Immunization Financing

in MENA Middle-Income Countries

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MAY 2018

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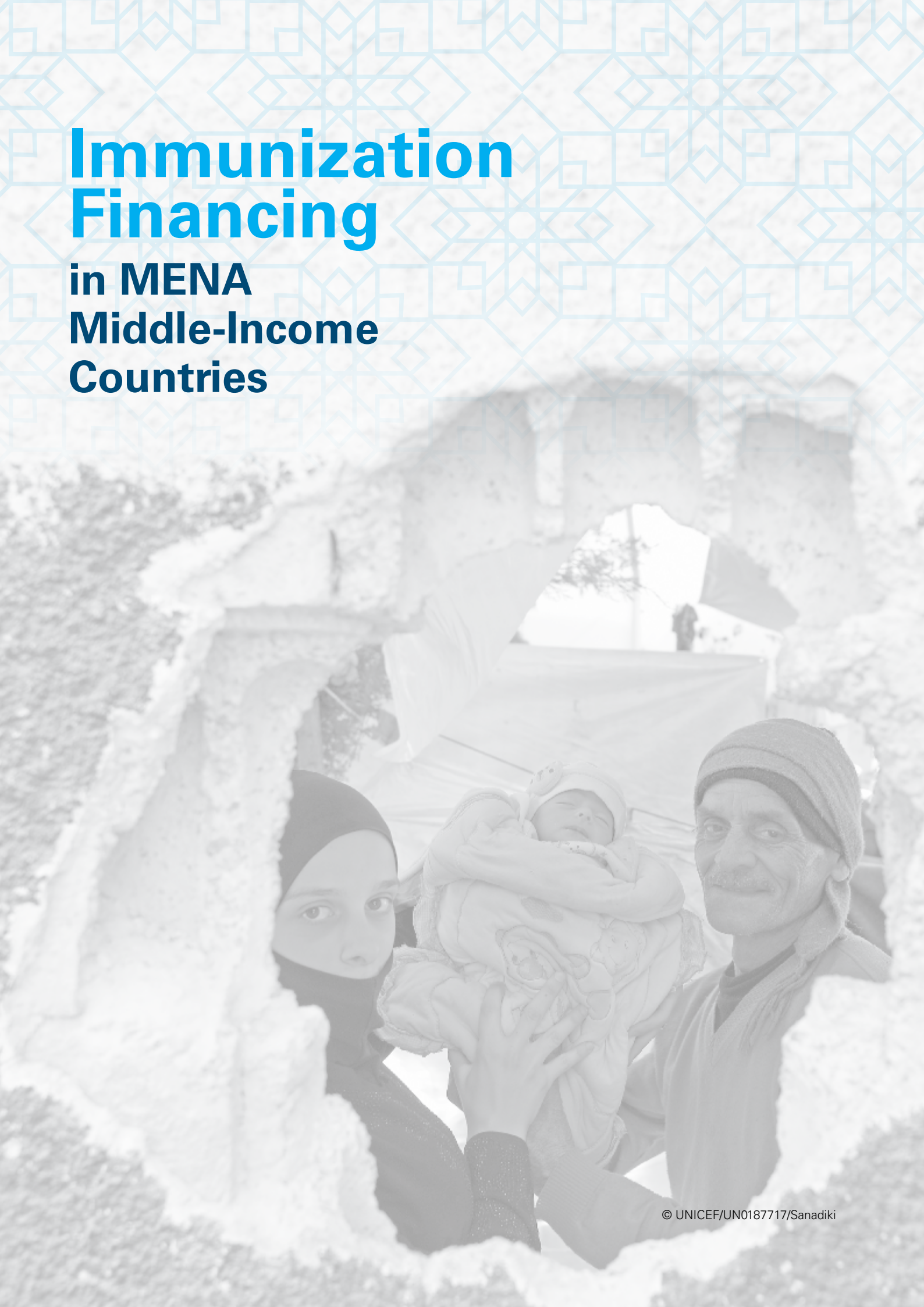


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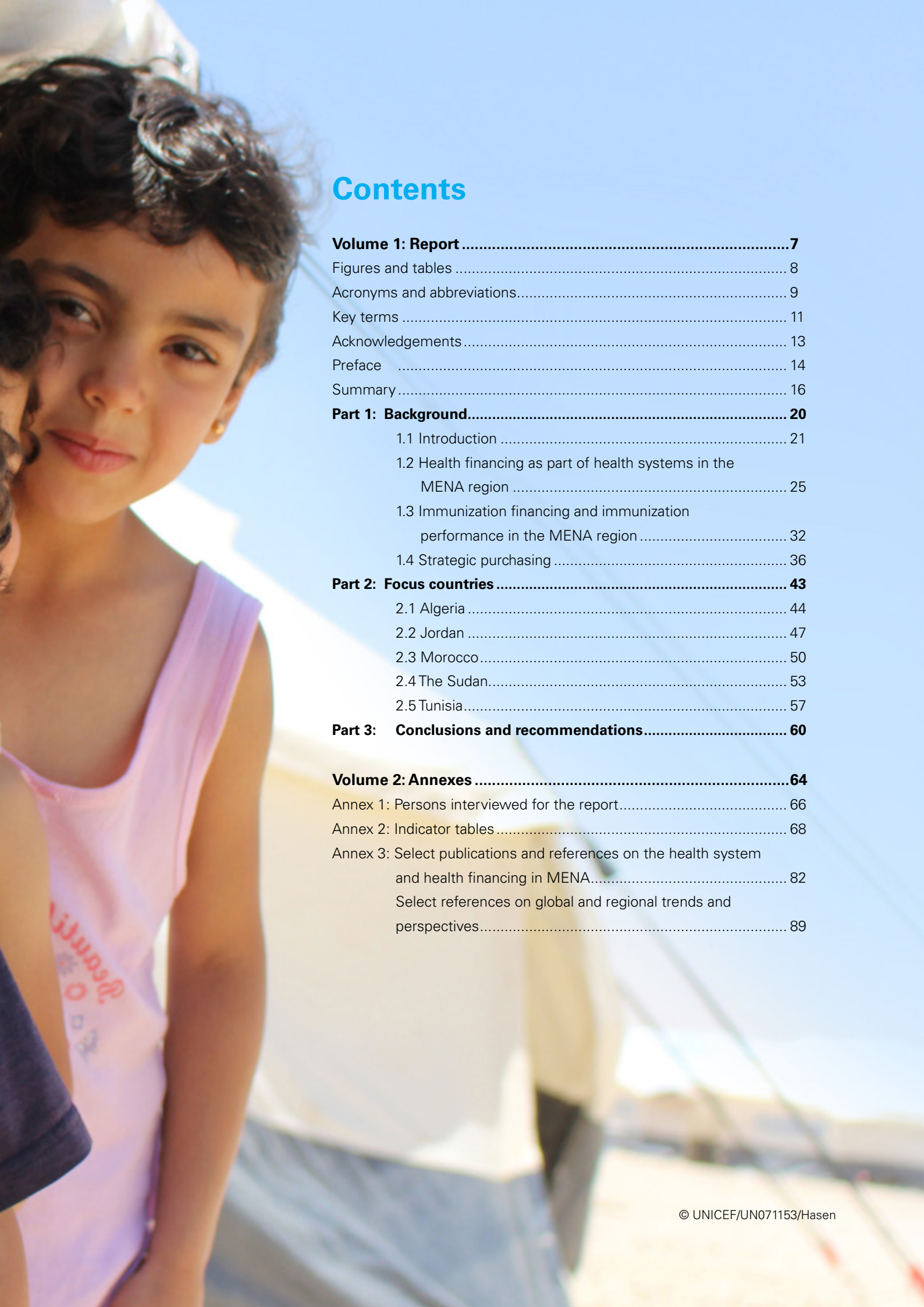

Contents

VOLUME 1: REPORT

Figures and tables

Figures

Tables

Acronyms and abbreviations

AMG	free medical assistance programme (Tunisia) (Assistance Médicale Gratuite)
AMO	compulsory health insurance (Morocco) (Assurance Maladie Obligatoire)
BCG	bacille Calmette-Guérin (anti-tuberculosis vaccine)
bOPV	bivalent oral polio vaccine
cMYP	comprehensive multiyear plan for immunization
CNAM	National Health Insurance Fund of Tunisia (Caisse Nationale d'Assurance Maladie)
DT	diphtheria-tetanus vaccine
DTaP	diphtheria-tetanus-acellular pertussis vaccine
DTP	diphtheria-tetanus-pertussis vaccine
DTP3	diphtheria-tetanus-pertussis vaccine, third dose
EMRO	Eastern Mediterranean Regional Office of the World Health Organization
EMVAP	Eastern Mediterranean Regional Vaccine Action plan
EPI	Expanded Programme on Immunization
Gavi	Gavi, the Vaccine Alliance
GCC	Gulf Cooperation Council
GCFF	Global Concessional Financing Facility
GDP	gross domestic product
GNI	gross national income
GVAP	Global Vaccine Action Plan
HepB	hepatitis B vaccine
Hib	*haemophilus influenzae* type B vaccine
HPV	human papillomavirus vaccine
IMF	International Monetary Fund
IMR	infant mortality rate
IPA	Pasteur Institute of Algeria (Institut Pasteur d'Algérie)
IPV	inactivated polio vaccine
JRF	WHO-UNICEF Joint Reporting Form
LMIC	lower middle-income country
MCV	measles-containing vaccine
MCV1	measles-containing vaccine, first dose
MCV2	measles-containing vaccine, second dose
MENA	Middle East and North Africa
MENARO	Middle East and North Africa Regional Office
MIC	middle-income country

Acronyms and abbreviations

MICS	Multiple Indicator Cluster Surveys
MMR	measles-mumps-rubella vaccine
MOF	Ministry of Finance
MOH	Ministry of Health
NCD	non-communicable disease
NHA	National Health Accounts
NIP	national immunization programme
NITAG	National Immunization Technical Advisory Group
NRA	national regulatory authority
OBS	Open Budget Survey
OPV	oral polio vaccine
p.c.	per capita
PAHO	Pan American Health Organization
PCT	Central Pharmacy of Tunisia (Pharmacie Centrale de Tunisie)
PCV	pneumococcal conjugate vaccine
Td	tetanus-diphtheria vaccine
TFR	total fertility rate
U5MR	under-five mortality rate
UHC	universal health coverage
UMIC	upper middle-income country
UNDP	United Nations Development Programme
UNHCR	Office of the United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNICEF SD	UNICEF Supply Division
UNRWA	United Nations Relief and Works Agency
USAID	United States Agency for International Development
VII	Vaccine Independence Initiative
VPD	vaccine-preventable disease
WHO	World Health Organization

Key Terms*

capital cost	The cost of assets (such as buildings and equipment) that have a working life of one year or longer and usually exceed some threshold cost. In immunization, this could refer to cold chain equipment, national and regional medical stores, and vehicles used for immunization and other purposes.
co-financing	In the context of Gavi, contributions from both Gavi and Gavi-supported countries towards the cost of vaccines. Country contributions are not paid to Gavi; rather, the required co-financing amount is converted, using the full price that Gavi pays, into the number of vaccine doses the country is responsible for financing directly.
cold chain	A temperature-controlled supply chain. Vaccines must be kept in a narrow temperature range from the point of manufacture to the point of use.
comprehensive multiyear plan for immunization (cMYP)	A tool that countries use to estimate costs and financing for immunization and to identify financing gaps. The cMYP guidelines are updated periodically by the World Health Organization and UNICEF, with support from other immunization partners.
current health expenditure**	All health care goods and services used or consumed during a year (capital expenditures are excluded). Current health expenditure is the sum of domestic public health expenditure, domestic private health expenditure and external expenditure for health (see below).**
domestic health expenditure**	Financing for health from public and private domestic sources.
domestic private expenditure for health**	Expenditures by households, corporations, or non-profit corporations, either by voluntary health insurance or paid directly to health care providers.
domestic public expenditure for health**	Domestic government expenditure for health as internal transfers and grants, transfers, subsidies to voluntary health insurance beneficiaries, non-profit institutions serving households or enterprise financing schemes, as well as prepayment and social health insurance contributions.
earmarking	The practice of dedicating a stream of revenue to a programme. Governments use earmarks to secure funding for a dedicated purpose that will not be subject to regular budget negotiations.
equity	The absence of avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically. Health inequities therefore involve more than inequality with respect to health determinants, access to the resources needed to improve and maintain health or health outcomes. They also entail a failure to avoid or overcome inequalities that infringe on fairness and human rights norms (definition from the World Health Organization).
external expenditure for health**	Funding for health from official development assistance or other external sources.
fiscal space	Room in a government´s budget that allows the government to allocate resources for a desired purpose without jeopardizing the sustainability of its financial position or the stability of the economy.
general revenue	Money that a government raises through personal income taxes, taxes on corporate income and profits, value-added and sales taxes, duties and import taxes, property and inheritance taxes, payroll taxes, and/or taxes on profits from the sale of natural resources. These sources are typically pooled into a consolidated fund and appropriated towards payment of public expenses through regular budgeting and planning cycles.
Global Vaccine Action Plan	The strategic framework that lays out ambitious global immunization goals, proposed objectives and actions for the period 2011–2020. It was endorsed by 194 member states of the World Health Assembly in May 2012.

Key Terms*

grant	A sum of money or a product that is provided by one entity to another without expectation of repayment.
gross domestic product	A measure of the monetary value of final goods and services – that is, those that are bought by the final user – produced in a country in a year. It counts all the output generated within the borders of a country.
immunization financing sustainability	The ability of a country to mobilize and efficiently use domestic and supplementary external resources on a reliable basis to achieve current and future immunization targets.
loan	Money lent from one entity to another that carries the requirement of future repayment. Loans may be on concessional terms (credits) or non-concessional terms.
out-of-pocket spending for health	Direct expenditure by households for health care.
para-public sector	Semi-autonomous public firms, institutions and agencies.
pooling	The accumulation and redistribution of prepaid health revenues on behalf of a population for eventual transfer to providers in exchange for covered services.
public financial management system	The system by which financial resources are planned, directed and controlled to enable and influence delivery of public service goals. It covers all phases of the budget cycle, including budget preparation, internal controls and auditing, procurement, monitoring and reporting, and external auditing.
recurrent cost	A resource that is consumed within one year or has a working life of less than one year and must be regularly replaced. It is also called operating cost.
shared cost	The cost of a resource that is shared by and can be allocated to multiple health services.
social health insurance	A health financing model in which coverage is mandatory for the entire population or a subset of the population. Entitlement to covered services is linked to a contribution made by an individual or on the individual's behalf that is not related to health risk, and coverage is provided by a government or government-regulated body or bodies.
transition process	The process during which a country moves, over a number of years, from eligibility for external assistance to ineligibility, usually based on per capita income or other criteria. It is also known as the *graduation process.*
trust fund	A mechanism that governments can use to ring-fence, or protect, funding for specific purposes. Trust funds may receive funds from multiple streams of revenue and may be legally incorporated with policies and tax regulations that vary by country; a governing board oversees the strategy, business plan, management and operations. Trust funds may also have asset managers that seek to ensure the right rate of return, levels of risk and rate of capital depletion.
universal health coverage	Ensured access to essential health services for an entire population without risk of financial hardship or impoverishment.
user fee	A charge paid by users of goods or services at the point of use. User fees can be formal or informal.
WHO pre-qualified vaccine	A vaccine from a manufacturer whose quality has met standards defined by the World Health Organization for use by United Nations agencies.
WHO/UNICEF DTP3 coverage estimate	A country-specific estimate, for a specific year, of the percentage of children in a country who have received the third dose of the diphtheria-tetanus-pertussis vaccine (DTP3), as reviewed and published by WHO and UNICEF.

*Key terms are drawn from the Immunization Financing Resource Guide (<www.immunizationfinancing.org>). In addition, certain terms have been added from WHO's indicator list for the 2017 data release of its Global Health Expenditure Database. These terms are indicated with a double asterisk.

**Definitions from WHO's Indicator list for 2017 data release <http://apps.who.int/nha/database/DocumentationCentre/Index/en>.

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Preface

Economic studies have shown that immunization is an excellent investment, yielding one of the highest returns in health. One dollar spent on immunization is estimated to generate a $16 return on investment. UNICEF considers governments' budget allocations, whatever their resources, to this life-saving intervention to be states' foremost commitment to children and the fulfilment of their obligations under the Convention on the Rights of the Child (CRC). Yet, protecting immunization in governments' budgets has not been systematically addressed in middle-income countries in the Middle East and North Africa (MENA) region.

It is to help governments uphold their commitments to the right of every child to be immunized against preventable diseases that UNICEF has undertaken the present financing study. Based on data, research, interviews, lessons learned and good practices in the MENA region, the study provides policymakers, senior officials in ministries of finance and health, and parliamentarians or equivalents with a set of key recommendations to secure necessary government financing for this critical childhood intervention. In focusing on middle-income countries, the study provides a deeper understanding of the situation and dynamics of two critical subgroups: (1) countries with gross national incomes per capita too high to make them eligible for outside financial support, yet who face challenges to meet their immunization goals; and (2) countries eligible for international development assistance, yet who struggle to transition out of aid and co-finance a much greater share of their immunization costs. That means prioritizing health within government budgets, prioritizing immunization within health, and working to make programmes as efficient as possible.

Key global players are at the vanguard of the immunization drive, including by making newer vaccines accessible to countries facing resource constraints. Gavi, the Vaccine Alliance, plays a central role in giving eligible countries support to adopt new, life-saving vaccines and improve coverage and equity. At UNICEF, the Supply Division makes every effort to source and supply affordable vaccines, making its procurement services available to countries.

Gaining efficiencies and ensuring sustainability are two overarching themes of immunization financing in this report. Where and how countries spend on health is critical: do they allocate funding to 'do the right thing' – using budgets to adequately support the highest priority activities in health, such as immunization? And are they 'doing things right' – delivering high-quality services and procuring vaccines efficiently? Do budgets include ancillary but crucial allotments for ongoing supervision, training, surveillance, supply and cold chain management, and laboratory control that are prerequisites for effective immunization?

This report concludes that in most of MENA's middle-income countries, prioritizing immunization and making it more efficient is the best way to create room in budgets and to secure more resources. Many of the recommended first steps are information-related: generating and sharing knowledge, equipping policymakers with evidence, and determining the role of social insurance. It is our hope that this report and its recommendations will help UNICEF and partners in the region strengthen their advocacy and support to governments so they live up to their commitments to the CRC and build high-performing immunization systems that are accessible to all.

Geert Cappelaere

Regional Director
UNICEF Middle East And North Africa

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Summary

This report examines health financing and, within that, immunization financing and vaccine procurement in the Middle East and North Africa (MENA) region, which consists of 14 middle-income countries (MICs) and six high-income countries. The report focuses on the MICs, given that their lower levels of health expenditure pose more challenges for financing immunization. Of the 14 MICs, Djibouti, the Sudan and Yemen have been eligible for Gavi assistance since 2000.[1] Gavi is a source of support for the introduction of new and underused vaccines, operational costs of campaigns, cold chains, and health system strengthening. The three countries eligible for Gavi support have introduced pentavalent, pneumococcal conjugate and rotavirus vaccines, and procure vaccines through the UNICEF Supply Division (UNICEF SD) at favourable prices for Gavi countries. The MICs not supported by Gavi face challenges in introducing new vaccines due to competing priorities, highly constrained resources, the higher cost of new vaccines, information gaps, and procurement rules and procedures. In many cases, they lag behind countries eligible for Gavi support on new introductions.

Conflicts, instability and the prevailing geopolitical situation in the region have hit immunization programmes hard in several countries, including Iraq, Libya, the Syrian Arab Republic and Yemen. For example, World Health Organization/UNICEF estimates of coverage of the third dose of the diphtheria-tetanus-pertussis vaccine (DTP3) in the Syrian Arab Republic fell from 80 per cent in 2010 to 42 per cent in 2016. Conflicts and instability have spilled over into other countries. Refugees make up about 1 in 6 people in Lebanon, and 1 in 11 in Jordan.[2] Large refugee populations are also found in Algeria, Egypt, Iraq and the Sudan. These Governments are stretched to provide health (and immunization) services to these populations and adapt delivery strategies to reach displaced persons. Nomads, recent urban migrants, certain ethnic groups and people living in more remote geographic areas, in addition to refugees, have less access to immunization services.

Health financing landscape. Immunization is one of the best uses of public funds for health and is a public responsibility. Its financing needs to be placed in the context of overall health financing, and in particular in the context of public spending on health. According to analysis of data from the World Health Organization's (WHO) Global Health Expenditure Database for 2015, domestic public spending per capita in MENA's middle-income countries is similar to that of other countries around the world of similar income levels, with a few exceptions; Algeria, Lebanon and Tunisia are spending somewhat more than would be expected for their level of income, and Iraq and Egypt are spending less. Social health insurance has been introduced and developed in many of the MICs; its coverage is highest in Algeria, the Islamic Republic of Iran, Jordan and Tunisia, and progressing in Morocco. To date, social health insurance has not financed immunization services directly, and it does not contribute funds to the Ministry of Health (MOH) for immunization services.

Out-of-pocket spending as a share of current health expenditure is a key concern for financial protection. This indicator increased sharply in recent years for Iraq and Yemen, according to the WHO Global Health Expenditure Database. For Egypt, Morocco, the Sudan and Yemen, the out-of-pocket spending share in 2015 was well above the global average for lower middle-income countries of 40 per cent (at 62 per cent, 53 per cent, 63 per cent and 81 per cent, respectively),[3] while Tunisia's share was roughly equivalent to the global average. Among MENA's upper middle-income countries, Algeria and Jordan[4] have done the best on this indicator, with their shares (28 and 25 per cent, respectively) slightly below the global average of 31 per cent for upper middle-income countries. While immunization services are free in public facilities, high shares of out-of-pocket spending in health more generally are a concern for governments because of the risks of forgoing care or impoverishment.

Immunization financing. The MOH budget is a mainstay of vaccine and immunization financing in most MENA countries. External financing is important mainly in the three countries eligible for Gavi support (Djibouti, the Sudan and Yemen). Some external assistance for refugee populations exists, particularly for those in camps. Private-sector provision of routine immunization is modest; it accounts for well under 10 per cent of all immunization in the countries and is typically financed by out-of-pocket spending.

1 The Syrian Arab Republic is also receiving some support from Gavi on an exceptional basis.
2 UNHCR (2017), *Global Trends: Forced Displacement in 2016.*
3 WHO (2017), *New Perspectives on Global Health Spending for Universal Health Coverage.*
4 Jordan was an upper middle-income country in 2015, the year of this comparison. It was reclassified as a lower middle-income country in 2016 due to its fall in gross national income per capita.

Health system transitions. Many MENA governments are engaged in health policy and financing reforms, with the goal of generating more revenue for health, improving risk pooling for financial protection, and introducing or strengthening the contracting of services.[5] For example, Morocco is expanding social health insurance and the use of contracting. Tunisia is harmonizing and strengthening the regulation of social health insurance schemes, while Algeria is preparing a new health law and expanding the use of contracting. These health system changes can present risks or opportunities for immunization and other priority health programmes.

Fiscal space, or budgetary room, for new immunization activities. The oil price slump in 2014 hit the oil-producing countries hard (prices have subsequently recovered somewhat), and conflict has also threatened economic growth and stability in MENA. In general, its countries have prioritized immunization within fluctuating public budgets but have had more difficulty creating fiscal space for new vaccine introductions, unless they have external support. This report concludes that in most of MENA's middle-income countries, technical efficiency gains may be possible in immunization. Moreover, making the case within government to give more priority to health – and within health, to immunization – may be a way to secure more resources for needed activities.

Procurement. Accurately forecasting vaccine needs, budgeting adequately, securing timely budget releases and efficiently procuring high-quality vaccines are vital functions of immunization programmes and important cost drivers. The three countries eligible for Gavi support rely on UNICEF SD for all vaccine procurement (and for technical assistance on forecasting and budgeting). Morocco also relies heavily on UNICEF SD for most vaccines.

5 Yazbeck, Rabie and Pande (2017), 'Health Sector Reform in the Middle East and North Africa: Prospects and Experiences'.

For the other MENA middle-income countries, procuring vaccines and related products has been a considerable challenge due to local and external factors. The global vaccine market is experiencing many changes, such as the emergence of new manufacturers with pre-qualified products, a decrease in the number of producers from industrialized countries, and the importance of the Pan American Health Organization's (PAHO) Revolving Fund, UNICEF SD, Gavi and the Bill & Melinda Gates Foundation as global players. Countries are not always well informed about these developments and their consequences, or about the vaccine pipeline, price and quality, or the reliability of manufacturers and suppliers.

Some of MENA's middle-income countries that have customarily self-procured all their vaccines are now exploring the use of UNICEF SD for some requirements, particularly for the introduction of new vaccines, with the objective of securing more affordable quality vaccines. However, some of the requirements are not always compatible with country public procurement rules. These include direct contracts with UNICEF without a competitive bidding process, payment in hard currency and payment before receiving vaccines.

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Key recommendations

Make the case for financing for new vaccine introductions, and for adequate support of operational costs. Many MICs not eligible for Gavi support lag behind Djibouti, the Sudan and Yemen on important new vaccine introductions. Governments could look to create budgetary room for new introductions either by reprioritizing budgets away from lower-priority activities to immunization, or by finding cost-savings in immunization that could fund new introductions. Partners could work with governments to prepare the evidence for making the case to fund new vaccine introductions, as well as for adequately funding all components of the immunization programme.

Ensure immunization needs are considered in financing and institutional reforms. As countries consider health reforms, they must assess how public health programmes might be impacted positively or negatively. As the role of social insurance grows in MENA, should immunization services be included in the benefit package? Or, should they be provided through MOH-run facilities? Does social insurance have a role in contributing funding to the MOH for these services? MENA countries can learn from each other's experiences as well as from many countries that have undertaken such reforms.

Explore how to overcome barriers to using UNICEF Supply Division for procurement of new vaccines. Some MENA countries use UNICEF SD for some or all vaccines. Others are interested in using UNICEF SD especially for the more expensive new vaccines, given UNICEF SD's scale and expertise in procurement. UNICEF SD could work with countries to explore the use of the Vaccine Independence Initiative (VII) or commercial financing instruments to meet its prepayment requirement. Countries could share experience on how they have successfully worked within UNICEF SD services or adapted government procurement regulations to use them.

Better understand the private sector's role in order to strengthen its contributions. The private sector is providing immunization services in many MENA countries, and although the scale is not large, such services are growing. Partners might assist countries in better understanding the sector's role, including vaccine safety issues (e.g., integrity of the cold chain), whom the sector serves, how services are paid for, its contribution to coverage, and its integration with monitoring and surveillance. The role of private health insurance also needs to be better understood, especially in financing new vaccines or vaccines not yet included in the national calendar.

Part 1: Background

1.1 Introduction

This report details the findings of the project: Support the UNICEF MENA Regional Office to analyse and document the current health financing landscape and practices (using immunization as an example). The project's main objective has been to generate and synthesize key findings and determine the best practices in immunization financing within the context of overall health financing, including vaccine procurement. The study intends to help generate strategies, advocacy tools and operational plans for UNICEF regional and country offices and partners, as they move forward in 2018 and beyond to improve sustainable and equitable immunization financing. The 20 MENA countries consist of three MICs eligible for Gavi support; one country receiving partial Gavi support under the Fragility, Emergencies and Refugees Policy; 10 MICs not eligible for Gavi support; and six high-income countries. The report focuses on MICs because they face the greatest challenges in adopting new vaccines and reaching high and equitable coverage. Data tables in the annex cover all MENA countries.

Organization of the report. Part 1 begins by setting the context, followed by overviews of health financing and health systems, immunization financing and immunization performance within health systems, and a review of strategic purchasing, including vaccine product selection and procurement methods in MENA. **Part 2** covers five countries selected for more in-depth analysis: Algeria, Jordan, Morocco, the Sudan and Tunisia. **Part 3** contains a conclusion and recommendations from the study, including how UNICEF MENARO and country offices might focus their efforts in 2018 and beyond to help governments and partners achieve high-performing immunization systems that ensure equitable service delivery. This was a desk study, enriched by interviews and a consultative review with partners and countries held on 28 and 29 November 2017 in Amman, Jordan. Annex 1 is a list of individuals interviewed, Annex 2 contains detailed data underpinning the work, and Annex 3 lists background documents for the study. The broad conceptual framework for the study is outlined in the box, 'Study framework and key questions'.

Study framework and key questions

Conceptual framework

The objective of this study on immunization financing is to understand if such financing is adequate and sustainable. It focuses on the government's role, since immunization is a public responsibility, in that the benefits of immunization extend well beyond those who receive the vaccines to the overall population, through the control of infectious diseases.

Immunization financing is broader than vaccine financing. Vaccines are a large component of immunization costs and are most easily identified in the budget, usually in their own budget line. But immunization financing, as distinct from vaccine financing, is a broader concept and not so readily tracked; in addition to financing for vaccines, it includes financing for cold chain and logistics, health workers, monitoring and surveillance, and supervision. These components are often shared costs and may be financed by broader budget lines.

Immunization financing needs to be examined within the context of a country's overall health financing and health system. Financing is one of the four basic functions of health systems, along with stewardship/governance, the generation of human and physical resources, and service delivery. Financing functions include revenue generation, pooling and purchasing. In terms of revenue generation, the study looks at the broad sources of funds for the health system, and whether any distinct sources for immunization, such as external donor assistance, may be uncertain year to year or may be time-limited. It looks at broad pooling arrangements for the health system and at whether out-of-pocket payments play a role in immunization; and, more narrowly, at whether funds that support immunization activities are pooled broadly (such as for primary care) or held separately (such as line items for vaccines). In terms of purchasing, the study examines procurement of vaccines, given that they are a large share of the cost of immunization. Vaccine procurement is a specialized activity, and prices can vary greatly depending on product selection, procurement method and competition in the market. Strategic purchasing can be pursued by pooling volumes, adopting multiyear contracts, or joining regional or international procurement mechanisms.

Key questions examined in this study:

1. How high and equitable is immunization coverage, and what are the trends?
2. How successful have MENA countries been in introducing new vaccines, such as pneumococcal conjugate and rotavirus? What might explain the differences in new introductions across countries?
3. How sustainable are existing sources of financing? What are the trends?
4. Do governments in Gavi countries have credible plans for covering the immunization and vaccine costs when donor support ends? What are the actual trends and practices?
5. What are the sources of supply, and what are the vaccine procurement mechanisms? How efficient are they? What are the main issues and challenges?
6. How are the conflicts and refugee crisis in the region impacting health and immunization financing in the five focus countries (Algeria, Jordan, Morocco, the Sudan and Tunisia)?
7. Are any health reform initiatives planned or underway that might affect the responsibilities for financing the immunization programme, such as decentralization or steps to reach universal health coverage? How is the increased priority accorded to non-communicable diseases in MENA countries affecting immunization financing?

This report discusses the scope for gains in efficiency. Allocative efficiency and technical efficiency constitute the two broad types of efficiency gains. Allocative efficiency refers to shifting resources from low priorities to high ones; in other words, 'doing the right things' with the government budget. For example, a government might shift resources from a very costly hospital intervention that benefits very few to fund a new vaccine introduction with a larger expected impact on health outcomes. Technical efficiency refers to producing specific outcomes at lowest cost, or 'doing things right'. An example for immunization would be changing procurement methods to purchase high-quality products more cheaply.

The demographic context: Djibouti, the Sudan and Yemen are the countries in the earliest phase of the demographic and epidemiological transition. The total fertility rate (TFR) is below replacement level in Bahrain, the Islamic Republic of Iran, Kuwait, Lebanon, Qatar and the United Arab Emirates (UAE); it is highest in the Sudan (4.5), Iraq (4.3), Yemen (3.9), Jordan (3.3) and Egypt (3.2). (All figures draw on United Nations population estimates for 2017; *see Annex 2, Table 1.*) The region's largest birth cohorts are in MICs – starting with the largest, in Egypt, the Sudan, the Islamic Republic of Iran, Iraq, Algeria, Yemen and Morocco. These seven make up 80 per cent of the projected 2017 births in the region's 20 countries. Because of trends in fertility (and, to a lesser extent, mortality), the birth cohort is projected to fall slightly in most MENA countries over the coming years. The three exceptions are Iraq, the Sudan and Yemen, where the birth cohort is still growing year on year (1.5 per cent, 1.4 per cent and 0.2 per cent, respectively), underscoring the need for growth in immunization financing based on the changing birth cohort alone. Life expectancy is estimated to be 70 years or higher in all countries except Djibouti (63), the Sudan (64) and Yemen (65). These three not only have the highest under-five mortality rates (U5MR) –Djibouti at 77, the Sudan 67 and Yemen 56 – but also the highest infant mortality rates (IMR). All the countries have a growing need to address non-communicable diseases (NCDs) while still prioritizing maternal and child health, including immunization services. In sum, while most MENA countries are well along the demographic and epidemiological transition, those lagging farthest behind include Djibouti, the Sudan and Yemen. In addition, the large number of refugees from conflict areas is greatly complicating the demographic picture in some countries. The urban population has grown rapidly and is expected to double from 2010 to 2050 due to economic development, endemic water shortages in rural areas, agricultural modernization and refugees displaced by conflicts.[6]

The economic context: Growth has been volatile in many MENA countries over the past five years. The region's 20 countries are a mix of oil-importing and oil-exporting nations. The high-income Gulf States and Algeria, the Islamic Republic of Iran, Iraq and Libya are typically considered the oil exporters (with Qatar as a gas exporter). Natural resources – in this case, mostly oil – dominate total gross domestic product in the oil-exporting countries *(see Annex 2, Table 4).* Other MICs produce oil, for example Egypt, the Sudan and Tunisia, but they are net oil importers. The slump in oil prices since mid-2014 has hit oil exporters hard, while providing some benefits in oil-importing countries. The 2008 recession was an earlier shock affecting the 20 countries. Moreover, armed conflict, political unrest and terrorism have markedly destabilized economic growth and tourism in several countries.

Growth in gross national income per capita (GNI p.c.) was volatile for many MENA countries between 2012 and 2016 *(see Annex 2, Table 2).* Algeria in particular experienced large declines and increases in GNI p.c. over this period. Lebanon saw a significant fall from $9,190 in 2012 to $7,680 in 2016, with similar declines in Jordan (from $4,720 to $3,920) and Tunisia (from $4,150 to $3,690). The World Bank has not issued a point estimate for Djibouti's GNI p.c. for several years; it is only classified as a lower middle-income country (LMIC). The World Bank also did not issue point estimates for the GNI p.c. of the Islamic Republic of Iran and Libya in certain years. As government revenue is tied to overall national income, many countries have faced challenges in managing government budgets in this volatile period, including managing the health budget out of which immunization programmes are funded. Both real growth in gross domestic product (GDP) and government expenditure as a share of GDP are shown from 2008 to 2016 and projected forward *(see Annex 2, Table 3).* These shares have fluctuated widely in many countries. In the International Monetary Fund's (IMF) most recent update of its World Economic Outlook (October 2017), MENA growth was projected to fall by half, from 5.1 per cent in 2016 to 2.2 per cent in 2017. MENA oil exporters as a group were projected to see growth fall between 2016 and 2017, from 5.6 to 1.7 per cent. In contrast, economic growth in the oil-importing nations (Egypt, Morocco and the Sudan, among others) was projected to increase from 3.6 per cent in 2016 to 4.3 per cent in 2017.

The United Nations Development Programme's Human Development Index shows mixed ratings across the region. The Syrian Arab Republic, the Sudan, Yemen and Djibouti ranked low in 2015 on the Index, which has not improved in recent years *(see Annex 2, Table 5).* Egypt, State of Palestine, Iraq and Morocco were ranked in the 'medium human development' level. Similarly, the Index for these countries did not change significantly from 2010 to 2015. MICs ranking high on human development include Algeria, the Islamic Republic of Iran, Jordan, Lebanon, Tunisia and Libya. The Human Development Index is intended to provide a fuller picture on development than economic growth alone; one limitation, however, is that it does not capture inequities.

World Bank governance indicators reveal most MICs in MENA rank poorly on government effectiveness. While all six World Bank governance indicators are relevant for immunization, the most relevant indicator may be government effectiveness, given that immunization, with its public goods aspects, is a government responsibility. According to the World Bank Governance Indicators website, "government effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures,

6 Serageldin, et al. (2014), *Urban Migration Trends in the Middle East and North Africa Region and the Challenge of Conflict-Induced Displacement.*

the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies".[7] Fourteen of the region's 20 countries rank negatively on government effectiveness, with the scale running from -2.5 to 2.5 *(see Annex 2, Table 6)*. The only MIC in the region with a positive government effectiveness indicator for 2016 was Jordan, at 0.14.

Transparency International's Corruption Perceptions Index[8] indicates a grim global and regional picture. For MENA specifically, the report states: "Despite the political changes that shook the Arab region six years ago, the hope for Arab countries to fight corruption and end impunity has not seen any progress yet … [This] explains the sharp drop of most of Arab countries in the Corruption Perceptions Index 2016. 90 percent of these have scored below 50, which is a failing grade."[9]

Five of the 10 countries perceived to be the most corrupt in the world are in the MENA region. The Index highlights Tunisia as having taken some positive steps, including the passing of an Access to Information law, adopting a national anti-corruption strategy, empowering the Anti-Corruption Agency to do its work, and adopting a Financial Court law.

Open Budget Survey findings[10] indicate the MENA region is underperforming. The International Budget Partnership conducts the Open Budget Survey (OBS) periodically to assess transparency in participating countries' budget systems. The Survey questionnaire scores the public availability and detail of budget-related documents at each step of the budget cycle, which typically consists of budget formulation by the executive branch of government, budget approval by the legislative branch, budget execution/implementation, scrutiny by the external audit function, and legislative oversight. Transparency through the publication of detailed budgets is important for accountable governments.

Around the world, the 2017 OBS scores point to a decline in transparency from 2015, which was driven by the failure by governments to release documents to the public. Eleven MENA countries participated in the 2017 OBS. Jordan performed very well, placing 1st in the region (its score increased to 63 in 2017 from 55 in 2015) and 24th in the world, up from 33rd place in 2015. The MENA region consistently underperforms its peers: seven of the world's lowest 13 scores in 2017 were from MENA countries. The conflict in Yemen leading to the collapse in the budget system drove the decline in the country's score from 34 in 2015 to 0 in 2017. Iraq, Qatar and Saudi Arabia have consistently scored below 5 since joining the Open Budget Index.

None of the participating MENA countries have an independent fiscal institution – for example, a parliamentary budget office that objectively assesses a government's assumptions and projections on the macroeconomic framework (growth, inflation, unemployment) and fiscal framework (revenue, expenditure, debt). Such institutions are increasingly seen as having a big role in providing credibility in government finances and improving citizen confidence in government numbers.

Ongoing conflicts, persecution and political unrest have impacted economic growth and led to humanitarian crises in these countries and neighbouring ones. According to recent estimates from the Office of the United Nations High Commissioner for Refugees (UNHCR),[11] there are more than 3 million displaced persons in Iraq, and over 260,000 refugees from Iraq in other countries. Since 2011, over 5.4 million people have fled the Syrian Arab Republic, and approximately 6.1 million are internally displaced within the country. In Yemen, 190,000 people have fled to neighbouring countries, and about 405,000 displaced persons from South Sudan are in the Sudan. According to the UNHCR Global Trends report for 2016, refugees make up 1 in 6 people in Lebanon, and 1 in 11 in Jordan.

7 World Bank, Worldwide Governance Indicators, 'Government Effectiveness'.
8 Transparency International (2017), 'Corruption Perceptions Index 2016'.
9 Transparency International (2017), 'Middle East and North Africa: A very drastic decline'.
10 International Budget Partnership, <www.internationalbudget.org>, accessed 5 March 2018.
11 UNHCR, Emergencies, <www.unhcr.org/en-us/emergencies.html>, accessed 21 January 2018.

1.2 Health financing as part of health systems in the MENA region

The MENA region has immensely diverse economic, social, political and health contexts and challenges across countries.[12] Life expectancy is rising, maternal and infant mortality is declining, and coverage of high-impact health interventions is increasing to varying degrees in almost all countries. As already mentioned, the region is also experiencing an epidemiological transition with the decline of communicable diseases and the rise of NCDs and injuries, though the timing and pace of this transition varies between countries. These changes have important implications for the cost of health services and for health financing requirements. The region's health systems are facing a range of challenges to move towards universal health coverage (UHC), starting from NCDs, injuries and remaining communicable diseases to addressing shortages in human resources, improving governance, increasing fiscal space and reducing inequities in access and household spending on health. At the same time, prolonged conflict in the Syrian Arab Republic, Iraq, Libya and Yemen is already impacting health gains and health services in these countries. The regional refugee crisis resulting from the conflict in the Syrian Arab Republic is straining the health systems of the surrounding countries.

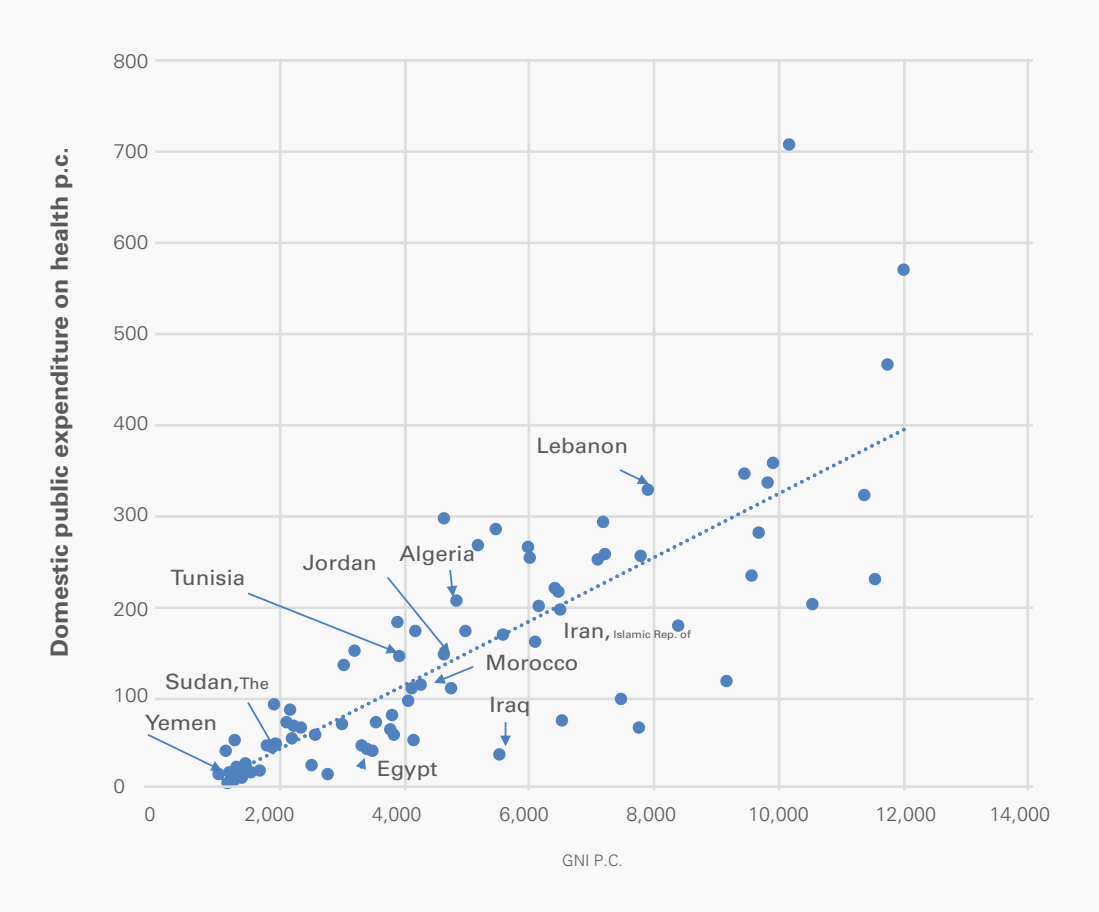
Main trends in health financing in the MENA region

Data on health financing are from the WHO Global Health Expenditure Database, which was recently updated for 2015. This update also included a major revision and expansion of some of the indicators, particularly concerning compulsory insurance and external finance.

12 Boutayeb and Helmert (2011), 'Social inequalities, regional disparities and health inequity in North African countries'.

According to the WHO data on health expenditures for 2015, domestic public expenditure on health per capita (p.c.) in most middle-income MENA countries is fairly close to what other countries of similar income levels are spending. Figure 1 includes all MICs in the world – classified as such for 2015, and excluding small countries with less than 600,000 inhabitants – and plots domestic public expenditure on health p.c. against GNI p.c. for 2015 *(see Figure 1).* The trend line shows what countries would spend on average for any given level of income. Djibouti, Libya, State of Palestine and the Syrian Arab Republic are excluded because of missing data. The Islamic Republic of Iran, Jordan, Morocco and the Sudan are very similar to the trend line. Iraq and Egypt are noticeably lower on domestic spending on health p.c., while Algeria, Lebanon and Tunisia are above the trend line, spending more than would be expected for their level of income p.c.

Figure 1. Domestic public expenditure on health per capita and GNI per capita ($), all middle-income countries (excluding those with populations <600,000), 2015



Source: WHO, Global Health Expenditure Database (<http://apps.who.int/nha/database>).

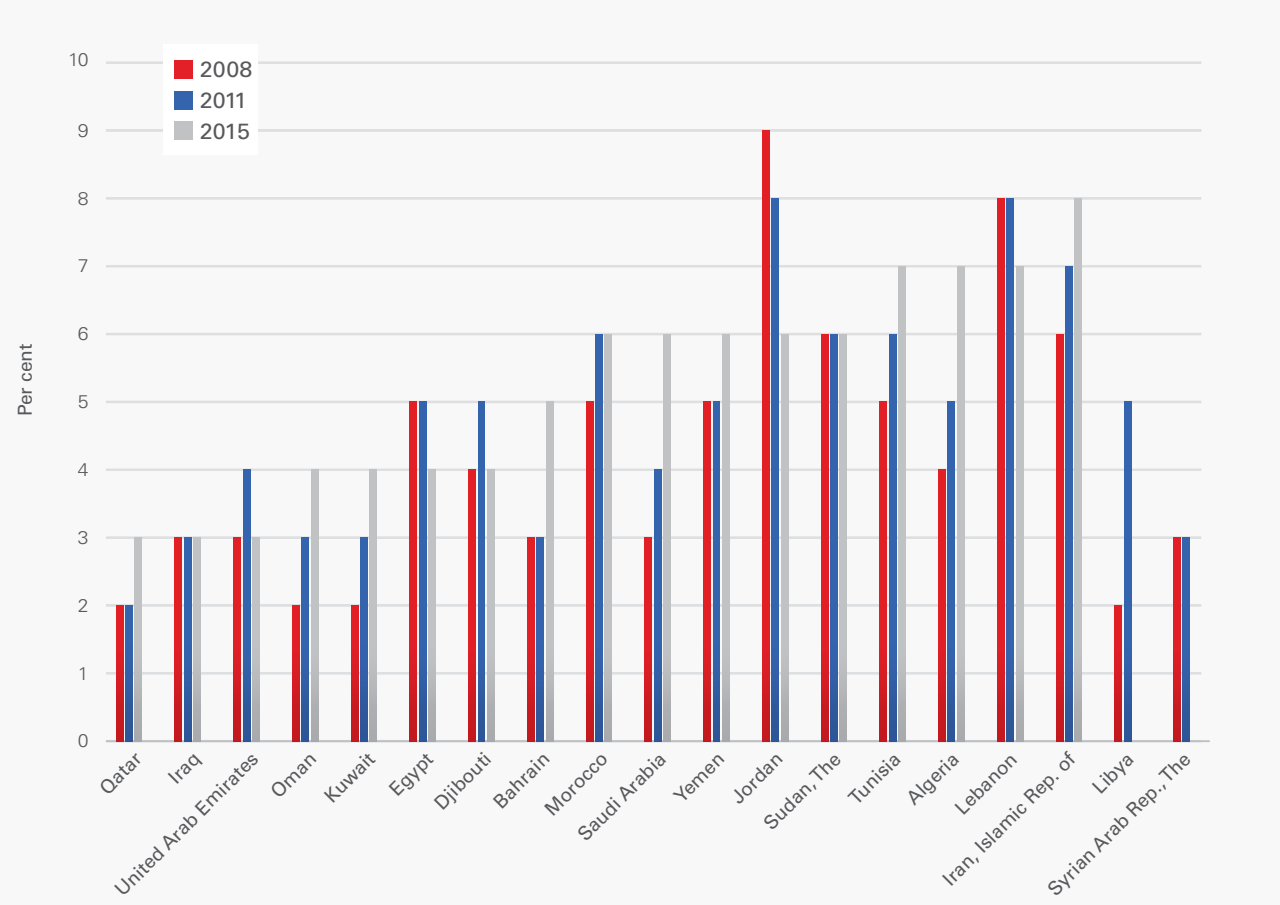
Despite this picture of public expenditure, **populations face relatively high out-of-pocket expenses in most of the MICs in MENA.** This means that households may forgo care or face impoverishment when confronted with high medical costs. Many governments[13] are aware of the situation[14] and are introducing measures to expand prepayment schemes and contractual arrangements between payers and providers, but most of them are struggling with financial constraints, the economic downturn, institutional instability and socio-political risks in the region.

Variations between the countries' current health expenditures are concerning: current health expenditure p.c. was estimated to range from a low of $72 in Yemen to $2,028 in Qatar in 2015. In this report's five focus

13 MENA Health Policy Forum (2016): 'Universal Access to Quality Healthcare in the Arab Countries'.
14 WHO (2016), *Eastern Mediterranean Vaccine Action Plan (EMVAP) 2016–2020.*

countries, the 2015 current health expenditure p.c. was $152 in the Sudan, $159 in Morocco, $258 in Tunisia, $257 in Jordan and $291 in Algeria. For the MENA countries overall in 2008, current health spending as a share of GDP averaged 4.2 per cent, increasing to 5.3 per cent in 2015. Algeria, the Islamic Republic of Iran, Jordan, Lebanon and Tunisia have the highest shares, spending at least 6.5 per cent of their GDP on health in 2015 (see Figure 2).

Figure 2. Current health expenditure as a share of GDP, 2008, 2011 and 2015

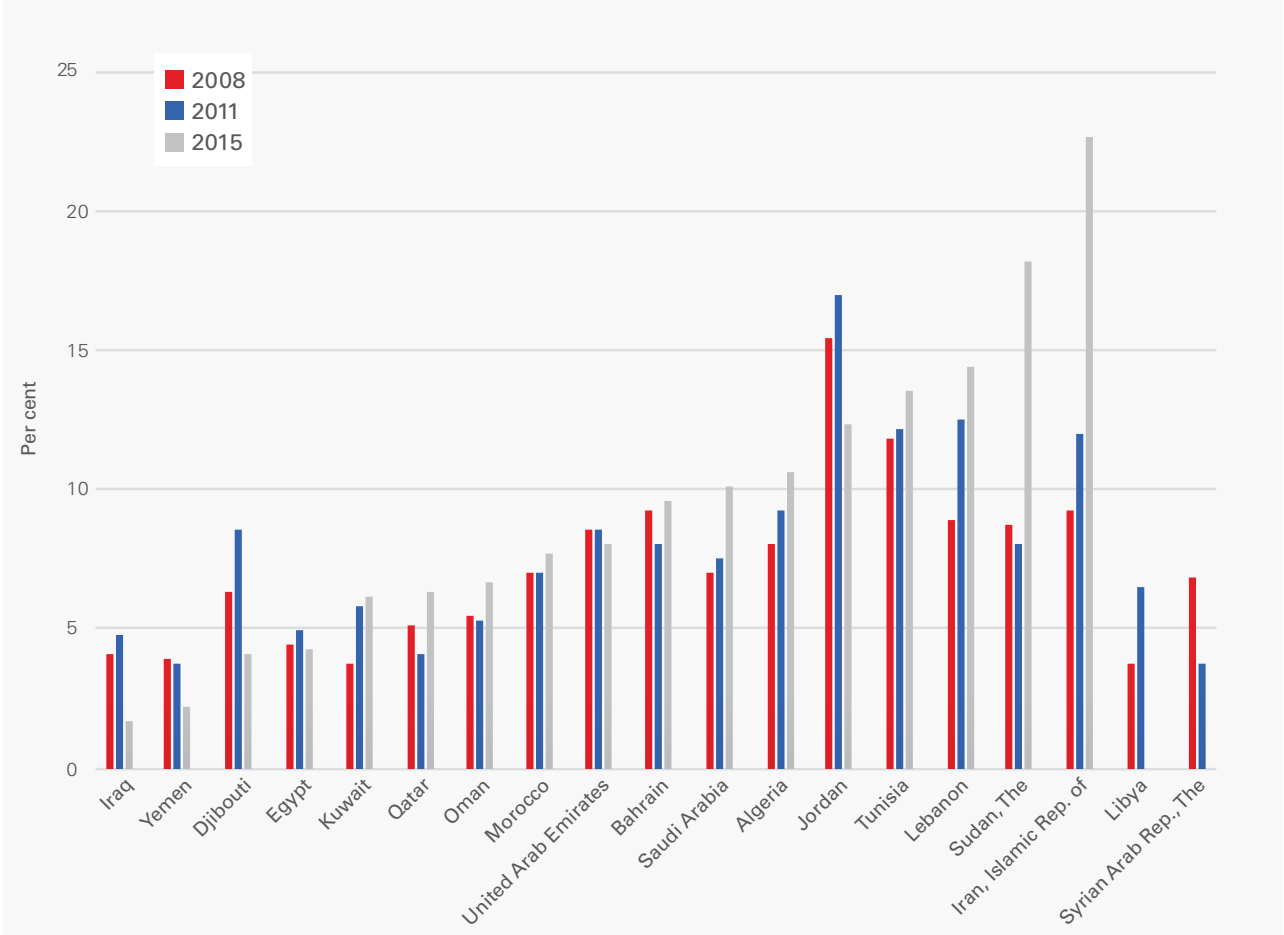


Note: 2015 data for Libya and the Syrian Arab Republic are not available.
Source: WHO, Global Health Expenditure Database <http://apps.who.int/nha/database>.

Slow expansion of prepayment schemes. Prepayment of health expenditure indicates the degree of resource pooling to cope with health risk and related spending. Prepayment provides financial protection by reducing the risk of vulnerability of individuals and families due to poor health. Prepayment of health expenditure can result from a high level of government expenditure, a generalization of social health insurance or even an expansion of private and community health insurance. Prepayment, either through the government or by any kind of health insurance, has increased slightly in some MENA countries with the expansion of tax-based and health insurance schemes; however, large segments of the population are still not covered.

Government expenditure on health as a share of general government expenditure is growing at a relatively slow pace in the region (the average share was 7.2 per cent in 2008 and 8.2 per cent in 2015) *(see Figure 3)*. It has decreased in Djibouti, the Syrian Arab Republic and Iraq, but has increased in Algeria, Morocco, Tunisia and the Sudan. The highest shares are in the Sudan (18 per cent) and the Islamic Republic of Iran (23 per cent), which places them in the top decile globally. Another key indicator of importance related to prepayment schemes in health financing is the share of compulsory financing arrangements in current health expenditure. These arrangements include both government funding and any type of compulsory health insurance scheme. This share has been stable in the report's focus countries *(see Figure 4)*.

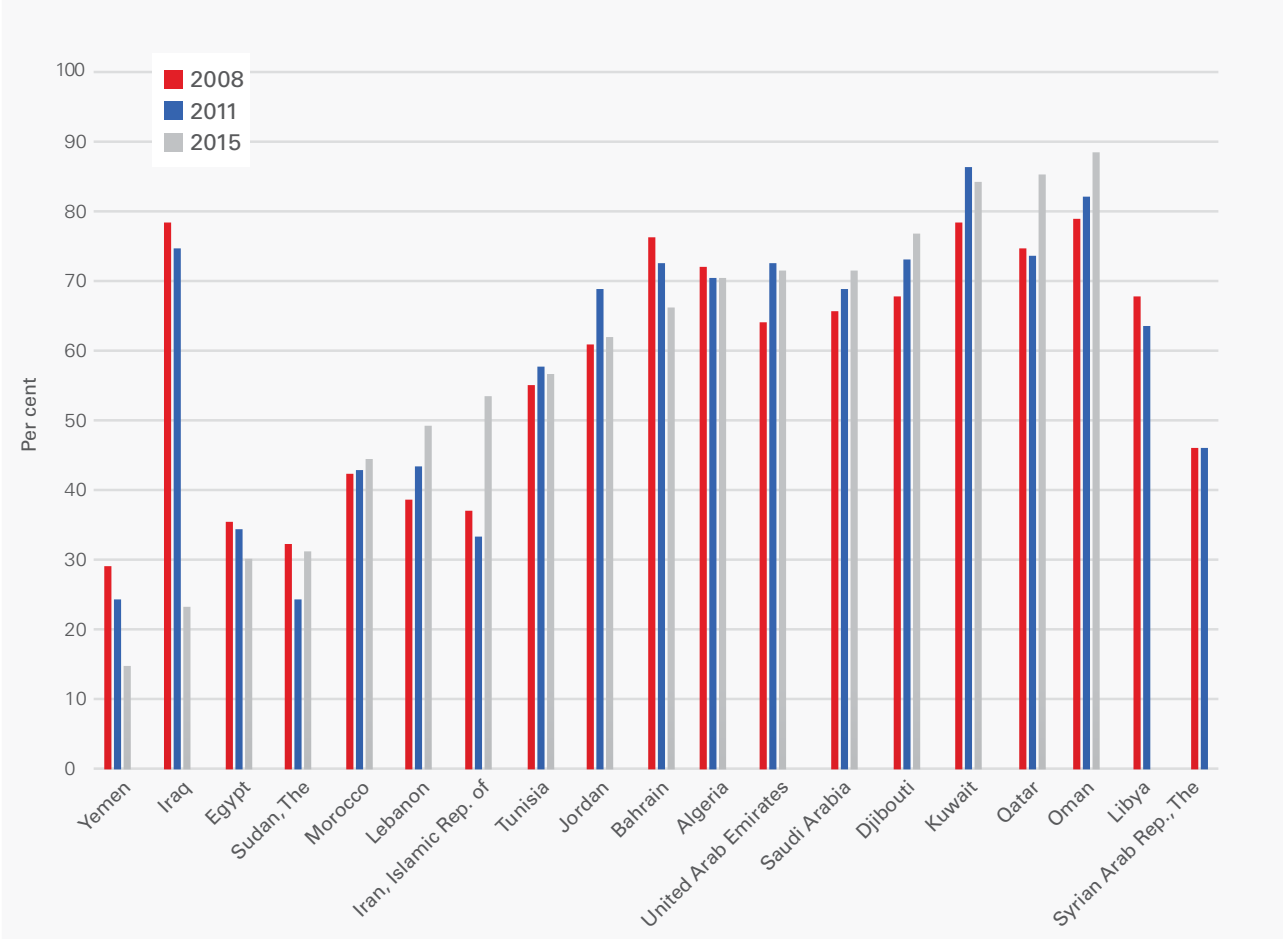
Figure 3. Domestic general government expenditure on health as a share of general government expenditure, 2008, 2011 and 2015



Note: 2015 data for Libya and the Syrian Arab Republic are not available.
Source: WHO, Global Health Expenditure Database <http://apps.who.int/nha/database>.

Out-of-pocket expenditure on health care remains high in many countries. According to WHO data, out-of-pocket expenditure as a share of current health expenditure in 2015 ranged from 6 per cent in Oman to more than 80 per cent in Yemen *(see Figure 5).* Out-of-pocket spending, associated with a higher risk of financial hardship and impoverishment, declined only modestly in most middle-income MENA countries in recent years. The Gulf States have some of the lowest out-of-pocket rates due to high oil revenues, which enable higher public spending on health. For other countries, the share of household spending varies considerably and is not related solely to per capita income, but to multiple factors such as prevailing health policy, the size of the private sector, co-payment in the public sector and the magnitude of financial protection provided through the state budget and health insurance schemes. In seven of the middle-income MENA countries, out-of-pocket spending is at least 40 per cent of current health spending. This share is higher for expenditures on pharmaceutical products, for example in Egypt, Lebanon and Morocco. The situation has worsened in recent years for Egypt, Iraq15 and Yemen due to the drastic decline in public and export revenues, in addition to conflicts, instability and governance issues. The same trend in the Syrian Arab Republic and Libya can be assumed despite the lack of data for 2015.

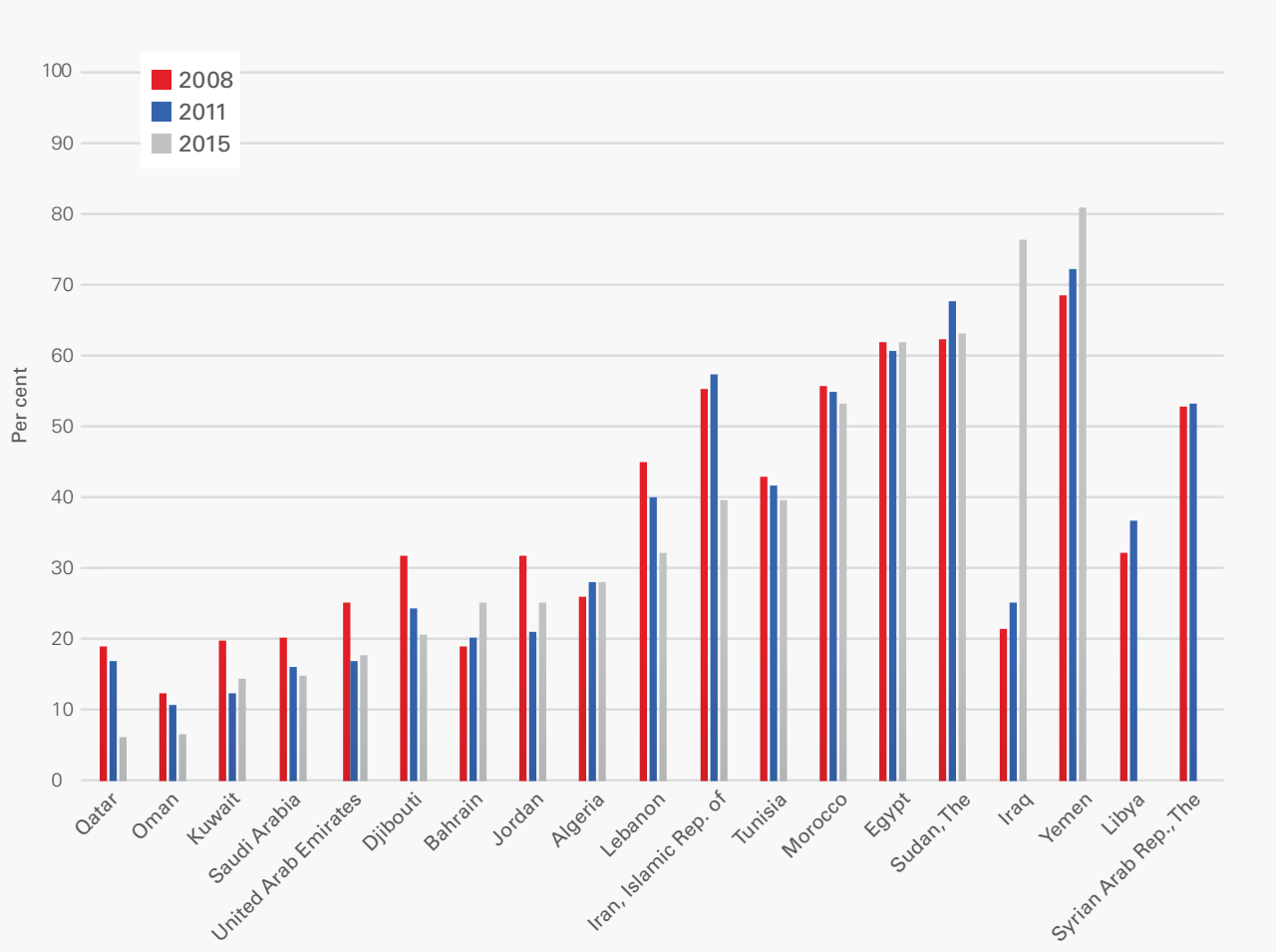
Figure 4. Compulsory financing arrangements as a share of current health expenditure, 2008, 2011 and 2015



Note: 2015 data for Libya and the Syrian Arab Republic are not available.
Source: WHO, Global Health Expenditure Database <http://apps.who.int/nha/database>.

15 Data for Iraq for 2015 are questionable and should be considered with caution.

Figure 5. Out-of-pocket expenditure as a share of current health expenditure, 2008, 2011 and 2015



Note: 2015 data for Libya and the Syrian Arab Republic are not available.
Source: WHO, Global Health Expenditure Database <http://apps.who.int/nha/database>.

The private sector has a growing role in medical service and product delivery. Rapid growth of health services and products provided by the private for-profit sector has evolved hand in hand with the growth in out-of-pocket expenditure (e.g., in the pharmaceutical sector in almost all MENA countries). Some of this is assumed to result from public dissatisfaction with the availability, quality and convenience of government-provided services. Other reasons are related to the increasing number of health professionals and the difficulty governments have to recruit and keep them in the public sector by offering salaries and working conditions with incentives. While private (voluntary) health insurance is almost absent in about half of the MENA countries, it is growing in the Gulf States as well as in the Islamic Republic of Iran, Jordan, Lebanon, Morocco and Tunisia. Private health insurance is largest in Lebanon, reaching 17 per cent of current health expenditure in 2015 *(see Annex 2, Table 7)*.

External support from donors and international agencies has never been significant in the MENA region. Exceptions are Egypt and Morocco (both more in the past), and Djibouti, Jordan, the Sudan, the Syrian Arab Republic and Yemen today *(see Annex 2, Table 7)*. This has come mainly through budget support and earmarked funding for specific projects. Funding for emergency humanitarian response was a significant challenge in recent years. While external funding has increased and diversified since 2011 for countries affected by conflicts and war, it remains far from adequate in covering the pressing basic social and health needs.[16] Available data may underestimate the total external assistance provided to governments, as this is sometimes counted as domestic spending.

16 UN Office for the Coordination of Humanitarian Affairs (2016), *World Humanitarian Data and Trends 2015*.

Funding health services for refugees is a major challenge in countries with large refugee populations. In Jordan, for example, the Syrian crisis and its refugees have burdened the country with huge costs due to the re-emergence of vaccine-preventable and communicable diseases, increased waiting times in health services and shortage of health workers, the growth of the uninsured population (a large part of which is refugees), and pressure on the government budget and public financing. Refugees living outside camps are often covered under public schemes, while those in camps are covered mainly by non-governmental organizations and United Nations agencies with external financial support. International initiatives were launched, such as the Global Concessional Financing Facility (GCFF) in 2016, to fill the gap in humanitarian and development assistance to support refugees and host communities in Jordan and Lebanon. The GCFF has unlocked $1 billion in concessional financing. Each $1 in grants made to the GCFF can leverage $4 to $5 in concessional financing for development projects that benefit refugees and the communities hosting them.[17]

All 20 MENA countries face the problem of poor data for decision making. Limited data are available about household health expenditures, actual use of and access to public and private facilities, and the cost of health services and programmes, particularly since 2011. However, a few countries, such as Jordan, Morocco and Tunisia, have made efforts to regularly produce national health accounts and to establish units on health economics within the MOH.

17 The GCFF was initiated by the World Bank Group, in partnership with the United Nations and the Islamic Development Bank Group. Since its launch, the Facility has received contributions from nine countries – Canada, Denmark, Germany, Japan, the Netherlands, Norway, Sweden, the United Kingdom and the United States – as well as the European Commission.

1.3 Immunization financing and immunization performance in the MENA region

The 20 MENA countries can be divided into the following three groups in terms of immunization financing:

Countries of the Gulf Cooperation Council

For the six Gulf Cooperation Council (GCC) countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates), government funding of vaccines and immunizations is not a significant constraint; these countries have introduced many new vaccines, and the government budget covers all the costs of the national immunization programme (NIP). Specific products are often manufactured by large Western firms that charge higher prices than other manufacturers. By 2016, all GCC countries had met the Global Vaccine Action Plan (GVAP) 2020 target of at least 90 per cent of DTP3 *(see Annex 2, Table 9)*, and all but Qatar had met the goal for the first dose of measles-containing vaccine (MCV1) and for the second dose (MCV2), with coverage reaching 95 per cent or higher.

Middle-income countries eligible for Gavi support

The three eligible countries (Djibouti, the Sudan and Yemen) are highly dependent on Gavi support to purchase new and underused vaccines and to assist with costs related to immunization operations. UNICEF and WHO also provide more technical assistance to these countries through the Partnership Engagement Framework with Gavi. Due to the disastrous effects of the conflict in the Syrian Arab Republic on that country's economy, health system and immunization programme, the Gavi Board pledged up to $25 million in both 2017 and 2018 for vaccines and cold chain equipment disbursed to and managed by WHO and UNICEF, although the Syrian Arab Republic is not formally eligible for Gavi support.

Eligible countries are currently financing a share of new vaccine costs through the co-financing requirement. This share will grow over time, and more rapidly once the countries cross the eligibility threshold. Countries eligible for Gavi support need to carefully plan for these rising costs, as well as, in some cases, the cost of traditional vaccines, which may be partially or fully funded with other external assistance. The share of routine immunization funded

by government can be shown, as reported through 2016 on the WHO-UNICEF Joint Reporting Form *(see Table 1)*. While these data are useful to review, they must be interpreted with caution as they may not be comparable across countries or even within countries over time. (Respondents may interpret differently what is covered as routine immunization expenditures.)

The Syrian Arab Republic's exceptional support does not require co-financing. Djibouti, the Sudan and Yemen are required to co-finance routine vaccines (in practice, this means co-procure) supported by Gavi *(see Table 2)*. In 2018, Djibouti, the Sudan and Yemen are all in the 'preparatory transition' phase of Gavi co-financing classification, which means that co-financing requirements are increasing by 15 per cent annually per dose. Co-financing is linked to the price of the vaccine; thus, if its price falls (as has occurred with pentavalent), co-financing can decrease from one year to the next. But in general, it is assumed co-financing will increase to prepare the countries to eventually assume the full responsibility of financing the vaccines. **As the Sudan is expected to be the first of the three MENA countries to transition from Gavi support, it should be fully self-financing the vaccines that are currently supported with Gavi assistance by 2025.**

Table 1. Data from the Joint Reporting Form for countries eligible for Gavi support, 2008–2016

Economy	2008	2009	2010	2011	2012	2013	2014	2015	2016
% of immunization expenditure financed from government funds									
Djibouti	32	26	50	38	60	98	64	54	N/A
Sudan, The	8	19	55	8	3	12	12	9	11
Yemen	66	63	43	37	33	17	22	6	2
% of routine vaccines financed from government funds									
Djibouti	N/A	N/A	26	0	0	3	14	7	8
Sudan, The	0	3	6	2	1	5	7	9	11
Yemen	18	35	20	N/A	15	16	21	8	3

Note: N/A = not available.
Source: Reported by governments to WHO on the Joint Reporting Form.

Table 2. Gavi co-financing requirements for Djibouti, the Sudan and Yemen ($ million), 2015–2022

Economy	2015	2016	2017	2018	2019	2020	2021	2022
Djibouti	0.051	0.046	0.057	0.031	0.042	0.049	0.089	0.103
Sudan, The	3.744	4.172	3.303	3.708	4.305	6.797	12.015	17.466
Yemen	--	--	2.320	1.851	2.233	2.574	4.746	6.916

Note: Yemen had co-financing waivers for 2015 and 2016.
Source: Gavi website.

Of the three eligible countries, Djibouti and Yemen have not met the GVAP goal of 90 per cent DTP3 coverage; rather, coverage has fallen in the two countries since 2010 *(see Annex 2, Table 9)*. All three countries have not met the MCV1 and MCV2 targets.

Middle-income countries not eligible for Gavi support

Almost all of the 11 MICs not eligible for Gavi support (Algeria, Egypt, the Islamic Republic of Iran, Iraq, Jordan, Lebanon, Libya, Morocco, State of Palestine, the Syrian Arab Republic[18] and Tunisia) are funding all costs of routine vaccines and the NIP from the government budget *(see Table 3)*. Some external aid is provided to Jordan and Lebanon for immunizations delivered to refugees. WHO and UNICEF provide ad hoc support and technical assistance to some of the MICs, mainly in areas such as training, communication, surveillance and evaluation. Some of the data are clearly erroneous, such as that Jordan reportedly was financing only 10 per cent of immunization expenditures in 2016 when the figure was likely closer to 80 to 90 per cent, and some data is missing *(see Table 3)*. The lack of reporting in this region can be seen as a major concern in terms of data quality. Interpreting the reported data should

18 The Syrian Arab Republic is listed here because, although it receives Gavi support on an exceptional basis, it is not Gavi-eligible.

be done with caution and cross-checked with other sources of information (e.g., MOH budget, comprehensive multiyear plan, national health subaccounts, annual operational plans and reports).

Table 3. Data from the WHO Joint Reporting Form for non-Gavi middle-income countries, 2008–2016

	2008	2009	2010	2011	2012	2013	2014	2015	2016
% of immunization expenditure from government funds									
Algeria	100	100	100			100	100	100	100
Egypt	100	100		100				100	100
Iran, Islamic Rep. of	100	100			100	100	100	100	100
Iraq	100	98				100	90	100	99
Jordan	100	100	0	100			100	100	10
Lebanon	100	100	100		100	100	100	62	40
Libya	100	100							
Morocco	80	100	100						
Palestine, State of									
Syrian Arab Rep., The	100	100							44
Tunisia	99	99		99	95	95		99	98
% of routine vaccines financed from government funds									
Algeria	100	100	100	N.A.	100	100	100	100	100
Egypt	100	100	100	100	100	100		100	100
Iran, Islamic Rep. of	100	100	100	100	100	100	100	100	100
Iraq	100	100				100	93	100	100
Jordan	100	100	100	100	100	100	100	80	100
Lebanon	100	100	100		100	100	100	65	
Libya	100	100							
Morocco	100	100	100	100			100	100	100
Palestine, State of									
Syrian Arab Rep., The	100	100	100	100	100	100	77	84	53
Tunisia	100	100		100	100	100	100	100	100

Note: Blank fields indicate missing data.
Source: WHO Joint Reporting Form.

Of these 11 countries, Iraq and Lebanon have not met the 2015 GVAP target of 90 per cent DTP3 coverage. In addition, Iraq, Lebanon and the Syrian Arab Republic have not met the GVAP target for MCV1 and MCV2 coverage.

New vaccine introductions. Experience shows that the non-Gavi MICs in MENA are facing difficulties in introducing new, life-saving vaccines due to the combined effect of the higher cost of such vaccines, inadequate allocation of the necessary domestic resources, and inadequacy of the vaccine procurement and regulation systems in those countries.

To date, pneumococcal conjugate vaccine (PCV) has not been introduced in Egypt, the Islamic Republic of Iran, Iraq, Jordan, the Syrian Arab Republic and Tunisia *(see Annex 2, Table 9).* Rotavirus vaccine has not been introduced in Algeria, Egypt, the Islamic Republic of Iran, Lebanon, the Syrian Arab Republic and Tunisia. While rubella vaccine has been introduced in all non-Gavi MICs in MENA, human papillomavirus (HPV) vaccine has been introduced in the NIP solely in Libya.

Since 2008, the overall level of reported domestic expenditure for immunization has increased in most MENA countries with the introduction of a few new vaccines, as well as other factors. However, that expenditure has not reached the level sufficient to ensure sustainable and adequate immunization financing for implementing strategies and activities necessary to achieve global and regional immunization goals. Sufficient financing in this

case means enough to cover the current programme and the introduction of important new vaccines, as well as to support non-vaccine immunization costs, such as cold chain maintenance and upgrades, supervision, monitoring and surveillance, and strategies to increase coverage and reach vulnerable groups. While this is particularly relevant for countries in conflict, such as Iraq, Libya, the Syrian Arab Republic and Yemen, it is also important for Egypt and Tunisia, particularly for non-vaccine immunization expenditures.

Efforts to scale up immunization programmes in the region face several challenges. Managerial capacity is inadequate[19] in several countries, with the need for stronger programme capacity at the central and peripheral levels. In addition, the relatively low government allocations for immunization programmes and the increasing need for financial resources to meet the evolving demands of the Expanded Programme on Immunization (EPI), including new vaccines introductions, threaten the gains of the immunization programmes.

Conclusions

WHO/UNICEF 2016 immunization performance, as measured by DTP3 coverage, was fairly high except for Djibouti, Iraq, Lebanon, the Syrian Arab Republic and Yemen. MCV2 coverage is of concern in Djibouti, Iraq, Lebanon, the Syrian Arab Republic, the Sudan and Yemen (see Annex 2, Table 9).

In the MENA region, the MOH budget is the mainstay of immunization financing. External financing is important primarily in the three countries eligible for Gavi support (Djibouti, the Sudan and Yemen), with some external assistance for refugee populations. In contrast to some other regions, MENA countries have not pursued innovative financing mechanisms, such as earmarked taxes, lotteries or national-level trust funds, to try to develop 'protecting' funding for immunization.

While social insurance funds exist in several MENA countries, they are currently not a significant source of immunization financing. This could change in the future, depending on how countries move towards UHC. In Costa Rica, social insurance is the main funder of immunization, while the MOH provides overall guidance and funds a portion of the vaccines.

The private sector provides some immunization services in many MENA countries. Voluntary health insurance schemes covering immunization may become a component of the benefit package in the future. Indeed, some private insurance schemes in Tunisia, for example, already cover PCV.

Many countries face budgetary pressures and have had difficulties incorporating new life-saving vaccines, such as pneumococcal and rotavirus vaccines. Budgetary pressures could well affect the ability to upgrade the cold chain and strengthen other immunization functions over time. Additional funding is also needed to reach marginalized groups, nomads and internally displaced persons.

The Sudan will be the first of the Gavi countries to move into the 'accelerated transition process', namely towards transitioning out of Gavi assistance. Adequately scaling up the financing of vaccines and related activities will be a major challenge as Gavi assistance winds down, given the Sudan's indebtedness, relatively low growth prospects and low tax base. The Sudan will also be affected by the reduction in funding for polio eradication infrastructure in the country.

Over the medium term, the rebuilding of health systems and immunization programmes in post-conflict areas will require significant resources. Fiscal space for these efforts could come from (1) allocating a greater share for health in the overall government budget; (2) seeking efficiency gains in vaccine product selection and procurement; (3) giving primary health care a higher priority (and within that, immunization) in the overall health budget; (4) including immunization in the benefits package as social insurance grows; and (5) seeking efficiencies through better integration of primary care and immunization. As an example of the last measure, the Sudan hopes to replace some of its outreach-based immunization over time with fixed sites providing immunization and other primary health care service.

19 WHO (2016), *Eastern Mediterranean Vaccine Action Plan (EMVAP) 2016–2020.*

1.4 Strategic purchasing

Procuring vaccines and related products has been a considerable challenge for most MENA countries due to local and external factors. The global vaccine market is experiencing much tension and change. Fewer vaccine producers from industrialized countries exist compared to 10 or 15 years ago, due in part to mergers and acquisitions by multinational pharmaceutical companies. This decrease in the number of producers could result in reduced competition for a country's vaccine market and the consequent problems of unpredictable prices and irregular supplies from manufacturers. However, that trend is counterbalanced by an increasing number of producers from developing and emerging economies, some of whom have WHO pre-qualified products and sell vaccines on the international market. Countries are not always well informed about these developments, particularly about quality or supply reliability. UNICEF SD plays a vital role in supplying quality and affordable vaccines to low- and middle-income countries, especially to those eligible for Gavi support. However, some of UNICEF SD's requirements are not always compatible with a country's public procurement rules.

UNICEF Supply Division and partners have helped to shape the market for vaccines. MENA countries may not be aware of how UNICEF SD, Gavi and other partners have had an important role in shaping vaccine markets to assure supply and affordable prices. In 2000, pentavalent vaccine (DTP-hepatitis B [HepB]-*haemophilus influenzae type B* [Hib]) was supplied to UNICEF by one producer at a price of $3.60 per dose. By providing demand forecasts and encouraging manufacturers to respond to the UNICEF SD market (and the large market of countries eligible for Gavi support), the number of manufacturers grew and the price fell. The lowest price for pentavalent vaccine offered through UNICEF SD is now $0.65 per dose in 2018, with five suppliers providing vaccines through UNICEF SD.[20] More importantly for the MENA region, **this price is now available to any country procuring pentavalent vaccine through UNICEF SD, whether or not it is eligible for Gavi support.** All suppliers are providing WHO pre-qualified vaccines.

20 UNICEF, data on the awarded price per dose, per product, per supplier and per calendar year; see <www.unicef.org/supply/files/DTP-HepB-Hib.pdf>.

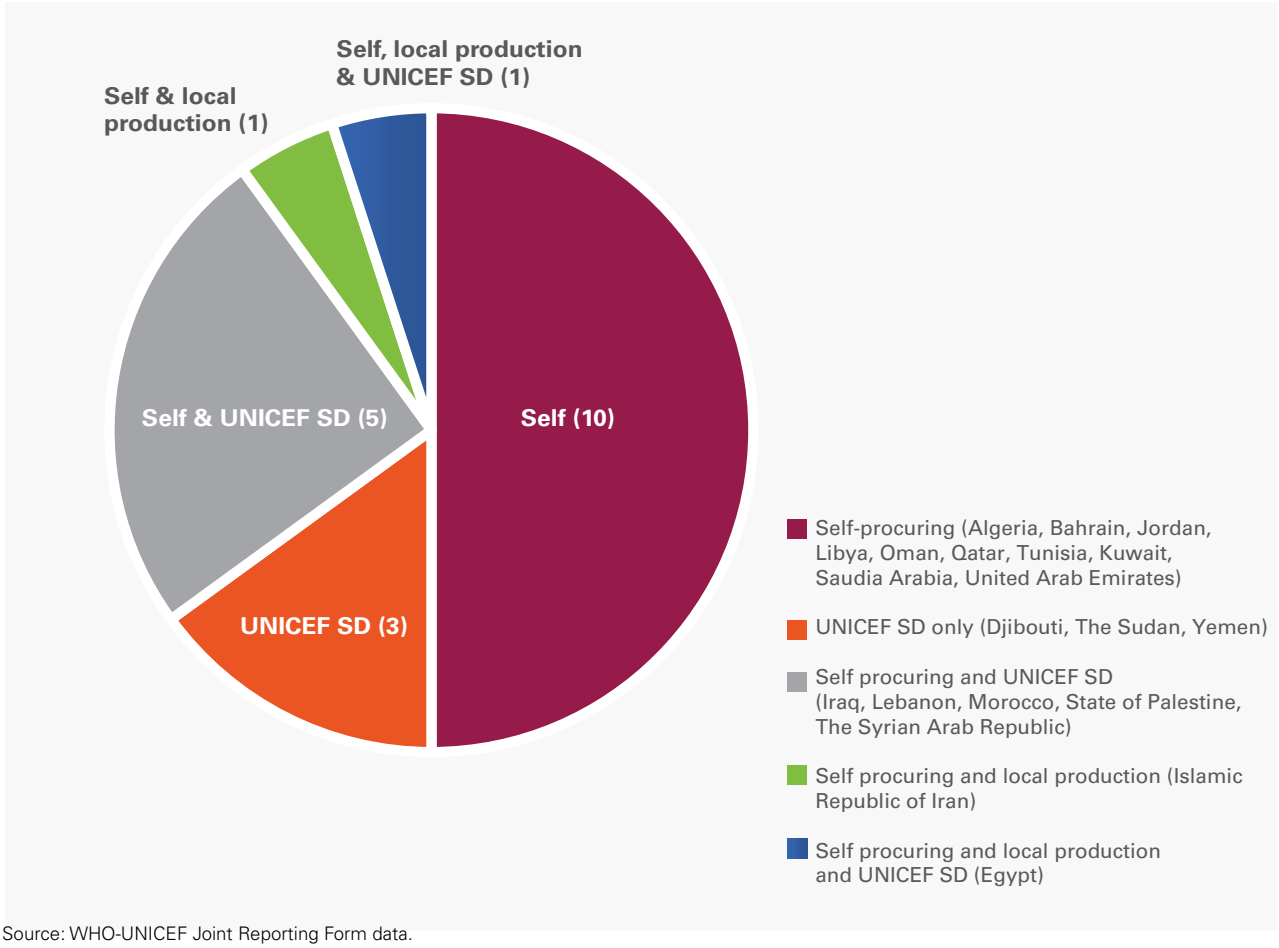
In addition to global market challenges, NIPs often cope with internal problems, such as the irregular release of government funds for vaccines, budget shortfalls, limited in-country capabilities in vaccine procurement and management, and complicated or non-transparent procurement practices. Public procurement rules and procedures very often are not fully adapted to the vaccine features and market characteristics. These vaccine procurement challenges are likely to grow in the near future, as more new and costly vaccines and product presentations come onto the market.

MENA countries can be grouped based on how they handle procurement:

1. Gulf States that procure through self-purchases directly or, more often, through group purchases by the GCC. They undertake these routes especially for vaccines included in national vaccination programmes (see the box, 'The GCC group purchasing programme').
2. Countries that receive Gavi support and source from UNICEF SD. These countries can benefit generally from the lowest prices, using vaccines pre-qualified by WHO and largely funded by Gavi. Their traditional vaccines are also procured through UNICEF SD, and in some cases are funded, all or in part, with external assistance.
3. Non-Gavi MICs (Algeria, Egypt, the Islamic Republic of Iran, Iraq, Jordan, Lebanon, Libya, Morocco, State of Palestine, the Syrian Arab Republic[21] and Tunisia) that self-procure on the world market. Some of these countries use UNICEF SD for a number of EPI vaccines (Egypt, Morocco, State of Palestine, Lebanon, Iraq). Egypt and the Islamic Republic of Iran have a very modest local production of a few EPI vaccines.

The different EPI vaccine procurement modalities covering self-procurement, local production and UNICEF SD can be shown for the region's countries *(see Figure 6)*.

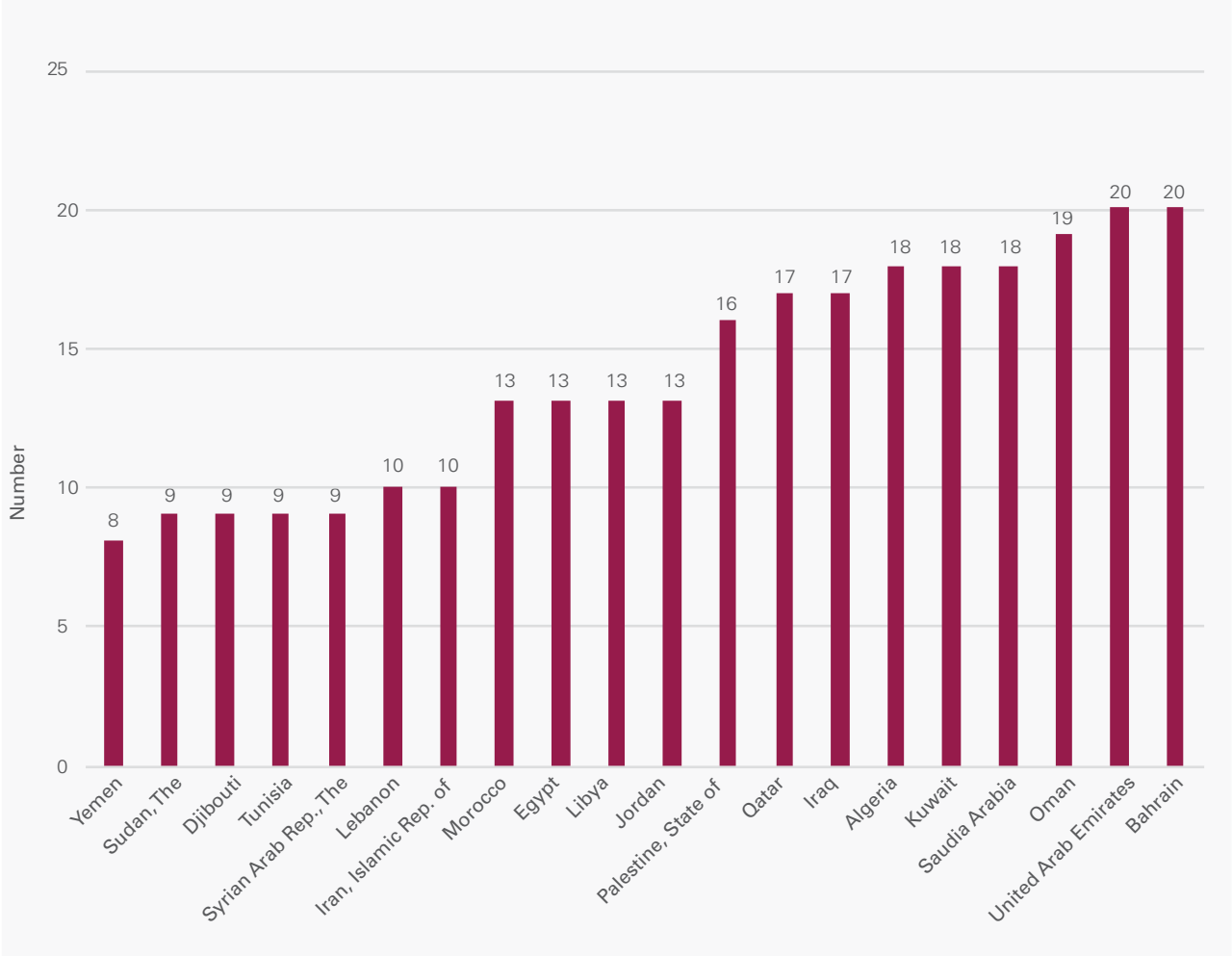
Figure 6. EPI vaccine procurement modalities in use



Source: WHO-UNICEF Joint Reporting Form data.

21 Gavi provides some support to the Syrian Arab Republic through partners on an exceptional basis.

Figure 7. Number of procured vaccines (all presentations) in MENA countries, 2016



Source: WHO-UNICEF Joint Reporting Form data.

In Egypt and the Islamic Republic of Iran, a few vaccines are locally procured, and the rest are imported. In the Islamic Republic of Iran, the Razi Institute produces tetanus-diphtheria (booster) (Td), diphtheria-tetanus (DT) and bivalent oral polio vaccines (bOPV), and the Pasteur Institute of Iran produces anti-tuberculosis (bacille Calmette-Guérin) (BCG), Hepatitis B adult and Hepatitis B vaccines. In Egypt, Td and DT vaccines are produced by Vacsera, a government-owned company, and used locally by the EPI.

The Gulf Cooperation Council group purchasing programme

In 1978, the Health Ministers Council, made up of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates, issued a joint tender for drugs because of the high prices paid by some of the smaller states and the difficulty in obtaining the small quantities they required. From this initial tender involving 32 drugs and a total value of $1.1 million grew a group purchasing system for a range of medical products – from drugs and vaccines to medical and dental supplies, chemicals, and laboratory supplies. In 1981, the Council was merged into the Gulf Cooperation Council (GCC), with the group purchasing programme run by the Executive Office for Health Ministers based in Riyadh, Saudi Arabia.

Based on a group contracting model, the GCC purchasing programme centralizes the tender and bid process for its countries. The countries then contract with and pay suppliers on their own. Unlike the PAHO Revolving Fund, the GCC programme handles only the tendering, bidding, selection and adjudication parts of the procurement process. Member countries agree to purchase at least 60 per cent of the total value of their requirements in each product category (e.g., vaccines and sera) to ensure the programme's continued functioning, while still allowing a degree of flexibility in their purchases. When producers contract with countries, they are obliged to offer the same prices across countries.

The programme is intended to do several things: save costs through bulk purchasing, ensure the continuous supply of products by reducing administrative procedures, accelerate the tender and bid process, standardize products across member countries, and improve quality assurance through a pre-qualification process. Two additional objectives, relevant more to pharmaceuticals than to vaccines, are to encourage the purchase of generic products to save costs, and to support the local pharmaceutical industry in member countries.

How successfully have two major objectives been met, namely (1) achieving cost savings and (2) ensuring a continuous and adequate supply of vaccines to member countries? The GCC was able to achieve significant cost savings for countries by obtaining advantageous vaccine prices through bulk purchasing and international competitive bidding for the industrial country vaccines that it offers. At the same time, countries that expand their range of suppliers to include high-quality producers in countries that are not members of the Organisation for Economic Co-operation and Development can apparently achieve greater cost savings on their own, according to the results of a study conducted in 2005.* A big limitation of the GCC vaccine purchasing mechanisms is that the GCC relies on a few European and American vaccine producers for most vaccines, mainly because they use acellular pertussis vaccines and single dose presentations.

Although empirical and recent data are lacking at the country level, the GCC reports that its procurement programmes have led to the reliable supply of vaccines to member countries and have reduced supply disruptions. According to the GCC, major factors responsible for improved vaccine supply through its group procurement mechanism have been the shorter procurement process, greater predictability of timing and simplified procedures.

The GCC system makes it possible to benefit from the advantages of group purchasing while leaving the responsibility to each country to finance its supply and to commit partially or totally to the national programme's vaccines. It remains limited by the size of the market, the expressed preferences for new products and for vaccines manufactured in industrialized countries, which is why vaccine prices are relatively high.

*DeRoeck, et al., 'Regional group purchasing of vaccines: review of the Pan American Health Organization EPI revolving fund and the Gulf Cooperation Council group purchasing program'.

Vaccine procurement for countries eligible for Gavi support

Djibouti, the Sudan and Yemen benefit from WHO pre-qualified products and are largely funded by Gavi. They procure through UNICEF SD and have contributions from donors and partners at all levels and at each stage of the procurement cycle of vaccines and injection equipment. That cycle includes identification of needs, multiyear projection of demand, consolidation of global demand, selection and negotiation with producers, pre-qualification of products, financing of product and cold chain purchase, training of personnel, and assistance to the management of the supply chain and evaluation. UNICEF SD provides end-to-end tendering and order management services, issues requests for proposal, and communicates instructions and criteria for selection. It pools vaccine demand, signals pricing and volume targets, evaluates manufacturer bids, awards volumes and follows up with manufacturers regarding shipment, logistics and payment. This support is efficient from a market perspective, as it pools demand, reduces transaction costs between manufacturers and countries, and reduces needed points of contact between buyers and sellers. It is a very valuable service for countries eligible for Gavi support. With this massive external technical and financial support, these countries have been able to introduce new vaccines and technologies. They have also been able to reduce the gaps with other countries and to pursue the Millennium Development Goals, Sustainable Development Goals and GVAP goals.

The benefits of this approach are large, and the limits are well known. A country risks becoming dependent and losing autonomy to make decisions at its own pace. Partners could do more to support the country's capacity for building and gaining knowledge of the global complexity of vaccines and their markets (vaccines and presentations available, vaccines in the pipeline, efficiency and comparative prices, local and global market trends, drivers and players).

Co-financing requirements encourage countries to take more responsibility and to think about the future financing of their vaccines. This helps countries with functional National Immunization Technical Advisory Groups (NITAGs) to make better choices about priorities, vaccine presentations, the relation of costs and benefits, and the importance of budget planning and mobilizing domestic resources. However, not all countries eligible for Gavi support are using domestic resources to pay for their co-financing obligations, and some countries are not financing traditional vaccines. Unfortunately, it is not uncommon for governments to delay paying for vaccines. Approval for vaccine budgets can be drawn out, and inefficient processes for releasing funds can obstruct payment even when vaccines are fully budgeted for. These hurdles, observed in the eligible countries, have prevented vaccines from always being delivered on time.

Vaccine procurement in middle-income countries not eligible for Gavi support

These countries – Algeria, Egypt, the Islamic Republic of Iran, Iraq, Jordan, Lebanon, Libya, Morocco, State of Palestine, the Syrian Arab Republic and Tunisia – have procurement mechanisms based on self-procurement, using in some cases local production of a small number of vaccines (Egypt, the Islamic Republic of Iran). Some countries also use UNICEF SD for purchasing certain vaccines (Egypt, Iraq, Lebanon, Morocco, State of Palestine and the Syrian Arab Republic). All countries face challenges in meeting their needs, accessing a steady supply of products that meet international standards at affordable prices, and introducing the new vaccines recommended by WHO. Information from interviews concerning prices paid for vaccines indicate that, in some cases, prices paid vary considerably across countries: prices are sometimes on par with those from UNICEF SD, but in other cases are much higher. This varies by country, and caution is needed in interpreting any price comparison; many factors are involved, such as contract duration, the quantity purchased, price structure and exchange rate.[22]

Problems with global supply and vaccine presentations. On several occasions, countries have suffered stock-outs due to the low global supply of certain products (e.g., DTP, MCV, inactivated polio vaccine [IPV]). Others have not found vaccine presentations tailored to their immunization programmes and strategies, such as a five-dose vial for measles or two-dose vial for PCV and rotavirus, or are forced to accept high prices because of their low cohort size, weak bargaining power or lack of knowledge about the market. In a context of limited vaccine supply capacity, manufacturers often tend to favour developed-country markets and large contracts, possibly at the expense of MICs with low cohort size or low health spending and financial capacity.

22 For more information, see the WHO Vaccine Product, Price and Procurement (V3P) Web Platform at <www.who.int/immunization/programmes_systems/procurement/v3p/platform/en>.

The uptake of new vaccines has been slower in MICs compared to high-income and Gavi-supported countries due to financial and procurement constraints, as well as political reasons related to local production and vaccine security, as with Egypt and the Islamic Republic of Iran *(see Annex 2, Table 9).* Three countries with large populations (Algeria, Egypt and the Islamic Republic of Iran) experienced significant delays introducing Hib-containing vaccines. In addition, nearly all the MICs in the region had delays introducing rotavirus and pneumococcal vaccines, and some have still not introduced them.

Moreover, countries' laws and procedures for public procurement are not always adapted to the context and market of vaccines. Provisions may require the following:

- Products be used in the routine programme of the country of origin of production
- Products be registered in the country prior to any response to international calls for tender
- Producers have a permanent representative in the country
- Suppliers pay high registration fees
- Suppliers import and deliver the product up to the district level
- Suppliers deliver all vaccines used in the EPI in a single batch
- Payments be in local currency
- All documentation be exclusively in the country's language
- Manufacturers train local personnel
- Manufacturers work with a local government-appointed private agent
- Manufacturers' facilities are visited before any response to an international call for tender

Some of the non-Gavi MICs that currently do not use UNICEF are interested in using UNICEF procurement services for a number of their vaccine purchases. However, UNICEF requirements are at odds with their regulations. These include direct contracts with UNICEF without a competitive bidding process, payment in hard currency and payment before receiving vaccines. Some countries mention the issue of liability and quality assurance by the contractual party, i.e., with UNICEF SD directly. Other countries wish to benefit from the prices offered to the countries eligible for Gavi support. These issues have been debated for years. Some countries adjust their local procurement rules in view of the many benefits of UNICEF procurement. Other countries are trying to find common ground with UNICEF SD and negotiate clauses and provisions compatible with country public procurement rules.

UNICEF SD, in response to increasing awareness of MIC needs, has consulted countries, industries and partners on possible interventions it could make within the vaccine market on behalf of these countries. UNICEF options for MICs include pooling demand from the countries, conducting specific procurement for this group of countries, and negotiating price ceilings for them to access under certain criteria. Acknowledging that some of the current UNICEF requirements for using its procurement services are difficult for some countries under government financing and public procurement rules, UNICEF is also considering options to address these concerns within its MIC approach and particularly for its MICs tender for PCV in 2018.

More flexible financing instruments. Another possible option for country consideration is subscribing to UNICEF's VII. The Initiative uses a capital fund, capitalized at $35 million as of December 2017, to allow UNICEF SD to initiate procurement on behalf of subscribers without prepayment. Once the vaccines are received and invoiced, the countries have 30 days to repay the VII. These more flexible payment terms may help countries that struggle with the prepayment requirement.[23] UNICEF SD is also ready to work with countries to explore commercial financing options that meet the prepayment requirement, including bank guarantees and bank letters of credit. With UNICEF's agreement, letters of credit or bank guarantees could be used to stand in for UNICEF's prepayment requirement *(see Figures 8 and 9).*

23 For more information on the VII and on subscription requirements, see <www.unicef.org/supply/index_85897.html>.

Figure 8. Commercial bank guarantee

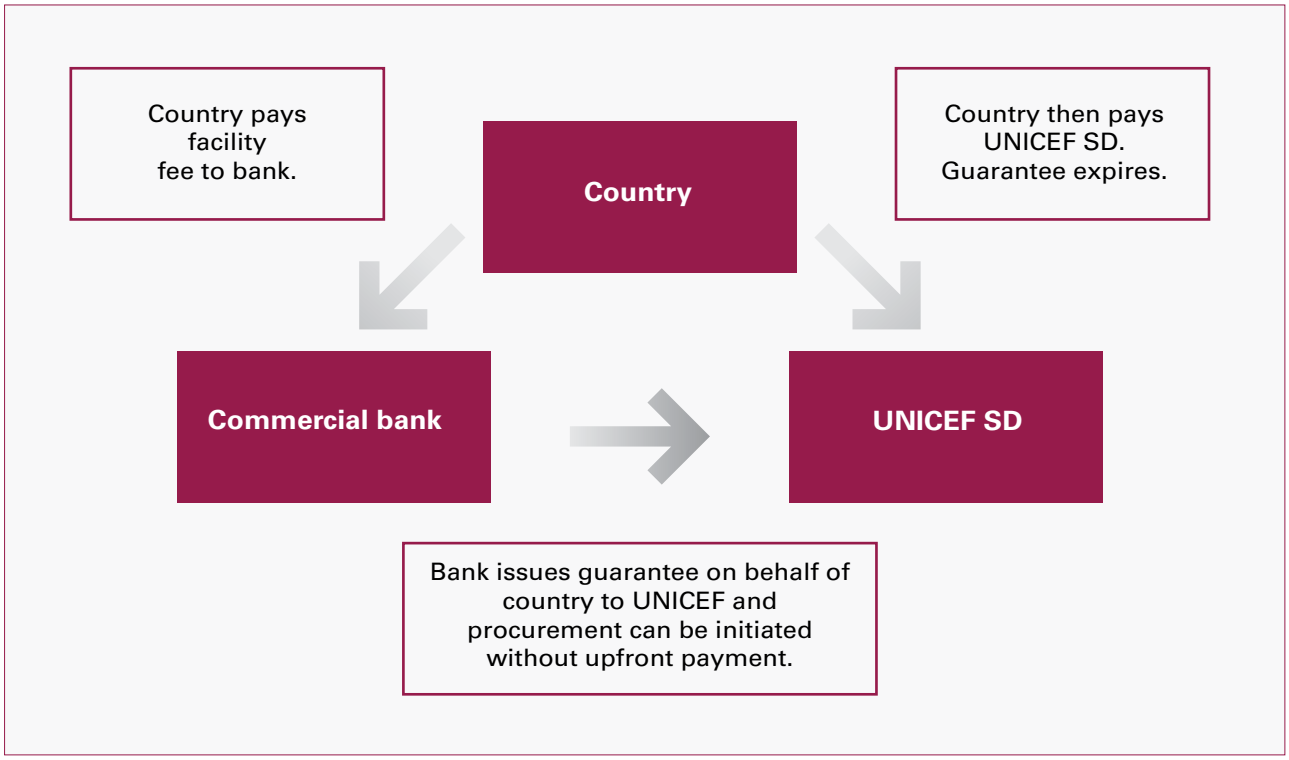
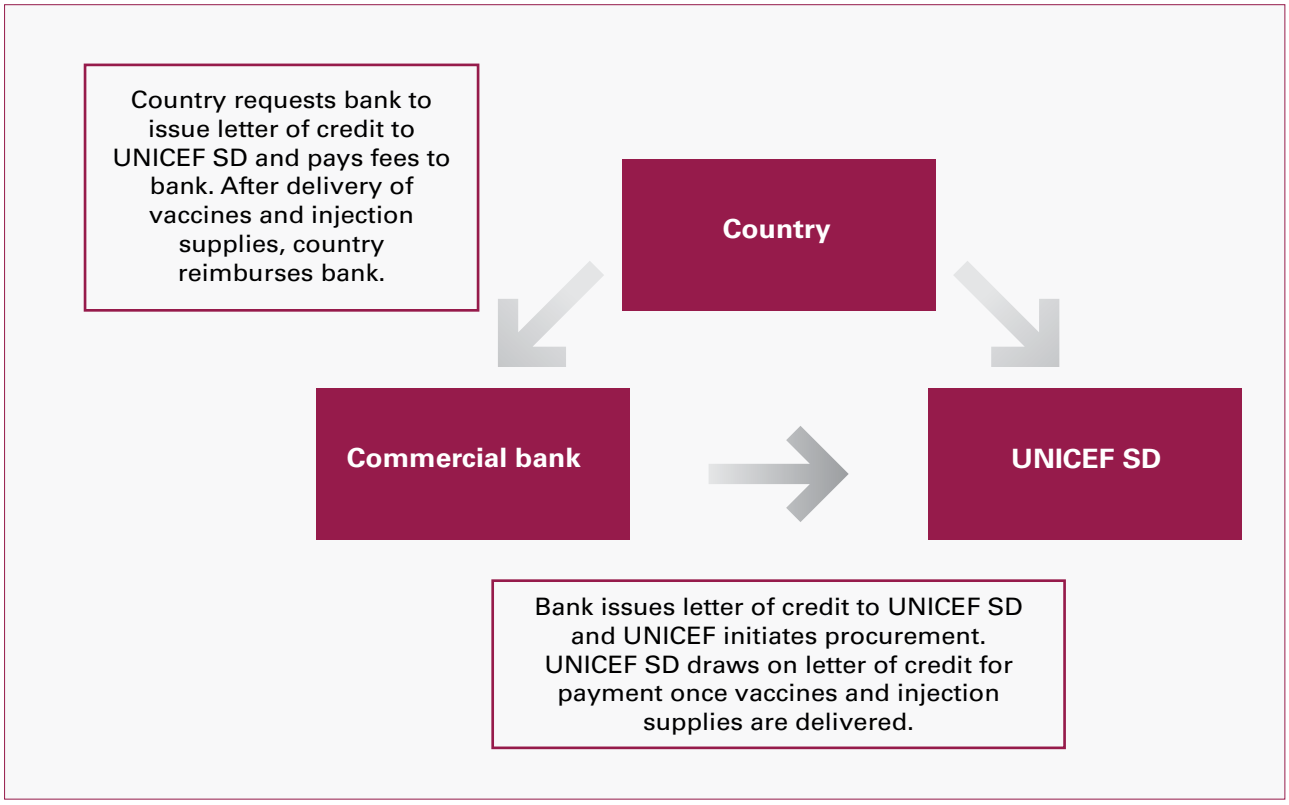


Figure 9. Letter of credit



Part 2:
Focus countries

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2.1 Algeria

Algeria is an upper middle-income country with a GNI p.c. of $4,270 in 2016 *(see Annex 2, Table 2)* and a population of over 41 million in 2017 *(see Annex 2, Table 1)*. Most of the population (71 per cent) lives in urban areas. The economy has relied on government redistribution of hydrocarbon revenues. When oil prices were high, Algeria was able to build infrastructure, repay most of its external debt, achieve social stability and make progress towards meeting the Millennium Development Goals. Poverty was reduced by 20 per cent in the past two decades. However, unemployment was estimated at 10.5 per cent in 2016 and remains particularly high among youth (27 per cent) and women (20 per cent).[24]

Algeria is now dealing with fiscal deficits, a steep decline in international reserves and a near depletion of fiscal savings in the oil stabilization fund created during the period of high oil prices. The authorities have implemented some structural reforms and are working on a long-term strategy to reshape the country's growth model to foster greater private-sector activity and economic diversification. As oil prices are expected to remain low relative to price levels immediately prior to 2014, and as hydrocarbon reserves are exhaustible, the consolidation is focusing primarily on broadening the tax base, gradually replacing costly broad subsidies of basic commodities with direct support to the population most in need, and further strengthening the budget framework. Investments in health, education and targeted social safety nets have been maintained thus far.

Health system and health status. The health system includes a mix of public, para public and private financing and service delivery. More than 90 per cent of all beds are found in public hospitals.[25] The private sector has expanded considerably since the early 1990s, and almost 50 per cent of all health professionals now work in the private sector. The para-public sector is made up of autonomous medical services of big public firms, such as Sonatrach and Sonelgaz, that provide outpatient health care for their employees and their families.

24 IMF (2017), *Algeria: 2017 Article IV Consultation,* Country Report No. 17/141.
25 Zehnati (2014), 'Analyse économique de l'émergence et du développement d'une offre privée de soins en Algérie'.

While the Algerian constitution guarantees free access to health care services in the public sector, access and utilization vary in practice. Disparities between regions, provinces and social groups are of great concern. Data from the Multiple Indicator Cluster Surveys (MICS) from 2011 to 2012 showed considerable differences in access to maternal and child health services between regions and the highest and lowest income quintiles.

General health indicators registered substantial progress in achieving the health- and nutrition-related Millennium Development Goals. Life expectancy reached 77 years in 2014 compared to 72 in 2000. The IMR was estimated at 22 per 1,000 live births in 2014, down from 37 in 2000.[26] This reflects the rapid epidemiological transition during the past decades in Algeria.

Health system financing. Current health expenditures p.c. reached $292 in 2015 *(see Annex 2, Table 7)* due to the rapid increase in demand and supply of health services and products, changes in the epidemiological profile of the population, the expansion of health insurance and the private sector, and the rise in the cost of health services and products. The total pharmaceutical market grew from $500 million in 2000 to $3.7 billion in 2016,[27] driven by the prevalence of NCDs and the rapid introduction of new drugs and medical devices. Current health expenditure represented 7 per cent of GDP in 2015 *(see Annex 2, Table 7),* increasing from 3.7 per cent in 1995. The share of public expenditure on health (including government and social health insurance) in current health expenditure has fluctuated over the period 2000–2015 from 68 to 77 per cent, and was estimated in 2015 at 71 per cent.

The Government supports 90,000 to 130,000 Sahrawi refugees accommodated in five camps in southwestern Algeria. It also provides immunization free of charge to the Syrian and Palestinian population hosted by the country. The share of out-of-pocket expenditures increased slightly, from 26 per cent in 2000 to 28 per cent in 2015, and has remained fairly stable over the past decade *(see Annex 2, Table 9).* This is slightly lower than the global average of 31 per cent for upper middle-income countries.[28] Social health insurance covers almost 85 per cent of the population and funds public and private providers.

Immunization coverage and new vaccine introduction. With 91 per cent DTP3 coverage in 2016 (WHO/UNICEF estimates), Algeria met the 2020 GVAP performance criteria on DTP3, and is close to meeting them on MCV1 and MCV2 (94 per cent estimated coverage of MCV1 in 2016). EPI achievements include (1) no cases of diphtheria since 2007; (2) no cases of polio since 1997, with the certification process of elimination in progress; (3) elimination of neonatal tetanus in 1984, with the certification validated by WHO; and (4) a 99 per cent reduction in the incidence of measles, from 65.5 cases per 100,000 inhabitants in 1996 to 0.07 cases in 2012.[29]

Algeria has a formal NITAG. Two workshops were held with local and global experts in 2013 and 2015 to propose an update that accounts for epidemiological trends, WHO recommendations, technological advances and opportunities in the global vaccine market. Based on the NITAG recommendations, the MOH decided to introduce three new vaccines in 2016: IPV, measles-mumps-rubella (MMR) and PCV. The gap in time between the NITAG recommendation and the introduction of the recommended vaccines was mainly due to financial constraints and the required huge increase in the vaccine budget.

Immunization financing. The budget for EPI vaccines increased from $3.5 million in 1997 to $31 million in 2015, and jumped to $90 million in 2016 with the introduction of MMR vaccine, IPV and PCV.[30] More than 95 per cent of vaccinations are delivered in the public sector free of charge for the target population. Non-EPI vaccines (flu, vaccines for travellers and pilgrims) are imported and provided mainly by the Pasteur Institute of Algeria (Institut Pasteur d'Algérie [IPA]) against payments and fees. The flu vaccine is the only one available from private providers. Social health insurance does not fund vaccines and immunization services. Given overall budgetary pressures, adequate funding of non-vaccine components of the NIP, such as cold chain, surveillance, supervision and transport, could be at risk. Funding of newly introduced vaccines is protected so far but may be difficult to sustain in the near future. The Government may wish to explore possible technical efficiency gains from changing vaccine presentations and immunization strategies, and reducing wastage rates.

Strategic purchasing: vaccine procurement. The IPA has a legal monopsony on importing vaccines for the public and private sectors. Local production ended in the 1980s. Vaccine procurement is carried out exclusively by the IPA following the public procurement law and procedures, and under MOH supervision. The IPA is in charge of importing, storage and distribution. The NIP is responsible for vaccine forecasting, product specifications and vaccine management. Specific MOH entities are responsible for vaccine registration and funding. The National

26 Ministry of Health, Population and Hospital Reform (2014), 'Situation démographique et sanitaire (2000–2014)'.
27 BMI Research (2016), *Algeria Pharmaceuticals & Healthcare Report.*
28 WHO (2017), *New Perspectives on Global Health Spending for Universal Health Coverage.*
29 Ministry of Health, Population and Hospital Reform (2016), 'Guide pratique de mise en œuvre du nouveau calendrier national de vaccination'.
30 Ibid.

Laboratory of Quality Control of Pharmaceutical Products oversees quality assurance, while the National Institute of Public Health is responsible for surveillance and the information system. The IPA imports only WHO pre-qualified vaccines. Despite multiple attempts, Algeria has not used UNICEF SD to purchase EPI vaccines because of public procurement rules and the role accorded to the IPA; however, the Government continues to be interested in this option. The IPA charges a handling fee of about 20 per cent for vaccine procurement. Vaccines are exempt from import taxes, and income from vaccine sales is an important element of IPA's budget.

Sanofi Pasteur, the Saïdal Pharmaceutical Group and the IPA signed a memorandum of understanding on 7 December 2017 to create a joint venture for filling vaccines in Algeria. It would aim to manufacture three vaccines from Sanofi Pasteur: hexavalent (diphtheria-tetanus-acellular pertussis [DTaP], HepB, Hib, IPV), tetravalent and the quadrivalent influenza vaccine. The new unit would have a production capacity of between 10 million and 20 million doses per year to cover the Algerian market's needs.

Conclusions. The MOH is the single source of funding of EPI vaccines and immunization in Algeria. The Government may wish to explore contributions from social health insurance and voluntary health insurance in the future, as the reduction in vaccine-preventable diseases (VPDs) averts hospitalization and treatment costs. Relatively high prices of recently introduced vaccines is a concern, and sustainability could be a challenge in the coming years. Adequate funding of recurrent non-vaccine immunization costs is becoming difficult, particularly for supply chain equipment and management, surveillance and laboratory control, information systems, and monitoring and evaluation. The MOH and IPA have been discussing with UNICEF SD the possibility of using UNICEF procurement services for new vaccines, such as PCV. Some of the requirements, for example prepayment, are not compatible with the national public procurement rules. Algeria is looking for some flexibility on prepayment, perhaps by using commercial bank guarantees or letters of credit to meet the prepayment requirement.

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2.2 Jordan

Jordan's socio-economic situation is challenging, given the exogenous shocks and events of the past several years. Following strong economic growth from 2000 to 2009, real growth fell to an average of 2.5 per cent annually between 2010 and 2016.[31] This slowdown was preceded by the 2008 global financial crisis, and was then exacerbated by the disruption of Egyptian gas supplies during the Arab Spring. That event resulted in Jordan substituting gas imports with more expensive oil imports. The Syrian crisis led to closed land borders between Jordan, Iraq and the Syrian Arab Republic, which in turn reduced exports and negatively impacted tourism. The large influx of refugees into Jordan from the Syrian Arab Republic, Iraq and Yemen has strained the financing and provision of public services, including health.

The Government's budget depends in part on external grants. The United States Agency for International Development (USAID) is the largest donor, and disbursed $2.03 billion to Jordan in the period 2014–2016, of which $844 million was general budget support and $639 million emergency response. About $54 million was disbursed for basic health and maternal and child health.[32] The refugee crisis was met with much support during the initial years, but donor fatigue has set in. With the need to provide ongoing services, the crisis continues to strain Jordan's economy. The Government has struggled with reducing its high debt-to-GDP ratio, and entered into a three-year Extended Fund Facility agreement with the IMF in August 2016 totalling $723 million. The agreement aims to maintain macroeconomic stability and consolidate the fiscal account. The Government has had to cut spending, including the MOH budget, which has created many pressures within the Ministry and made its goal of achieving UHC harder to reach in the short to medium term.

Health system and health status. The MOH has a large network of primary health care centres and secondary and tertiary hospitals. Public-sector facilities also include those run by the military's Royal Medical Services and university hospitals (University of Jordan Hospital, King Abdullah University Hospital). The for-profit private sector consists of private clinics, diagnostic centres and hospitals, while the international and non-profit sector includes clinics for refugees run by the United Nations Relief and Works Agency (UNRWA), UNHCR, the King Hussein Cancer Center

31 IMF (2017), *World Economic Outlook, October 2017.*
32 USAID, Jordan, <https://results.usaid.gov/results/country/jordan?fiscalYear=2016>.

and charity clinics. Risk pooling is fragmented, with several payers and providers. The MOH civil health insurance fund covers an estimated 44 per cent of the population, while the Royal Medical Services military insurance fund covers 27 per cent, university hospitals just over 1 per cent and private health insurance about 7 per cent. UNRWA covers an estimated 7 per cent (Palestinian refugees), although only with primary care services.[33] The uninsured population can get services at public facilities but must make co-payments. Immunization and prenatal care are free at public facilities.

The IMR is estimated at 15 per 1,000 live births and the U5MR at 17.5 per 1,000 for 2017. Life expectancy is estimated at 74 years in 2017. The TFR is about 3.3 *(see Annex 2, Table 1)*. Jordan's Human Development Index, a composite index measuring achievement in health, education and standard of living, was 0.74 in 2015, which is classified as 'high human development'.

According to United Nations Population projections for 2017, Jordan's population is now estimated at 9.7 million.[34] The last census, held in 2015, estimated the population at 9.5 million, of which 6.6 million were Jordanians and 2.9 million non-Jordanians. Of these, 1.3 million were identified as Syrians. Of the total population, registered Syrian refugees totalled 654,877 in November 2017, according to UNHCR. Its estimates also show that about one fifth of these refugees are in camps.

The influx of refugees has strained the health system in several ways. First, it has created the risk of re-emerging communicable diseases that have been relatively well controlled in Jordan – diseases such as measles, tuberculosis and diarrhoeal disease. Second, the large number of refugees has increased the demand for outpatient services, hospitalizations, and medicines and vaccines, which strain the already pressured health budget.

Health system financing. Domestic government expenditure on health made up 57 per cent of current health expenditure in 2015, with external assistance accounting for an additional 7 per cent *(see Annex 2, Table 7)*. About 12 per cent of the Government's overall budget was directed to health in 2015, which is relatively high compared to other MENA countries. Out-of-pocket expenditure was estimated at 25 per cent in 2015 *(see Annex 2, Table 7)*, which was lower than the global average for UMICs of 31 per cent in that year.[35]

Immunization coverage and new vaccine introduction. Routine immunization is provided free of charge to all in the country, regardless of nationality and insurance status. The WHO/UNICEF estimate of DTP3 coverage was 98 per cent in 2016. Coverage levels have been very high for many years, being consistently above 90 per cent since 2000. The WHO/UNICEF estimate of MCV2 coverage was 99 per cent in 2016, meaning that Jordan has met the 2020 international GVAP targets for both DTP3 and MCV coverage. Despite very high coverage rates, some concerns remain for subgroups of the population. For example, data show that the lowest measles coverage is in certain geographic areas, namely Aqaba, Ma'an and Tafiela.[36] HepB vaccine was introduced in 1995, Hib vaccine in 2001 and IPV in 2005.

In addition to PCV, Jordan's NITAG has been recommending the introduction of hepatitis A and varicella vaccines since 2012. However, with the influx of refugees, immunization programme funds have, out of necessity, been largely oriented towards reaching the entire Jordanian population rather than towards new vaccine introductions. Even with these constraints, the Government managed to introduce the rotavirus vaccine in 2015.

Immunization financing. Currently, the Government funds routine immunization almost entirely from the domestic budget. For 2016, the Jordan Country Office funded a share of the overall cost, i.e., about $262,000 in value (OPV, as well as DTP, tetanus toxoid, and measles vaccines).[37]

Strategic purchasing: vaccine procurement. Jordan procures its EPI vaccines directly through its Joint Procurement Department under the Prime Minister. In some cases, prices paid in 2016 were relatively high compared to UNICEF SD reference prices.[38] The MOH is open to examining the use of UNICEF SD to procure PCV, which it hopes to introduce soon with support from USAID (as yet unconfirmed). However, use of UNICEF SD may be challenging, given UNICEF's prepayment requirement and other points which may conflict with the Government's procurement regulations.

33 Government of Jordan, 'The National Strategy for Health Sector in Jordan, 2015–2019'.
34 UN Population Prospects is the source for the 2017 demographic estimates: see <https://esa.un.org/unpd/wpp/Download/Standard/Interpolated>, accessed 5 March 2018.
35 Jordan was reclassified as a lower middle-income country in 2016. In 2015, the year of comparison for these data, it was an upper middle-income country.
36 UNICEF (2016), *UNICEF Annual Report 2016: Jordan*.
37 In addition, UNICEF SD procured about $11 million in vaccines for MENARO in Jordan in 2016. This was for regional needs, including for displaced populations/refugees (some of which may have been used in Jordan).
38 According to price data provided by the Government.

Following its introduction of IPV in 2005, Jordan switched from whole cell pertussis pentavalent to the more expensive acellular pertussis plus IPV-containing vaccine (DTaP-Hib-IPV) in 2010. Thereafter, prices for this vaccine fluctuated and increased, and the Government subsequently replaced it with hexavalent (DTaP-Hib-HepB-IPV) in 2017, which was recommended by the NITAG. While this vaccine presentation is very expensive, Jordan wants to use this combination vaccine with IPV given the global shortages of stand-alone IPV. The country remains very concerned about ensuring IPV coverage, as cases of vaccine-derived polio have occurred nearby in the Syrian Arab Republic. It considers hexavalent to be a more secure source of supply of IPV. While the supply of stand-alone IPV has greatly improved, Jordan could still see supply security as a risk and would need strong assurance that if it switched to stand-alone IPV, it would be guaranteed a continuous supply.

The pros and cons of choosing hexavalent vaccine need to be balanced against those of purchasing (whole cell) pentavalent vaccine plus stand-alone IPV vaccine, as this would be considerably less expensive. If purchased through UNICEF SD, pentavalent vaccine is now available to countries at a price as low as $0.65 per dose for the 10-dose presentation, and up to $1.40 per dose for the single dose (in 2017).[39] The IPV UNICEF reference price for 2017 is $2.80 per dose. Savings are so large that they could cover the introduction of PCV, for example. This needs to be balanced against other considerations, such as the security of IPV supply and the choice of acellular pertussis.

Conclusions. While the Government is strongly committed to health – and within that, to immunization – its overall budget is highly constrained because of its effort to reduce debt and its agreement with the IMF. To make further progress in immunization when the overall fiscal space is so restricted, budgetary room may need to be created from efficiency gains. If confirmed, USAID grant funding for PCV would provide temporary additional fiscal space, but the Government would need to plan on assuming funding of this vaccine when USAID support winds down.

Important potential areas for efficiency gains are through product selection, the mode of procurement and the length of contracts. While Jordan is interested in multiyear contracts, regulation is not favourable for now (the country only has one-year contracts or single deliveries).

39 UNICEF, data on the awarded price per dose, per product, per supplier and per calendar year; see <www.unicef.org/supply/files/DTP-HepB-Hib.pdf>.

2.3 Morocco

Morocco is a lower middle-income country with an estimated population of 36 million in 2017. Key economic sectors include agriculture, tourism, aerospace, automotive, phosphates and textiles. It has increased investment in its port, transportation and industrial infrastructure to position itself as a hub and broker for business throughout Africa. Its GNI p.c. was $2,850 in 2016 *(see Annex 2, Table 2)*. Morocco's economy only grew by an estimated 1.2 per cent in 2016 due to the adverse impact of poor rainfall, but the economy was projected to grow by 4.8 per cent in 2017 and 3.0 per cent in 2018 *(see Annex 2, Table 3)*. While the country is engaged in a vast programme of reforms aimed at sustaining economic growth and social conditions, some challenges and weaknesses remain – namely, the wide gap between rural and urban standards of living, and the high poverty and unemployment rate.

Health system and health status. The health care system includes a mix of public and private financing and delivery. Financed chiefly by the public budget, the MOH offers the entire population access to health centres, dispensaries, diagnostic centres and public hospitals. Human resources represent one of the key constraints for Morocco's health system,[40] with an overall shortage of medical, technical and nursing staff, as well as geographical distribution problems. Personnel shortages are attributed to a variety of causes, including relatively low salaries and incentives to work in the public sector. Significant progress has been made in reducing the prevalence of infectious diseases, and in improving maternal and child health. About 39 per cent of the population lived in rural settings in 2016, and life expectancy was estimated at 76 years in 2017 *(see Annex 2, Table 1)*.

Health system financing. Morocco has made significant progress in its move towards UHC by absorbing a large part of the population under various medical coverage schemes. Since 2005, the national health coverage system in Morocco has consisted of two main schemes: compulsory health insurance (Assurance Maladie Obligatoire [AMO]) and the Medical Assistance Regime (Régime d'Assistance Médicale). In the period 2016–2017, these two schemes, combined with private health insurance schemes, provided coverage to around 62 per cent of the population, up from 34 per cent in 2010. This leaves around 38 per cent, or roughly 12.6 million people, uninsured, and expanding

40 Ministry of Health, 'Santé en chiffres 2014, Edition 2015'.

coverage for them is a challenge.[41] This population consists mainly of independent, self-employed professionals and those in the informal sector. Debate over health insurance for independent workers, modelled on the AMO, is ongoing, with a few options under discussion.

Out-of-pocket payments by households constitute the largest single source of overall health financing in Morocco, responsible for an estimated 53 per cent of total health expenditures in 2015 *(see Annex 1, Table 7).* This is significantly higher than the global average of 40 per cent for LMICs.[42] Most of these payments go towards drug purchases made at private pharmacies, as well as to health services provided in the private sector and hospital services in the public sector.[43] Cost recovery in the public sector is officially practised only in hospitals, and all outpatient services provided at health centres and dispensaries, including immunization services, are officially provided free of charge. External assistance to health is now very low. Previously, it played a critical role in funding key maternal and child health programmes, including the NIP.

The main health financing challenges are to reduce the share of out-of-pocket expenditure in total health expenditure (given that it exposes households to the risk of financial catastrophe and impoverishment), to increase the current levels of government health financing, to expand insurance coverage to the informal sector and to establish efficient purchasing and provider payment mechanisms. The new national health strategy for 2017–2021 and the MOH action plan for 2016–2021 propose strategies to tackle these challenges as part of the movement towards UHC and equitable health systems.[44]

Immunization coverage and new vaccine introduction. The NIP is managed and funded exclusively by the MOH. Immunization services are largely provided by maternal and child health nurses operating from health centres, dispensaries, hospitals and within mobile teams. DTP3 and MCV2 coverage in 2016 have exceeded GVAP targets *(see Annex 2, Table 9).* HepB vaccine was introduced in 1999, measles-rubella vaccine in 2003, Hib vaccine in 2007–2008, and PCV and rotavirus vaccine in 2010–2011. The MOH estimates that 5 per cent of all immunizations are delivered by private providers, mainly to the better-off segments of the urban population.[45] However, in Rabat and Casablanca, private providers are an increasingly important source of immunization services, and the only source of non-EPI vaccines, such as HPV and flu vaccines. Although social health insurance does not fund immunization, some private insurance does.

Limited overall funding for health and the disparity in health resources between regional areas create inequities in the access to and quality of services. Differences exist in access to routine health services between urban and isolated rural areas. Because of a shortage of fixed health facilities in rural areas – where 30 per cent of the population must travel more than 10 kilometres to a health facility and 14 per cent are not covered at all by the health system[46] – access to immunization services on a routine basis is significantly less than in urban areas. This has led to lower immunization coverage rates in a number of rural provinces. National Immunization Days are used to increase coverage in the rural areas and to reduce disparities.

Immunization financing. Financing of the NIP has evolved in many ways over the past decades, with four clear phases. In the **first phase,**[47] from the 1970s to the early 1990s, international donors, notably UNICEF, USAID and WHO, provided much of the financing of direct programme inputs, such as vaccines, vaccine supplies and cold chain equipment. Mass immunization campaigns were common. In the **second phase,** beginning in the early 1990s, direct donor support for the programme declined and was replaced by World Bank loan funding channelled through the MOH investment budget. The vaccines were purchased through UNICEF's VII, using a revolving fund initially capitalized for Morocco by USAID. The role of UNICEF and USAID evolved from direct financing of vaccines and other immunization-related inputs to facilitating the Government's purchase and financing of its vaccine supply. The **third phase** began with the implementation of the new five-year health plan for 1999–2003, which included the introduction of HepB vaccine, efforts to increase immunization coverage in the relatively poor-performing areas, replacement of cold chain equipment and the introduction of single-use syringes,

41 WHO (2015), 'Review of the Moroccan Health System: Challenges and Opportunities to Accelerate Progress Universal Health Coverage, WHO mission to Morocco'.
42 WHO (2017), *New Perspectives on Global Health Spending for Universal Health Coverage.*
43 Economic, Social and Environmental Council of Morocco (CESE), *Les soins de santé de base.* Saisine n°4/2013.
44 WHO, *Morocco Country Cooperation Strategy 2017–2021.*
45 Personal communication and interviews with MOH resource people.
46 Economic, Social and Environmental Council of Morocco (CESE), *Les soins de santé de base.* Saisine n°4/2013.
47 Kaddar, et al., (1999), 'Case Study on the Costs and Financing of Immunization Services in Morocco'.

which significantly increased the cost of the immunization programme. These costs came at a time when donor funding, including that from the World Bank, continued to decline. This challenge was successfully managed, and the government budget now covers all the national immunization expenditures. The **fourth phase**, in the current decade, saw the introduction of pneumococcal and rotavirus vaccines and the measles-rubella vaccine into the national immunization schedule, totally funded by the government budget. Despite many debates and efforts, notably by the Lalla Salma Foundation for Cancer Prevention and Treatment, the introduction of HPV vaccine has encountered numerous constraints, particularly those related to the cost of vaccines and financing the delivery.

Strategic purchasing: vaccine procurement. In 1993, Morocco became the first country in the MENA region to join the VII, an effort by UNICEF and partners to assist countries in becoming self-sufficient in financing their vaccine supply. The VII allows countries to pay for vaccines in local currency and only once the commodities are delivered, thereby eliminating two major obstacles – the lack of hard currency and the need to pay in advance. To capitalize the fund, USAID provided $600,000, which was later increased to $1.1 million. The capitalization amount set the limit for the total outstanding payments a country can have at any one time. The Government then procured nearly all its vaccines through the VII using World Bank loan funds, and reduced import duties and taxes on vaccines. When World Bank funding ended in 2002 and vaccine purchases increased substantially to include the HepB vaccine, the VII capitalization was too low to accommodate the country's vaccine needs. In 2006, when Morocco included Hib vaccine in the immunization schedule, it ended its use of the VII. The Government continued to use UNICEF Procurement Services but paid for all vaccines from government funds in advance and in hard currency.

In 2010, the Government decided to introduce both rotavirus and pneumococcal vaccines to help reach the health-related Millennium Development Goals, and it procured these vaccines directly. The budget for PCV and rotavirus vaccine represented 77 per cent of the overall vaccine budget, reducing MOH's ability to introduce new vaccines and to fund other EPI components. Prices of rotavirus vaccine and PCV were considered too high compared to the other vaccines and UNICEF prices. The MOH has been exploring opportunities to procure PCV and rotavirus vaccine through UNICEF SD in 2018.

The Government of Morocco has been building its experience and knowledge of the global vaccine market and vaccine procurement best practices. It did get some capacity building on procurement modalities for vaccines through WHO courses on vaccine procurement in 2006, through the initiative of the Eastern Mediterranean Regional Office of the World Health Organization (EMRO) on pooled procurement for the lower middle-income countries, and through the recent UNICEF network for vaccine procurement practitioners meeting.

Conclusions. Morocco has made significant progress towards UHC; however, household out-of-pocket spending remains high and has been persistent over the years. Immunization funding and vaccine supply have evolved dramatically with the Government's growing commitment to funding after long relying on donor support and World Bank loans. Funding for immunization operations is insufficient, particularly for training, supervision, information systems, cold chain maintenance and communication activities. The choice made by Morocco to purchase almost all its vaccines from UNICEF SD has ensured a regular supply of quality products at affordable prices. The direct purchase of PCV and rotavirus vaccines using MOH funds has allowed the rapid introduction of these new vaccines from 2010, but this has not come without high costs and additional challenges.

2.4 The Sudan

Since becoming independent in 1956, the Sudan has experienced intermittent civil war. The secession of South Sudan in 2011 resulted in several economic shocks, including the loss of much oil revenue and reduced economic growth. South Sudan's civil war has put pressures on the Sudan due to the influx of refugees, and its famine in 2017 also pushed refugees into the country. The US Government placed sanctions on the Sudan in 1997 and expanded them in 2006, isolating the country to a great degree from the world's financial systems and creating difficulties for it to access foreign exchange. These sanctions were lifted in October 2017. Agriculture and livestock are important sectors in the economy and will be critical for growth over time.

The Sudan ranks low on the United Nations Development Programme's Human Development Index – at 0.49, it is one of the lowest in MENA along with Djibouti and Yemen *(see Annex 2, Table 5)*, ranking it 165 of 188 countries in 2015. It also ranked poorly on the World Bank's governance indicators in 2016, with its scores for government effectiveness (-1.41), regulatory quality (-1.49), rule of law (-1.26) and voice and accountability (-1.80) *(see Annex 2, Table 6).*

The Sudan is a highly indebted country, complicated by difficulties in apportioning the debt between itself and South Sudan. It has been in non-accrual status to the World Bank Group since 1994, and as such has no access to World Bank credits or loans. However, the World Bank re-engaged with the Sudan, using a multi-donor trust fund to provide grant funding and analytical work related to strengthening core government functions and supporting the Government's work on reducing poverty.

Fiscal space is highly constrained given the Government's limited access to external assistance, its high indebtedness and low tax base. **General government expenditures were estimated at only about 12 per cent of GDP in 2016 *(see Annex 2, Table 3)*, compared to the average for all the middle-income MENA countries at 31 per cent.** Economic growth prospects for the Sudan are positive though modest over the medium term. The IMF projects real growth in GDP of about 3.6 per cent per year from 2017 to 2022 *(see Annex 2, Table 3)*, but this translates to just over 1 per cent annually in the same period when combined with estimated population growth of 2.4 per cent per year.

Health system and health status. Health services are largely devolved to the state level, and national resources are being decentralized over time to the state level as well. The formula used to allocate resources for health to states and districts appears to be heavily driven by hospital infrastructure rather than by where the poor health outcomes and problems with service coverage exist. For example, public expenditure on health p.c. was estimated at $23 p.c. in Khartoum versus $2.5 in Darfur (no year provided for reference). This has created inequities in the use of resources by area. In general, curative care receives a large share of resources, while spending on primary and preventive care is limited.[48]

The Sudan has its National Health Insurance Programme that enrols civil servants and formal-sector workers. It is being scaled up to enrol other population subgroups on a voluntary basis. While the benefits package is comprehensive, the benefits are in practice difficult to access outside urban areas because of a lack of health infrastructure.

Public facilities charge fees for many drugs and services. Routine immunization is exempt from fees.

The private sector provides a small share of total immunizations in the Sudan. The for-profit private sector is concentrated in the largest cities. The EPI provides routine vaccines to the private sector, and the latter is expected to report on coverage.

The Sudan's IMR was estimated at 44 per 1,000 live births in 2017 *(see Annex 2, Table 1)*, with only Djibouti at a higher level of the MENA countries. The U5MR was estimated at 67 per 1,000 *(see Annex 2, Table 1)*. The 2017 population was projected at 40.5 million in 2017, and births were projected at 1.3 million in the same year. The TFR is high at 4.5 (the highest in MENA), and the birth cohort is growing at about 1.4 per cent annually, with implications for increasing immunization expenditures.

Health system financing. Spending on health is regressive, with very high out-of-pocket expenditures (63 per cent of current health expenditures in 2015, compared with the global average for LMICs of 40 per cent). This results in low financial protection; in fact, households may forgo needed care because of the cost (or the lack of geographical access) or may pay out-of-pocket costs with potentially large financial hardship.

Health as a share of government expenditure is growing, but the growth is constrained by low overall government revenues. The Government is committed to moving to UHC but cannot make much progress without creating more fiscal space. General government expenditure on health as a share of total government expenditure was estimated at 18 per cent in 2015, which is very high in the context of both MENA and countries globally. The 18-per-cent proportion ranks the Sudan 6th among middle-income countries globally on this measure.

Immunization coverage and new vaccine introduction. While WHO/UNICEF estimates of DTP3 coverage in the Sudan for 2016 are high at 93 per cent, wide variations exist in delivery of services, vaccination coverage and incidence of disease. The provision and cost of immunization services are significantly affected by difficult access to some areas, rural-urban migration, natural disasters, the long-standing civil war and limited resources. The problem has been exacerbated by the influx of refugees in 2015 and 2016 from Eritrea, Ethiopia and Somalia. The Sudan faces challenges in reaching security-compromised areas, such as the Darfur states. It also has difficulty reaching nomads, internally displaced and ethnic groups. The influx of refugees presents difficult issues of surveillance, disease outbreak prevention, and immunization. High staff turnover also creates problems.

With Gavi support, the Sudan has introduced pentavalent (and earlier, HepB), rotavirus, pneumococcal conjugate and meningitis A vaccines into the routine programme. The country has also received direct financial support for vaccine introductions, health system strengthening and, earlier, immunization system strengthening. It has also received support for meningitis A and yellow fever campaigns. From 2000 through October 2017, Gavi disbursed the equivalent of $345.5 million to the Sudan.[49] The country plans to introduce yellow fever vaccine in the routine programme in 2019, and measles-rubella vaccine in 2020. It also hopes to introduce HPV vaccine in the coming years.

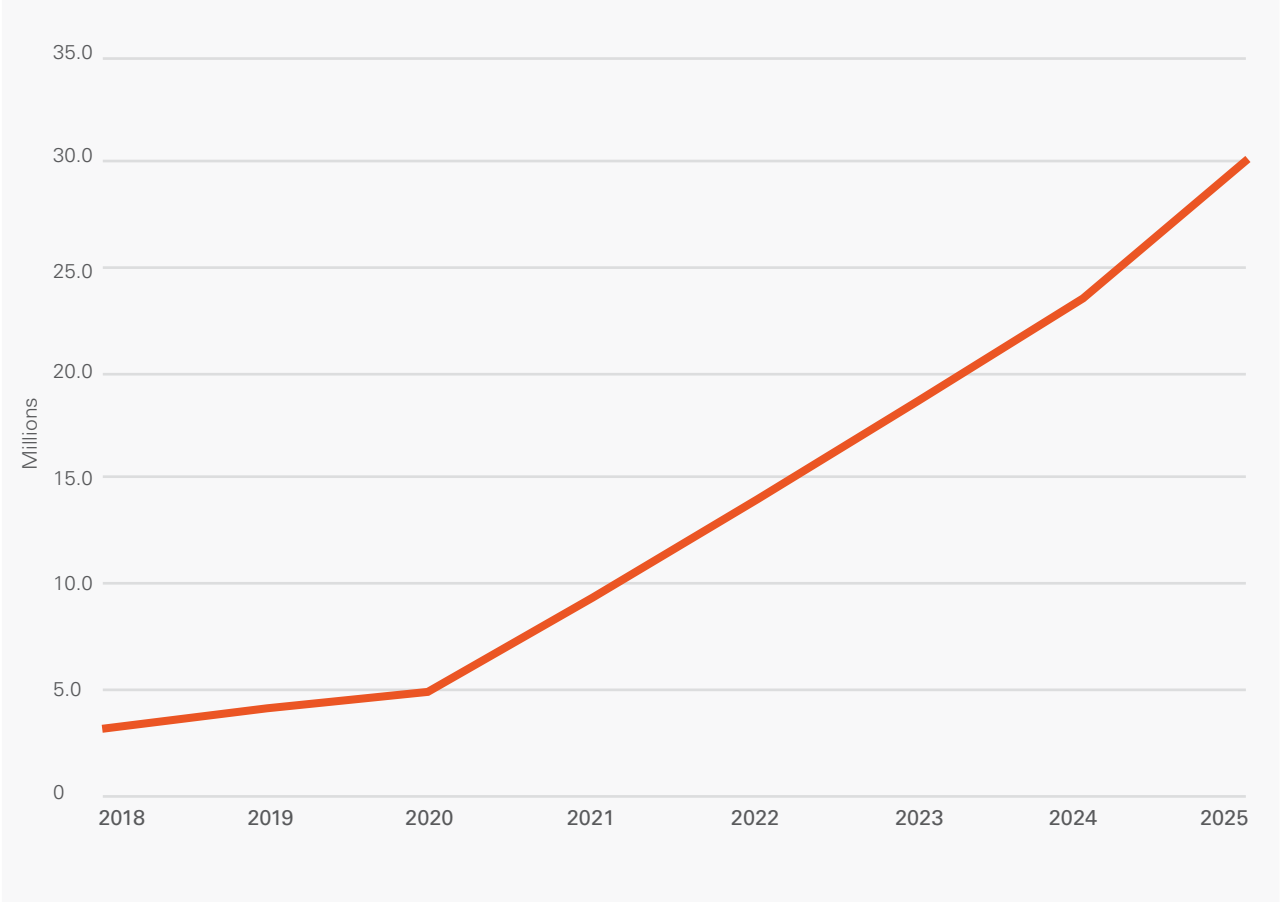
Immunization financing. As part of Gavi's sustainability model, the Sudan needs to co-finance routine vaccines so it is better prepared to finance them on its own over time. Its co-financing obligations have been steadily growing since 2010. The Sudan defaulted on its co-financing obligations in 2012 but has been meeting them since.

48 World Bank (2015,) 'Republic of Sudan: Health Financing Options Paper'.
49 Gavi, the Vaccine Alliance, Sudan (the), <www.gavi.org/country/sudan>, accessed 27 January 2018.

With the country's growth in GNI p.c., it is expected to cross Gavi's eligibility threshold in 2020, after which co-financing obligations will ramp up sharply. Co-financing obligations in 2017 totalled $3.3 million. Gavi estimates the Sudan's co-financing obligations will rise from $3.1 million in 2018 to $13.9 million in 2022 and $30.1 million by 2025 *(see Figure 10)*. This estimate is only for vaccines that are currently supported by Gavi.

This rapid ramp-up is of concern given the Sudan's current low expenditures on vaccines. All traditional vaccines are financed externally and procured by UNICEF SD. The rationale for this is unclear, given the low cost of these vaccines. The Sudan only contributes the cost of injection supplies for traditional vaccines. As a consequence, the country will not only need to ramp up its spending to fully finance Gavi-supported vaccines, but also may need to boost spending to cover what are presently externally supported costs of traditional vaccines, should that funding support end. To illustrate these amounts: The total cost of vaccines and injection supplies was $40.2 million in 2016; of this, Gavi contributed $37.74 million and other external donors $3.41 million, while the Government contributed $4.09 million – or less than 10 per cent of total contributions.[50] Another way to gauge the magnitude of the scale-up is to compare the eventual co-financing contributions in 2025 ($30.1 million) to the Sudan's 2015 public spending on health, which represents approximately 1.7 per cent of the current budget. To create the fiscal space to eventually cover these requirements, the Government will need to either allocate a significant portion of any new funding for the MOH budget to co-financing or reallocate funds from existing MOH programmes.

Figure 10. The Sudan's projected co-financing obligations ($) for Gavi-supported vaccines, 2018–2025



Source: Gavi Secretariat.

50 Data provided by the Government of the Sudan.

Strategic purchasing: vaccine procurement. The Sudan currently uses UNICEF SD to procure all its vaccines. As a Gavi-transitioning country, it will benefit from manufacturer pledges for continued prices for a period of time following the transition, as long as it continues to procure through UNICEF SD.

Conclusions. The Sudan has made excellent progress in introducing important new life-saving vaccines. While it has coverage and equity challenges, it nonetheless has reached 93 per cent DTP3 coverage (WHO/UNICEF estimates). Second-dose measles is much lower at 69 per cent. However, this performance was achieved through intensive outreach and mobile activities to expand immunization services, particularly in areas with no fixed EPI services due to lack of infrastructure, geographical inaccessibility, conflict or natural disaster. These strategies have been supported so far by Gavi, particularly with health system strengthening funds, but they are costly and unsustainable.

The prospect of fully transitioning from Gavi support will be challenging, given the Sudan's fiscal prospects. The economy's growth is projected to be positive but low over the coming years on a per capita basis, according to IMF projections. The country is highly indebted and has a very low tax base relative to GDP. Government spending on health as a share of overall government spending is already very high at 18 per cent, relative to all middle-income countries; the country will need to plan carefully for scaling up co-financing requirements, and it will also need to cover the cost of traditional vaccines, depending on when external assistance ceases. This will require reallocating health spending away from lower-priority areas, and/or improving efficiencies. The Sudan will also lose direct financial support (health system strengthening) and will need to replace that with government spending. Given the country's highly constrained budget, the MOH and Ministry of Finance (MOF) will need to plan carefully for this budget ramp-up, or the country risks suffering drops in coverage and stock-outs of vaccines.

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2.5 Tunisia

Tunisia is a small country divided into 24 governorates and grouped into seven large socio-economic regions. The total population in 2017 is projected at 11.5 million *(see Annex 2, Table 1)*. Tunisia has made great strides to advance its political transition, but tangible economic dividends are taking longer than expected; growth is not strong enough to significantly change the level of unemployment amid widening fiscal and current account deficits. However, the country's economic growth is expected to rise to 2.5 per cent in 2017–2018 after failing to exceed 1 per cent for the last six years. Tunisia's economy should start to regain momentum in 2017–2018 through the recovery of the agriculture, phosphate and manufacturing sectors. In the medium term, economic growth is projected to pick up gradually to 3 per cent in 2018 and 3.5 per cent in 2019 *(see Annex 2, Table 3)*, against a backdrop of an improved business climate through structural reforms and greater security and social stability. Tunisia is also undergoing rapid urbanization.

Health system and health status. The Tunisian health care system is mainly managed by the Ministry of Public Health and its 24 regional directorates. Health care is provided by the public sector, the para-public sector and private facilities. The health care system is predominantly public: 87 per cent of all beds are public, but the private sector has expanded considerably since the early 1990s. A para-public sector exists, with six polyclinics that provide outpatient care in general and specialist medicine and diagnostic tests. The Ministry of Defence and Ministry of the Interior have their own hospitals and medical laboratories.

Tunisia's health system is generally adequate in terms of infrastructure, staff, health professionals and general medical equipment. However, it suffers from insufficiently skilled personnel (particularly nonmedical), poor equipment maintenance, and limited capacity in regulation and information systems. Disparities between regions, governorates and social groups are of great concern.[51] About 69 per cent of the total hospital capacity is concentrated in the country's eastern coastal region. MICS data from 2011–2012 show considerable differences between the highest and lowest income quintiles in their access to maternal and child health services.[52]

51 Arfa and Elgazzar (2013), 'Consolidation and transparency: Transforming Tunisia's Health Care for the Poor'.
52 Ministry of Development, Investment and International Cooperation, MICS4–Tunisia 2011–2012.

Health indicators have registered substantial progress against the health- and nutrition-related Millennium Development Goals.[53] Life expectancy reached 76 years in 2017, and the IMR is projected at 16 per 1,000 live births in 2017 *(see Annex 2, Table 1).*

Health system financing. Health care in Tunisia is financed through a combination of social health insurance, general government revenues and private spending, with health insurance accounting for an increasingly greater share of the total.[54] Current health expenditure as a share of GDP increased from 5.4 percent in 2008 to 6.7 per cent in 2015, while general government health expenditure as a percentage of current health expenditure has remained relatively constant over the years (between 54 and 57 per cent). Out-of-pocket payments have decreased from 42 per cent of current health expenditure in 2008 to 40 per cent in 2015 *(see Annex 2, Table 7).* A number of key sources mentioned that private health spending by households rose rapidly since 2010.[55] This growth is not reflected in the WHO database figures and has been attributed to increasing household spending on pharmaceutical products and the growing use of the private sector. Private expenditures accounted for 43 per cent of current health expenditures in 2015, approximately 80 per cent of which were direct payments at the point of use and 20 per cent of which represented health insurance premiums.

The National Health Insurance Fund (Caisse Nationale d'Assurance Maladie [CNAM]) covers the formally employed and their dependents, who together make up about 68 per cent of the total population. CNAM purchases health services from public and private providers. The free medical assistance programme (Assistance Médicale Gratuite [AMG]) is financed by transfers from the MOF to MOH health facilities without any consideration of the cost or use of public health services by AMG beneficiaries. Since the revolution in January 2011, awareness of inequalities in the access to health care services has grown, as has concern about universal health care coverage. AMG programmes were extended to cover about 29 per cent of households. The 2014 constitution has a commitment to UHC and the aim to reduce out-of-pocket expenditure.[56]

Immunization coverage and new vaccine introduction. Tunisia's NIP was launched in 1979, based on the following principles: routine immunization of children under 5 years of age and women of childbearing age, free vaccination integrated into all basic health structures, and a strong surveillance system for VPDs and adverse events following immunization. Since 1979, this programme has undergone many changes, particularly to the national calendar of vaccinations. The NIP has achieved high coverage at both the national level and in each of the country's governorates. Despite very high coverage rates, there are still concerns among subgroups of the population.[57] In recent years, the NIP has experienced staffing and equipment shortages in some regions and districts, as well as limited budgets for supervision, training, communication, Internet connection, surveillance, and cold chain replacement and maintenance. Plans to introduce new vaccines, such as PCV and HPV vaccine, have been delayed despite NITAG recommendations.

Immunization financing. Routine immunization, free of charge in public health facilities, is financed by the MOH budget. About 7 per cent of infants are vaccinated in the private sector, where the cost is financed by private health insurance and/or out-of-pocket spending.[58] WHO and UNICEF allocate modest funds on an ad hoc basis, mainly for training, surveys, monitoring and evaluation, and both organizations support ancillary purchases, training, surveys, and monitoring and evaluation activities.

Strategic purchasing: vaccine procurement. Vaccine procurement is carried out exclusively by the Central Pharmacy of Tunisia (Pharmacie Centrale de Tunisie [PCT]). The PCT procures vaccines for the public and private sectors. The private sector represents one third the value of total imports; it includes routine vaccines, as well new vaccines and vaccines for travellers and adults which are not part of the NIP. Prices for some EPI vaccines are relatively high compared to UNICEF prices. The PCT applies a margin of 30 per cent to cover its costs.

The vaccine procurement system is well established with clear roles and responsibilities. The PCT is in charge of purchasing, storing and distributing vaccines and related products, while the NIP handles vaccine demand forecasting and management. The NITAG and national regulatory authority (NRA) are responsible for registration, technical specifications and quality control. Only WHO pre-qualified vaccines and selected suppliers are considered by the PCT. As of 2017, 41 were registered with market authorization, and 21 were being considered for market authorization. Registering a vaccine takes one to three years (the period of validity is five years; registration fees are $2,010).

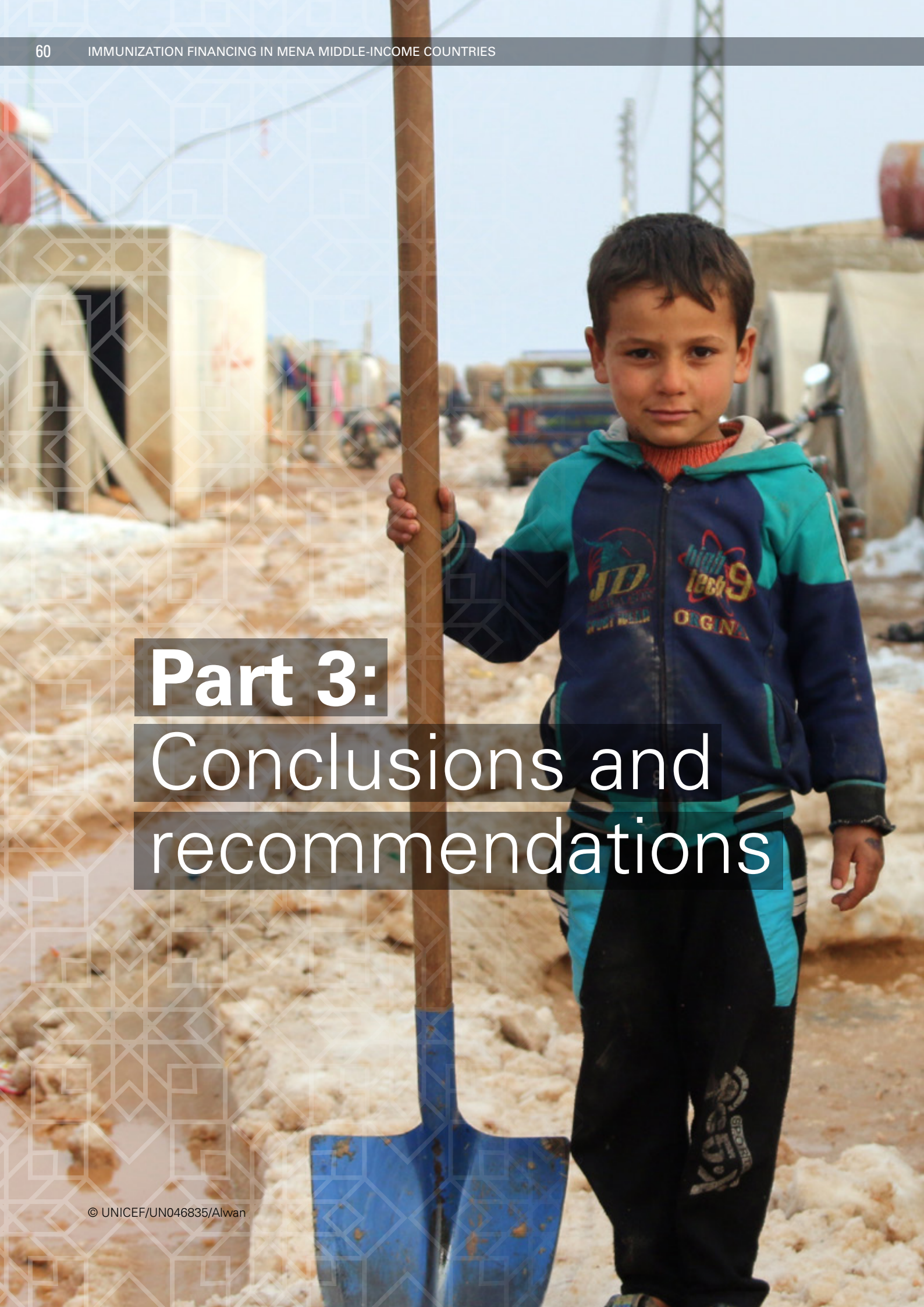
53 WHO (2017), *Tunisia: Health profile 2015.*
54 Ayadi and El Abassi (2017), 'Crise du financement de la santé en Tunisie: quelles solutions pour progresser vers la Couverture Sanitaire Universelle?'.
55 Tunisian Association for the Defense of the Right to Health – ATDDS (2016), *Rapport sur le droit à la santé en Tunisie.*
56 Technical Committee on Societal Dialogue (2014), 'Pour une meilleure santé en Tunisie: Faisons le chemin ensemble'.
57 Ministry of Health (2017), 'Le plan national de vaccinations'.
58 Ibid.

Procurement is done through biannual international tenders for each type of vaccine. The PCT's normal payment terms are 180 days from the date of billing, and prices are set by the manufacturer in dollars or euros. The margin required by the national structures of import and control, namely by the PCT plus the National Control Laboratory (Laboratoire Nationale de Contrôle), the National Agency of Sanitary and Environmental Control of Products (Agence Nationale de Contrôle Sanitaire et Environnemental des Produits) and the Institut Pasteur de Tunis, is between 30 and 33 per cent (this margin is a controversial issue).

Tunisia has vaccine shortages and vaccine supply issues caused not only by problems in coordination between the regulatory authorities, the NIP and the PCT in charge of importing the vaccines, but also by the size of the local vaccine market and the low responsiveness of manufacturers. The lengthy and complex procurement procedures have also been cited as contributing to supply issues.

Tunisia is interested in introducing new vaccines and has been trying to find ways to work with UNICEF SD. As with several other MENA countries, the prepayment requirement is a challenge regarding government regulations. In addition, liabilities and responsibilities also must be resolved.

Conclusions. Tunisia has a high-performing NIP and a functional NITAG. While health insurance covers over 80 per cent of the population, it does not help fund immunization. Nearly 30 per cent of the value of total vaccine imports comes from the private sector; this includes new vaccines and vaccines for travellers and adults that are not part of the national schedule. Because of the economic downturn and its effect on government revenue, the overall MOH budget including immunization is severely constrained, limiting the Government's ability to introduce new vaccines and reduce disparities. The MOH has not introduced new vaccines, such as PCV and rotavirus vaccine, and is now struggling to finance some operational costs, such as supervision, training, surveillance, cold chain maintenance and operation. To help resolve this, Tunisia could explore alternatives in mobilizing resources for immunization and seek efficiency gains in vaccine regulation, management and procurement methods.



Part 3: Conclusions and recommendations

Conclusions

Most MENA countries have high immunization coverage rates. But immunization coverage has dropped considerably in some (including Iraq, the Syrian Arab Republic and Yemen), due to the conflicts, instability and the prevailing geopolitical situation in the region. Approximately 1.3 million surviving infants in MENA missed their third dose of DTP vaccine in 2016. In many of the region's countries, problems of equity persist, particularly concerning displaced populations, nomads, ethnic groups and marginalized urban populations.

The Ministry of Health budget remains the mainstay of immunization financing in most of the countries. External financing is important mainly in the three countries eligible for Gavi support (Djibouti, the Sudan and Yemen) and, to some extent, in the Syrian Arab Republic. Some external assistance for refugee populations exists in Jordan and Lebanon. While social insurance is growing as a financing scheme in many MENA countries, it is currently not a source of immunization financing. The private sector provides some immunization services and has a growing role in many MENA countries. In the future, voluntary health insurance schemes covering immunization or some vaccines as a component of the benefit package may arise. Social health insurance may also be involved in the future, depending on how countries move towards UHC.

New vaccine introductions pose challenges for the region. As the region's only countries eligible for Gavi support, Djibouti, the Sudan and Yemen have benefited from such support in introducing new and underused vaccines at UNICEF SD prices for Gavi countries. The three countries have all introduced rotavirus and pneumococcal conjugate vaccines, for example. Of the countries not eligible for Gavi support, only Libya, Morocco and State of Palestine have introduced both rotavirus and pneumococcal conjugate vaccines; Egypt, the Islamic Republic of Iran, the Syrian Arab Republic and Tunisia have introduced neither of these. Algeria and Lebanon have not introduced rotavirus vaccine, and Iraq and Jordan have not introduced pneumococcal conjugate vaccine. In many cases, NITAGs have recommended the introductions, but budgetary room has not been created. The problem is exacerbated by high and uncertain prices for these vaccines.

The Sudan will be the first of the Gavi countries in MENA to move into the 'accelerated transition process'. Expected to occur in 2020, this phase comes after countries cross the eligibility threshold. At that time, the Sudan will have its final years of Gavi support, during which country co-financing scales up more rapidly as the support winds down. The Sudan is expected to fully self-finance its Gavi-supported vaccines in 2025. Nevertheless, the country will likely face challenges in scaling up the financing of vaccines and related activities given its indebtedness, relatively low growth prospects and low tax base. While the Sudan's tax base is only 12 per cent of GDP, it devotes about 18 per cent of government spending to health (according to WHO's global health expenditure database), a very high share compared to other countries globally. Scope may exist to finance co-financing requirements by reallocating funds from lower-priority activities within health towards immunization.

Local and external factors have made procuring and purchasing vaccines and related products a considerable challenge for most MENA countries. The global vaccine market is experiencing many changes, such as the emergence of new manufacturers with pre-qualified products, a decrease in the number of producers from industrialized countries, and the importance of the PAHO Revolving Fund, UNICEF SD, Gavi and the Bill & Melinda Gates Foundation as global players. Countries are often not well informed about these developments and their consequences, nor about the vaccine pipeline and quality or reliability of manufacturers and suppliers.

Globally, UNICEF SD and regional and country offices play a vital role in supplying quality and affordable vaccines to low- and middle-income countries, particularly to those eligible for Gavi support. However, some of the requirements are not always compatible with country public procurement rules. Moreover, country laws and regulations for public procurement are not always well adapted to the context and market of vaccines, or to the smooth use of UNICEF procurement services. Requirements for local agents, prior registration, bundling of services and payment in local currency, among others, are neither adapted to nor compatible with efficient vaccine regulation and procurement.

Most countries have established NITAG and NRA bodies, some of which are quite active. However, both bodies are making slow progress on various matters – NRAs on the update of vaccine regulation and procurement rules and procedures, and NITAGs on issues of data quality, cost-effectiveness, budget impact analysis and disease modelling. In addition, service delivery strategies for marginalized urban populations, nomads and other groups need to be addressed. Other areas with potential for improvement are related to waste management and the environmental impact of immunization activity programmes, controlled temperature chain, vaccine presentation and delivery technologies.

Recommendations

This report's recommendations focus on immunization financing and vaccine procurement in the MENA region's middle-income countries, including both those supported and not supported by Gavi. The recommendations are in line with the Eastern Mediterranean Vaccine Action Plan for 2016–2020.

Steps to create greater fiscal space for immunization to improve coverage and equity, introduce new vaccines and adequately fund all elements of the programme: All the middle-income MENA countries need to create room in their budgets for immunization requirements to adapt delivery strategies and reach underserved groups; to strengthen elements of the programme, such as upgrading the cold chain and surveillance; to introduce priority new vaccines; and, in the case of countries eligible for Gavi support, to scale up co-financing and, in some cases, pay for traditional vaccines. Measures could include the following:

- **Ensure programme managers and policymakers are well equipped to make the case, drawing on national and international evidence for why investing further in immunization programmes is important and of high priority.** Arguing for more resources for health, and for priority health interventions in primary health care, could be just as critical. Where needed, UNICEF and partners could help countries to prepare briefs and presentations on this topic or could assist with more in-depth studies to generate evidence. Countries can draw on international studies which demonstrate immunization's return on investment; one study estimated that every dollar spent on vaccinations yielded a return of $16, using cost-of-illness methodology.[59] They could also carry out studies within their own country, such as on the potential savings in outpatient and hospitalization costs from a new vaccine introduction.
- **Determine how social insurance might be able to contribute to immunization goals, as countries move along the path towards universal health coverage.** Immunization could be included in the basic benefits package financed by social insurance, as is done in Estonia and Thailand. Or, if the MOH network should still deliver immunization services, social insurance funds might help finance part or all of those expenditures. So that countries can better understand the options, some background work would be needed on approaches taken by other countries and lessons learned from those experiences.
- **Do more with existing resources.** With resources highly constrained, scope may exist to gain efficiencies along the whole immunization service process, and particularly from vaccine product selection, forecasting, management and procurement. Savings could be reprogrammed into other immunization and vaccine needs, including new introductions and operation costs.
- **Carry out studies of the private sector's role in immunization delivery.** Countries could engage in such studies to better understand the sector's role: how it contributes to coverage; if it follows good practices on cold chain, storage, and vaccination; if it is integrated into overall monitoring and surveillance; how services are financed; and how it can help to further equitable access. In the longer term, governments could explore contracting the private sector to provide immunization services and involving private health insurance in funding immunizations.
- **Organize a regional symposium to engage with a broad group of stakeholders to discuss and address many of the issues raised in this study.** Organized by UNICEF MENARO, the symposium could cover issues such as new vaccine introductions, improvements in coverage, the role of the private sector, the role of social insurance, and vaccine procurement. It could include academia, parliamentarians, the ministries of finance and health, social insurance funds, medical associations, the private sector (both for-profit and not-for-profit), and partners.

59 Ozawa et al. (2016), 'Return on Investment from Childhood Immunization in Low- and Middle-Income Countries, 2011–20'.

Steps to improve efficiencies in vaccine procurement and regulation:

- **UNICEF and partners could promote active sharing of information on important topics among MENA countries.** Market information, uneven among government teams who need it to make sound decisions, includes vaccines in the pipeline, vaccine quality, price and supply issues. UNICEF and partners could encourage or help facilitate the participation of MENA countries in UNICEF's Vaccine Procurement Practitioners Forum (face-to-face meetings) and the online network. Partners could also assist countries with conducting their own customized vaccine market research where necessary.
- **Partners could facilitate peer learning processes on forecasting and budgeting and assist in sharing best practices and standardized tools.** Many countries need to better understand the costs and risks of inaccurate vaccine forecasting (e.g., the impact on the immunization programme and on budget planning and availability of funds), and to strengthen their forecasting accuracy.
- **Partners could try to reenergize important processes through technical assistance.** These processes apply to multiyear immunization planning with detailed annual operational plans and budgets, which are still lacking in the region.
- **Countries could share experiences with nations that are exploring the use of UNICEF SD to procure some of their vaccines.** Public procurement rules and procedures for vaccines and biological products may need revision to work with UNICEF SD, if desired, and to be up to date with these market features and product requirements.
- **Governments could explore subscribing to UNICEF's Vaccine Independence Initiative or using commercial financing instruments.** These include letters of credit or commercial bank guarantees to meet UNICEF's prepayment requirement.
- **UNICEF MENARO, country offices, and partners could improve their own capacity to provide quality technical support.** Such support could be in immunization financing and vaccine procurement.

Steps to help ensure that the Sudan transitions successfully from Gavi support: Gavi is already discussing transition planning with the Sudanese Government and the need to plan and budget for increasing co-financing. Co-financing is projected to increase from about $3 million in 2018 to $30 million in 2025, when the country will be fully financing its Gavi-supported vaccines. In addition, as the Sudan is not financing its traditional vaccines, they need to be part of the overall financing plan. Partners could work with the Government to support this process. This may require:

- supporting high-level dialogue with the MOF, MOH and partners on the return on investment from immunization, including development of a domestic resource mobilization plan and conducting an economic evaluation and equity costing analysis;
- planning for procurement following transition out of Gavi support;
- training in vaccine forecasting and budgeting;
- monitoring budget releases proactively for timeliness;
- adapting delivery strategies, including the use of the private sector, to be as efficient as possible given the many challenges faced by the country;
- learning from other countries in the Gavi transition process (through the Learning Network for Countries in Transition), as well as from other middle-income countries in the MENA region, about good practices in forecasting, procurement, financing and budgeting, and service delivery.

VOLUME 2: ANNEXES

Annexes

Annex 1

Persons interviewed for the report

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Tunisia

Essia Ben Farhat, Manager, Expanded Programme on Immunization, Ministry of Health

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Annex 2

Indicator tables

Table 1. Demographic estimates, 2017

Economy	Total population ('000s)	Life expectancy	IMR	U5MR	Births ('000s), 2017	Births ('000s), 2022	Projected annual growth in birth cohort (%), 2017–2022	TFR, 2017
Algeria	41,318	76.3	23.9	27.7	918	828	-2.1	2.7
Bahrain	1,493	77.0	6.1	7.7	22	22	0.6	2.0
Djibouti	957	62.6	51.0	76.9	22	22	-0.1	2.8
Egypt	97,553	71.7	15.9	20.3	2,496	2,381	-0.9	3.2
Iran, Islamic Rep. of	81,163	76.2	12.2	14.2	1,290	1,081	-3.5	1.6
Iraq	38,275	70.0	28.1	32.8	1,252	1,348	1.5	4.3
Jordan	9,702	74.5	15.0	17.5	247	242	-0.4	3.3
Kuwait	4,137	74.8	7.3	9.4	65	62	-1.1	2.0
Lebanon	6,082	79.8	8.4	9.8	91	89	-0.4	1.7
Libya	6,375	72.1	21.4	25.4	123	113	-1.7	2.2
Morocco	35,740	76.1	22.5	26.4	696	658	-1.1	2.5
Oman	4,636	77.3	8.1	9.5	81	77	-1.2	2.6
Palestine, State of	4,921	73.6	18.0	21.1	155	164	1.1	3.9
Qatar	2,639	78.3	6.4	7.7	26	27	0.5	1.9
Saudi Arabia	32,938	74.7	11.1	13.1	630	602	-0.9	2.5
Sudan, The	40,533	64.7	44.4	67.3	1,322	1,416	1.4	4.5
Syrian Arab Rep., The	18,270	71.0	16.0	18.4	397	416	0.9	2.9
Tunisia	11,532	75.9	16.0	17.5	206	189	-1.7	2.2
United Arab Emirates	9,400	77.4	5.4	6.3	89	86	-0.6	1.7
Yemen	28,250	65.2	42.6	56.2	876	886	0.2	3.9

Source: UN Population Prospects 2017 Revision, medium variant.
Notes: IMR = infant mortality rate; U5MR = under-five mortality rate; TFR = total fertility rate.

Table 2. Gross national income (GNI) per capita (current $), 2012–2016 (high to low, based on 2016 values)

Economy	2012	2013	2014	2015	2016
Qatar	78,720	85,550	90,420	85,430	75,660
Kuwait	44,730	44,940	55,470	40,930	41,680
United Arab Emirates	36,040	38,620	43,480	43,170	40,480
Saudi Arabia	18,030	26,200	26,340	23,550	21,750
Bahrain	19,120	25,250	21,330	20,350	21,480
Oman	19,120	19,560	18,150	16,920	18,080
Lebanon	9,190	9,870	9,880	7,930	7,680
Iran, Islamic Rep. of	UMIC	5,780	6,820	6,550	6,530
Iraq	5,870	6,710	6,410	5,550	5,430
Algeria	4,110	5,290	5,340	4,870	4,270
Jordan	4,720	4,950	5,160	4,680	3,920
Tunisia	4,150	4,360	4,210	3,970	3,690
Egypt	3,000	3,160	3,280	3,340	3,460
Palestine, State of	LMIC	2,810	3,060	3,090	3,230
Morocco	2,940	3,030	3,020	3,040	2,850
Sudan, The	1,450	1,130	1,740	1,840	2,140
Yemen	1,110	1,330	1,370	1,300	1,040
Libya	UMIC	UMIC	7,920	6,030	UMIC
Syrian Arab Rep., The	610	LMIC	LMIC	LMIC	LMIC
Djibouti	LMIC	LMIC	LMIC	LMIC	LMIC

Source: World Bank, GNI per capita figures issued on 1 July for the previous year.
Notes: For the Islamic Republic of Iran, the State of Palestine, Libya, the Syrian Arab Republic and Djibouti, the World Bank did not issue point estimates of GNI per capita for certain years but instead classified them into an income category; UMIC = upper middle-income country; LMIC = lower middle-income country.

Table 3. Real GDP growth and general government expenditure (GGE) as a percentage of GDP, 2008–2022 (actual and projected)

Economy	Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Est. Starts After
Algeria	Real GDP growth	2.4	1.6	3.6	2.8	3.4	2.8	3.8	3.7	3.3	1.5	0.8	1.4	1.8	2.3	2.5	2016
	GGE as percentage GDP	38.0	42.6	37.3	40.1	43.5	36.2	40.6	45.8	42.4	35.5	32.0	30.4	28.7	28.5	28.2	2016
Bahrain	Real GDP growth	6.2	2.5	4.3	2.0	3.7	5.4	4.4	2.9	3.0	2.5	1.7	1.7	2.1	2.2	2.2	2016
	GGE as percentage GDP	23.6	25.6	28.5	27.8	31.9	34.3	28.4	36.6	35.4	34.8	33.5	33.7	33.1	32.9	32.6	2016
Djibouti	Real GDP growth	5.8	1.6	4.1	7.3	4.8	5.0	6.0	6.5	6.5	7.0	7.0	7.0	6.0	6.0	6.0	2014
	GGE as percentage GDP	40.5	43.6	37.4	35.5	37.2	37.7	40.5	58.9	51.8	32.5	30.6	30.2	30.3	30.4	30.1	2016
Egypt	Real GDP growth	7.2	4.7	5.1	1.8	2.2	3.3	2.9	4.4	4.3	4.1	4.5	5.3	5.8	6.0	6.0	2016
	GGE as percentage GDP	34.0	32.9	31.8	30.3	30.7	35.0	36.2	33.4	32.1	31.1	29.5	26.6	25.2	24.6	24.2	2016
Iran, Islamic Rep. of	Real GDP growth	0.3	0.3	5.8	3.5	-7.7	-0.3	3.2	-1.6	12.5	3.5	3.8	4.0	4.0	4.1	4.1	2016
	GGE as percentage GDP	22.0	20.6	19.2	18.3	14.3	14.4	15.4	17.9	19.5	21.0	21.0	21.0	20.9	20.7	20.6	2016
Iraq	Real GDP growth	8.2	3.4	6.4	7.5	13.9	7.6	0.7	4.8	11.0	-0.4	2.9	1.7	2.0	2.1	2.1	2014
	GGE as percentage GDP	57.3	58.9	49.6	43.4	42.9	48.0	43.5	42.6	41.5	41.0	41.1	37.2	35.0	33.1	31.1	2014
Jordan	Real GDP growth	7.2	5.5	2.3	2.6	2.7	2.8	3.1	2.4	2.0	2.3	2.5	2.7	2.9	3.0	3.0	2016
	GGE as percentage GDP	34.5	35.4	30.4	33.2	31.9	35.6	37.9	29.1	29.0	30.4	29.2	27.9	26.4	26.4	26.2	2016
Kuwait	Real GDP growth	2.5	-7.1	-2.4	10.9	7.9	0.4	0.6	2.1	2.5	-2.1	4.1	3.7	3.4	3.3	3.2	2015
	GGE as percentage GDP	40.4	42.2	44.7	39.1	38.8	38.1	44.3	54.4	52.9	50.6	49.7	49.1	48.7	48.1	46.4	2015
Lebanon	Real GDP growth	9.2	10.1	8.0	0.9	2.8	2.6	2.0	0.8	1.0	1.5	2.0	2.5	2.5	3.0	3.0	2013
	GGE as percentage GDP	34.2	32.0	29.2	28.7	30.3	29.5	29.0	26.9	29.1	29.8	32.0	32.9	33.5	34.0	34.9	2015
Libya	Real GDP growth	2.7	-3.0	3.2	-66.7	124.7	-36.8	-53.0	-10.3	-3.0	55.1	31.2	-0.8	2.4	2.5	2.6	2016
	GGE as percentage GDP	48.2	72.1	57.9	59.7	45.7	88.1	143.1	176.1	131.4	85.4	64.9	64.4	62.4	60.4	57.8	2016

Economy	Indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Est. Starts After
Morocco	Real GDP growth	5.9	4.2	3.8	5.2	3.0	4.5	2.7	4.6	1.2	4.8	3.0	4.0	4.2	4.5	4.6	2016
	GGE as percentage GDP	30.6	30.4	31.1	33.8	35.2	32.9	32.9	30.7	30.2	29.4	28.9	28.5	28.5	28.3	28.4	2016
Oman	Real GDP growth	8.2	6.1	4.8	-1.1	9.3	4.4	2.5	4.2	3.0	0.0	3.7	2.9	2.2	1.8	2.2	2015
	GGE as percentage GDP	29.3	38.2	33.9	39.3	44.0	44.8	47.4	50.2	51.5	46.0	45.3	44.0	42.4	41.2	39.8	2016
Palestine, State of	Real GDP growth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	GGE as percentage GDP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Qatar	Real GDP growth	17.7	12.0	18.1	13.4	4.7	4.4	4.0	3.6	2.2	2.5	3.1	2.7	2.8	3.1	3.2	2015
	GGE as percentage GDP	23.0	32.9	30.6	28.5	31.0	28.3	33.4	41.5	37.2	33.5	31.4	29.7	28.3	27.0	24.5	2015
Saudi Arabia	Real GDP growth	6.3	-2.1	4.8	10.3	5.4	2.7	3.7	4.1	1.7	0.1	1.1	1.6	1.8	2.0	2.0	2016
	GGE as percentage GDP	26.7	37.1	34.0	33.3	33.2	35.5	40.2	40.7	38.6	33.6	35.0	35.5	35.6	35.2	35.0	2016
Sudan, The	Real GDP growth	3.0	4.7	2.5	-1.2	-3.0	5.2	1.6	4.9	3.1	3.7	3.6	3.6	3.6	3.6	3.5	2010
	GGE as percentage GDP	23.5	20.6	19.5	18.5	13.3	13.3	13.4	12.9	11.8	12.2	11.8	11.6	11.4	11.2	11.3	2015
Syrian Arab Rep., The	Real GDP growth	4.5	5.9	3.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2010
	GGE as percentage GDP	22.9	26.7	28.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2009
Tunisia	Real GDP growth	4.5	3.1	2.6	-1.9	3.9	2.4	2.3	1.1	1.0	2.3	3.0	3.5	4.1	4.3	4.3	2014
	GGE as percentage GDP	24.8	25.8	25.2	29.3	29.8	32.4	29.8	28.8	28.7	30.2	30.0	28.6	27.4	26.6	26.4	2016
United Arab Emirates	Real GDP growth	3.2	-5.2	1.6	6.4	5.1	5.8	3.3	3.8	3.0	1.3	3.4	3.2	3.1	3.1	3.1	2016
	GGE as percentage GDP	22.0	35.0	32.2	31.2	29.1	30.3	33.1	32.4	32.6	30.4	29.5	28.4	27.2	25.9	24.7	2015
Yemen	Real GDP growth	3.6	3.9	7.7	-12.7	2.4	4.8	-0.2	-28.1	-9.8	-2.0	8.5	13.5	7.4	5.5	5.5	2008
	GGE as percentage GDP	41.2	35.2	30.2	29.8	36.2	30.8	27.8	23.5	24.4	20.6	24.0	26.0	25.9	26.6	26.8	2013

Source: IMF, World Economic Outlook, October 2017.
Note: N/A = not available.

Table 4. Total natural resource rents as a percentage of GDP, 2014 and 2015

Middle-income economy	2014	2015
Algeria	19.3	12.0
Djibouti	1.1	0.9
Egypt	8.0	3.9
Iran, Islamic Rep. of	24.3	N/A
Iraq	41.3	28.6
Jordan	1.1	1.2
Lebanon	0.0	0.0
Libya	N/A	N/A
Morocco	2.2	2.6
Palestine, State of	N/A	N/A
Sudan, The	6.8	4.2
Syrian Arab Rep., The	N/A	N/A
Tunisia	4.7	3.0
Yemen	11.7	2.3

High-income economy	2014	2015
Bahrain	8.2	4.9
Kuwait	54.2	39.1
Oman	38.7	22.9
Qatar	17.4	11.3
Saudi Arabia	40.1	23.4
United Arab Emirates	22.5	11.9

Source: Data from World Development Indicators database, accessed 10 October 2017.
Notes: Rents are the difference between the value of production at world prices and total costs of production; N/A = not available.

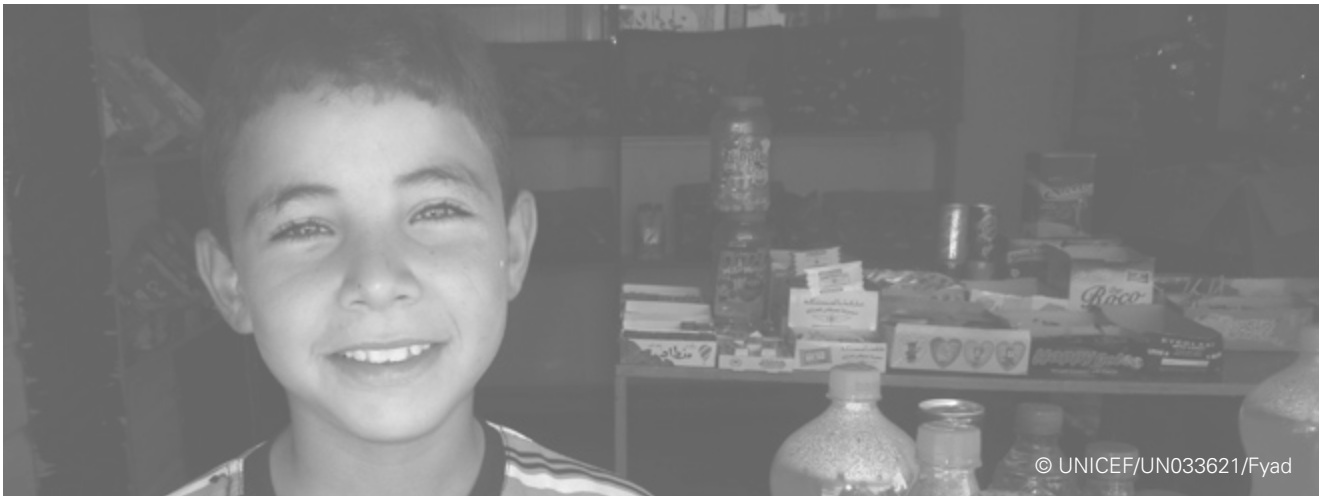

Table 5. Human Development Index (HDI) trends, 1990, 2000 and 2010–2015

Economy	1990	2000	2010	2011	2012	2013	2014	2015	HDI rank, 2015	Change in HDI rank 2010 – 2015
Very high human development										
Qatar	0.75	0.81	0.83	0.84	0.84	0.85	0.85	0.86	33	2
Saudi Arabia	0.70	0.74	0.80	0.82	0.83	0.84	0.85	0.85	38	9
United Arab Emirates	0.73	0.80	0.82	0.83	0.83	0.83	0.84	0.84	42	-4
Bahrain	0.75	0.79	0.81	0.81	0.82	0.82	0.82	0.82	47	-3
Kuwait	0.71	0.79	0.79	0.79	0.80	0.79	0.80	0.80	51	-1
High human development										
Oman	N/A	0.70	0.80	0.80	0.80	0.80	0.79	0.80	52	-3
Iran, Islamic Rep. of	0.57	0.67	0.74	0.75	0.77	0.77	0.77	0.77	69	3
Lebanon	N/A	N/A	0.76	0.76	0.77	0.76	0.76	0.76	76	-12
Algeria	0.58	0.64	0.72	0.73	0.74	0.74	0.74	0.74	83	3
Jordan	0.62	0.71	0.74	0.74	0.74	0.74	0.74	0.74	86	-6
Tunisia	0.57	0.65	0.71	0.72	0.72	0.72	0.72	0.72	97	-5
Libya	0.68	0.73	0.76	0.71	0.73	0.73	0.72	0.72	102	-35
Medium human development										
Egypt	0.55	0.61	0.67	0.67	0.68	0.69	0.69	0.69	111	-3
Palestine, State of	N/A	N/A	0.67	0.67	0.68	0.68	0.68	0.68	114	-5
Iraq	0.57	0.61	0.65	0.66	0.66	0.66	0.65	0.65	121	-3
Morocco	0.46	0.53	0.61	0.62	0.63	0.64	0.64	0.65	123	4
Low human development										
Syrian Arab Rep., The	0.56	0.59	0.65	0.65	0.64	0.58	0.55	0.54	149	-29
Sudan, The	0.33	0.40	0.46	0.47	0.48	0.48	0.49	0.49	165	-1
Yemen	0.41	0.44	0.49	0.49	0.50	0.50	0.50	0.48	168	-12
Djibouti	N/A	0.36	0.45	0.46	0.46	0.47	0.47	0.47	172	-2

Source: UNDP Human Development data, 1990–2015, <http://hdr.undp.org/en/data>, accessed 1 March 2018.
Notes: The HDI is a composite index measuring average achievement in three basic dimensions of human development – a long and healthy life, knowledge and a decent standard of living. See ***Technical note 1*** in the ***Human Development Report 2016*** at <http://hdr.undp.org/sites/default/files/hdr2016_technical_notes.pdf> for details on how the HDI is calculated;
N/A = not available.

Table 6. World Bank governance indicators, 2016

Economy	Government effectiveness	Regulatory quality	Rule of law	Control of corruption	Voice and accountability	Political stability and absence of violence/ terrorism
Libya	-1.89	-0.34	-1.87	-0.02	-1.37	-2.21
Syrian Arab Rep., The	-1.82	0.08	-2.01	-1.61	-1.96	-2.91
Yemen	-1.82	-1.48	-1.60	-1.67	-1.65	-2.79
Sudan, The	-1.41	-1.49	-1.26	0.23	-1.80	-2.38
Iraq	-1.26	-1.23	-1.70	-1.40	-1.01	-2.28
Djibouti	-0.97	-0.70	-0.97	-0.65	-1.32	-0.63
Egypt	-0.66	-1.17	-0.41	-0.63	-1.23	-1.42
Palestine, State of	-0.62	0.06	-0.31	-0.15	N/A	-2.10
Algeria	-0.54	0.97	-0.85	-0.69	-0.88	-1.14
Lebanon	-0.53	-0.07	-0.86	-0.97	-0.52	-1.56
Tunisia	-0.21	-1.67	0.02	-1.57	0.33	-0.99
Iran, Islamic Rep. of	-0.20	-0.92	-0.71	-0.72	-1.39	-0.74
Kuwait	-0.18	0.05	0.03	-0.20	-0.69	-0.15
Morocco	-0.10	-2.27	-0.14	-1.57	-0.65	-0.29
Jordan	0.14	-1.13	0.31	0.27	-0.76	-0.53
Oman	0.19	-0.23	0.43	-0.15	-1.11	0.80
Saudi Arabia	0.24	0.70	0.47	0.92	-1.78	-0.50
Bahrain	0.32	0.61	0.46	-0.06	-1.45	-0.86
Qatar	0.75	0.61	0.86	0.37	-1.20	0.87
United Arab Emirates	1.41	-0.47	0.89	1.28	-1.12	0.44

Source: World Bank, Worldwide Governance Indicators, <http://info.worldbank.org/governance/wgi/index.aspx#home>, accessed 1 March 2018.
Notes: -2.5 (weak) to 2.5 (strong); N/A = not available.

Table 7. Health expenditure indicators, 2015

Economy	CHE as % GDP	CHE p.c. $	Domestic GGHE p.c. $	Domestic private health expenditure p.c. $	External health expenditure p.c. $	Domestic GGHE as % CHE	Domestic private health expenditure as % CHE	External health expenditure as % CHE	Domestic GGHE as % GGE	Out of pocket as % CHE	Voluntary health insurance as % CHE	Compulsory financing arrangements as % CHE	Government financing arrangements as % CHE
Algeria	7	292	206	86	0	71	29	0	11	28	1	71	42
Bahrain	5	1,190	788	402	N/A	66	34	N/A	9	25	9	66	66
Djibouti	4	82	45	18	19	55	22	23	4	20	1	77	64
Egypt	4	157	47	109	0	30	70	0	4	62	1	30	25
Iran, Islamic Rep. of	8	366	195	171	N/A	53	47	N/A	23	40	4	53	26
Iraq	3	154	36	118	0	23	76	0	2	76	0	23	23
Jordan	6	257	147	93	17	57	36	7	12	25	8	62	56
Kuwait	4	1,169	983	186	N/A	84	16	0	6	14	2	84	84
Lebanon	7	645	326	310	9	51	48	1	14	32	17	49	25
Libya	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Morocco	6	160	69	89	2	43	56	1	8	53	1	44	23
Oman	4	636	562	75	N/A	88	12	N/A	7	6	3	88	88
Qatar	3	2,030	1,733	296	N/A	85	15	N/A	6	6	7	85	85
Saudi Arabia	6	1,194	852	343	N/A	71	29	N/A	10	15	9	71	71
Sudan, The	6	152	47	102	3	31	67	2	18	63	1	31	29
Syrian Arab Rep., The	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tunisia	7	258	145	112	1	56	43	0	14	40	3	57	24
United Arab Emirates	3	1,402	999	403	N/A	71	29	N/A	8	18	7	71	71
Yemen	6	72	7	59	6	10	82	8	2	81	1	14	14

Source: WHO, Global Health Expenditure Database, <http://apps.who.int/nha/database/ViewData/Indicators/en>, accessed 3 January 2018. Data for the State of Palestine are not in the database.
Notes: CHE = current health expenditure; GGHE = general government health expenditure; GGE = general government expenditure; p.c. = per capita; N/A = not available.

Table 8. Universal health coverage indicators

	SDG-UHC Indicator 3.8.1		SDG-UHC Indicator 3.8.2	
Economy	**Service coverage index, 2015**	**Data available to construct indicator**	**Most recent year available**	**Latest year: Population with catastrophic health spending (10% threshold) (%)**
Algeria	76	high	N/A	N/A
Bahrain	72	medium	N/A	N/A
Djibouti	47	medium	1996	1.4
Egypt	68	high	2012	26.2
Iran, Islamic Rep. of	65	high	2013	15.8
Iraq	63	medium	N/A	N/A
Jordan	70	medium	2006	5.3
Kuwait	77	medium	N/A	N/A
Lebanon	68	medium	1999	44.9
Libya	63	low	N/A	N/A
Morocco	65	medium	2006	22.0
Oman	72	medium	1999	0.6
Palestine, State of	N/A	N/A	N/A	N/A
Qatar	77	high	N/A	N/A
Saudi Arabia	68	medium	N/A	N/A
Sudan, The	43	medium	N/A	N/A
Syrian Arab Rep., The	60	low	N/A	N/A
Tunisia	65	high	2010	16.7
United Arab Emirates	63	low	N/A	N/A
Yemen	39	high	2005	17.1

Source: World Health Organization and the International Bank for Reconstruction and Development/The World Bank, ***Tracking universal health coverage: 2017 global monitoring report,*** 2017, Licence: CC BY-NC-SA 3.0 IGO.
Notes: The Sustainable Development Goals (SDGs) include two indicators to monitor progress towards universal health coverage (UHC): indicator 3.8.1 refers to the coverage of health services and indicator 3.8.2 refers to the proportion of the population with large household expenditures on health as a share of total household expenditure or income. The UHC Service Coverage Index in this table is a single indicator calculated from 16 tracer indicators, one of which is WHO/UNICEF estimates of DTP3 coverage. The percentage of the population with catastrophic spending in this table refers to households with out-of-pocket spending greater than or equal to 10 per cent of household income or expenditure, calculated from the latest household survey data available.
N/A = not available.

Table 9. Immunization programme indicators, 2016

Economy	WHO/ UNICEF DTP3 coverage (%)	WHO/ UNICEF DTP coverage (%)	Dropout rate, DTP to DTP3 (%)	WHO/ UNICEF MCV1 coverage (%)	WHO/ UNICEF MCV2 coverage (%)	Proportion (%) of districts with at least 80% coverage of DTP3	Introduced rotavirus vaccine?	Introduced PCV?	Introduced HPV?	Number of EPI vaccines
Algeria	91	96	5	94	96	*	no	yes	no	11
Bahrain	99	99	0	99	99	100	yes	yes	no	26
Djibouti	84	90	7	75	82	17	yes	yes	no	11
Egypt	95	96	1	95	96	90	no	no	no	12
Iran, Islamic Rep. of	99	99	0	99	98	100	no	no	no	17
Iraq	63	73	14	66	64	42	yes	no	no	16
Jordan	98	99	1	96	99	100	yes	no	no	16
Kuwait	99	99	0	93	96	*	yes	yes	no	18
Lebanon	81	84	4	79	75	100	no	yes	no	13
Libya	97	98	1	97	96	100	yes	yes	yes (2013)	12
Morocco	99	99	0	99	99	98	yes	yes	no	11
Oman	99	99	0	99	99	100	no	yes	no	18
Palestine, State of	N/A	N/A	N/A	N/A	N/A	N/A	yes	yes	N/A	N/A
Qatar	98	99	1	99	92	*	yes	yes	no	15
Saudi Arabia	98	98	0	98	96	100	yes	yes	no	18
Sudan, The	93	97	4	86	69	82	yes	yes	no	9
Syrian Arab Rep., The	42	61	31	62	52	41	no	no	no	12
Tunisia	98	99	1	96	97	100	no	no	no	11
United Arab Emirates	99	99	0	99	99	*	yes	yes	partial programme (2008)	20
Yemen	71	76	7	70	49	64	yes	yes	no	9

Source: World Health Organization; Lebanon PCV information from UNICEF Middle East and North Africa Regional Office staff; HPV vaccine introduction information from Gavi, the Vaccine Alliance, and HPV Information Centre.
Notes: *indicator cannot be usefully calculated because most districts did not report DTP3 coverage; DTP = diphtheria-tetanus-pertussis vaccine; DTP3 = third dose of DTP vaccine; MCV1 = measles-containing vaccine, first dose; MCV2 = measles-containing Vaccine, second dose; PCV = pneumococcal conjugate vaccine; HPV = human papillomavirus; EPI = expanded programme on immunization; N/A = not available.

Table 10. Immunization system performance

	Procurement methods		Financing		Presence of	
Economy	**Use UNICEF Supply Division**	**Self-procurement**	**Gov. vaccine funding**	**Gov. EPI funding**	**cMYP**	**NITAG**
Algeria					yes	yes
Bahrain		GCC			yes	yes
Djibouti	Gavi				yes	yes
Egypt					yes	yes
Iran, Islamic Rep. of					yes	yes
Iraq					yes	yes
Jordan					no	yes
Kuwait		GCC			yes	yes
Lebanon			N/A		yes	yes
Libya			N/A		yes	yes
Morocco					no	yes
Oman		GCC			yes	yes
Palestine, State of			N/A	N/A	N/A	N/A
Qatar		GCC			no	yes
Saudi Arabia		GCC			yes	yes
Sudan, The	Gavi				yes	yes
Syrian Arab Rep., The					yes	yes
Tunisia					yes	yes
United Arab Emirates		GCC			yes	yes
Yemen	Gavi				yes	yes

Source: Procurement method (UNICEF Supply Division, self-procurement): author interviews, document review. Government vaccine funding, government immunization funding, cMYP, NITAG: WHO/UNICEF Joint Reporting Form.
Notes: The six high-income countries do not all report on government funding. The assumption made in this table is that all finance 100% of vaccines and immunization expenditures from the government budget;
cMYP = comprehensive multiyear plan for immunization; NITAG = National Immunization Technical Advisory Group; GCC = Gulf Cooperation Council countries; N/A = not available.

● totally or almost completely ● partially ○ not applicable


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Table 11. Immunization financing: Percentage of immunization expenditure financed from government funds, 2008–2016

Economy	2008	2009	2010	2011	2012	2013	2014	2015	2016
Algeria	100	100	100	N/A	N/A	100	100	100	100
Bahrain	100	100	N/A	N/A	N/A	100	100	100	N/A
Djibouti	32	26	50	38	60	98	64	54	N/A
Egypt	100	100	N/A	100	N/A	N/A	N/A	100	100
Iran, Islamic Rep. of	100	100	N/A	N/A	100	100	100	100	100
Iraq	100	98	N/A	N/A	N/A	100	90	100	99
Jordan	100	100	0	100	N/A	N/A	100	100	10
Kuwait	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lebanon	100	100	100	N/A	100	100	100	62	40
Libya	100	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Morocco	80	100	100	N/A	N/A	N/A	N/A	N/A	N/A
Oman	100	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Palestine, State of	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Qatar	N/A	95	N/A	N/A	100	100	N/A	N/A	80
Saudi Arabia	100	100	N/A	N/A	100	N/A	N/A	N/A	N/A
Sudan, The	8	19	55	8	3	12	12	9	11
Syrian Arab Rep., The	100	100	N/A	N/A	N/A	N/A	N/A	N/A	44
Tunisia	99	99	N/A	99	95	95	N/A	99	98
United Arab Emirates	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Yemen	66	63	43	37	33	17	22	6	2

Source: WHO Joint Reporting Form.
Note: N/A = not available.

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Annex 3

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