Doctorate</b>	دكتوراه صيدلة									
<b>Assistant Pharmacist</b>	مساعد صيدلي									
<b>Total</b>										
<b>REGISTERED NURSES</b>	التمريض									
<b>Staff Nurse</b>	تمريض قانوني									
<b>Patient care Nurse</b>	رعاية منزليه									
<b>Associated Nurse</b>	تمريض مشارك									
<b>Practical Nurse</b>	تمريض مساعد									
<b>Nurse Aid</b>	عامل تمريض									
<b>Midwives</b>	قابله قانونية									
<b>Total</b>										

M: male  
F: female

J: Jordanian  
N.J: non-Jordanian

H: hospital  
C: center

D: directorate