



The Hashemite Kingdom of Jordan
High Health Council/ General Secretariat

National Human Resources for Health Observatory
Jordan's HRH Report, 2015



High Health Council

General Secretariat

**National Human Resources for Health Observatory
Annual Report, 2015**

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May, 2016







"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 Resources 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 reach Universal Health Coverage (UHC). Political commitments at the highest levels were made clear to support related HRH 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 to analyze and respond to HRH gaps in Jordan.

The High Health Council (HHC) has placed HRH as a priority concern, thus the HHC general secretariat has been honored to host Jordan's National HRH Observatory (NHRHO) as a cooperative initiative between MOH, HHC, and WHO and all health workforce stakeholders to provide reliable and instant data and indicators necessary to develop informed policies and evidence-based decisions.

The HHC developed the National Health Strategy for the years (2015-2019), the Strategy is consistent with the goals of the "National Agenda", "We are all Jordan" and "Jordan Vision 2025" 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 and the Executive Developmental Plan 2016-2019 (EDP) that was derived from it; a strategic HRH objectives & monitoring outcome indicators with contributions of all concerned sectors were developed within the strategy and its EDP after the situation was analyzed and priorities were identified.

This annual 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 2015. All stakeholders were greatly involved in the production of this technical report, moreover they are encouraged to take advantage and benefit from its potential.

Finally I would like to express my gratitude 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 focal point and the technical 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.

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1. Introduction

Jordan is a small 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 9.532 million of whom 82.6 % live in urban areas. Population and housing census for the year 2015 showed that 30% of the population are non-Jordanians, almost half of them are Syrians(1.3 million). The population is distributed among 12 governorates over three regions (North, Middle, and South).The majority of the population lived in Amman governorate (42.04%), followed by Irbid governorates (18.57) and then Zarqa governorate (14.32%). 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 Census indicated that the Kingdom's population doubled more than 10 times within 55 years, with an average annual population growth rate of 5.3 for the year 2015.

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 74.4 years, (72.7 for males and 76.7 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.

The total fertility rate (TFR) is relatively high in Jordan, although it has declined steadily in recent years to reach 3.5 in 2014. 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 .

According to the National Health Account (NHA) 2013, Jordan spent approximately JD 1.880 billion on health, or JD 231.8 per capita. This total health expenditure represented 7.89% of Jordan's GDP. The public sector is the largest source of health funding (61.47%), followed by the private sector (34.78%) and the donors (3.75%) (6). While providing basic health care services throughout the kingdom continues to be a major concern for the government especially with the huge influx of Syrian refugees, 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 Minister of health, it includes in its membership the Minister of finance, Minister of planning and international cooperation, Minister of Social Development, Minister of labour, 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 president 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.

To achieve these objectives the HHC set The **National Strategy for Health Sector** in Jordan(NSHS) for the years 2015-2019 in which it endorses four main strategic objectives that constitute the outcomes of the health system, and comprehensively reflect the performance of the health care sector; this strategy analyzed the human resources as one of the main six building blocks of any health system, and thus identified the challenges and propose certain interventions and policy directions to face these challenges.

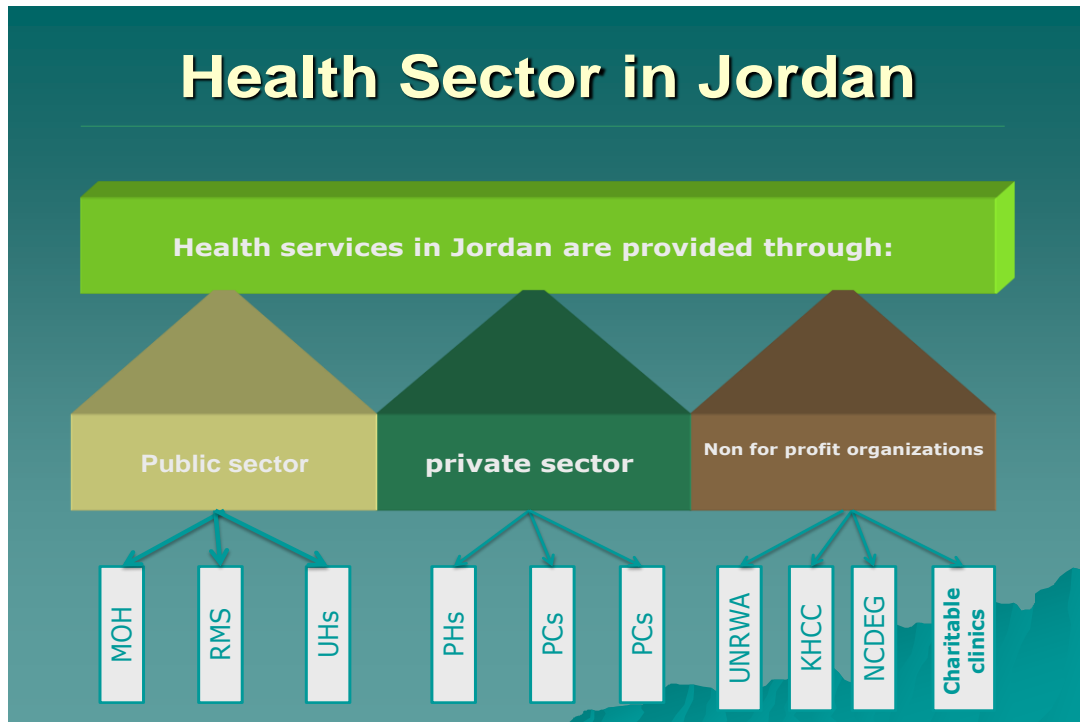
The new NSHS strategy will be consistent with the goals of the "National Agenda" , "We are all Jordan", Jordan Vision 2025 and its Executive Developmental Program 2016-2018 as well as other health and health related sub sector strategies and plans.

Jordan Vision 2025 was developed in 2015 to determine the kingdom's political and socio-economic reform policies and programs over the next 10 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.

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 (1): 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:

- 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 (99 comprehensive centers, 378 primary centers, 198 Village Clinics, 460 Maternal and Child Health centers and 402 oral health clinics). Secondary and tertiary health care services are provided through 31 **MOH** hospitals distributed over

the 12 governorates of Jordan with 5077 beds representing over one third of hospital beds in the country (38.7%).

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 41.7% of the Jordanian 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).

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 2551 (19.5%) of hospitals beds in Jordan for the year 2015. RMS is responsible for providing health services and a comprehensive medical insurance to military and security personnel. Beneficiaries of RMS constitute around 38% of the insured Jordanian population; they include active and retired staff and their dependents, staff of the Royal Court, Royal Jordanian Airlines, Mu'ta University 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 11 military health centers and clinics distributed all over the country in addition to air medical evacuation services.

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 599 beds (4.6% of the total beds) for the year 2015.

KAH was established in 2002 by Jordan University of Science and Technology (JUST). It has 538 beds (4.1% of the total number of hospital beds in Jordan) for the year 2015. 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 59 hospitals with nearly one third of the hospital beds in the country (4350 beds represents about 33.2% 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.

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 2.25 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 2013-2015. It delivers primary health care services through 25 primary health care facilities which deal with over 2.3 million visits each year. These services include medical care, dental care, physiotherapy, pre-conception, ante-natal, post-natal care, and family planning, disease prevention and control, health protection and promotion, environmental health, and partial reimbursement for hospitalization and/or advanced diagnostic services at government hospitals with a sealing 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 settled by the beneficiary. So although UNRWA mainly focuses on primary health care, it also provides partial reimbursement to help 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**), was established 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 organization, established by a Royal Decree to combat cancer not only in Jordan but also in 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.

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:

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) Encouraging health system research agenda and facilitating the implementation of this agenda including HRH research.

8. Health Professionals Associations (Jordan Medical Association, Jordan Registered nurses & Midwifery 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

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 National HRH Policy Forum at 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) Providing technical support to HRH 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 2014 as the population in Jordan increased rapidly , table (1). For the year 2014, there were 29.4 doctors, 10.3 dentists, 18.3 pharmacists and 45.3 nurses (all categories). At the sub-national level, HRH Reports for the years 2011, 2012, 2013, 2014 showed a great disparities in health workforce distribution between different governorates.

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. For the year 2014, the ratio was approximately 1.30 nurse to 1.0 doctor.

Table (1): Trend of Human Resource Ratio Development (2010-2014)

Year / Profession	2010	2011	2012	2013	2014
Physicians	26.5	25.5	27.1	28.6	29.4
Dentists	9.3	9.8	10.0	10.4	10.3
Pharmacists	15.0	12.6	16.3	17.8	18.3
Nurses	44	43.7	46.6	44.8	45.3

Source: Annual statistical book, MOH, 2014

Over the past few decades, the regional political instability 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, and the population is aging, in addition to the problem of HRH brain drain and migration, all of these factors add an additional burden to health workforce in Jordan.

Jordan, as in many other countries, is faced with acute 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).

The HHC analyzed the health sector in Jordan and set HRH priorities after reviewing all documents, studies, and reports related to health in Jordan. The following are the **main HRH challenges** due to absence of a National HRH Strategy:

- Inadequate national training plans.
- Deficient endorsed job descriptions.
- Poor investment in human resources development.
- Difficulty in attracting and retaining qualified health 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 document of **Jordan 2025** is considered to be the most 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 this document which was translated to an **Executive Developmental plan 2016-2018**. This plan included sectoral and sub-sectoral initiatives which were translated into allocative programs, projects and 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.

HRH issues were also identified to be one of the top national health research priorities in Jordan .

6. National HRH Observatory in Jordan

In order to respond to HRH challenges, the policymakers made paramount efforts to address challenges concerning human resource for health through establishing a **National HRH Observatory (NHRHO)** in July 2009 for the purpose of identifying HRH gaps and developing effective plans for crucial HRH problems.

6.1 Definition of NHRHO

NHRHO is a cooperative initiative among relevant stakeholders to monitor the patterns of the health workforce distribution over the country. 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 sixth annual report was prepared by the HRH observatory team 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 in-equitable 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 the collected HRH data for the year 2015 were used.

7.3 Data collection Methods

Jordan specific 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 two focal points from each governorate.

Thirty three 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 one focal point was appointed to collect data from the public sector only the source of data from the private sector was obtained from Jordan Dentists Association.

- 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 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 nursery) 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 NHRH focal point 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 and comparing the same data from different sources.
- 7- Data entry, cleaning and analysis was performed by NHRH focal point.

7.8 Limitation of the study:

1. Presence of variation in the same piece of HRH information between different sources.
2. Lack of accurate and updated information about acting health work force in the private sector.

8. Results

- **HRH stock**

8.1 Health workforce at the public sector:

Public Sector in this report is the sector that provide public services , it involves MOH, RMS, the two university hospitals (JUH and KAH), JFDA, JPD and the HHC. As shown in the table below the majority number of health workforce is present in the MOH as it is considered to be the main provider for health services.

Table (2): Distribution of health workforce in the public sector by category, 2015

Cadre	MOH	RMS	JUH	KAUH	FDA	JPD	NCDE	HHC	Total
Physicians	3881	1783	548	521	4	0	30	3	6770
Dentists	753	306	37	3	0	11	0	1	1111
Pharmacists	460	285	22	38	116	11	12	0	944
Registered nurses	4579	3423	499	658	0	0	24	0	9183
Midwives	1387	237	10	16	0	0	0	0	1650

8.1.1 Health workforce at MOH

Table (3) shows that physicians working at the MOH for the year 2015 are mainly males (84% vs.16%). The table also shows that more than half of the dentists at MOH are males, while around three quarters of the pharmacists and more than half of the registered nurses are females (75%, 62% respectively).

Table (3): Health workforce at MOH by category and gender, 2015

Cadre	Gender				Total
	Male	%	Female	%	
Physicians	3909	84.2%	733	15.8%	4642
Dentists	397	53.9%	339	46.1%	736
Pharmacists	156	25.2%	464	74.8%	620
Registered nurses	1770	38.3%	2848	61.7%	4618
Midwives	0	0 %	1390	100%	1390

Table (4) shows the distribution of different health workforce categories at both the central level (MOH main directorates) and the peripheral level (Governorates) for the year 2015. Less than 7% in all categories (except for pharmacists) work at the central level.

Table (4): Health workforce at MOH by category and work place, 2015

Cadre	Central directorates		Governorates		Total
	No.	%	No.	%	
Physicians	274	5.9%	4368	94.1%	4642
Dentists	51	6.9%	685	93.1%	736
Pharmacists	147	23.7%	473	76.3%	620
Registered nurses	101	2.2%	4517	97.8%	4618
Midwives	21	1.5%	1369	98.5%	1390

8.1.2 Health workforce at Royal Medical Services (RMS)

Table (5) shows that 84% of physicians and 71% of dentists at the RMS are males, while about 66% of pharmacists and 69% of registered nurses are females.

Table (5): Health workforce at RMS by category and gender, 2015

Cadre	Gender				Total
	Male	%	Female	%	
Physicians	1504	84%	279	16%	1783
Dentists	216	71%	90	29%	306
Pharmacists	96	34%	189	66%	285
Registered nurses	1059	31%	2364	69%	3423
Midwives	0	0%	237	100%	237
Total	2875	100%	3159	100%	6034

Table (6) shows that RMS services are distributed over 9 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 Madaba governorate .

Table (6): Health workforce at RMS by category and governorate, 2015

governorate	Physicians		Dentists		Pharmacists		Registered nurses		Midwives	
	No.	%	No.	%	No.	%	No.	%	No.	%
Amman	1258	70.1%	186	61%	211	74%	2024	60%	86	36.3%
Irbid	144	8%	30	10%	19	6.6%	392	11.6%	68	28.7%
Zarqa	125	7%	24	8%	20	7%	382	10%	32	13.5%
Mafraq	9	0.5%	6	2%	1	0.5%	31	1%	1	0.4%
Karak	79	4.4%	17	5.6%	15	5.4%	241	7%	13	5.5%
Aqaba	83	4.7%	16	5.2%	12	4%	204	6%	20	8.4%
Ma'an	12	0.7%	12	3.9%	1	0.5%	20	0.6%	0	0%
Tafiela	68	3.8%	10	3.3%	6	2%	124	3.6%	16	6.8%
Madaba	5	0.2%	5	1%	0	0%	5	0.2%	1	0.4%
Total	1783	100%	306	100%	285	100%	3423	100%	237	100%

8.1.3 Health workforce at Jordan University Hospital

Table (7) shows that more than one half of physicians (53%) and (46%) of the dentists are males. Nearly three quarters of the registered nurses (73%) at the JUH are females, while the majority of the pharmacists (78%) are females. The number of midwives working at JUH increased from 4 in the year 2014 to 10 in the year 2015.

Table (7): Health workforce at JUH by category and gender, 2015

Cadre	Gender				Total
	M	%	F	%	
Physicians	294	53%	254	47%	548
Dentists	17	46%	20	54%	37
Pharmacists	5	22%	17	78%	22
Registered nurses	135	27%	364	73%	499
Midwives	0	0%	10	100%	10

8.1.4 Health workforce at KAUH

Table (8) shows that 72% of physicians, and 37% of the registered nurses at the KAUH are males, while 87% of the pharmacists and all the dentists are females.

Table (8): Health workforce at KAUH by category and gender, 2015

Cadre	Gender				Total
	M	%	F	%	
Physicians	380	72%	150	28%	530
Dentists	0	0%	3	100%	3
Pharmacists	5	13%	33	87%	38
Registered nurses	243	37%	415	63%	658
Midwives	0	0%	16	100%	16

8.1.5 Health workforce at JFDA

Table (9) indicates that the health workforce working at the JFDA are mostly pharmacists, more than three quarters of these pharmacists are females (77%). There are only four physicians working at the JFDA with no dentists, nurses or midwives.

Table (9): Health workforce at the JFDA by category and gender, 2015

Cadre	Gender				Total
	M	%	F	%	
Physicians	3	75%	1	25%	4
Pharmacists	26	23%	90	77%	116
Total	29	25%	91	75%	120

8.1.6 Health workforce at Joint Procurement Department (JPD)

Table (10) indicates that the health workforce working at the JPD are only pharmacists and they are mainly females (89%).

Table (10): Health workforce at the JPD by category and gender, 2015

Cadre	Gender				Total
	M	%	F	%	
Pharmacists	1	11%	8	89%	9
Total	1	11%	8	89%	9

8.1.7 Health workforce at the National Center for Diabetes, Endocrinology and Genetics (NCDEG)

Table (11) shows that 60% of the physicians, 75% 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 (11): Health workforce at NCDEG by category and gender, 2015

Cadre	Gender				Total
	M	%	F	%	
Physicians	12	40%	18	60%	30
Pharmacists	0	0%	12	100%	12
Registered nurses	6	25%	18	75%	24

8.1.8 Health workforce at the High Health Council (HHC)

Table (12) indicates that the health workforce working at the **HHC** are only three physicians and one dentist (public health specialists).

Table (12): Health workforce at HHC by category and gender, 2015

Cadre	Gender				Total
	M	%	F	%	
Physicians	2	67%	1	33%	3
Dentists	0	0%	1	100%	1

8.2 Health workforce at the private sector

According to this report, the private sector means the non-state sector which involves all institutions that are not included in the public health sector (private hospitals & clinics, UNRWA, JAFPP, KHCC.). High percentage of medical consultants, qualified nurses and technicians who are working at the private sector were previously 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 (13) shows the number distribution of physicians, dentists, pharmacists, registered nurses and midwives working at the private sector according to the place of work. The majority are working in the private hospitals and clinics.

Table (13): Distribution of Health workforce at the Private Sector, 2015

Cadre	Private hospital & clinics	UNRWA	JAFPP	KHCC	Total
Physicians	7665	110	27	336	8138
Dentists	5761	30	0	2	5793
Pharmacists	10262	2	0	86	10350
Registered nurses	4664	47	25	523	5259
Midwives	233	34	0	0	267

8.2.1 Health workforce at UNRWA

Table (14) shows that physicians, dentists and pharmacists working at UNRWA are mainly males, while registered nurses are almost females (89%).

Table (14): Health workforce at UNRWA by category and gender, 2015

Cadre	Gender				Total
	M	%	F	%	
Physicians	90	82%	20	18%	110
Dentists	22	73%	8	27%	30
Pharmacists	2	100%	0	0%	2
Registered nurses	5	11%	42	89%	47
Midwives	0	0%	34	100%	34

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

Table (15) 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. A new clinic has been opened in AL-Balqa governorate in the year 2015.

Table (15): Health workforce at JAFPP by category and gender, 2015

Cadre	Gender				Total
	M	%	F	%	
Physicians	0	0%	27	100%	27
Registered nurses	0	0%	25	100%	25

Table (16) shows that JAFPP services are distributed over 10 governorates (only Ma'an & AL-Tafeilah governorates don't have JAFPP clinics). The same table shows that more than half of these health workforces are found in Amman governorate (54%).

Table (16): Health workforce at JAFPP by category and governorate, 2015

Governorate	Physicians		Registered nurses	
	No.	%	No.	%
Amman	15	54%	13	46%
Zarqa	3	50%	3	50%
Madaba	1	50%	1	50%
Irbid	2	50%	2	50%
Mafraq	1	50%	1	50%
Jarash	1	50%	1	50%
Ajloun	1	50%	1	50%
Karak	1	50%	1	50%
Aqaba	1	50%	1	50%
Balqa	1	50%	1	50%
Total	27	52%	25	48%

8.2.3 Health workforce at KHCC

Table (17) shows that (72%) of the physicians and 46% of the registered nurses working at KHCC are males while 90% of the pharmacists are females. It also shows that there are only two dentists and no midwives working at KHCC.

Table (17): Health workforce at KHCC by category and gender, 2015

Cadre	Gender				Total
	M	%	F	%	
Physicians	241	72%	95	28%	336
Dentists	0	0%	2	100%	2
Pharmacists	9	10%	77	90%	86
Registered nurses	243	46%	280	54%	523
Midwives	0	0%	0	0%	0

8.3 Distribution of Health Workforce at the National Level

Graph (2) illustrates that most of the health professionals working in Jordan are physicians (30%) and registered nurses (29%) followed by pharmacists(23%) and then dentists (14%) while the least are midwives (4%).

Graph (2): Distribution of National Health Workforce by category in Jordan, 2015

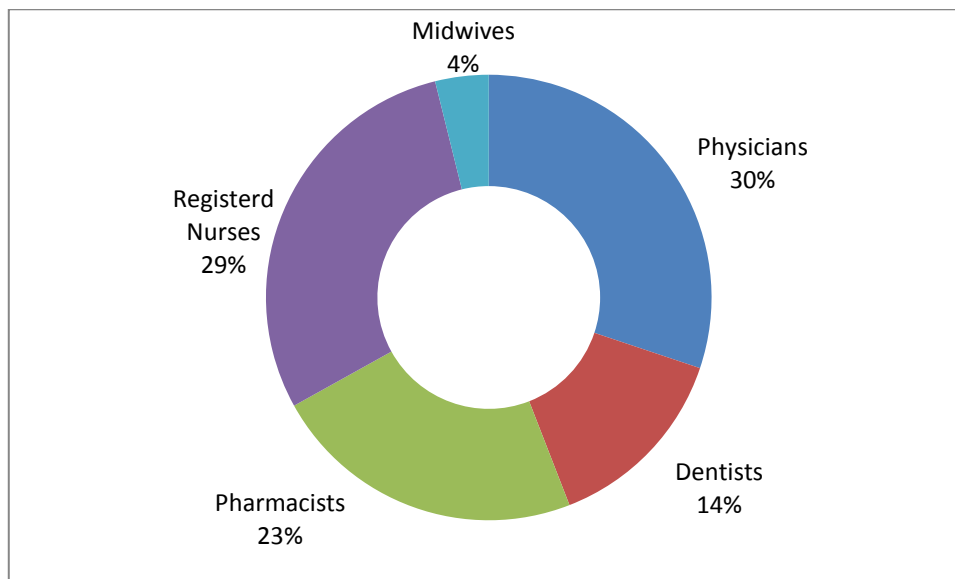


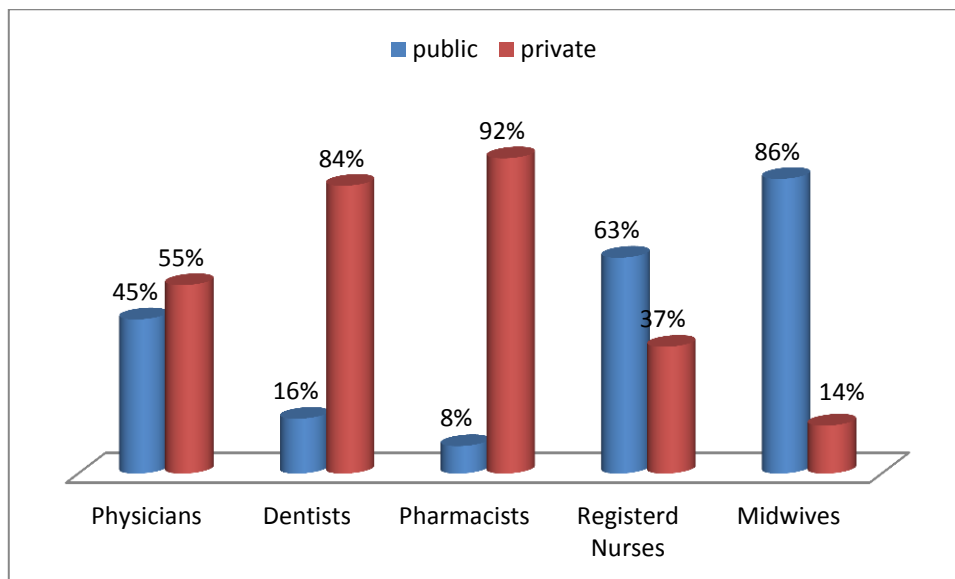
Table (18) shows the density of health workforce categories at the national level. It is noticed that there is a great drop in the ratios per 10.000 pop. among different health workforce categories in Jordan for the year 2015, this is due to the highly increase in the number of population of Jordan (based on the Population and housing census that was conducted in 2015).

Table (18): Ratio of Health workforce/10.000 pop. at the national level, 2015

Cadre	Public	Private	Total	Ratio/10.000 pop.
Physicians	6770	8138	14908	15.6
Dentists	1111	5793	6904	7.2
Pharmacists	944	10350	11294	11.8
Registered nurses	9183	5259	14442	15.2
Midwives	1650	267	1917	2

Graph (3) shows that the vast majority of physicians, dentists and pharmacists work at the private sector (55%, 84% and 92% respectively), while 63% of the registered nurses and 86% of the midwives work at the public sector.

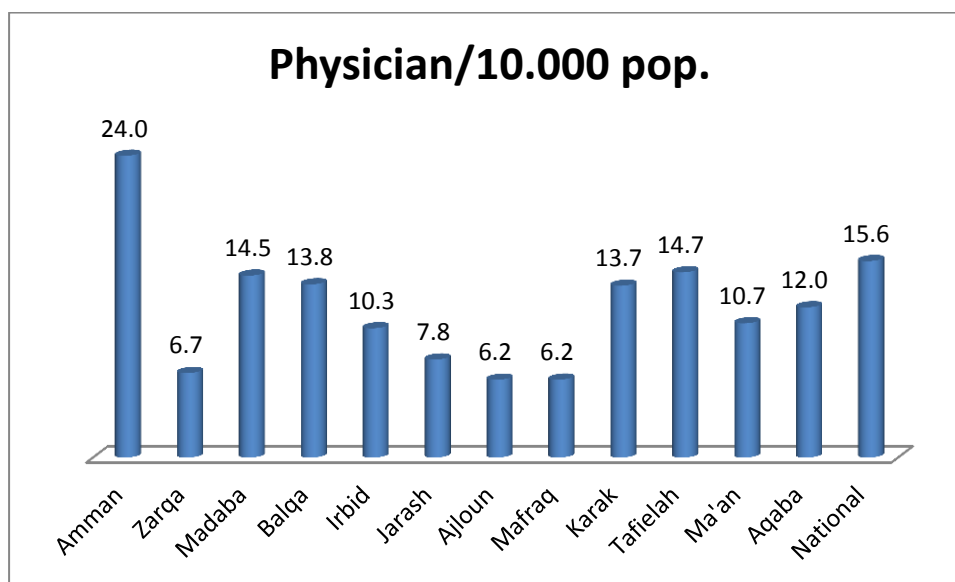
Graph (3): Distribution of Health workforce by Sector, 2015



8.4 Health workforce indicators at the sub national level:

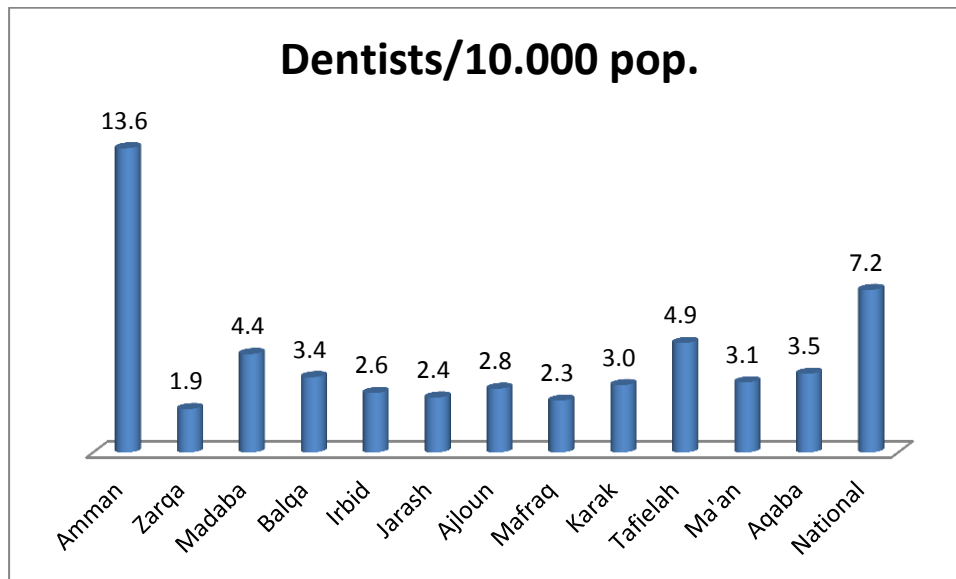
Graph (4) shows that the highest ratio of physicians per 10000 population is found in Amman reaching 24, while the second highest was recorded at 14.7 in Tafielah, 14.5 in Madaba. Meanwhile the lowest ratio was recorded in Mafraq and Ajloun at 6.2 per 10000 population.

Graph (4): Ratio of physicians per 10000 population by governorate, 2015



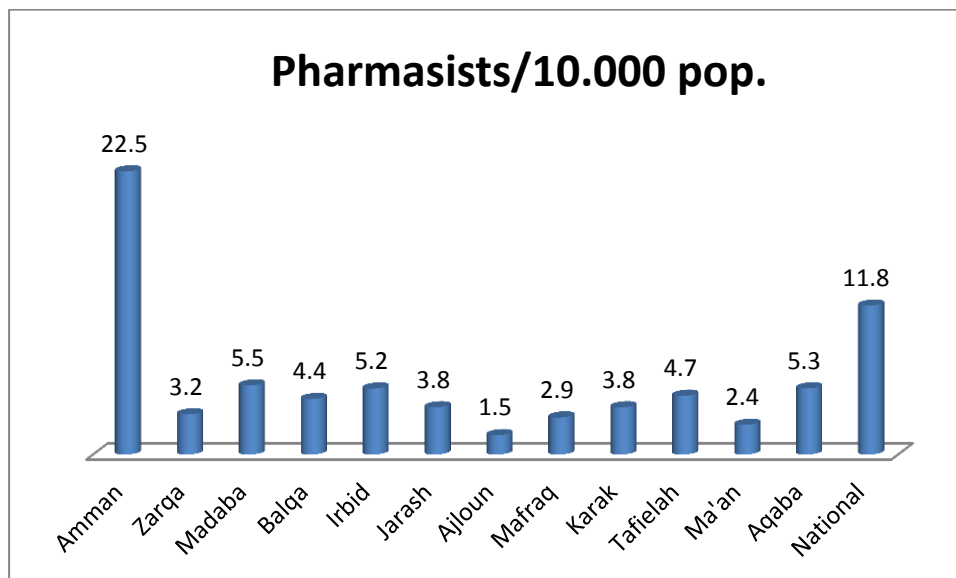
Graph (5) shows that the highest ratio of dentists per 10000 population was recorded in Amman reaching nearly 13.6, while the lowest ratio of about 1.9 was recorded in Zarqa (1.9)

Graph (5): Ratio of dentists per 10000 population by governorate, 2015



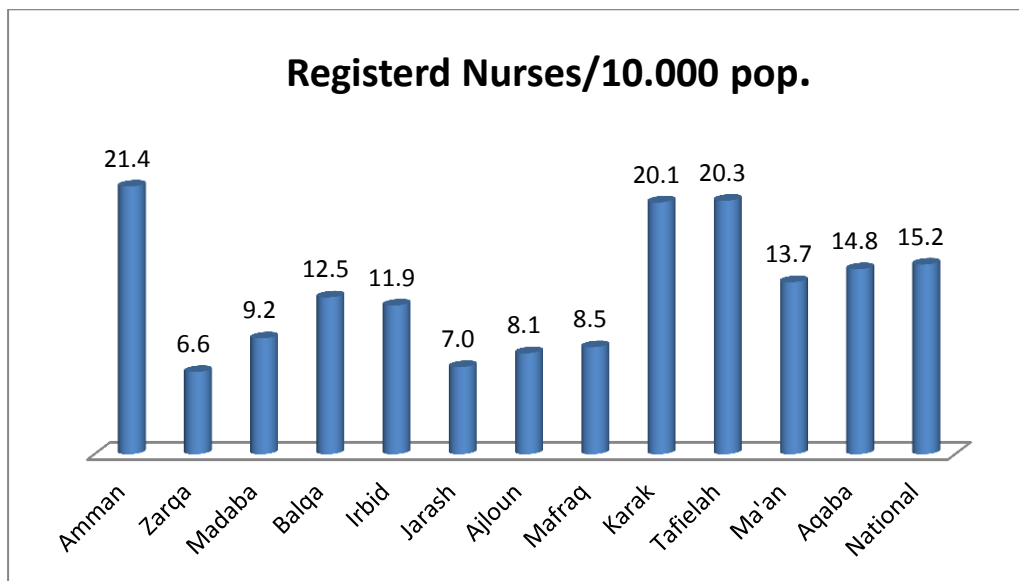
Graph (6) shows that the highest ratio of pharmacists per 10000 population was recorded in Amman (22.5) while the lowest ratio was found in Ajloun (1.5) followed by Ma'an (2.4).

Graph (6): Ratio of Pharmacists per 10000 population by governorate, 2015



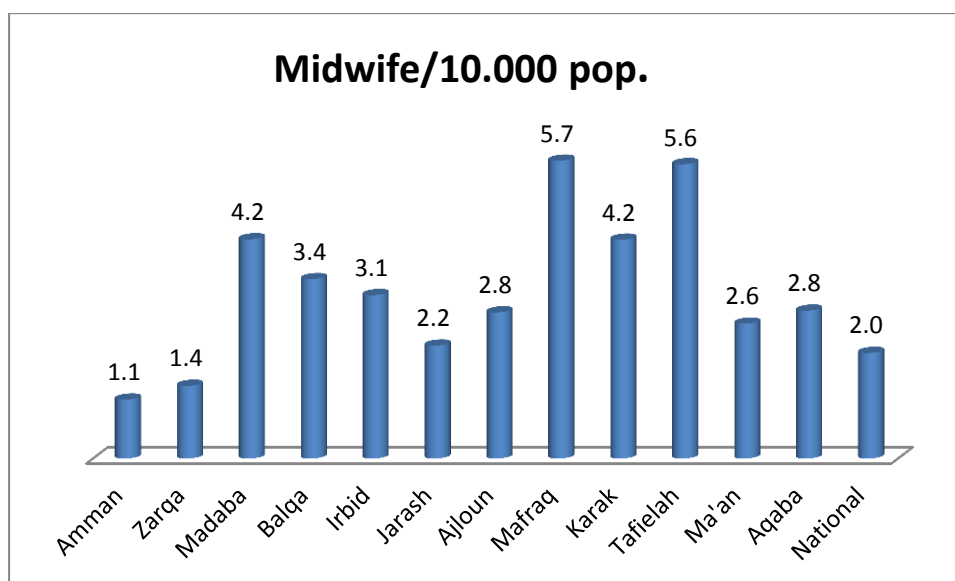
Graph (7) shows that the highest ratio of registered nurses per 10000 population was found in Amman reaching 21.4. The least was found in Zarqa at 6.6 followed by Jarash (7.0).

Graph (7): Ratio of Registered nurses per 10000 population by governorate, 2015



Graph (8) shows that the highest ratio of midwives per 10000 population was recorded in Mafraq at 5.7 and Tafielah at 5.6. The lowest was recorded in Amman (1.1) and then Zarqa (1.4).

Graph (8): Ratio of Midwives per 10000 population by governorate, 2015



- **HRH Production**

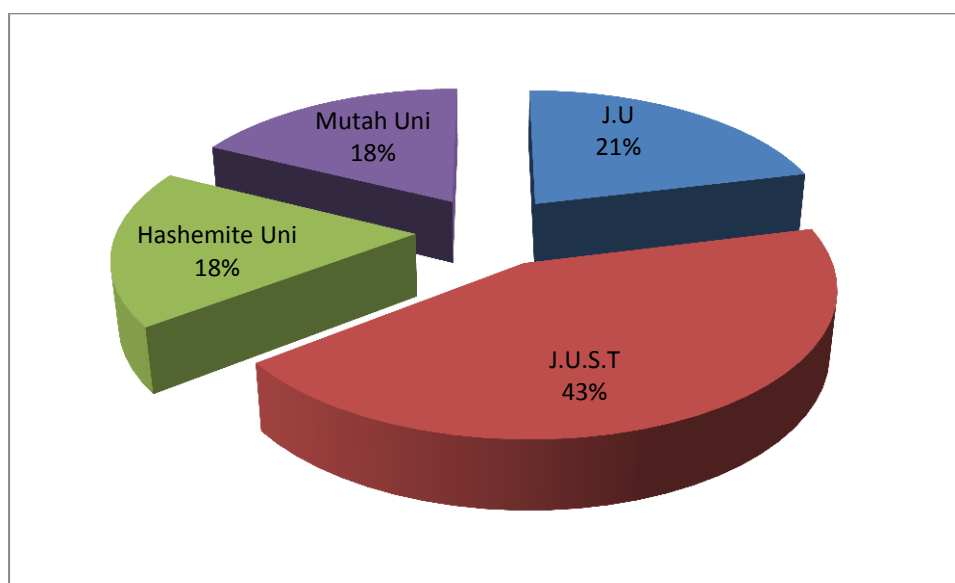
Health Universities in Jordan conduct Under-graduate programs of 4-6 academic years leading to a Bachelor’s degree for physicians, dentists, pharmacists, and registered nurses, in addition to post-graduate programs. There are six main public universities that graduate the majority of health educated 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, Al-Ahliyya Amman University and the American University of Madaba.

9.1 Enrollees and graduates from Medicine Faculties for the year 2014/2015

Jordan has five Medicine Faculties (the University of Jordan, the Jordan University of Science and Technology, the Hashemite University, Mutah University and Al- Yarmouk University which is newly opened and thus has no graduates.

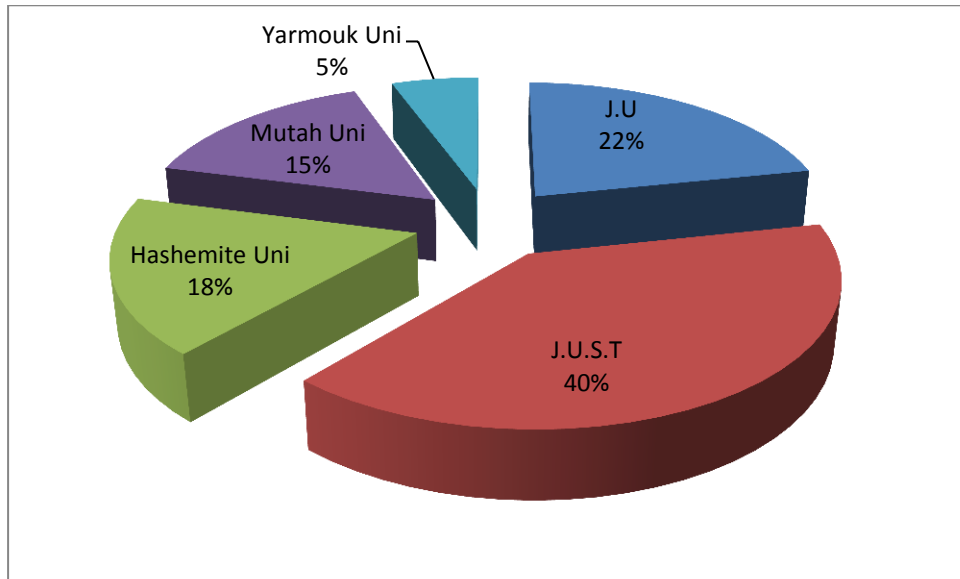
Graph (9) showed that the majority were graduated from J.U.S.T (43%) . About one fifth of medical students (21%) were graduated from the University of Jordan (21%), the rest were graduated from both Hashemite University and Mutah University on equal basis (18%).

Graph (9): Graduates from Medicine Faculties in Jordan Universities, 2015



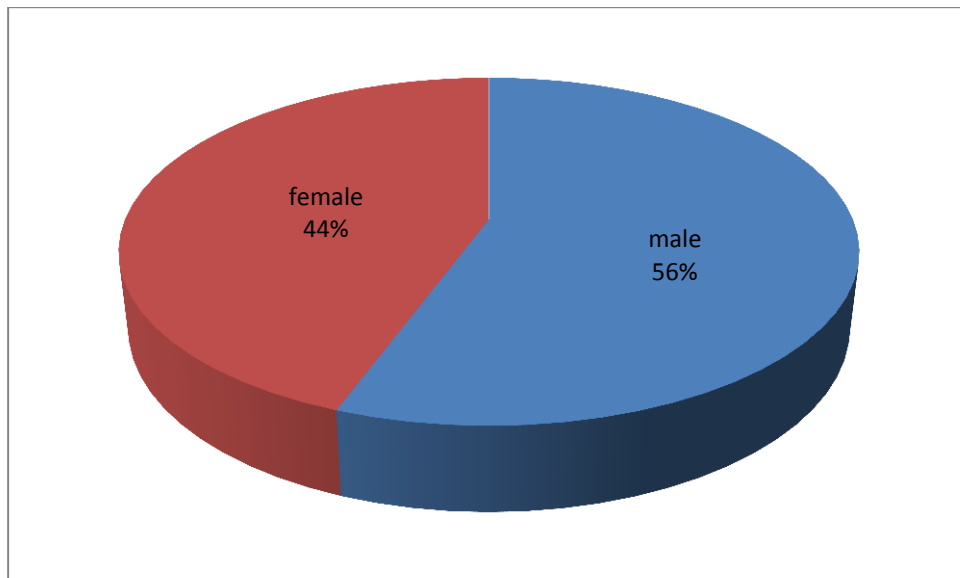
Regarding the enrolled students to Medicine Faculty, most of the students (40%) were accepted in J.U.S.T. 22% of them were enrolled to the J.U, (18%) were enrolled to Hashemite University, 15% in Mutah University and the rest (5%) were enrolled in Yarmouk University. **Graph (10)**

Graph (10): Enrollees at Medicine Faculties in Jordan Universities, 2014/2015



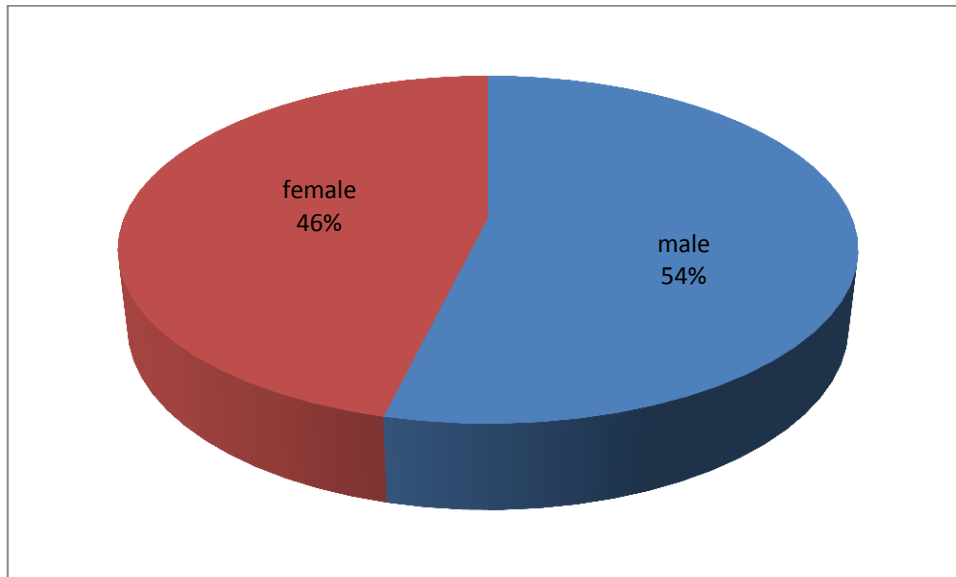
Graph (11) shows that about 56% of graduates from Medicine Faculties are males compared to 44% females.

Graph (11): Graduates from Medicine Faculties by gender, 2015



Graph (12) shows that 46% of the enrollees in the Medicine faculties are females compared to 54% males.

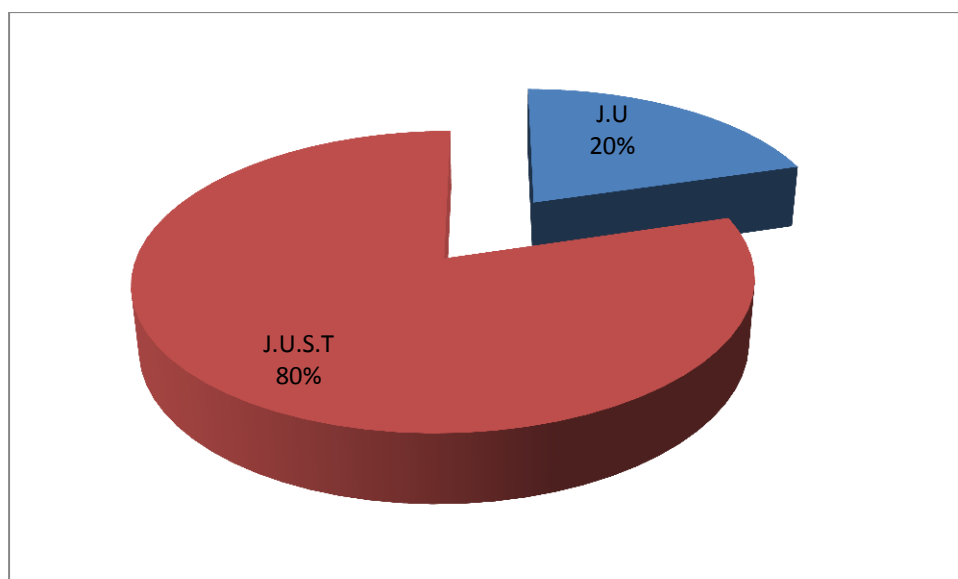
Graph (12): Enrollees at Medicine Faculties by gender, 2014/2015



9.2 Enrolled and graduated students from Dentistry Faculties for the year 2014/2015:

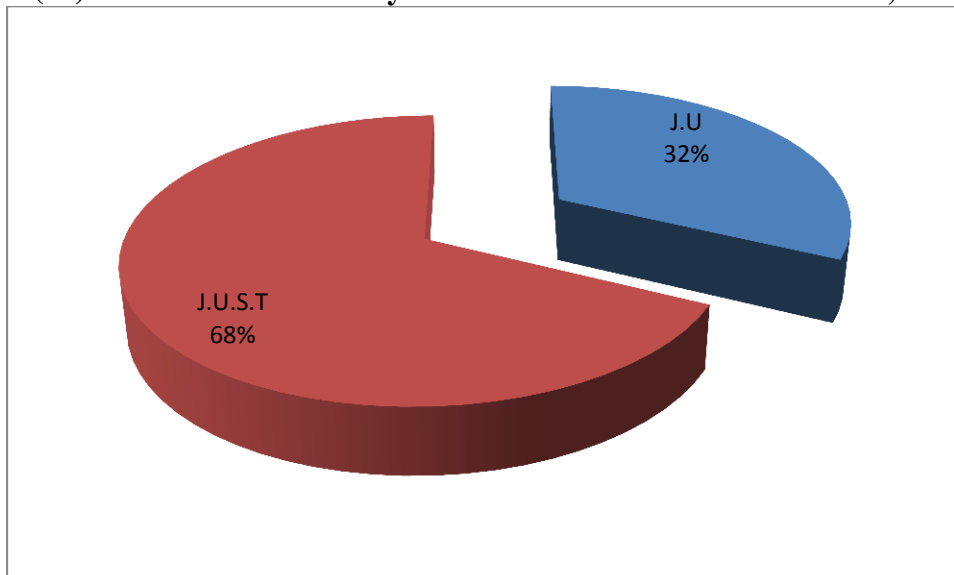
Jordan has only two Dental Faculties in two public universities (J.U and J.U.S.T). It is noticed from the graph below (13) that the majority of dentists (80%) were graduated from J.U.S.T while the remaining (20%) were graduated from J.U.

Graph (13): Graduates from Dentistry Faculties in Jordanian Universities, 2015



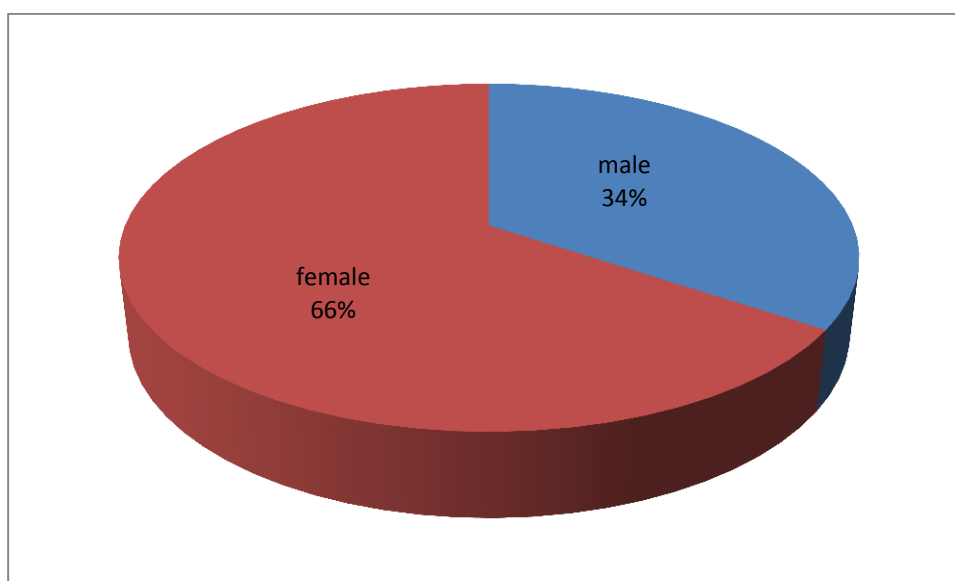
Regarding the enrolled students to Faculties of Dentistry, 68% were enrolled to J.U.S.T while the remaining 32% were enrolled to the J.U. **Graph (14)**

Graph (14): Enrollees at Dentistry Faculties in Jordanian Universities, 2014/2015



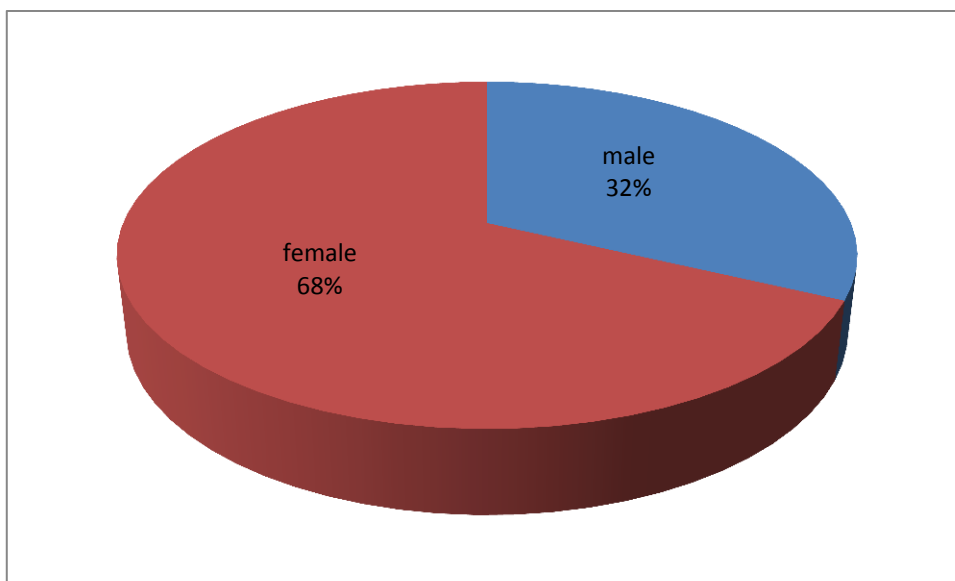
Graph (15) shows that two thirds (66%) of graduates from the Faculties of Dentistry in Jordan were females compared to one third (34%) males.

Graph (15): Graduates from Dentistry Faculties by gender, 2015



Graph (16) illustrates that more than two thirds of the enrollees in the Faculties of Dentistry for the year 2014/2015 are females (68%).

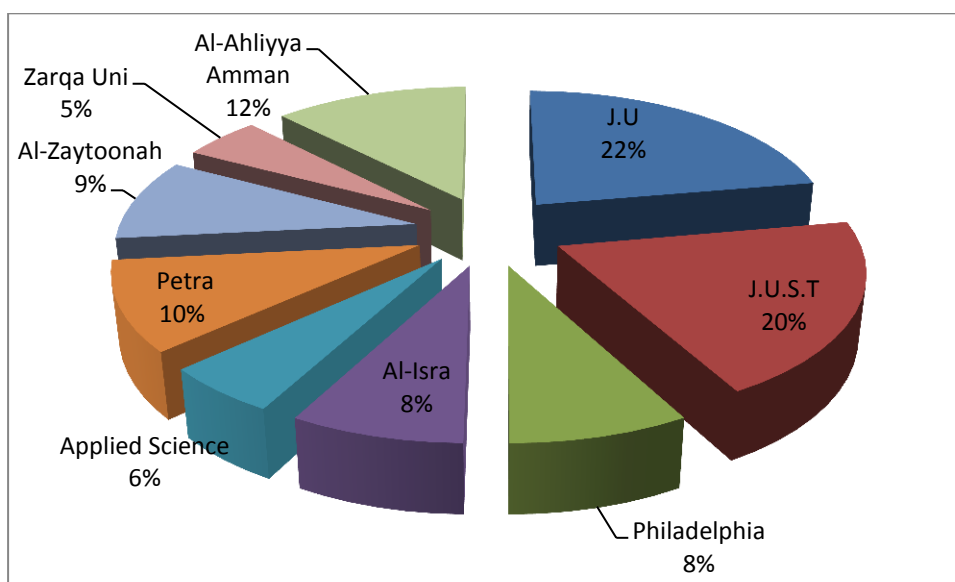
Graph (16): Enrollees in Dentistry Faculties by gender, 2014/2015



9.3 Enrolled and graduated students from pharmacy Faculties for the year 2014/2015

There are 9 pharmacy Faculties in Jordan (two public universities and seven private universities). It is noticed from the graph below (**graph 17**) that (42%) of the pharmacy students were graduated from the two public universities (J.U and J.U.S.T) .

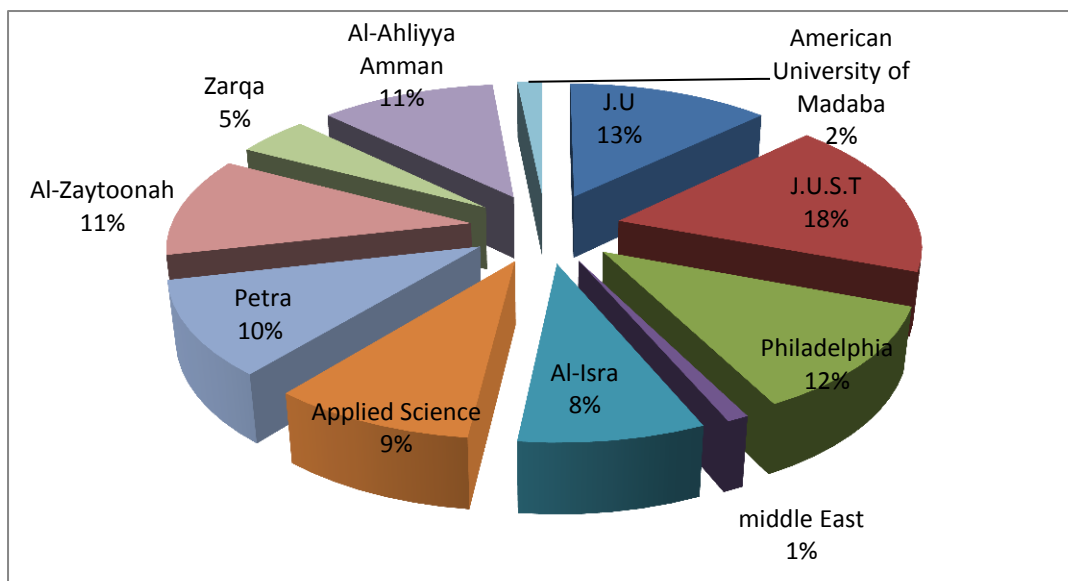
Graph (17): Graduates from Pharmacy Faculties in Jordanian Universities, 2015



Regarding the enrolled students to Pharmacy Faculties, there are 11 pharmacy Faculties in Jordan (two in the public universities and nine in the private universities). The American University of Madaba was newly opened this year and accepted about 2% of the totally

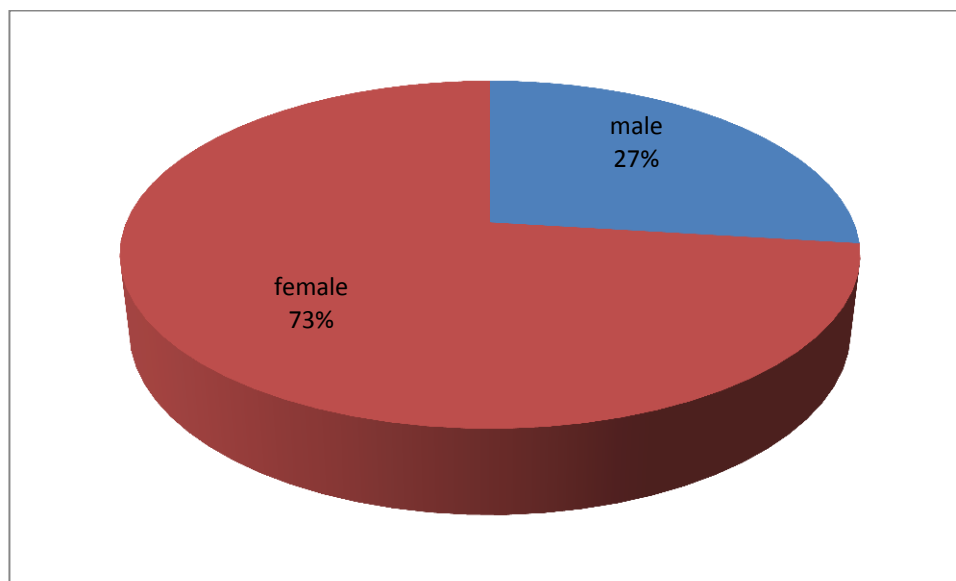
accepted students of the pharmacy faculties. About 31% of students were accepted in the two public universities (J.U and J.U.S.T). **Graph (18)**

Graph (18): Enrollees at Pharmacy Faculties in Jordanian Universities, 2014/2015



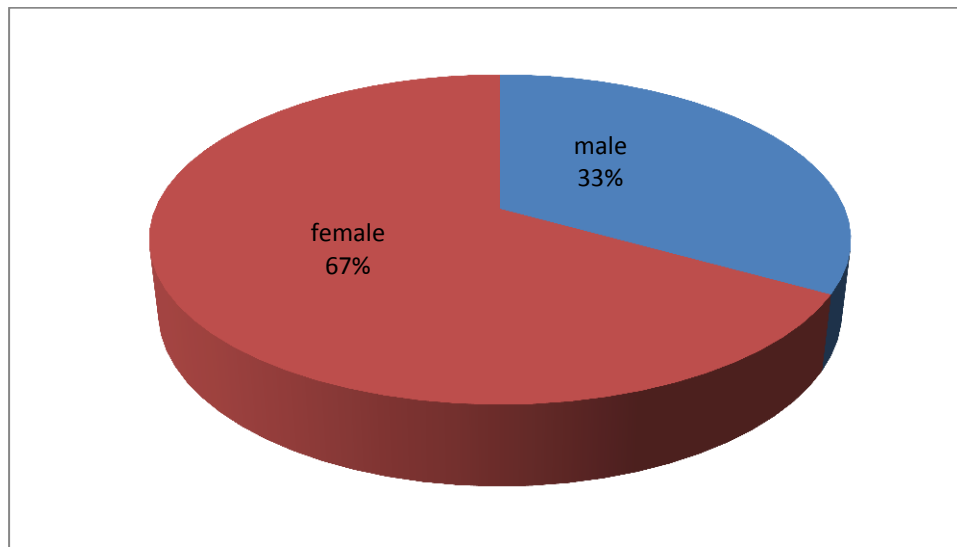
As shown in **Graph (19)** about 73% of graduates from the pharmacy faculties in Jordan are females compared to 72 % males.

Graph (19): Graduates from Pharmacy Faculties by gender, 2015



Graph (20) shows that two thirds (67%) of the enrolled students to the pharmacy faculties in Jordan are females compared to one third (33%) males.

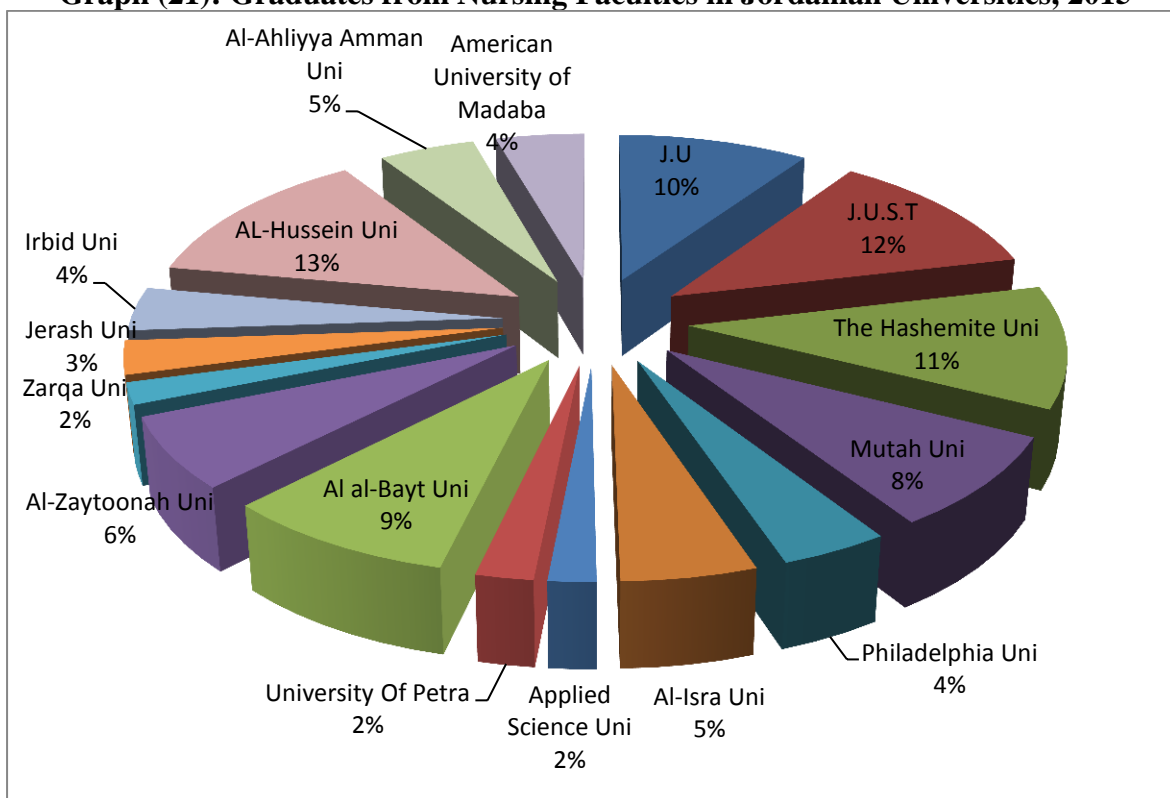
Graph (20): Enrollees in Pharmacy Faculties by gender, 2014/2015



9.4 Enrolled and graduated students from Nursing Faculties for the year 2013/2015:

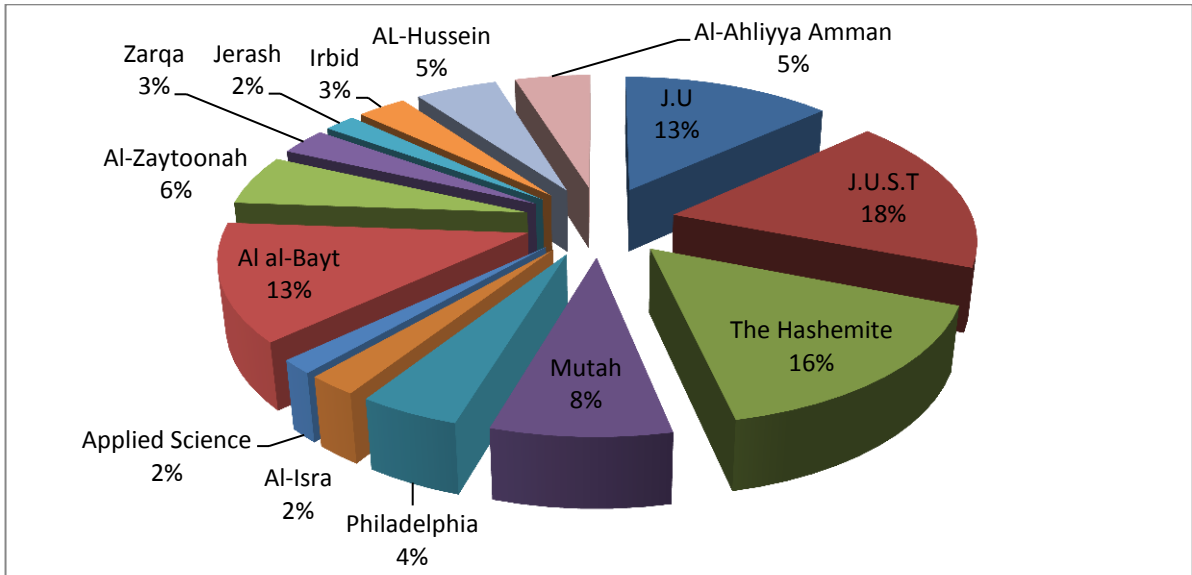
Five public universities and nine private universities are now offering BSc in nursing. **Graph (21)** shows the distribution of graduates from these nursing faculties; About 54% of the nursing students were graduated from the five public universities (J.U, J.U.S.T, Hashemite University, Al-Hussein University and Mutah University)

Graph (21): Graduates from Nursing Faculties in Jordanian Universities, 2015



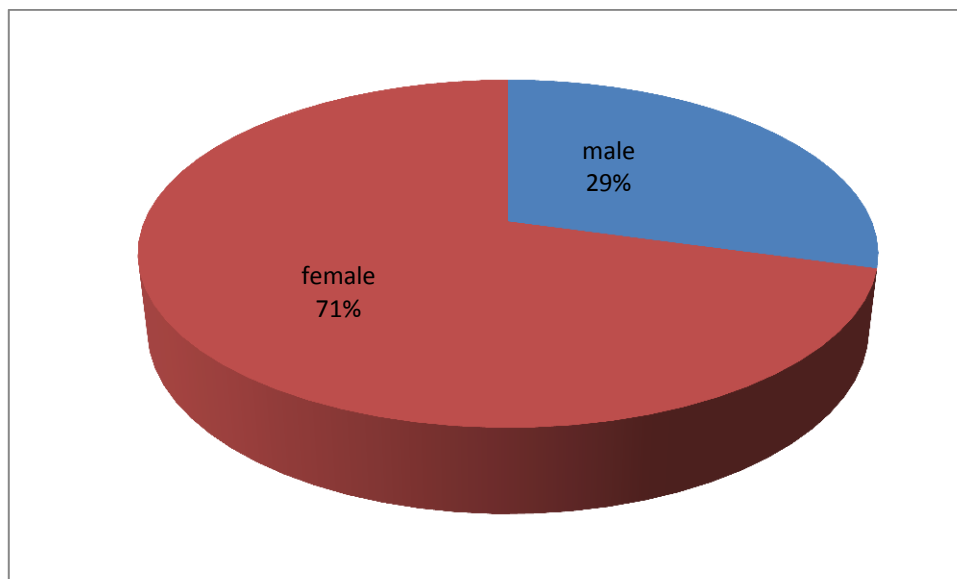
Regarding the enrolled students to nursing faculties, about 60% were accepted in the public universities (J.U, J.U.S.T, Hashemite University, Al- Hussein University and Mutah University). **Graph (22)**

Graph (22): Enrollees at Nursing Faculties in Jordanian Universities, 2014/2015



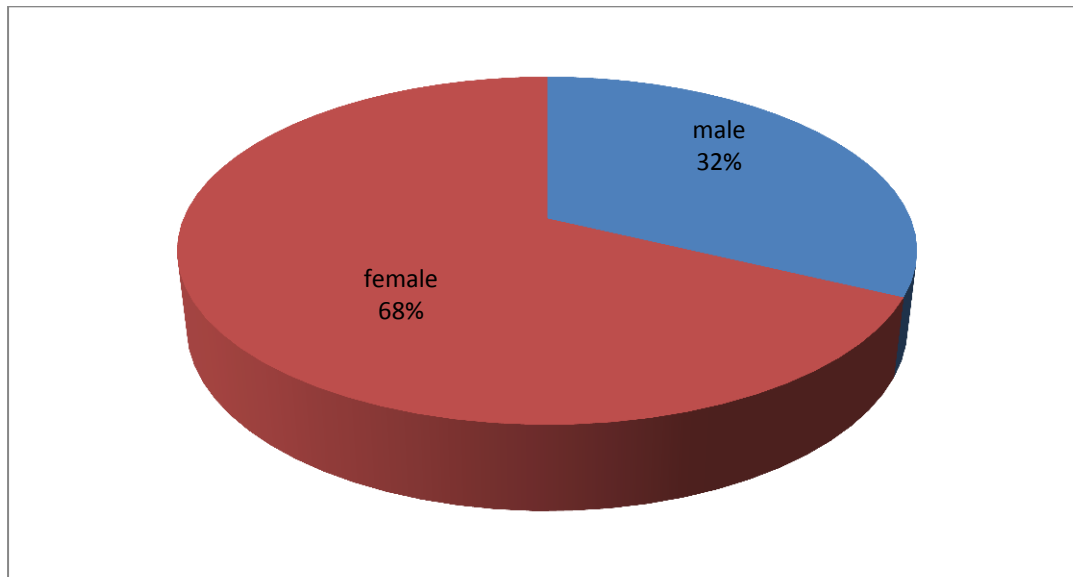
Graph (23) shows that 71% of graduates from the nursing faculties in Jordan are females compared to 29% males.

Graph (23): Graduates from Nursing Faculties by Gender, 2015



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 (24)** emphasizes the implementation of this policy, the ratio of accepting female students in nursing faculty increased from 65% in 2014 to 68% in 2015.

Graph (24): Enrollees in Nursing Faculties by gender, 2014/2015



10. Recommendations

- Develop a multi-sectoral HRH Strategy to face the HRH challenges in Jordan.
- Develop a dynamic HRH automated 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.
- conduct 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 acceptance regulation in the universities regarding enrollees to fill the gap between health professionals' supplies and actual market needs.
- Reconsider the gender issue 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

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12. Annexes

Annex (1): Enrollees & Graduates at Medicine Faculties in Jordanian Universities by Gender, 2014-2015

Annex (2): Enrollees & Graduates at Dentistry Faculties in Jordanian Universities by Gender , 2014-2015

Annex (3): Graduates at Pharmacy Faculties in Jordanian Universities by Gender, 2014-2015

Annex (4): Enrollees & Graduates at Nursing Faculties in Jordanian Universities by Gender, 2014-2015

Annex (5): Distribution of public health sector professionals Form in Jordan, 2015

Annex (6): Distribution of private health sector professionals Form in Jordan, 2015

**Annex (1): Enrollees & Graduates at Medicine Faculties in Jordanian Universities
by Gender , 2014/2015**

Specialization	Medicine											
	Graduate						Enrolled					
	University	M	%	f	%	T	%	M	%	F	%	T
Jordan University	87	49%	90	51%	177	21%	903	48%	986	52%	1889	22%
J.U.S.T	204	56%	159	44%	363	43%	1934	56%	1511	44%	3445	40%
The Hashemite Uni	88	59%	61	41%	149	18%	865	56%	670	44%	1535	18%
Yarmouk Uni.	0	0%	0	0%	0	0%	237	49%	246	51%	483	5%
Mutah Uni	86	59%	61	41%	147	18%	735	55%	603	45%	1338	15%
Total	465	56%	371	44%	836	100%	4674	54%	4016	46%	8690	100%

**Annex (2): Enrollees & Graduates at Dentistry Faculties in Jordanian Universities by
Gender, 2014/2015**

Specialization	Dentistry											
	Graduate						Enrolled					
	University	M	%	F	%	T	%	M	%	F	%	T
Jordan University	22	25%	65	75%	87	34%	223	25%	667	75%	890	32%
J.U.S.T	125	37%	215	63%	340	66%	664	35%	1217	65%	1881	68%
Total	147	34%	280	66%	427	100%	887	32%	1884	68%	2771	100%

**Annex (3): Enrollees & Graduates at Pharmacy Faculties in Jordanian
Universities by Gender, 2014/2015**

Specialization	Pharmacy											
	University	Graduate					Enrolled					
		M	%	F	%	T	%	M	%	F	%	
Jordan University	44	12%	313	88%	357	22%	183	15%	998	85%	1181	13%
J.U.S.T	62	20%	255	80%	317	20%	308	19%	1336	81%	1644	18%
Philadelphia Uni	31	24%	99	76%	130	8%	443	41%	641	59%	1084	12%
Middle East Uni	0	0%	0	0%	0	0%	53	0%	37	0%	90	1%
Al-Isra Uni	67	54%	58	46%	125	8%	419	55%	341	45%	760	8%
Applied Science Uni	21	24%	65	76%	86	6%	314	37%	538	63%	852	9%
University of Petra	51	31%	111	69%	162	10%	329	34%	638	66%	967	11%
Al-Zaytoonah Uni	46	31%	104	69%	150	9%	352	34%	686	66%	1038	11%
Zarqa Uni	21	27%	58	73%	79	5%	124	30%	293	70%	417	4%
Al-Ahliyya Amman Uni	89	45%	109	55%	198	12%	481	47%	543	53%	1024	11%
American University of Madaba	0	0	0	0	0	0%	43	29%	103	63%	146	2%
Total	432	27%	1172	73%	1604	100%	3049	33%	6154	67%	9203	100%

**Annex (4): Enrollees & Graduates at Nursing Faculties in Jordanian Universities
by Gender, 2014/2015**

Specialization	Nursing											
	Graduate						Enrolled					
	University	M	%	F	%	T	%	M	%	F	%	T
University of Jordan	22	14%	135	86%	157	10%	139	19%	596	81%	735	14%
J.U.S.T	47	24%	146	76%	193	12%	330	34%	644	66%	974	19%
The Hashemite Uni	43	24%	138	76%	181	11%	243	28%	623	72%	866	17%
Mutah Uni	26	19%	111	81%	137	9%	129	29%	313	71%	442	9%
Philadelphia Uni	50	76%	16	24%	66	4%	156	62%	94	38%	250	5%
Al-Isra Uni	52	63%	30	37%	82	5%	67	54%	58	46%	125	2%
Applied Science Uni	3	10%	26	90%	29	2%	26	30%	61	70%	87	2%
Al al-Bayt Uni	75	52%	68	48%	143	9%	212	29%	508	71%	720	14%
Al-Zaytoonah Uni	32	30%	74	70%	106	6%	92	29%	222	71%	314	6%
Zarqa Uni	7	22%	25	78%	32	2%	64	38%	104	62%	168	3%
Jerash Uni	23	46%	27	54%	50	3%	47	42%	64	58%	111	2%
Irbid Uni	16	25%	49	75%	65	4%	58	34%	115	66%	173	3%
AL-Husseini Uni	21	10%	190	90%	211	13%	36	13%	251	87%	36	1%
Al-Ahliyya Amman Uni	54	68%	25	98%	79	5%	173	65%	92	35%	173	3%
American University of Madaba	9	12%	64	88%	73	5%	0	0	0	0	0	0%
Total	480		1159		1639	100%	1772	32%	3745	68%	5517	100%

High Health Council / General Secretariat
National HRH Observatory In Jordan

Annex (5): Distribution of Public Health Sector Professionals Form in Jordan, 2015

Cadre	Cadre in Arabic	Gender (الجنس)				Nationality (الجنسية)				Work Place (المكان)						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 جلدية															
Otolaryngology	أخصائي انف وإذن 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	Gender (الجنس)				Nationality (الجنسية)				Work Place (مكان العمل)						Total
		m	%	f	%	J	%	N.J	%	H	%	C	%	D	%	
Residency	الإقامات															
Radiology	طبيب مقوم أشعة															
Obstetric	طبيب مقوم نسائية وتوليد															
Forensic Medicine	طبيب مقوم طب شرعي															
Internal Medicine	طبيب مقوم باطني															
Dermatology	طبيب مقوم جلدية															
Otolaryngology	طبيب مقوم انف واذن وحنجرة															
Neurology	طبيب مقوم أعصاب															
Orthopedics	طبيب مقوم عظام															
Nephrology	طبيب مقوم كلي															
Physical Therapy & Rehabilitation	طبيب مقوم علاج طبيعي وتأهيل															
Ophthalmology	طبيب مقوم عيون															
Anesthesiology	طبيب مقوم تخدير															
General Surgery	طبيب مقوم جراحه عامه															
Family Medicine	طبيب مقوم طب أسرة															
Pediatrics	طبيب مقوم أطفال															
Medical lab	طبيب مقوم مختبرات طبية															
Cardiac Surgery	طبيب مقوم جراحة قلب															
Cardiology	طبيب مقوم باطني قلب															
Plastic Surgery	طبيب مقوم جراحة تجميل															
Psychiatry	طبيب مقوم نفسيه															
Pulmonology	طبيب مقوم صدرية															
Gastroenterology	طبيب مقوم جهاز هضمي															
Urology	طبيب مقوم كلي ومسالك بولية															
Emergency doctors	طبيب مقوم طوارئ															
Public Health/Community Medicine	طبيب مقوم طب مجتمع / صحة عامه															
Total																
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	طبيب مقوم 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	%	
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 منزليه															
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, 2015

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									
Total										
Medical specialties	اطباء الاختصاص									
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 أسره									
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 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	m	%	f	%	J	%	N.J	%	اللواء
Residency	الإقامات									
Radiology	طبيب مقيم أشعة									
Obstetric	طبيب مقيم نسائيه وتوليد									
Forensic Medicine	طبيب مقيم طب شرعي									
Internal Medicine	طبيب مقيم باطني									
Dermatology	طبيب مقيم جلديه									
Otolaryngology	طبيب مقيم انف 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									
Total										
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									
Total										
Internship Dentist	طبيب أسنان امتياز									
Dentist (General Practitioner)	طبيب أسنان عام									
Total										

Cadre	cadre in Arabic									اللواء
		m	%	f	%	J	%	N.J	%	
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 معالجه لبييه									
Conservative treatment	أخصائي معالجه تحفظيه									
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 منزليه									
Associated Nurse	تمريض مشترك									
Practical Nurse	تمريض مساعد									
Nurse Aid	عامل تمريض									
Midwives	قابله قانونية									
Total										

M: male
F: female

J: Jordanian
N.J: non-Jordanian

H: hospital
C: center

D: directorate