



## Health Accounts System of Dubai 2012 Report

A baseline for a new era

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**EXPO 2020**  
DUBAI, UNITED ARAB EMIRATES



## FOREWORD

*Allocating sufficient and sustainable funds for healthcare is a cornerstone of the success of any health system*



Under the leadership of His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister and Ruler of Dubai significant, advancements have been made in all services and economic sectors. The general aim

is to build a sustainable socio-economic environment that can respond to the healthcare needs of the Dubai population.

With the recent introduction of a Mandatory Health Insurance Law 11 of 2013, Dubai's health sector landscape is evolving rapidly. The regulatory role of the Dubai Health Authority is to ensure accessibility, quality and continuity in the provision of health services to residents of and visitors to Dubai.

The Dubai Health Authority (DHA) is pleased to publish this first account of health expenditure for the Emirate of Dubai. The information contained in this Health Accounts System of Dubai (HASD) 2012 Report will support decision-making through evidence-based insights and policy implications. This report also acts as a benchmark for the production of a Health Accounts system for the United Arab Emirates (UAE).

Selection and implementation of the most recent methodologies has been important for decision-making regarding health sector policies in Dubai. In the interest of efficient planning and implementation, it is important to understand the financial elements and mechanisms of health expenditure, and to monitor changes over time. Efficient and effective use of financial resources will raise the standard and quality of health services. Our decision to implement HASD was based on two needs:

1. To measure the financial dimensions of Dubai's healthcare system, allowing efficiency in allocating funds between the private and public health sectors.
2. To monitor changes in the financial distribution between governmental and private health sectors, compared with regional and international distributions. Monitoring changes that occur over time will give the government and investors the information needed to gauge investment size and trends.

In successfully completing this exercise DHA greatly appreciates the participation of all stakeholders for their contribution to ensuring the establishment of an efficient and dynamic healthcare system in Dubai. Special appreciation goes to Dr. Haider Saeed Al Yousuf, Director Health Funding Department, and the technical team.

Going forward, HASD will be published on an annual basis, to support the advancement and growth of the healthcare sector of Dubai. I look forward to continued support from all stakeholders in producing the annual HASD Report. I also invite the stakeholders to utilize the information contained in this report to support their decisions on how to deliver better healthcare for residents of Dubai.

His Excellency Eng. Essa Al Madoor  
Director General  
Dubai Health Authority

## ACKNOWLEDGEMENT

Significant efforts were undertaken to provide this comprehensive analysis of health expenditure and financing flows throughout Dubai's healthcare sector. Significant data on expenditure was collected, analyzed and validated to produce the HASD Report: 2012. The Health Funding Department (HFD) in DHA worked in close collaboration with key stakeholders, in order to publish a transparent report. In particular:

### Dr. Haider Saeed Al Yousuf

Director Health Funding Department,  
Supervised the entire project, and participated in the writing of this report.

The technical team responsible for the execution of HASD and this report includes the following members:

### Mr. Altijani Hussin

Health Economics Consultant,  
Led the technical and administrative production of this report

### Dr. Meenu Mahak Soni

Conducted the analysis of the data submitted, and participated in the writing of this report

### Mrs. Priya Sridharan

Managed the production and participated in the writing of the report

### Senior team members from the Health Funding Department

Participated in a comprehensive review of the report

### Dr. Eldaw A. Suliman

Provided valuable review of the report

This exercise could not have been successfully completed without the support and cooperation of various stakeholders. Sincere gratitude and appreciation is also due for the cooperation of various organizations in providing the vital and sensitive financial information necessary to produce this report. The following organizations' collaborative efforts are recognized:

- Finance Department, Dubai Health Authority
- Ministry of Health – Dubai Medical District, United Arab Emirates
- Department of Finance, Dubai
- Dubai private health sector: Hospitals, insurance companies, polyclinics, and pharmacies.

Appreciation goes to

1. Merck Serono Middle East FZ-LLC for sponsoring the printing of this report,
2. Taha Actuaries & Consultants for collecting and tabulating the private health insurance data,
3. Dr. Cornelis van Mosseveld, WHO, Health Economist (Former), for the detailed technical feedback provided.

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# 1 EXECUTIVE SUMMARY

10 Billion AED was spent on healthcare in 2012: 8.5 Billion AED in Dubai, 1.5 Billion AED outside

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5.8 Billion AED was spent in the private healthcare sector

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Share between private and government was 68:32, matching Dubai's strategic goal of 70:30

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First Health Accounts in UAE, with a plan to update the results annually

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## 1.1 Need for HASD

- The need of health accounts in Dubai is paramount for the planned reform involving implementation of universal health coverage, mandated by Law 11 of 2013. Success of this reform requires reliable data collection and analysis to inform policy making.
- Health accounts offer reliability and standardization of data through internationally accepted classification standards.
- Thus, the Health Accounts System of Dubai (HASD) provides a factual account of health expenditures by government and private sector.

## 1.2 Data Collection & Analysis

- HASD methodology conforms to the international classification of System of Health Accounts (SHA) 2011 developed by World Health Organization (WHO), Organization for Economic Co-operation & Development (OECD) and The Statistical Office of the European Commission (EUROSTAT). In addition, few assumptions were used to map Dubai healthcare system to SHA 2011.
- Primary and secondary datasets were received from
  - Government (Dubai Department of Finance - DoF, Dubai Health Authority - DHA, Ministry of Health - Dubai Medical District - MoH) - financial and utilization.
  - Private sector - health insurance companies, providers and retailers, and major employers and corporations
- The datasets were analyzed using the recently released Health Accounts Production Tool, developed by USAID, WHO, and the World Bank.

## 1.3 HASD Key Insights & Implications

Key Insights	Implications
<p><b>1</b> <b>Where did the health funds come from? (Sources of funds)</b></p> <p>The total current expenditure on health of 9,934 M AED was funded as follows:</p> <ul style="list-style-type: none"> <li>• Government 32%</li> <li>• Employers and corporations 45%, of which 36% of the total expenditure was prepayments</li> <li>• Households 22%</li> </ul>	<p>The small share of prepayment amounts, 36%, paid by the employers, is not sustainable. The management of funds in Dubai showed a silo flow, where providers of funds managed their own budgets.</p> <p>The Mandatory Health Insurance (MHI) Law provides DHA with the mandate to implement universal health coverage that includes substantial prepayments amounts. The prepayments will allow a bridged model (diversity in sources and management of health funds), which will lead to the sustainability of the system based on access and quality.</p> <p><i>What does this mean?</i>  <i>When various health financial sources pool money into a common collection, it reduces individual risk and increases efficient redistribution as per patients needs</i></p>
<p><b>2</b> <b>Which institutions managed the health funds?</b></p> <ul style="list-style-type: none"> <li>• Each source of funds was managed by the respective sector; i.e. Government, private, households</li> </ul>	<p>Nearly half of the money for healthcare was paid for services delivered at hospitals. The government share of hospital services was even higher: 54%. Hospitals in Dubai received the highest share of healthcare funds among all OECD benchmark countries, an average of 38%.</p> <p>MHI is based on a primary care model. To promote PHCs as the gatekeeper in the new health funding scheme, these findings should be used as the baseline to monitor the transition from the pre-existing scheme to the planned scheme.</p> <p><i>What does this mean?</i>  <i>A more balanced distribution of where money is spent (hospitals or primary care) will ensure better value for money spent on services</i></p>
<p><b>3</b> <b>Where healthcare funding went (which providers)?</b></p> <ul style="list-style-type: none"> <li>• Hospitals received 48%, a percentage that is higher by the international comparisons.</li> <li>• Clinics and polyclinics received 22%.</li> <li>• Pharmacy retailers received 8%, and ancillary 4%.</li> <li>• Services provided outside Dubai (imported) accounted for 15%.</li> </ul>	<p>Nearly half of the money for healthcare was paid for services delivered at hospitals. The government share of hospital services was even higher: 54%. Hospitals in Dubai received the highest share of healthcare funds among all OECD benchmark countries, an average of 38%.</p> <p>MHI is based on a primary care model. To promote PHCs as the gatekeeper in the new health funding scheme, these findings should be used as the baseline to monitor the transition from the pre-existing scheme to the planned scheme.</p> <p><i>What does this mean?</i>  <i>A more balanced distribution of where money is spent (hospitals or primary care) will ensure better value for money spent on services</i></p>

### 1.3 HASD Key Insights & Implications (cont'd)

Key Insights	Implications
<p data-bbox="181 568 208 600">4</p> <p data-bbox="271 363 920 395"><b>What services were purchased by the health funds?</b></p> <ul data-bbox="271 411 992 711" style="list-style-type: none"><li>• Curative care received 55%.</li><li>• Preventive care received 6%, and was mainly funded by the government. Of the government funds, 13% was spent on preventive care. However, it accounted for only 1% of insurance claims and OOP. Of these services 90% were provided in ambulatory settings.</li><li>• Drugs and other medical goods received 20%</li><li>• All services provided outside Dubai (imported) accounted for 15%.</li></ul>	<p data-bbox="1122 376 1973 507">Since the majority of the population in Dubai is transient, and because employers move between insurance companies relatively more often, health insurance companies may be reluctant to invest in preventive programs designed to reduce future costs.</p> <p data-bbox="1122 536 1962 632">The government should continue to design preventive care strategies and together with the private sector ensure implementation, through mandated programs and interventions.</p> <p data-bbox="1122 663 2018 791"><i>What does this mean?</i> <i>Employers and health insurance companies should be guided, trained and communicated on preventive care</i></p>
<p data-bbox="181 1066 208 1098">5</p> <p data-bbox="271 874 931 938"><b>Which population groups benefited from the health funds?</b></p> <ul data-bbox="271 967 981 1254" style="list-style-type: none"><li>• Although Dubai's population is strongly skewed towards working males, health expenditure was balanced between males and females (symmetrical pyramid). Males accounted for 76% of the population, and they benefited from 53% of the health funds</li><li>• Young children (0-4 years old) and elderly (65+) accounted for less than 5% of the population, but benefited from 18% of the health funds.</li></ul>	<p data-bbox="1122 927 2011 1023">As a result of the inherited demographic structure of Dubai, equity is achieved, because the share of money spent matches the health needs of the population groups.</p> <p data-bbox="1122 1051 2047 1118">Use of the risk adjusted population will enable a better calculation for future health financing projections.</p> <p data-bbox="1122 1150 1995 1230"><i>What does this mean?</i> <i>Money should follow the healthcare needs of the people</i></p>



## 2 INTRODUCTION & CONTEXT

### 2.1 Economic Environment of Dubai

Dubai's dynamic and industrious economy has developed during the last 40 years through trade, industrialization, real estate development, hospitality, promoting investment and tourism. Dubai's GDP per capita was 41,282 US\$ in 2012, with new initiatives on Green Economy and investments in health, education and research & development.

The success of Dubai's economy is attributed to trade and investment rather than hydrocarbon reserves Dubai Department of Economic Development (DED), The Business Year, 2012). In order to promote a competitive business environment, Dubai has established more than 20 free zones, including the Dubai International Financial Center, Dubai Healthcare City (DHCC), Knowledge Village, Internet City and Media City (DED).

An income tax free system has made it an international hub that is popular with visitors and investors from the eastern and western hemispheres.

Dubai continues to grow as a tourist destination and its mark on the world map was emphasized in 2010 when it inaugurated the world's tallest building, Burj Khalifa. Further developments and plans include the extension of the metro system, Dubai World Central and the Mohammad bin Rashid City.

Driven by the growth of its tourism industry, Dubai aims to place itself on the world map of medical tourism for identified elective health services.

Most recently, Dubai has won the bid of hosting the World Exposition 2020, with the core theme of "connecting minds, creating the future".

### 2.2 Dubai's health sector

Dubai's health sector is currently undergoing a significant reformation which will change the landscape of healthcare and how it is used. In November 2013, His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice-president and Prime Minister of UAE and Ruler of Dubai, passed the Mandatory Health Insurance (MHI) Law 11, which states that all residents and visitors to Dubai must have a minimum of basic healthcare coverage.

The implementation is scheduled to take effect across Dubai in stages, with universal coverage by 2016. Dubai's Universal Health Coverage (UHC) is based on mandatory enrollment through employment, which will remove the burden of financial considerations for the patient.

This model ensures that patients have access to healthcare within a financially sustainable health sector, and that patients will have the choice of seeking treatment with government and/or private healthcare providers. As a result, providers are given incentives to focus on quality of services delivered.

Currently, the health sector is comprised of government and private facilities, and a free zone: DHCC.

The government owns 4 DHA hospitals with a capacity of 2063 beds, and 14 Primary Healthcare Centers (PHC). In addition to DHA, the Ministry of Health – Dubai Medical District (MOH) owns and operates 2 hospitals, with a capacity of 284 beds, and 9 PHCs in Dubai.

The private sector comprises of 22 hospitals, with a capacity of 1468 beds, and over 1000 outpatient clinics and polyclinics (DHA Annual Statistical Report 2012). Thus, the total bed capacity in Dubai is 3815 beds, which can be translated into 1.9 beds per 1000 population.

DHA and private healthcare providers are regulated and licensed as per international standards of practice by DHA, and are expected to be aligned to the overall health sector strategy providing affordable and accessible care.

In keeping with the demands of a growing population and its respective health needs, DHA plans to expand its facilities, increasing access and affordability of services through the expansion of Rashid Hospital & Trauma Center, building new hospitals and establishing the Al Maktoum Trauma Center (Dubai Health Strategy 2013-2025).



### 2.3 Health status of the population of Dubai

The average life expectancy of Dubai's population is 76 Years, with the leading cause of death as cardio-vascular disease (CVD) (DHA Annual Statistical Report, 2012). The focus of public health programs in Dubai continues to be on preventive care, including policies which have been implemented across the national and expatriate populations, such as obesity prevention programs for UAE Nationals, CVD surveillance program, tuberculosis screening program and other communicable disease prevention programs. The health outcomes of some of these programs are reflected in the slight decrease in reported cases of communicable diseases (0.7%), from 2011 to 2012 (DHA Annual Statistical Report, 2012).

The Dubai health sector has experienced the growth in demand for healthcare with 18.6% increases in outpatient visits and 17.8% in patients between 2011 and 2012. The private health sector accounted for 75.8% of the total outpatient visits and 61.3% of the total inpatients in 2012 (DHA Annual Statistical Report, 2012). This aligns to Dubai Health Sector Strategy goal of 70/30 split of healthcare service provision between private and public sector.

In addition to healthcare facilities in Dubai, DHA also provides funding for overseas treatment of specially approved cases. These cases are stringently evaluated prior to approval of funding. In 2012, Germany, Thailand and UK were the countries of choice for a large number of these cases, with the most common being for oncology, neurosurgery and cardiac surgery.

## 2.4 Objective

The objective of HASD is to measure trends for healthcare expenditure in Dubai.

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*The Health Accounts System of Dubai 2012 reports a factual account of the expenditure on healthcare by government and private sectors*

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Many countries have experienced rapid increases in healthcare costs and spending over the past 10 years, which was also coined with the 2007 global financial crisis. A natural response by governments has been concern about how resources are mobilized and allocated within the sector. The System of Health Accounts (SHA 2011) was used to illustrate all expenditure flows within the healthcare sector, both government and private. The system provides answers to key policy questions, including the following:

- **Where did the health funds come from? (Sources of Funds)**
- **Which institutions managed the health funds**
- **Where healthcare funding went (which providers)?**
- **What services were purchased by the health funds?**
- **Which population groups benefited from the health funds?**

Major improvements in understanding healthcare spending have been initiated by using the new System of Health Accounts produced by the WHO, OECD and EUROSTAT.

SHA 2011 provides more opportunities for accurate description of financial flows, including revenues and financing schemes.

There is also continued comprehensive discussion on cross-border care and medical tourism – both these issues are of growing importance for Dubai.

In the effort to improve healthcare reporting across world health sectors, WHO, OECD and EUROSTAT have revised the reporting methodology in agreement with international health organizations, in the SHA-2011 manual.

The manual provides a common framework and classification of standards for healthcare reporting in the International Classification of Health Accounts (ICHA). The use of a common standard allows for:

- More relevant comparison of expenditure across world health sectors
- Focus on consumption
- Development of policy and best practices
- Better information on the impact of health expenditure on national economies
- Breakdown of expenditure as per disease, age, gender, region and socio-economic status.

## 2.5 Imperative

Considerable efforts have been directed toward the problem of health financing and related concerns within the health sector of the UAE, and Dubai in particular.

The government of Dubai has undertaken strategic initiatives to ensure sustainable growth and development that can meet the population's needs. This includes increasing the efficiency of healthcare service delivery while ensuring that quality is maintained.

Healthcare financing and health economics have become key focus areas for supporting effective decision-making. The most significant constraining factors have been the absence of 1) appropriate health management information systems for healthcare expenditure, and 2) clear tracking of healthcare funds

HASD becomes an effective evidence-based policy tool for DHA because:

1. It is inclusive of all revenue of funds, including public, semi-public, and private. Therefore, policy makers are better informed about spending throughout the entire healthcare sector, not just government financing.
2. It offers an international standard to allow policymakers to make comparisons with other countries with similar socio-economic backgrounds. A lesson learned from one country may be applicable and relevant to another country, especially those located in the same region. For example, comparing HASD with regional Health Accounts can lead policy makers to make the right decision on their health spending or even health status.

3. HASD presents health spending information in a format that is easy to use in policy design and in managing healthcare resources.

## 2.6 Critical Success Factors

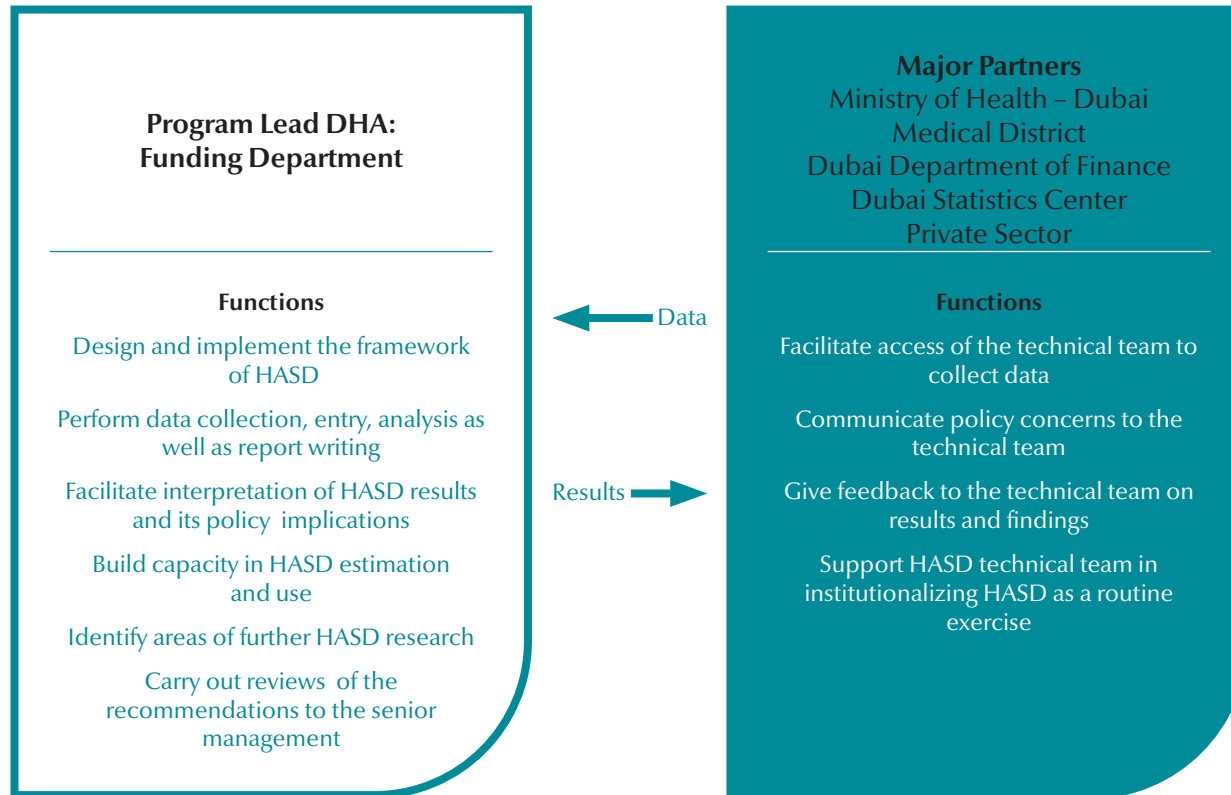
**Stakeholder participation** – Confidentiality is a key concern during the collection of sensitive financial data from the various health sector stakeholders. In order to manage this effectively, consistent communication and transparency of the process is vital.

**Skills & Capabilities** – Strong technical skills for analyzing data and developing relevant insights and policy implications are required for reports that can have an effective and practical use for government decision-making

**Availability of information/Data** – Primary and Secondary financial data can only be extrapolated from established systems that have structured processes in place. In the case of newly established areas, data must be validated prior to analysis.



Figure 1 HASD Framework



## 2.7 HASD Framework

A detailed project plan to establish HASD was submitted for internal approval, with timelines for the medium and short terms. Figure 1 illustrates the HASD framework, which ensures that HASD is a government-driven program with DHA as custodian.

A kickoff workshop was launched in May 2013, which was attended by more than 100 organizations. The objective of the workshop was to officially launch HASD, explain its importance, and request the data needed for production.

Two parallel technical training sessions on National Health Accounts (NHA) and HASD were conducted: one for hospitals, and the other for the Private Health Insurance companies (PHI), in order to provide instruction on the breakdown and format of data to be collected.

Following the Kickoff workshop mentioned above, stakeholder meetings were conducted to better map the healthcare system in Dubai. The objective was to draw healthcare boundaries in order to establish full classification of the revenue of funds, financing schemes, agents and healthcare providers. Mapping also anticipated the data to be collected, and the grouping of SHA 2011 functions, beneficiaries of health funds, etc. The technical team then proceeded with the data collection and analysis.



# 3 APPROACH & METHODOLOGY

## 3.1 HASD Methodology

Overall, HASD methodology followed the international classification of SHA 2011. In addition to these classifications, additional administrative and technical steps were taken in order to accurately map the healthcare system in Dubai. In particular, the HASD technical team needed to address two issues: the rationale for producing National Health Accounts (NHA) at an Emirate level, and the definition of population boundaries.

### **An Emirate level Health Accounts**

A key issue to address initially was the definition of health boundaries. The need for an Emirate level Health Accounts is paramount, for the following reasons:

1. There are no NHA at the national level in UAE.
2. Dubai has initiated substantial reform in healthcare financing by shifting from scattered health financing schemes to a universal healthcare coverage (UHC) scheme based on equitable contribution from all participants. This reform requires reliable data collection and standard data analysis. NHA offers both the reliability and standardization of data. In addition, NHA has been used internationally to inform policy making during transition to universal health coverage. Regional countries along with WHO and WB highlighted that.
3. Once it has been successfully produced for Dubai, HASD data will be aligned to the national health accounts to facilitate internal comparisons between the Emirates.

4. To ensure an efficient oversight of the health funding at the Emirate level, DHA requires detailed and specific datasets for Dubai's health system.

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*"In the area of addressing coverage of financial risk protection, countries must review and update coverage under different prepayment arrangements by conducting national health accounts analysis"*

Regional Meeting on Accelerating Progress  
Towards UHC, UAE 2013

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### **Population boundaries for HASD**

Once the decision was made to produce Health Accounts Systems for Dubai, the second technical issue to address was the population boundaries. This section highlights the assumptions and rationale used for HASD population.

The population in Dubai is classified into the following four groups:

1. Nationals
2. Non-Nationals with employment visas from Dubai and residence inside Dubai
3. Non-Nationals with employment visas from Dubai but residence outside Dubai (mainly Sharjah)
4. Tourists who visit Dubai. These constitute a significant factor in Dubai's economy

The two last groups are not considered as part of Dubai's population in the official figures from Dubai Statistics Center (DSC). However, the health financing reform is aimed to offer UHC to all members of the first three groups, regardless of their geographic location. Government agencies and private employers are mandated to offer healthcare coverage to all employees (Law 11, 2013).

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*Thus, the population boundaries for HASD is that all Dubai residents (National and non-Nationals), even if they live outside Dubai, are included in the production of HASD.*

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DSC estimated the population of Dubai at 2.1 million in 2012, with approximately 76% male and 24% female. The majority of male expatriate residents are blue-collar workers of Asian, South Asian or African origin, employed mainly in the infrastructure and transport sectors. Working-age males comprise the majority of the population of Dubai, with only 11% under the age of 15 years and 1% over 60 years of age (Population Bulletin 2012, Dubai Statistics Center). The estimates of the first three groups – who constitute HASD boundaries – are at 3.15 million with a gender breakdown that is similar to the DSC's figures.

From 2000 to 2010, the population in Dubai increased by 121% compared to an average global increase of 13%. Adjusting the population in Dubai is instrumental for determining per capita health needs. Adjustment of population ensures that the comparisons of per capita health measure with other countries account for the unique composition of the populations in Dubai. The population of Dubai was adjusted using regression models to predict the adjusted population

for each age group of males. The results of the adjusted population models for Dubai are shown in section 4.7 (Beneficiaries of health funds). More information on population adjustment can be found in Hussin, 2014 (accepted for publishing).

### 3.2 Data Sources and Assumptions

The data for HASD were collected and analyzed in accordance with international guidelines provided in SHA 2011. In conjunction with the HASD Methodology section, which lists the data sources used, and the assumptions followed.

#### Government

##### 1. Dubai Department of Finance (DoF)

DoF provided HASD's technical team with data for health expenditure paid by Dubai government to three recipients: Dubai Municipality, Dubai Police, and Dubai Ambulance. The data received included a detailed breakdown of expenditure and revenue based on the Dubai Government Chart of Accounts. The Chart of Accounts included the Cost Center and the item details of the recipient organizations. This breakdown was useful to accurately map the expenditures at the item level, and to ensure consistency with reports from the recipients of the funds.

##### 2. DHA

Three datasets were used to analyze and map DHA's activities to HASD:

- a. Detailed expenditure data for the Cost Centers by item definition, and by sector (hospitals, PHC, administration, etc.). The breakdown was similar to that of DoF, and further allowed





for consistency across all of the government providers. For the expenditure per healthcare function, the data codes of clinical specialty were split into outpatient, inpatient and daycare. The preventive care expenditure was mapped based on Outpatients (OP) at PHC, assuming that counselling and preventive care was provided during each OP visit at PHC. Medical Fitness expenditure was allocated based on the age group of the expatriates' population distribution from age group 20 and above.

- b. The revenue data that contains the money collected by each cost center, which was also used in computing the Out-of-Pocket (OOP) expenditure.
  - c. The administrative data that contains the utilization, time spent by doctor per inpatient by specialty, and time taken for outpatient consultation according to specialty. The administrative data was used to map the expenditures by function, age groups and gender, as well as Overseas Treatment (OST).
3. Ministry of Health – Dubai Medical District

The details of the expenditures and revenue data contain a breakdown by hospital and by health center located in Dubai. To account for the share of the health governance by MoH in Dubai, the national data was split based on the utilization data of MOH facilities in Dubai, with the assumption that 15% of the total IP and OP visits were conducted in Dubai.

### ***Private health insurance companies***

The administrative primary data was collected from the PHI, for both membership and claims data. These datasets included the transactions for all Dubai-based policies. This information permitted capture of detailed transactions by members, even if they did not reside in Dubai and had received the services outside Dubai. The membership data contained information such as gender and age, as well as other enrollment information (start date, end date, etc.). The claims data contained the details of the services provided including information on treatment and diagnosis. This data also included detailed financial information per activity, such as the amount paid by the insurance company and the co-payment amount paid by the patient. The services received by the members were then classified and mapped to SHA 2011. Services received outside Dubai were classified as imported services (HC.9). This information was also used to compute the OOP. The two datasets were used to map the services provided to SHA 2011. The submission rate for the PHI data was 100%.

### ***Private health care providers***

Secondary data was collected from the following private providers:

1. Hospitals: all the hospitals submitted their secondary data, except the American Hospital. This hospital's data was estimated from its share of health manpower (licensed by DHA), statistical activities of transactions, and the health insurance payments received.
2. Major polyclinics
3. Major pharmacy chains
4. Pharmaceutical data for all the drugs sold in Dubai.



The data from these providers used in the triangulation process, provided valuable information on the OOP estimation as well as direct contracts with major employers.

**Major employers**

A group of the employers provide voluntary health coverage to their employees either by purchasing private health insurance, providing direct contracts with the private health providers, or reimbursing their employees for services received. The data from the major self-insured employers was collected.

For the next round of HASD, the Establishment Survey conducted in 2013 by Dubai Statistics Center will be used to triangulate the health expenditure information.

**Households Out-of-Pocket payments**

The current best practice for estimating households OOP expenditure on health involve integrating and triangulating multiple data sources. The technical team used the rich administrative datasets collected to estimate the OOP payments without a household survey. The following is the list of the sources of the data used:

- Hospitals: the data received from DHA and the private providers contained detailed payments made by the patients and to the activity level.
- PHI: the claims data contained item payments made to the providers, which included the OOP share.
- Other providers: the major clinics and pharmacy chains data contained the detailed OOP payments.

However, DHA did not collect information on OOP received by clinics and non-chain pharmacy retailers.

To calculate the total OOP based on the data collected, we used this equation:

$$\text{Total OOP} = \frac{\text{OOP collected} \times \text{Insurance payments to all (Clinics + Polyclinics + Others)}}{\text{Insurance payments to Hospitals inside and outside Dubai}} \times \frac{\text{\# of Doctors (Clinics + Polyclinics)}}{\text{\# of Doctors in Hospitals}}$$

Where OOP Collected is the OOP payments received by the private providers that submitted their data to DHA. The second part of the equation is used to weight the OOP based on the manpower size.

Using administrative datasets to estimate the households OOP payments are sufficient in countries such as Australia, Bangladesh, Malaysia, Sri Lanka, and the United States ( Maeda, et al., 2012, p. 95).

In addition, the data was cross-checked against a household survey conducted by DHA and DSC in 2009, which included expenditure and utilization sections. The results of this survey were adjusted for inflation, and were close to those of the administrative data.



### 3.3 Health Accounts Production Tool

The data collected was analyzed and tabulated using the Health Accounts Production Tool (HAPT), Version 2.1.1.0. HAPT was developed by the Health Systems 20/20, with inputs and support from key NHA stakeholders including the WHO and the World Bank. HAPT was developed to streamline and simplify the estimation process, thereby insuring a standard production of NHA to monitor and improve health system performance. The tool achieves these goals through a series of features designed around the themes of data quality, efficiency, ease of use, collaboration, consistency and flexibility. HAPT User Guide, page 1. HA Production Tool User Guide: Version 2.1.1.0. June March 2012. Bethesda, MD: Health Systems 20/20, Abt Associates Inc.

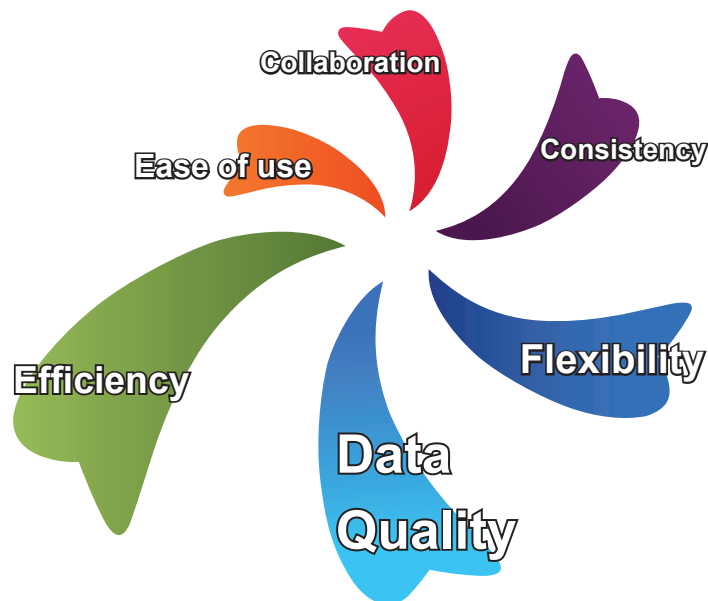
### 3.4 Limitations

As expected in producing NHA for the first time, HASD has few limitations, despite the comprehensive and detailed datasets collected to estimate 2012 data and the use of HAPT. First, the triangulation of data should be completed for future HASDs. Efforts should be made to improve the data source and data standards. In particular, surveys should be conducted to collect information from households and private firms. Second, primary datasets should be collected from the providers (hospital discharge data, and annual financial reports) instead of secondary datasets (surveys).

This data collected and used from the households does not include the details of the treatment outside Dubai. However, most of these cases are cosmetic treatments, which are not part of the health boundaries as per SHA 2011. The cases that require medical treatment, based on SHA definitions, are mostly paid by the government or the private health insurance. Expenditures on these cases are included in the administrative data received.

These limitations will be minimized for the 2013 data, with the collection of the insurance-based transactions using EClaims. EClaims is an electronic platform launched in January 2013, which connects the providers and the insurance companies via a DHA hub. In addition, DHA is collaborating with DSC to conduct and produce the data for the Establishment Survey (2013) and the Household Utilization and Expenditures Survey (2014). Improvements in the data collection will support accurate allocation of health funds and minimize unnecessary expenditures.

Health Accounts Production Tool Themes and Features



# 4 FINDINGS & ANALYSIS

*The Dubai Health Sector Strategy 2011-2013 mentioned a goal of 70/30 ratio between the private and public providers. The financial ratio in 2012 was 68/32.*

## 4.1 Health Accounts Summary Indicators

Figure 2 HASD's summary indicators

Indicators	Total Health Expenditure (THE) <sup>1</sup>	Current Health Expenditure (CHE) <sup>2</sup>
1. Health Expenditure (HE) % Gross Domestic Product (GDP)	3.4%	3.1%
2. General Government Expenditure on Health (GGHE) as % of GDP	1.1%	1.0%
3. GGHE as % of General Government Expenditure	9.7%	10.8%
4. General Government Expenditure on Health as % of HE	32.1%	32.6%
5. Private Expenditure on Health (PvHE) as % of HE	67.9%	67.4%
6. Out-Of-Pocket expenditure as % of PvHE	29.3%	32.2%
7. Out-Of-Pocket expenditure as % of HE	19.9%	21.7%
8. Private Insurance as % of PvHE	49.1%	53.9%
9. Private Insurance as % of HE	33.4%	36.3%
10. Expenditure on Inpatient care as % of HE	27.6%	30.0%
11. Government Expenditure on Inpatient care as % of GGHE	45.2%	48.4%
12. Prevention and Public Health services as % of HE	5.1%	5.5%
13. Medical Goods as % of HE	18.5%	20.2%
14. Health Expenditure / Capita at Exchange Rate (NCU per US\$)	941	866
15. Health Expenditure / Capita at Purchasing Power Parity (NCU per US\$)	934	859
16. General Government Expenditure on Health / Capita at Exchange Rate (NCU per US\$)	302	282
17. General Government Expenditure on Health / Capita at Purchasing Power Parity (NCU per US\$)	300	280
18. Out-Of-Pocket expenditure / Capita at Exchange Rate (NCU per US\$)		187
19. Exchange Rate (NCU per US\$)		3.67
20. Purchasing Power Parity (NCU per US\$)		3.70
21. Gross domestic product - Price index (2006 = 100)		318,379

**Note:** 1. Total health expenditure is no longer part of the health accounts as per SHA 2011. It is calculated as CHE + Capital Investments. In this report, the term is used only to make comparison with other countries. 2. Current health expenditure is based on the classification of SHA, which includes all services (curative, medical goods, governance, etc.), but excludes investments and exports.

## 4.2 Sources of funds

Figure 3 Financing Flows from Revenues of Health Care Financing Schemes by Financing Schemes (FSXHF), Dubai 2012 Million AED

Revenues of health care financing schemes		FS.1	FS.5	FS.6	FS.6.1	FS.6.2	All FS	% Total
Financing schemes		Transfers from government domestic revenue (allocated to health purposes)	Voluntary prepayment	Other domestic revenues n.e.c	Other revenues from households n.e.c.	Other revenues from corporations n.e.c.		
<b>HF.1</b>	<b>Government schemes and compulsory contributory health care financing schemes</b>	<b>3,242</b>		<b>498</b>		498	<b>3,740</b>	<b>38%</b>
	HF.1.1.1 Central government schemes	260		24		24	283	3%
	HF.1.1.2 State/regional/local government schemes	2,982		475		475	3,457	35%
<b>HF.2</b>	<b>Voluntary health care payment schemes</b>		<b>3,605</b>	<b>438</b>		438	<b>4,042</b>	<b>41%</b>
	HF.2.1 Voluntary health insurance schemes		3,605				3,605	36%
	HF.2.3 Enterprise financing schemes			438		438	438	4%
<b>HF.3</b>	<b>Household out-of-pocket payment</b>			<b>2,152</b>	2,152		<b>2,152</b>	<b>22%</b>
<b>All HF</b>		<b>3,242</b>	<b>3,605</b>	<b>3,088</b>	2,152	936	<b>9,934</b>	<b>100%</b>
<b>% Total</b>		<b>33%</b>	<b>36%</b>	<b>31%</b>	22%	9%	<b>100%</b>	
<b>HK1.1</b>	Capital formation for health care provider institutions.	<b>224</b>				643	<b>867</b>	
<b>Total Health Expenditure (THE)</b>		<b>3,466</b>	<b>3,605</b>	<b>3,731</b>	2,152	1,579	<b>10,801</b>	

### Key Findings

Current Health Expenditure (CHE) in Dubai for 2012 was 9,934 M AED.

### Where do the health funds come from?

The columns in Figure 3 show the answer to this question. It can be summarized as follows:

- The government (Federal and State) funded the healthcare system in Dubai by 3,242 M (33%)
- Employers funded the health care system, via the health insurance companies, by 3,605 M (36%)
- Households paid 2,152 M (22%).
- Corporations paid 936 M (9%).

### Which schemes pooled these funds?

The row in Figure 3 show the answer to this question, and can be summarized as follows:

- Government Schemes pooled 3,740 M (38%). The majority (93%) was pooled by the Dubai government.
- Voluntary schemes pooled 4042 M (41%).
- Households pooled 2,152 M (22%).

*The results show that a relatively small proportion of the health funds was collected as prepayments (3,605 M or 36%).*

## 4.3 Management of funds

Figure 4 Financing Flows from Financing Agents by Financing Schemes (FAXHF), Dubai 2012 Million AED

Financing schemes	Financing agents		FA.1	FA.1.1	FA.1.2	FA.2	FA.3	FA.5	All FA	%Total
	General government	Central government	State/Regional/Local government	Insurance corporations	Corporations (other than insurance corporations)	Households				
<b>HF.1</b>	<b>Government schemes and compulsory contributory health care financing schemes</b>	<b>3,740</b>	283	3,457					<b>3,740</b>	<b>38%</b>
	HF.1.1.1 Central government schemes	283	283						283	3%
	HF.1.1.2 State/regional/local government schemes	3,457		3,457					3,457	35%
<b>HF.2</b>	<b>Voluntary health care payment schemes</b>				<b>3,605</b>	<b>438</b>			<b>4,042</b>	<b>41%</b>
	HF.2.1 Voluntary health insurance schemes				3,605				3,605	36%
	HF.2.3 Enterprise financing schemes					438			438	4%
<b>HF.3</b>	<b>Household out-of-pocket payment</b>							<b>2,152</b>	<b>2,152</b>	<b>22%</b>
		<b>3,740</b>	283	3,457	<b>3,605</b>	<b>438</b>		<b>2,152</b>	<b>9,934</b>	<b>100%</b>
<b>%Total</b>		<b>38%</b>	3%	35%	<b>36%</b>	<b>4%</b>		<b>22%</b>	<b>100%</b>	

### Key Findings

#### Which institutions managed the health funds?

The columns in Figure 4 show the answers to this question, and can be summarized as follows:

- The government exclusively managed the amounts paid by the government, at both the Central and Emirate Level. For instance, all of the 3,457 M from Dubai Government was managed by the Dubai government
- The private health insurance corporations managed a total of 3,605 M, which represents (36%) of CHE.
- Households exclusively managed their 2,152 M funds for health.

*The management of funds in Dubai shows a silo flow, where providers of funds are managing their own budgets.*

## 4.4 Providers of services

Figure 5 Financing Flows from Financing Schemes by Health Care Providers (HF X HP), Dubai 2012 Million AED

Financing schemes		HF.1	HF.1.1.1	HF.1.1.2	HF.2	HF.3	All HF	% Total
Health care providers		Government schemes and compulsory contributory health care financing schemes	Central government schemes	State/regional/local government schemes	Voluntary health care payment schemes	Household out-of-pocket payment		
HP.1	Hospitals	2,035	178	1,856	1,791	930	4,756	48%
HP.3	Providers of ambulatory health care	999	81	918	695	525	2,219	22%
HP.4	Providers of ancillary services	150		150	48	170	368	4%
HP.4.1	Providers of patient transportation and emergency rescue	150		150			150	2%
HP.4.2	Medical and diagnostic laboratories				31	108	139	1%
HP.4.9	Other providers of ancillary services				16	62	78	1%
HP.5	Retailers and other providers of medical goods				237	508	745	8%
HP.6	Providers of preventive care	33		33			33	0%
HP.7	Providers of health care system administration and financing	103	24	80	257	18	379	4%
HP.9	Rest of the world	420		420	1,015		1,435	14%
All HP		3,740	283	3,457	4,042	2,152	9,934	100%
% Total		38%	3%	35%	41%	22%	100%	

### Key Findings

#### Where did the health funds go?

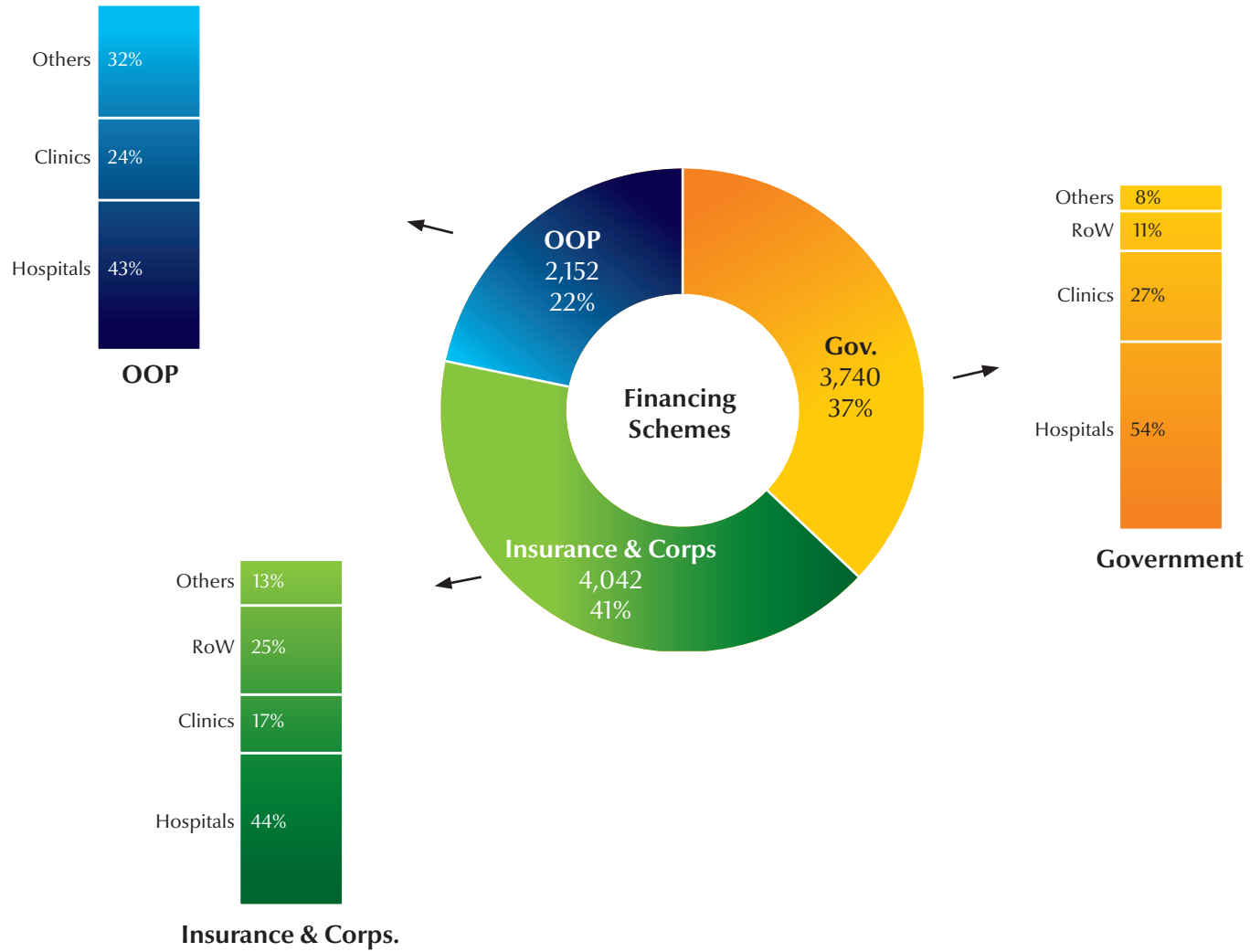
The rows in Figure 5 show the answer to this question and can be summarized as follows:

- Hospitals received the biggest share of funds in 2012, at 4,756 (48%).
- Clinics and polyclinics received the second largest share of funds, 2,219M (22%).
- Ambulance, medical and diagnostic labs, and imaging centres received only 368 M (4%).
- Pharmacies received 745 M (8%)
- Health governance received 379 M (4%) of the funds.
- A significant share of the health funds paid for health services delivered outside Dubai, 1,435 M (14%).

Figure 6 further illustrates the flow of health funds between the Financing Schemes and the Providers of services.

More than half (54%) of the government schemes for health was spent on hospitals, followed by clinics (27%). Insurance companies and households also spent a significant share of their health funds on services provided by hospitals, i.e. around 45%.

Figure 6 CHE by Financing Schemes and Providers, Dubai 2012



## 4.5 Services Provided

Figure 7 Financing Flows from Financing Schemes by Health Care Functions (HFXHC), Dubai 2012 Million AED

Health care functions	Financing schemes	HF.1 Government schemes and compulsory contributory health care financing schemes	HF.1.1		HF.2 Voluntary health care payment schemes	HF.3 Household out-of-pocket payment	All HF	% Total
			HF.1.1.1 Central government schemes	HF.1.1.2 State/regional/local government schemes				
<b>HC.1</b>	<b>Curative care</b>	<b>2,355</b>	143	2,212	<b>1,951</b>	<b>1,200</b>	<b>5,507</b>	<b>55%</b>
	HC.1.1 Inpatient curative care	1,568	53	1,515	1,021	393	2,982	30%
	HC.1.2 Day curative care	64		64	105	64	233	2%
	HC.1.3 Outpatient curative care	724	90	634	825	744	2,293	23%
<b>HC.2</b>	<b>Rehabilitative care</b>	<b>35</b>		35	<b>10</b>	<b>6</b>	<b>51</b>	<b>1%</b>
<b>HC.3</b>	<b>Long-term care (health)</b>	<b>2</b>		2			<b>2</b>	<b>0%</b>
<b>HC.4</b>	<b>Ancillary services (non-specified by function)</b>	<b>327</b>	47	279	<b>786</b>	<b>287</b>	<b>1,399</b>	<b>14%</b>
	HC.4.1 Laboratory services	94	35	59	538	181	813	8%
	HC.4.2 Imaging services	83	12	70	248	105	436	4%
	HC.4.3 Patient transportation	150		150	0	0	151	2%
<b>HC.5</b>	<b>Medical goods (non-specified by function)</b>	<b>427</b>	69	358	<b>989</b>	<b>588</b>	<b>2,003</b>	<b>20%</b>
<b>HC.6</b>	<b>Preventive care</b>	<b>482</b>		482	<b>26</b>	<b>42</b>	<b>550</b>	<b>6%</b>
<b>HC.7</b>	<b>Governance, and health system and financing administration</b>	<b>103</b>	24	80	<b>257</b>	<b>17</b>	<b>377</b>	<b>4%</b>
<b>HC.9</b>	<b>Other health care services not elsewhere classified (n.e.c.)</b>	<b>9</b>		9	<b>24</b>	<b>12</b>	<b>44</b>	<b>0%</b>
<b>All HC</b>		<b>3,740</b>	283	3,457	<b>4,042</b>	<b>2,152</b>	<b>9,934</b>	<b>100%</b>
<b>% Total</b>		<b>38%</b>	3%	35%	<b>41%</b>	<b>22%</b>	<b>100%</b>	

### Key Findings

#### What services were purchased by the health funds?

The rows in Figure 7 show the answer to this question which can be summarized as following:

- A significant share of health funds was spent on curative care, 5,507 M (55%). A little over half of this amount was spent on inpatient services (2,982 M).
- Long-term care accounted for a fraction of WHO Global Health Expenditure Database, 2011. Data for Dubai was obtained from this report and from the Dubai Statistics Center.
- Ancillary services and medical goods received 1,399 M AED (14%) and 2,003 M AED (20%) of the total funds, respectively.
- Preventive care accounted for only 550 M (6%) and was mainly funded by the government schemes (482 M).
- Governance of the health schemes received only 337 M of CHE (4%).

Figure 8 shows a graphical presentation of the financing flows from Financing Schemes to functions. The share of IP services was highest in government schemes (44%), while the shares for PHI and households were much lower: 28% and 21%, respectively.

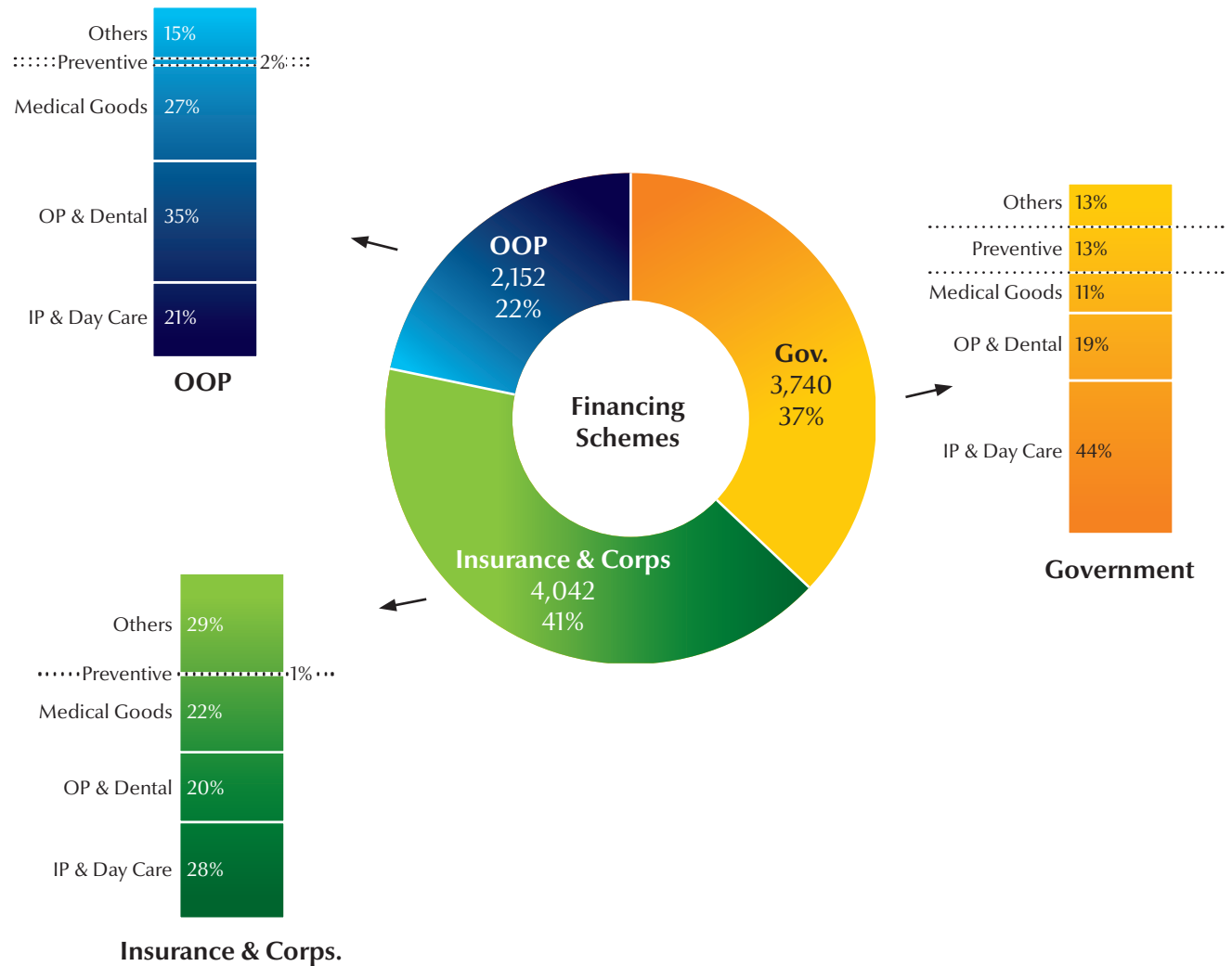
The chart also shows that preventive care was mainly funded by the government schemes, and accounted for 13% of the total government schemes. However, it accounted for about 1% of the private sector and OOP.



*The population in Dubai is transient and health insurance companies may not be inclined to invest in programs designed to reduce future costs, such as preventive care. The government should continue to be the main provider of preventive care, in order to ensure sustainable future healthcare costs through mandated programs and interventions.*

**Note:** HF1 includes 420 M AED for overseas treatment. This amount is included in the inpatient care delivered at hospitals.

Figure 8 Financing Flows from Financing Schemes and Health Care Function, Dubai 2012



## 4.6 Providers and Services

Figure 9 Financing Flows from Health Care Providers by Health Care Functions (HCXHP), Dubai 2012 Million AED

Health care providers		HP.1	HP.3	HP.4	HP.5	HP.6	HP.7	HP.9	All HP	% Total
Health care providers		Hospitals	Providers of ambulatory health care	Providers of ancillary services	Retailers and other providers of medical goods	Providers of preventive care	Providers of health care system administration and financing	Rest of the world		
<b>HC.1</b>	<b>Curative care</b>	<b>3,541</b>	<b>1,083</b>					<b>883</b>	<b>5,507</b>	<b>55%</b>
	HC.1.1 Inpatient curative care	2,326						655	2,982	30%
	HC.1.2 Day curative care	194	11					28	233	2%
	HC.1.3 Outpatient curative care	1,021	1,072					200	2,293	23%
<b>HC.2</b>	<b>Rehabilitative care</b>	<b>38</b>	<b>11</b>					<b>2</b>	<b>51</b>	<b>1%</b>
<b>HC.3</b>	<b>Long-term care (health)</b>	<b>2</b>							<b>2</b>	<b>0%</b>
<b>HC.4</b>	<b>Ancillary services (non-specified by function)</b>	<b>491</b>	<b>330</b>	<b>364</b>				<b>214</b>	<b>1,399</b>	<b>14%</b>
	HC.4.1 Laboratory services	287	246	137				143	813	8%
	HC.4.2 Imaging services	204	85	77				70	436	4%
	HC.4.3 Patient transportation	0	0	150				0	151	2%
<b>HC.5</b>	<b>Medical goods (non-specified by function)</b>	<b>651</b>	<b>287</b>	<b>4</b>	<b>745</b>			<b>316</b>	<b>2,003</b>	<b>20%</b>
	HC.5.1 Pharmaceuticals and other medical non-durable goods	626	267	4	745			302	1,944	20%
	HC.5.2 Therapeutic appliances and other medical goods	25	21					14	60	1%
<b>HC.6</b>	<b>Preventive care</b>	<b>19</b>	<b>491</b>			<b>33</b>		<b>7</b>	<b>550</b>	<b>6%</b>
<b>HC.7</b>	<b>Governance, and health system and financing administration</b>						<b>377</b>		<b>377</b>	<b>4%</b>
<b>HC.9</b>	<b>Other health care services not elsewhere classified (n.e.c.)</b>	<b>15</b>	<b>15</b>				<b>1</b>	<b>13</b>	<b>44</b>	<b>0%</b>
<b>All HC</b>		<b>4,756</b>	<b>2,219</b>	<b>368</b>	<b>745</b>	<b>33</b>	<b>379</b>	<b>1,435</b>	<b>9,934</b>	<b>100%</b>
<b>% Total</b>		<b>48%</b>	<b>22%</b>	<b>4%</b>	<b>8%</b>	<b>0%</b>	<b>4%</b>	<b>14%</b>	<b>100%</b>	

## Key Findings

### Which providers produced which services?

Figure 9 shows the answer to this question, and can be summarized as follows:

- Hospitals: of the total 4,756 M spent by hospitals, 3,541M was spent on curative care, 491 M for ancillary services, 651 M for medical goods, and 73 M for other services.
- Clinics and polyclinics: of the total 2,219 M received by clinics, 1,083 M was for Curative care, 330 M for ancillary, 287 M for medical goods, and 491 M for preventive care.
- The RoW provided a wide array of services totaling 1,435 M.
- The majority of preventive care was provided in ambulatory settings (491 M out of 550 M).

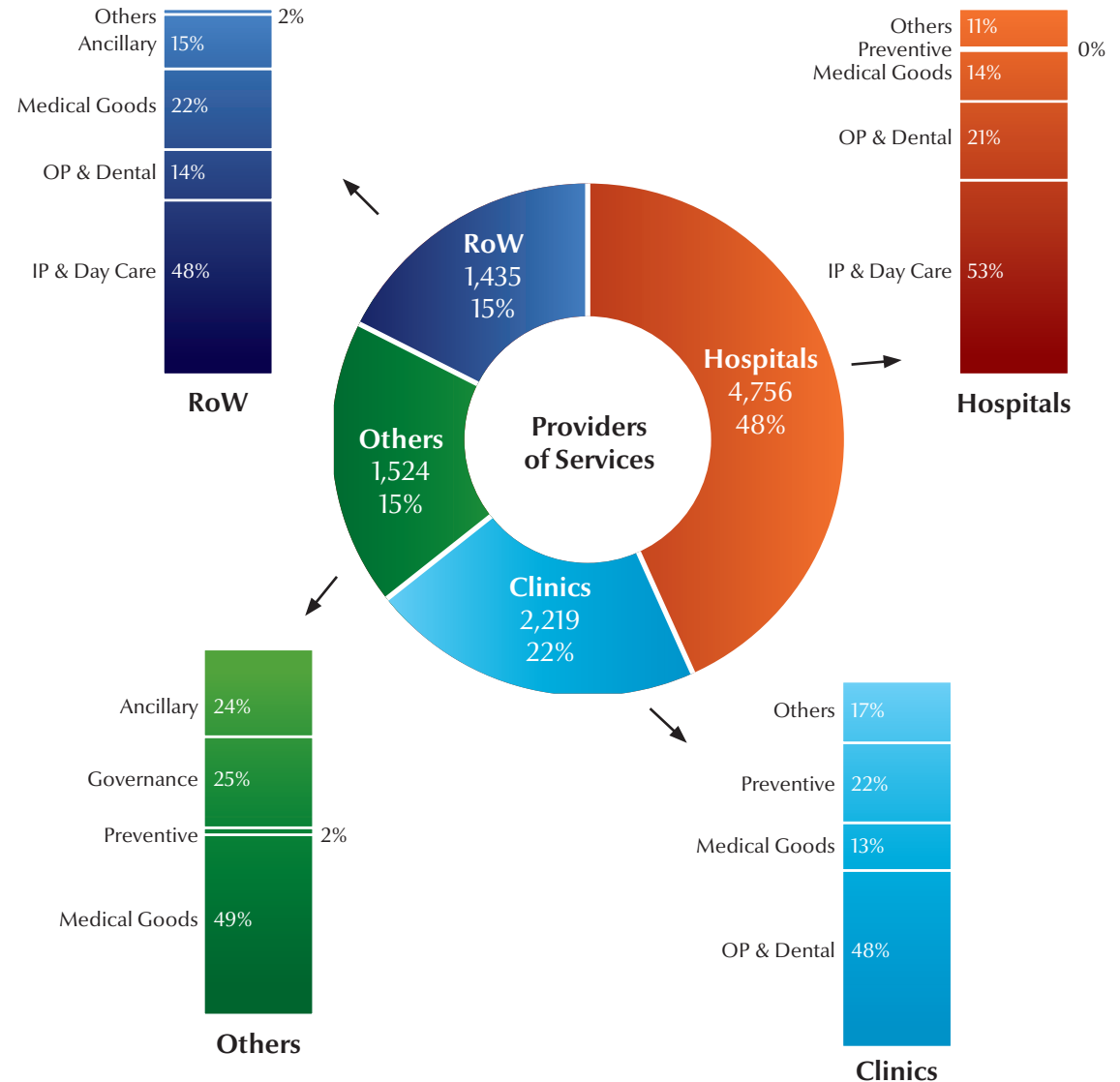
Figure 10 further shows the financing flows between providers and functions. PHCs constitutes a cornerstone role in the planned health financing model for Dubai. This model relies on PHCs as the gatekeeper to control the utilization in hospitals; thus, the overall health expenditure.

However, the share of PHCs (clinics) in the Figure was relatively small in 2012; only 22% of the health funds. This high concentration of services in hospitals rarely occurs in more diversified health care systems, such as in the majority of high income countries. This concentration results in competition for the available funds between hospitals and primary care settings.

*To promote PHCs as the gatekeeper in the new health funding scheme, these findings should be used as the baseline to monitor the transition from the pre-existing scheme to the planned scheme.*

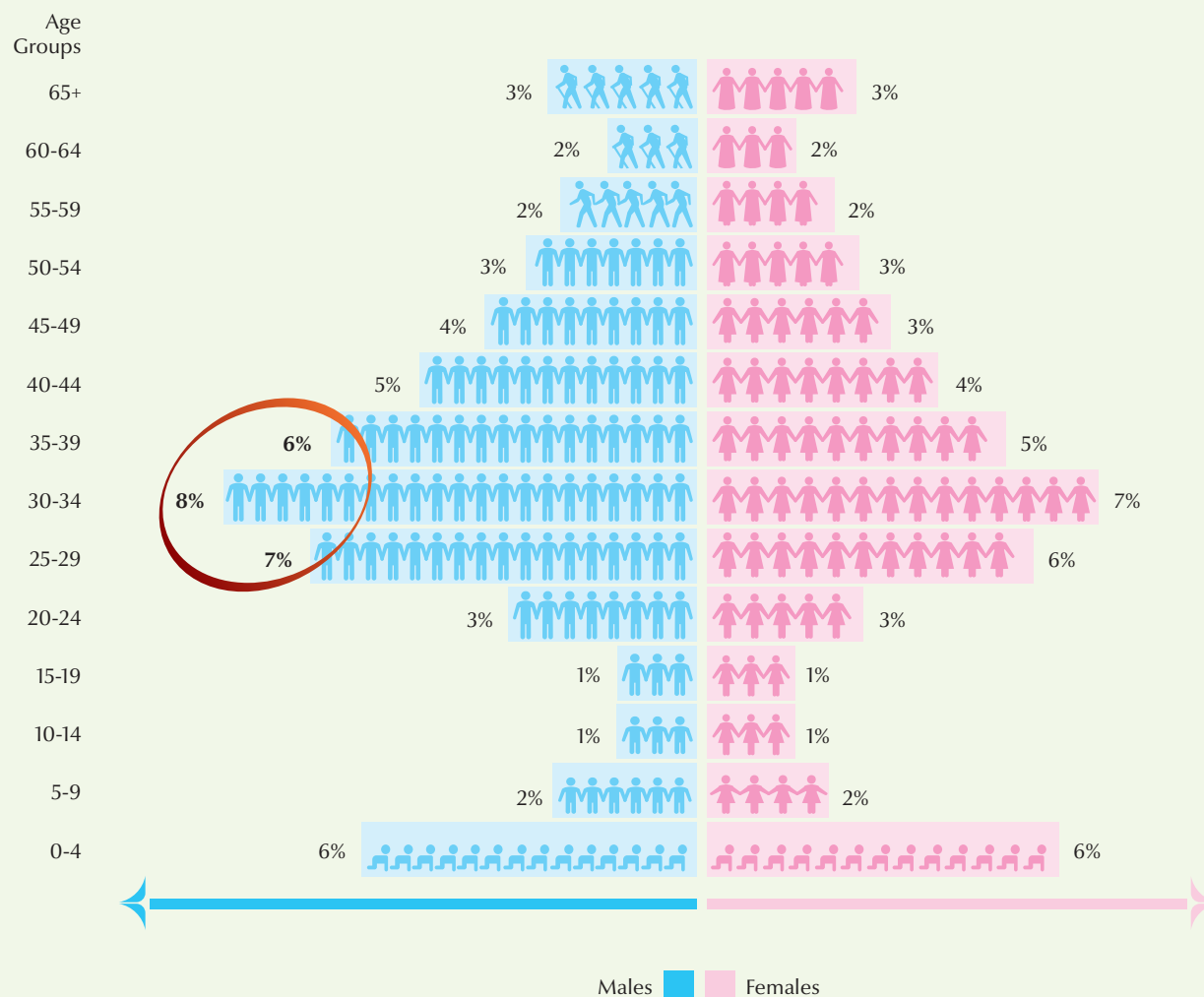
**Note:** HF1 includes 420 M AED for overseas treatment. This amount is included in the inpatient care delivered at hospitals.

Figure 10 CHE by Health Care Providers and Health Care Functions, Dubai 2012



## 4.7 Beneficiaries of health funds

Figure 11 Current Health Expenditures by Age Group and Gender, 2012 (% of Total Expenditures)



### Key Findings

#### Which population groups benefited from the health funds?

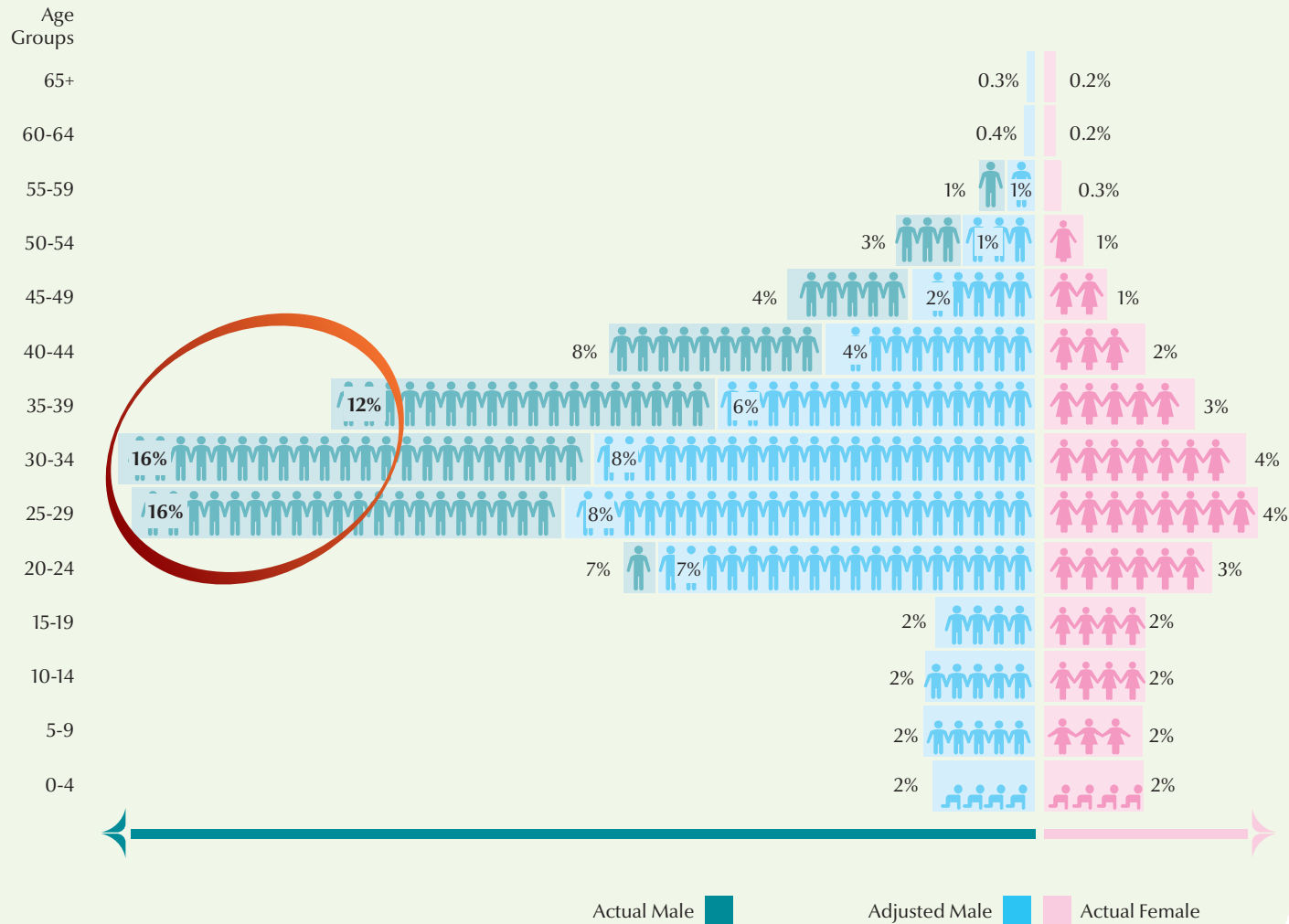
Figure 11 shows that health expenditures were balanced between males and females (symmetrical pyramid). A disproportionate share of the funds were paid for children aged 0-4 years old (12%) and adults 65+ years old (6%). These two groups constituted of the total population less than 5%.

When compared to the actual population in Figure 12, the CHE shows health funding inequality, which leads to health funding equity. Inequality: because the share of a population group does not match contributions to the share of money spent on them. Equity: because the differences are attributable to biological variations outside the control of the individuals concerned or the government.

For instance, the share of males aged 25-39 from the total population is 44%, but their share of the health expenditure was only 21%. The opposite was true for females in the same age groups; their share in the population was about 11%, but their share of health expenditures was 18%.

Figure 12 also shows the population pyramid for the actual and adjusted population (see the Methodology section above). The actual population shows a bulge in the working-age male groups (20-60), which is asymmetrical to the female population in the same age group. The adjusted male population reduces the significance of that bulge, in order to be used in the per capita health expenditure measures. These results correspond to the health expenditure findings (Figure 11), and further enforces the need to use the adjusted population for the per capita health indicators as seen in Figure 19.

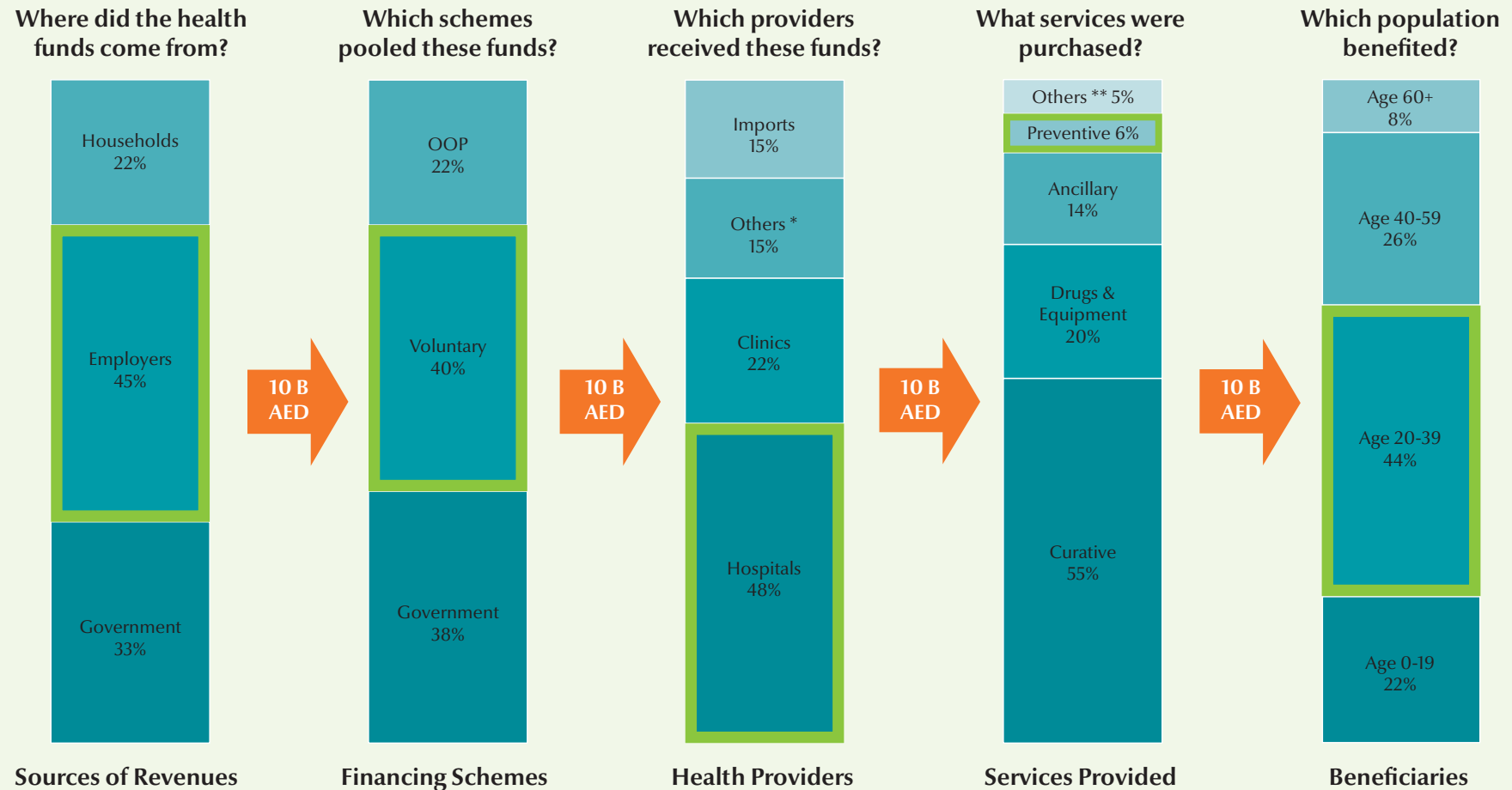
Figure 12 Actual and Adjusted Dubai Population, 2012 (% of Total Population)



When compared to the actual population in Figure 12, the CHE shows health funding inequality, which leads to health funding equity. Inequality: because the share of a population group does not match contributions to the share of money spent on them. Equity: because the differences are attributable to biological variations outside the control of the individuals concerned or the government.

## 4.8 Overall Flow of Health Revenues

Figure 13 Flow of Health Revenues, from Sources to Schemes to Providers to Services to Beneficiaries, Dubai 2012



\* Others (Providers): Retailers (8%), Diagnostic Centers (4%), Governance & administration (4%)

\*\* Others (Services): Rehabilitation (1%), Governance & administration (4%)

## 4.9 Factors of Provision

Figure 14 Financing Flows from Health Care Providers by Factors of Provision (Government Facilities) (HPXFP), Dubai 2012 Million AED

Health care providers		HP.1	HP.3	HP.4	HP.6	HP.7	HP.9	All HP	% Total
Factors of health care provision		Hospitals	Providers of ambulatory health care	Providers of ancillary services	Providers of preventive care	Providers of health care system administration and financing	Rest of the world		
	FP.1	Compensation of employees	902	464	128	13	51		1,558
FP.3	Materials and services used	1,004	477	23	9	46		1,558	42%
FP.3.1	Health care services	207	94		0	10		311	20%
FP.3.2	Health care goods	543	265	5	5	17		834	53%
FP.3.3	Non-health care services	167	78	9		15		268	17%
FP.3.4	Non-health care goods	87	40	9	0	5		141	9%
FP.3.nec	Other materials and services used (n.e.c.)				4			4	1%
FP.5	Other items of spending on inputs						420	420	11%
FP.nec	Other factors of health care provision (n.e.c.)	129	58		11	6		205	5%
All FP		2,035	999	150	33	103	420	3,740	100%
% Total		54%	27%	4%	1%	3%	11%	100%	

### Key Findings

#### What inputs were used to provide the services delivered?

Figure 14 shows the answer to this question, which can be summarized as follows:

- The data for the FP was available only from the public providers (funded by DoF or MoH - Dubai Medical District). DHA strongly recommended that private providers submit their factors of provisions. However, due to the sensitivity of the data and the first time experience with NHA and its potential, few hospitals submitted their costs of production. Thus, FP data is limited only to government providers for this report.
- The total amount spent on government facilities was 3,740 M.
- Compensation of employees accounted for 1,558 M (42%) of this amount.
- Almost 2,000 M was spent on the materials and services (53%).
- Healthcare services and goods (mainly medicines) represented 20% and 22% of the total respectively. However, 420 M was spent on treatment abroad.
- Non healthcare services and goods represented only 11% of the total FP.
- There is still 5% (205M) of the total money spent on government facilities that was not classified due to limited availability of information. Efforts should be made to map the remaining expenditure to HASD classifications.

#### 4.10 Comparative analysis – Dubai vs. other countries

One of the key reasons for using NHA is that it allows a country, or a group of countries, to compare their results with other countries. This section compared Dubai's results with 6 OECD countries and 6 GCC countries.

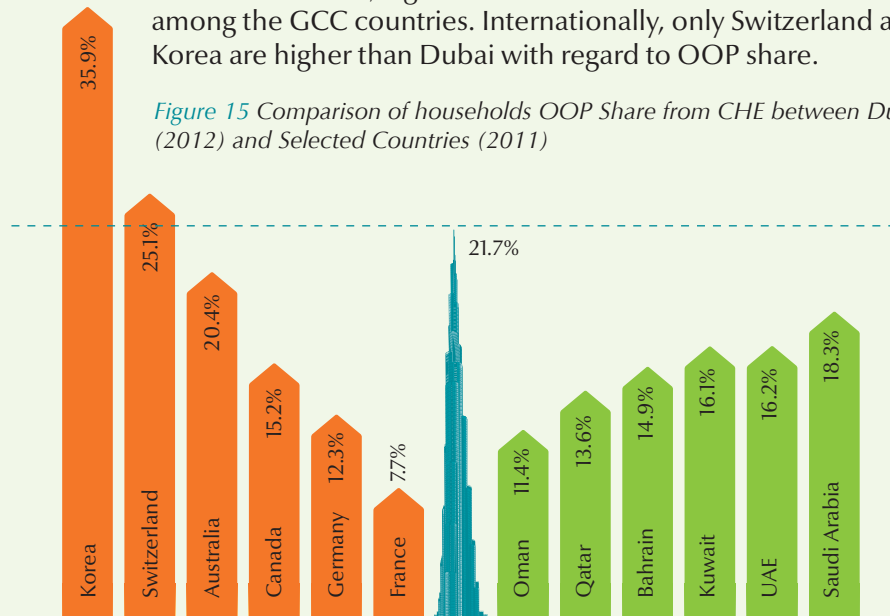
The OECD countries were Australia, Canada, France, Germany, Korea, and Switzerland. These high income countries were chosen to create a basket of countries that are similar to the current or future health financing system in Dubai. For instance, the UHC model in Dubai will be comparable to those of Switzerland and Germany. The current system, however, is comparable to that of Australia and France. Korea and Canada both have social health insurance systems, and data from these countries can be compared with the performance of the system in Dubai.

The data from the GCC countries provide the closest regional comparison to Dubai's healthcare system. Although the future UHC might differ from these countries, the population structure is comparable to Dubai. Thus, these countries can be used as a benchmark for the health needs of this unique population mix.

##### OOP share

Households have a significant share in the CHE. When compared to other countries, Figure 15 shows that Dubai's OOP is the highest among the GCC countries. Internationally, only Switzerland and Korea are higher than Dubai with regard to OOP share.

Figure 15 Comparison of households OOP Share from CHE between Dubai (2012) and Selected Countries (2011)

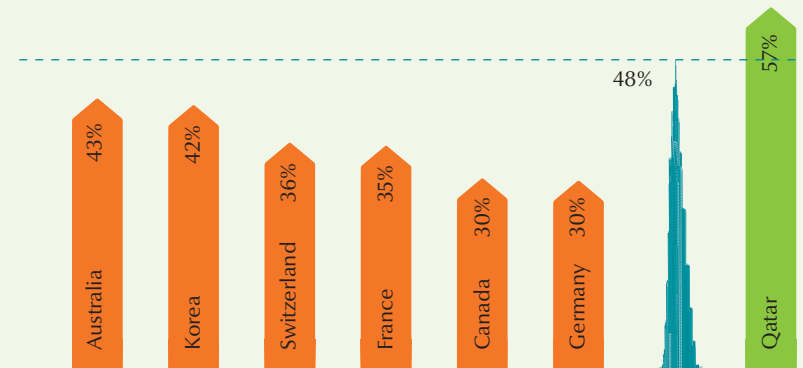


Note Dubai data is for 2012; Other countries 2011. Source: OECD Stat and WHO Global Health Expenditure Database

##### Hospital share

Figure 16 shows the hospital share of CHE in Dubai and the selected benchmark countries. The financing flows show that about half of all healthcare funding in Dubai was paid for services delivered at Secondary and Tertiary Care facilities, i.e. hospitals. The chart shows that hospitals in Dubai received the highest share of health funds among all benchmark countries. These facilities may not be efficient in providing primary and secondary care, due to high operating costs.

Figure 16 Comparison of Hospitals' Share from CHE Between Dubai (2012) and Selected Countries (2011)



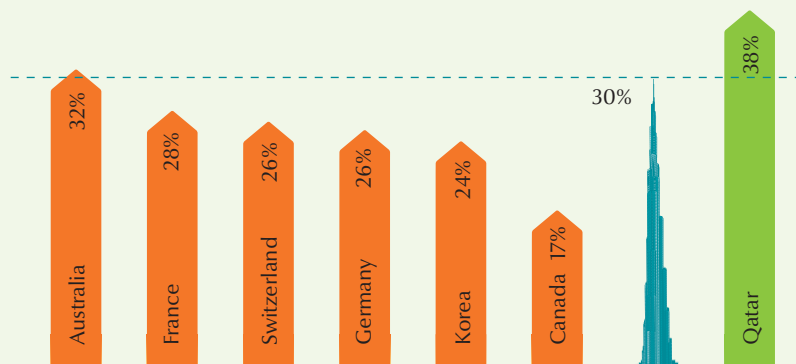
Note Data not available for the other GCC countries. Source: OECD Stat and Qatar NHA Report, 2012



### Inpatient share

Figure 17 shows that 30% of the CHE was spent on IP services. Compared to the other countries, Dubai resembled Australia (32%) and France (28%) in IP expenditures.

Figure 17 Comparison of Inpatient Share from CHE Between Dubai (2012) and Selected Countries (2011)



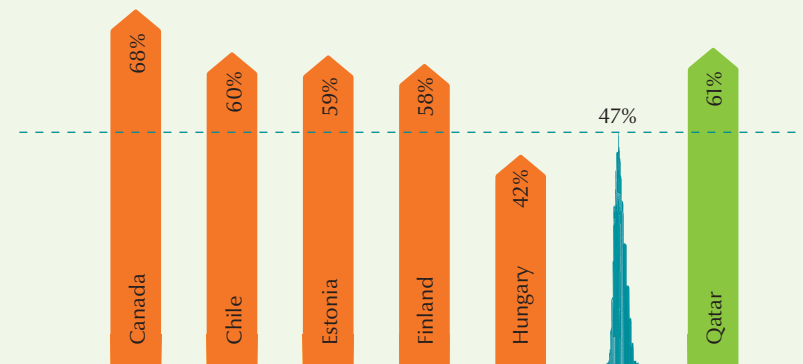
Note Data not available for the other GCC countries. Source: OECD Stat and Qatar NHA Report, 2012

### Factors of Provision share

Due to the recent FP classifications, only a few countries had data available. Thus, we used all of the countries with available datasets, which are not similar to the basket of benchmark countries used in this report. The data for Dubai is for government facilities only.

Figure 18 compares Dubai public sector factors of provision to other countries. Dubai's public hospitals rank among the lowest in cost for employees (47%).

Figure 18 Comparison of Share of Wages at Hospitals, Dubai (2012) and Selected Countries (2011)



Note Data not available for the other GCC countries. Source: OECD Stat and Qatar NHA Report, 2012

## Main Indicators

Figure 19 Comparative NHA and Economic Indicators, Dubai (2012) and other countries (2011)

Indicator <sup>1</sup>	Average Selected OECD <sup>2</sup>	Average GCC <sup>3</sup>	Dubai	
			HASD Population <sup>4</sup>	Risk Adjusted Population <sup>5</sup>
GDP / Capita at Exchange Rate (NCU per US\$)	37,391	34,154	41,282	
Total health expenditure (THE <sup>6</sup> ) % Gross Domestic Product (GDP)	10%	3.4%	3.4%	
THE / Capita at Purchasing Power Parity	3,881	1,109	934	1,699
THE / Capita at Exchange Rate	4,595	991	941	1,711
General Government Expenditure on Health (GGHE) / Capita at Exchange Rate (NCU per US\$)	2,803	805	300	545
GGHE / Capita at Purchasing Power Parity (NCU per US\$)	3,333	724	302	549
GGHE as % of THE	71%	72%	32%	
Private expenditure on health (PvtHE) as % of THE	29%	28%	68%	
Out-of-Pocket expenditure (OOP) as % of THE	16%	17%	20%	
Private Insurance as % of THE	10%	6%	33%	
OOP as % of PvtHE	53%	62%	29%	
Private insurance as % of PvtHE	39%	20%	49%	
OOP / Capita at Exchange Rate	659	166	187	341
Population (thousands)	261,692	44,831	3,125	<b>1,719</b>

Note: The data for Dubai is converted to THE to facilitate comparison with the other countries.

Source: WHO Global Health Expenditure Database, 2011. Data for Dubai is from this report and Dubai Statistics Center.

1. All figures for OECD and GCC are population-conditional averages, per group of countries.

2. Selected OECD countries are Australia, Canada, France, Germany, Korea, and Switzerland. These countries were chosen as part of a basket of countries that are similar to either the current or future version of Dubai's health financing system.

3. Available figures for GCC are estimates produced by WHO, which are not based on a comprehensive NHA. The GCC countries currently do not produce NHA, except Qatar.

4. The HASD population of Dubai is based on the definition of the System of Health Accounts: functional population, who have their legal residency in Dubai, regardless of their geographical location. The estimate for 2012 is 3.125 million.

5. See section 4.7 "Beneficiaries of health funds" for the adjusted population.

6. THE includes both CHE and capital formation. Due to the recent SHA 2011 classifications, the CHE was not reported in the source data for OECD and GCC. As a result, this Report uses THE in this comparison table instead of CHE. For Dubai only indicators, see Figure 2 above.

## Key Findings

- Dubai's GDP per capita was 41,282 US\$ in 2012, this was somewhat lower than per capita of the two comparative groups of countries.
- Dubai's THE as a percentage of GDP (3.4%) was identical to the average GCC (3.4%), but both were significantly lower than those in OECD (10%).
- Per capita THE in Dubai lagged regional and international levels, due to the lack of a mandatory health insurance system.
- Lower GGHE can be explained by two factors:
  1. The financial structure of the government of Dubai differs substantially from OECD (tax-based government revenue) and GCC (oil and gas revenue). Employers, and expatriate employees, enjoy an income tax-free economic model in Dubai. The government has no financial obligation to cover the cost of healthcare for employees of these companies since they already enjoy this tax-free system. Nonetheless, Dubai government heavily subsidized the cost of services provided to the public in its DHA facilities. The financial data from DHA used in this Report shows that total revenue generated from the services provided at DHA is only 20% of the actual cost.
  2. The government in Dubai pays for the healthcare for Nationals and for its employees via comprehensive benefit packages, which include payment for treatment outside Dubai. The Nationals, and the government employees and their dependents comprise less than 25% of the population of Dubai. Yet, the government's share of payment for THE is more than 30%.
    - The share of OOP from THE in Dubai (20%) was higher than OECD and GCC, both of which were approximately 16%.
    - However, the share of private health insurance was significantly higher in Dubai (31%) compared to the other two groups of countries. This PvtHE was funded by the private insurance sector at a higher rate in Dubai (51%) compared to OECD (39%) and GCC (20%).

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*The Dubai Health Sector Strategy 2011-2013 mentioned a goal of 70/30 ratio between the private and public providers. The financial ratio in 2012 was 68/32.*

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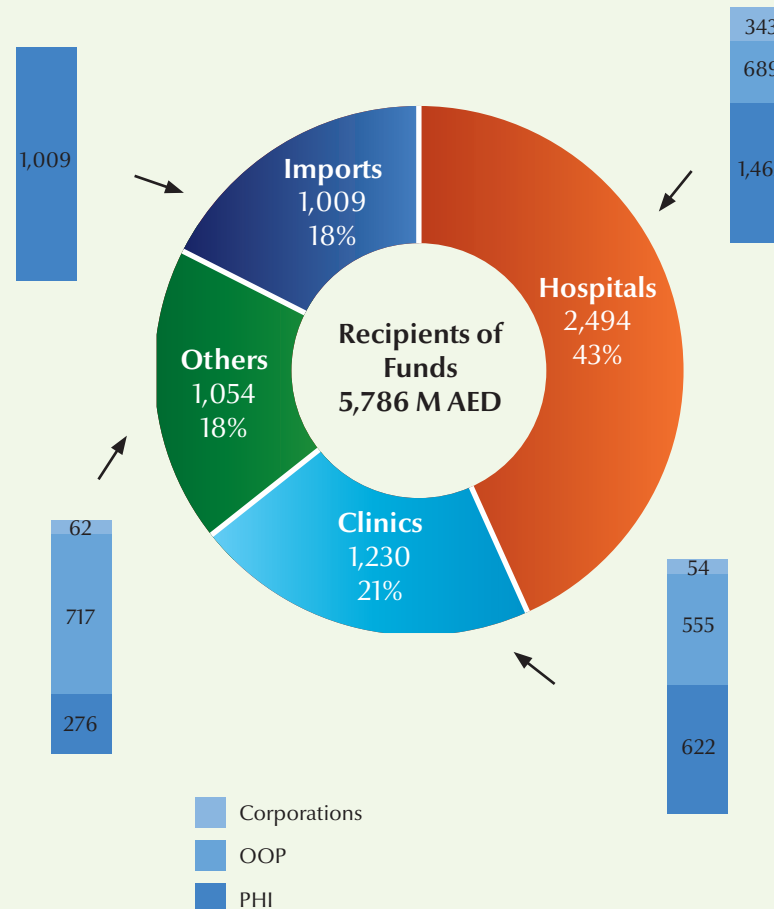
- The adjusted population column, which should be used to compare the per capita measure in Dubai to those in OECD, shows a higher THE / capita in Dubai, around 1700 US\$, but still less than half of that of OECD.

# 5 MARKETPLACE INSIGHTS

## 5.1 Inflow of funds

This section of the report includes the data for the private sector transactions only. Thus, government data (DoF, DHA, MoH, and others) are omitted from this section. The objective of this section is to extract data from the private market within the healthcare sector to gain business insights using HASD.

Figure 20 Inflow of funds to Providers from Sources, Dubai Private Sector 2012



### Key Findings

Figure 20 shows the inflow of funds in the private sector, and answers "Who pays for the private providers?"

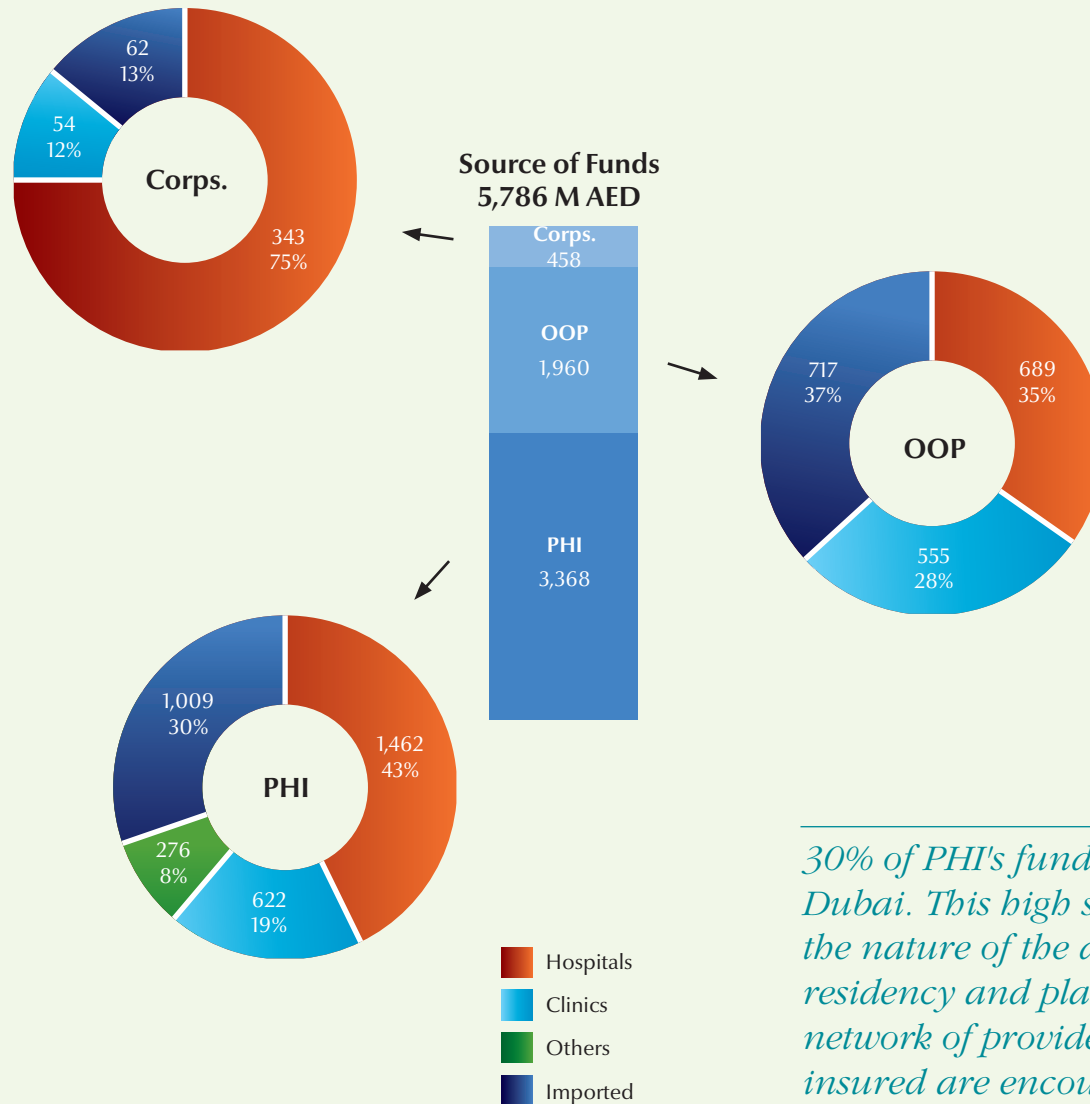
*Private Hospitals accounted for 43% of the private market. They received 59% of their revenues from PHI (1462 M AED), 28% from households, and 14% from direct contracts with corporations.*

- Private clinics accounted for 21% of the private market (1,230 M AED). They received 51% of their revenues from PHI, and 45% from households.
- Other providers, which includes pharmacies and diagnostic centers, accounted for 18% of the private market (1,054 M AED). These providers received 26% of their revenues from PHI, and 68% from households.
- The imported services were paid for exclusively by the PHI.

**Note:** Results include the private sector transactions only and exclude the government transactions.

## 5.2 Outflow of funds

Figure 21 Outflow of funds from Sources to Providers, Dubai Private Sector 2012



### Key Findings

Figure 21 shows the outflow of funds in the private sector between the sources of funds and the providers. It explains "Where does the private sector money for health go?"

- PHI accounted for the biggest source of funds in the private market: 3,368 M AED (58%). PHI paid a relatively higher share of their claims to services provided at hospitals (43%), than payments made by households (35%).
- Households accounted for 34% of the health funds available for the private market: 1,960 M AED. Households paid amounts approximately equivalent to those paid by the three providers, with the highest share to "Others" which include pharmaceuticals and diagnostic tests.
- Corporations accounted for 8% of the health funds paid by the private sector (458 M AED). The biggest share of corporation funds for health was paid to hospitals (75%).

*30% of PHI's funds were paid to services delivered outside Dubai. This high share was expected for two reasons: FIRST, the nature of the demographics of those insured (geographical residency and place of work); SECOND, the wide international network of providers offered by these companies, in which the insured are encouraged to seek care from relatively cheaper providers located outside Dubai.*

# ACRONYMS & DEFINITIONS

## Acronyms

AED	United Arab Emirates Dirham	FP	Factors of Provision
CHE	Current Health Expenditure	FS	Revenues of Financing Scheme
DED	Dubai Department of Economic Development	GCC	Gulf Co-operation Countries
DHA	Dubai Health Authority	GDP	Gross Domestic Product
DHCC	Dubai Healthcare City	GGEH	General Government Expenditure on Health
DM	Dubai Municipality	HASD	Health Accounts System of Dubai
DoF	Dubai Department of Finance	HC	Healthcare Functions
DSC	Dubai Statistics Center		

Term	Definition
Ancillary services	A variety of services such as laboratory tests, diagnostic imaging and patient transport, usually performed by paramedical or medical technical personnel with or without the direct supervision of a medical doctor.
Capital formation (investment)	Investment in health care facilities and equipment that creates assets that are typically used over a long period of time.
Curative care	Medical and paramedical services delivered during an episode of curative care. An episode of curative care occurs when the principal medical intent is to: relieve the symptoms of injury or illness; to reduce severity of an illness or injury; or to protect against injury or exacerbation of an injury which could threaten life or normal function.
Current and capital health expenditure	Expenditure that arises out of the addition of investment expenditures to current health expenditures (CHE + investment).
Current health expenditure (CHE)	Comprises all services such as curative care (including services provided to residents by non-residents providers), rehabilitative care, prevention, public health, and ancillary health care. Also includes expenditures for administration of these services and drugs, medical goods, and salaries and fees of health personnel. This excludes investment expenditures, and exports (services provided to non-residents).

Term	Definition
Day care	Planned medical and paramedical services delivered to patients who have been formally admitted for diagnosis, treatment or other types of health care but with the intention to discharge the patient on the same day.
Exports (of health care goods and services)	Health care goods and services acquired by non-residents (visitors) from resident providers.
Factors of provision (FP)	The types of inputs used to produce goods and services consumed or activities conducted in the health accounts boundary.
Financing agents (FA)	Institutional units that manage health finance schemes. For example, collecting revenues and premiums, purchase services, and pay for these services.
Financing schemes (HF)	Components of a country's health financial system that channel revenues to pay for, or purchase, the activities within the health accounts boundary.
Health care functions (HC)	The goods and services provided and activities performed within the health accounts boundary.
Health care providers (HP)	Entities that receive money in exchange for or in anticipation of activities inside the health accounts boundary.

HE	Health Expenditures	n.e.c	Not elsewhere classified	PHI	Private Health Insurance
HF	Financing Schemes	NCU	National Currency Unit	PvHE	Private Expenditure on Health
HFD	Health Funding Department (DHA)	HAPT	Health Accounts Production Tool	RoW	Rest of the World
HP	Healthcare Providers	OECD	Organization for Economic Co-operation & Development	SHA	System of Health Accounts
IP	Inpatient Services	OOP	Out-of-Pocket	THE	Total Health Expenditures
MHI	Mandatory Health Insurance	OP	Out-Patient Services	UAE	United Arab Emirates
MoH	Ministry of Health – Dubai Medical District	OST	Overseas Treatment	US\$	United States Dollars
		PHC	Primary Healthcare Centers	WHO	World Health Organization

Term	Definition
Health care system administration and financing	Establishments that are primarily engaged in the regulation of the activities of agencies that provide health care and in the overall administration of the health care sector, including the administration of health financing.
Imports of healthcare goods and services (Imports)	Health care goods and services acquired by residents from non-resident providers. In other words, healthcare services provided outside the geographical boundaries of the health care system.
Inpatient care (IP)	Formal admission into a health care facility for treatment and/or care that is expected to constitute an overnight stay.
Not Elsewhere Classified (nec)	A category used to reflect those activities or transactions that fall within the boundaries of the health accounts but which cannot be definitively allocated to a specific category due to insufficient documentation.
Out-Of-Pocket (OOP) spending	The direct outlays of households, including gratuities and payments in-kind, made to health practitioners and suppliers of pharmaceuticals, therapeutic appliances, and other goods and services whose primary intent is to contribute to the restoration or enhancement of the health status of individuals or population groups. Includes household payments to public services, non-profit institutions or non-governmental organizations.
Outpatient care (OP)	Any care offered to a non-admitted patient regardless of where it occurs except the patient's place of residence. It may be delivered in a hospital, an ambulatory care center, or a physician's private office.

Term	Definition
Preventive services	Services provided as having the primary purpose of risk avoidance, of acquiring diseases or suffering injuries, which can frequently involve a direct and active interaction of the consumer with the health care system.
Providers (HP)	Encompass organizations and actors that deliver health care goods and services as their primary activity, as well as those for which health care provision is only one among a number of activities.
Revenues of financing schemes (FS)	The revenues of the health financing schemes received or collected through specific contribution mechanisms.
System of Health Accounts (SHA) 2011	A system developed by the OECD, Eurostat, and WHO to provide international comparability standards for member and non-member countries. The manual was produced in 2011.
Total health expenditure (THE)	Total health expenditure is no longer part of the health accounts as per SHA 2011. It is defined as the sum of current health expenditure (CHE) and the expenditure on capital goods. In this report, the term is used only to draw comparison with other countries.
Voluntary prepayment schemes	Schemes that receive payments from the insurer or other institutional units on behalf of the insured, to secure entitlement to benefits of voluntary health insurance schemes.