



Kurdistan Regional Government  
Ministry of Planning • Ministry of Health

# Health Sector Reform in the Kurdistan Region—Iraq

## Financing Reform, Primary Care, and Patient Safety



C. Ross Anthony  
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Andrew W. Mulcahy



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HEALTH

## Preface

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This report provides an analysis of three key distinct but intertwined health policy areas (financing, primary care, and patient safety and quality) that need to be addressed as the Kurdistan Regional Government (KRG) continues to improve its health care system. In all three areas, RAND Corporation researchers analyzed and researched the issue, reviewed the relevant literature, developed and considered various policy options, and developed plans or approaches to overcome barriers and achieve stated policy objectives. For the primary care area, RAND helped implement a new management information system.

The RAND Corporation undertook this study at the request of the Kurdistan Regional Government under the auspices of the Ministry of Planning (MOP) and in collaboration with the Ministry of Health (MOH). The study team conducted the research from December 2011 through December 2012.

The findings should be of interest to those concerned about health care and health care-related policies in the Kurdistan Region—Iraq (KRI) generally and in health care policy more generally.

This research was performed as part of RAND Health’s Global Health Initiative. RAND Health has built an international reputation for conducting objective, high quality, empirical research to support and improve policies and organizations around the world. Its work focuses on a wide array of domestic and international policy areas, including quality of care, health promotion, financing, organization, public health preparedness, domestic and international health care reform, and military health policy.

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## Summary

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In 2010, the Kurdistan Regional Government (KRG) asked the RAND Corporation to help guide reform of the health care system in the Kurdistan Region—Iraq (KRI). The overarching goal of reform was to help establish a health system that would provide high quality services efficiently to everyone to prevent, treat, and manage physical and mental illnesses and injuries. In the first phase of its work, RAND focused on (1) primary care, (2) projecting health care demand and utilization, and (3) laying out the principles of health finance reform. This report summarizes the second phase of RAND’s work.

Between December 2011 and December 2012, which covered phase II of the project, RAND researchers analyzed three distinct but intertwined health policy issue areas: financing policy development, implementation of early primary care recommendations, and quality and patient safety assessment and recommendations. These were selected by the KRG’s Minister of Health and Minister of Planning as areas of particular concern as it continues to improve its health care system. At the request of the ministers, the researchers examined each issue, reviewed the relevant literature, explored the issue in discussions with key stakeholders, developed and assessed various policy options, and developed plans or approaches to overcome barriers and achieve stated policy objectives. In the area of primary care, they developed and helped to implement a new management information system.

### Health Care Financing in the Kurdistan Region—Iraq

The way a country finances its health care system is fundamental to the country’s ability to meet its national health objectives. The KRG asked RAND to examine the current health care financing system and to develop options and a strategic road map to help guide reform efforts.

A health financing system must address five fundamental questions about care: who is eligible, what services are covered, who pays (funding), how funds are pooled, and how payment is made. In the KRI, the draft KRG Constitution makes it clear that all KRI residents have a right to, or are eligible for, basic health care services provided in the public sector, although exactly what services are covered (the benefits package) has never been defined. Funding for public sector health services comes primarily from the KRG budget, which is funded mostly by a 17-percent allocation from the Iraqi budget, while private sector care is paid for by individuals in cash.

Pooling of funds to spread risk occurs in the KRG budget, which provides budget allocations to providers, such as hospitals and primary health care centers (PHCs), and pays staff salaries. The way in which services are purchased ideally provides incentives to purchase the *right*

*amount* of the *right kind* of services; however, presently in the KRI, such incentives are lacking. Physicians are paid a salary by the Ministry of Finance, and facilities receive a budget. There is no relationship between pay and performance; the system does not reward facilities that do a good job or physicians who work longer hours and provide more care in the public sector.

The private sector is estimated to account for 20 to 30 percent of health care spending. A substantial amount of this care is provided by physicians who are paid salaries in the public sector but spend significant amounts of time working in private sector clinics, where pay is higher. This phenomenon is often referred to as *dual practice* (DP).

### **Challenges to Implementing Health Financing Reform**

To move forward with health financing reform, KRG policymakers will need to overcome some challenges:

- Resources are insufficient—particularly in the public system—to adequately meet the current demand for health care, and the situation will worsen as the population grows and incomes increase.
- In the proposed Constitution, it is clear that the KRG believes that health care is a basic public right, and the government is committed to providing a basic level of care to all KRI residents. Because that care has been provided thus far with very minimal out-of-pocket costs to the public, people have come to believe that they are entitled to free care from the public sector, an entitlement that would not be sustainable in the long run.
- The data needed to make good management decisions, set financing policy, and manage a modern financing system are not currently available in the KRI.
- The Ministry of Health (MOH) does not presently have the capacity, personnel, or funding required to implement or manage the envisioned health care financing reform.
- Patient co-payments in the public sector are too low to raise funds or provide incentives for appropriate use.
- The hospital sector is hampered by the need for renovation and modern equipment because of Saddam-era neglect, and hospital administrators have little control over staffing and minimal budget flexibility. Most hospital administrators are respected doctors with no management training.
- The health financing system provides no incentives to reward work, performance, or productivity. This is particularly true among doctors whose salaries do not reflect the amount or quality of public sector service they provide.
- The private sector is rapidly expanding without regulatory guidance or a strategic investment process.

Despite these challenges, this is a good time for the KRG to make key decisions about the future of its health care system. The country has significant resources—both human and mineral—to support its aspirations. The lack of an entrenched system presents an opportunity to develop and implement a strategic health care vision that improves the availability of high quality care and provides it more cost-effectively.

### **A Two-Phase Approach to Financing Reform**

RAND researchers developed a strategic vision and road map to guide health financing reform in the KRI over the next decade. The road map lays out a two-phase approach to achieve the

aims of the strategy. The focus for the next five to seven years should be on phase I; whether the KRG decides to move to phase II will depend on many factors that are years in the future.

**Phase I**, to be fully implemented over the next five to seven years, envisions moving from the present budget-funded system to an efficient and effective Accountable National Health Service (A-NHS). The government would be responsible for funding health care and continue to be responsible for providing services for all citizens except for those who opt voluntarily to use the private sector; however, revenue collection, incentives, and managerial responsibility would differ significantly from the status quo. The resulting system would provide better care, more clearly meet residents' needs, and encourage productivity and incorporate incentives for efficiency and constant quality improvement.

As part of the movement to an A-NHS, the overall package of benefits provided by the public system would be defined and clarified to be comprehensive but also limited by the resources available and the policy choices of policy leaders. A wage tax to help fund a national health insurance pool would be phased in, and incentives would be realigned to encourage efficiency and quality on the part of hospitals and doctors. At the end of phase I, hospitals will be independent cost centers that control their own budgets, and new rules and incentives concerning physicians working in both the public and private sectors will have been put into place. A new agency—either part of the MOH or independent of it—would manage a health insurance fund and collect contributions from the central government and distribute them to service providers. Moving to a well-functioning A-NHS is an ambitious undertaking that will require the focus of the KRG for the foreseeable future.

In **phase II**, the KRG should consider whether to move to a functioning social health insurance (SHI) system along with an organizational structure to manage the system. Everyone would be expected to obtain insurance coverage. The SHI system would process and pay claims based on a payment model that encouraged efficiency and increased productivity. If the KRG makes the choice to move to an SHI, the insurance fund would pay for services that could be provided in either public or private care facilities.

### **Prerequisites and Policy Actions for Implementing Financing Reform**

RAND researchers identified prerequisites, as well as policy actions, needed in each phase to achieve the established objectives.

In **phase I**, prerequisites of change include improved data systems, a modernized MOH, improvements in the quality of care in the public sector, issuance of health cards, and establishment of an organizational structure to manage the new system.

Also in **phase I**, policy actions to be taken include encouraging the growth of private insurance to create needed skills, such as claim processing and payment, setting benefits packages, paying providers, evaluating risk and new technologies, and collecting and using data to guide business practices. A wage tax would be imposed on salaried employees working in government service or for large firms. Employers of foreign workers would be required to pay the full actuarial costs of their insurance. Other policy actions include explicitly defining the package of publicly supplied health benefits to which the government obligates itself, hospital sector reform, and policy changes related to physicians who practice in both the public and private sectors.

Once a fully functioning National Health Service (NHS) has been well established (over five to seven years), the KRG may wish to move to phase II and adopt an SHI system with supplemental private insurance to fund public health care in the KRI.

In **phase II**, prerequisites and enablers include enhancing the KRG’s ability to levy and collect taxes, synchronizing policy with Baghdad, and establishing a new Social Insurance Agency (SIA), which would be responsible for developing payment policies, processing claims, and paying providers for the services they render.

Also in **phase II**, policy actions include introducing an SHI system, building on the structure to manage the system developed in phase I. In collaboration with the Ministry of Finance (MOF), the new agency would set wage-tax rates and SHI rates; the KRG may choose to subsidize some groups and develop a system to provide care for the poor.

Supplemental private insurance would be allowed and encouraged in **both phases** to supplement payment for uncovered or partially covered services in the public sector and to help individuals spread their risk should they decide to use the private sector. People would still be required to support the public system fully even if they choose to purchase supplemental insurance. We would not recommend the adoption of a policy that allows for replacement insurance, in which private insurance is allowed to replace purchase of public insurance, because this almost always leads to two-tiered health care and lower quality in the public system.

## Addressing the Dual Practice Challenge

The term *dual practice* refers to the current practice in the KRI, in which physicians, who are paid a salary by the MOF to practice in the public health sector, work only a few hours in the public hospitals or health centers before leaving for their private practices. Physicians are also guaranteed a pension whose sum is not related to the quality or amount of care they provide. After a detailed assessment, RAND researchers concluded that DP in the KRI was inefficient and costly. It robs the public sector of the manpower it needs to fulfill its obligations and is ultimately a significant barrier to overall financing and hospital reform.

This report describes policy options for addressing the challenges associated with DP and examines those options from different perspectives, including effects on the supply of physicians in the public sector, ease of implementing new policies, regulatory complexity, quality of care, efficiency, and equity. After presenting the ramifications of alternative policies, we recommend an approach to begin to address the DP issue immediately—specifically, require physicians to work for three to five years in the public health sector before working in the private sector, link wages to number of hours worked, and reform physician pensions to link payouts to years of service.

In the longer run, when better data systems are operational and hospital reform is complete, quality of care or procedures performed could be incorporated as measures so that a comprehensive pay-for-performance policy could be established.

## Primary Care

In the area of primary care, RAND built on its extensive work since 2010 to begin implementing change. Drawing on our earlier research and experience, we defined primary care targets/benchmarks: recommended staffing, equipment, and a suggested list of services that we proposed should be the standard services offered at each type or level of health center. The recommendations for staffing, equipment, and services were vetted among health policy leaders in



the KRI before being finalized. The Minister of Health accepted these as the new policy of the MOH, translated the document RAND developed into Kurdish, and disseminated it to the Directors General of all governorates to use as their planning targets.

To support implementation of the policy, we developed a management information system so that the MOH could determine which health centers have the specified staffing and equipment and are providing the expected services. The management information system provides a wide range of information for ongoing planning and management at all levels across the KRI. We developed and pilot-tested the data form, revised it based on testing in Duhok and in-depth discussion with representatives from all general directorates, and began to implement it with the assistance of the Minister of Health and Departments of Health (DOHs) in all governorates. The MOH translated the form into Kurdish and sent it to all DOHs for data collection. As of late November 2012, only Duhok had submitted completed data, but data were pending from the other governorates.

This report presents selected tables and graphs mainly from the Duhok data to illustrate how these data constitute a usable policy and management tool. The Duhok data enable some important insights, as described in the report, and a broader range of insights will be possible once the data from Erbil and Sulaimaniya governorates are processed and outputs generated.

The data enable the KRG to compare the standards of service with the existing situations, thus giving the MOH and DOHs a powerful tool to help manage primary care and guide policy reform.

## Quality and Patient Safety

We conducted an initial assessment of patient safety—a vital dimension of overall quality of care—in public hospitals in the KRI. We based our assessment on site visits and discussions with officials, health care managers, and care providers throughout the KRI. We examined patient safety in the context of the landmark framework developed by the U.S. Institute of Medicine.

### Initial Findings from the Patient Safety Assessment

An important observation emerging from our assessment was that providers are aware of limitations in their ability to deliver care in the current practice milieu. This realization is key because the most powerful enabler of change is a cadre of professionals who will be responsible for “owning” the future health care delivery system. The RAND team also learned about specific quality improvement initiatives already under way—for example, at the Azadi Teaching Hospital in Duhok—about specific legislation designed to protect patient rights.

However, *what was lacking was a consistent, organized plan for improving quality and safety across all health care facilities*. Most efforts appeared to depend on the initiatives and desires of specific individuals within isolated hospital systems.

Given the current state of health care delivery in the KRG, an explicit assessment against each of the Institute of Medicine goals was not possible. However, some initial specific efforts are beginning in some domains of quality (e.g., safety). By contrast, DP, as it exists in the region, creates a system that is not equitable for all patients, encourages inefficiencies in the delivery of care, and challenges the combined public and private systems (mostly the public system) when attempting to provide timely care. Because physicians have split loyalties between

their public and private practices, the delivery system that exists is more provider-centric than patient-centric.

### **Our Recommendations for Improving Patient Safety**

Given our findings and input from the MOH and Ministry of Planning (MOP), we recommend four concrete activities to guide the KRI's health care providers toward international standards. The first recommendation, which focuses on achieving accreditation for health care facilities, is a phased activity that could begin now, although full implementation would occur over the next five years. The other three recommendations could be implemented over the next year. The recommendations are described in detail in the report and summarized here.

#### ***Recommendation 1: Pursue Internationally Recognized Accreditation for Health Care Facilities in the Kurdistan Region—Iraq***

The KRG should develop an accreditation model for health care facilities that is consistent with internationally recognized standards for health care delivery. Accreditation efforts should begin with hospitals, with later expansion to other health care delivery venues. Of the many accreditation models available worldwide, we suggest using the Joint Commission International accreditation model because it is internationally recognized and has been well received throughout the Middle East. Further, because so many hospitals and health systems in the geographic region have already sought accreditation, there are colleagues in neighboring countries who can serve as resources for Kurdistan's health care leaders.

The Joint Commission International defines five major “quality essentials” under which standards and guidelines are classified. Given these, we recommend five specific actions to the MOH for pursuing international accreditation:

- **Establish a leadership and accountability team.** Both administrative and clinical leadership are essential, and senior leadership will set the direction for the entire organization.
- **Establish a workforce team to enhance human resource management.** Specifically, the region must take responsibility for establishing professional licensure requirements consistent with international standards for education, training, and experience.
- **Establish a safe-environment-of-care team.** Requirements for ensuring a safe environment will vary across hospital settings but generally include routine inspection of facilities, guaranteeing availability of safe drinking water and electrical power, and establishing programs to reduce nosocomial infections and use masks, gloves, and other protections as necessary.
- **Establish a team focused on the clinical care of patients.** Requirements include a reliable process for correctly identifying patients, obtaining informed consent when appropriate, providing laboratory and diagnostic imaging services, ensuring that services are appropriate to patient needs, and educating patients and families to participate in patient care.
- **Establish a quality and safety team.** Elements here include an adverse-event reporting system, special attention to high-risk processes and high-risk patients, and a system in which patients and family can voice concerns with quality of care, in which appropriate clinical practice guidelines and standards are used, and in which it is generally recognized that everyone in an organization is responsible for improving quality.

***Recommendation 2: Examine Accredited Hospitals to Learn How They Achieved Success***

Many hospitals in the region have attained Joint Commission International accreditation. Visits to facilities could help KRI health care leaders understand how hospitals and countries have achieved accreditation and develop a network of colleagues within the region who can provide support and guidance.

***Recommendation 3: Attend a Joint Commission International Practicum Program***

In a Joint Commission International practicum program, international and regional health care leaders present a hands-on educational program that solidifies participants' understanding of requirements and strategies for pursuing accreditation. We recommend that the team from Kurdistan include regional government leaders and hospital leadership from two or three hospitals that commit to be the first to work toward accreditation.

***Recommendation 4: Establish a Regional Leadership Team***

We recommend the establishment of a KRG Quality Health Council led by the MOH and MOP. The council would provide important oversight and would include five teams of experts in the content of each of the five quality essentials defined by the Joint Commission International framework (see Chapter Six). Each team can establish specific goals for hospitals within the region and identify unifying programs and concepts to help facilities reach those goals. The chair of each team, or a designee, might be appropriate for participation in the practicum (recommendation 3).

**Implementing Policies for Pursuing Change**

Informed by detailed assessments and stakeholder input, we recommend specific, practical, achievable policy reforms in the areas of health care financing, primary care, and patient safety. The set of initiatives we have recommended is ambitious. However, as was clear in our discussions with both the governmental and provider communities, the desire to improve Kurdistan's health care system is genuine and strong.

If fully adopted, the reforms presented here would have a significant impact on improving health care in the KRI over the next several years. They would also provide powerful incentives that would promote higher quality and greater efficiency in health care for all KRI residents.



## Acknowledgments

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## Abbreviations

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ANC	antenatal care
A-NHS	Accountable National Health Service
DG	Director General
DOH	Department of Health
DP	dual practice
DRG	diagnosis-related group
ECG	electrocardiogram
ESR	erythrocyte sedimentation rate
GDP	gross domestic product
GM	growth monitoring
GP	general practitioner
GPS	global positioning system
Hct	hematocrit
Hgb	hemoglobin
HSA	health service agency
IOM	Institute of Medicine
ISO	International Organization for Standardization
IT	information technology
KRG	Kurdistan Regional Government
KRI	Kurdistan Region—Iraq
KRSO	Kurdistan Region Statistics Office
MIS	management information system
MOF	Ministry of Finance

MOH	Ministry of Health
MOP	Ministry of Planning
NHS	National Health Service
ORS	oral rehydration solution
PHC	primary health care center
SHI	social health insurance
SIA	Social Insurance Agency
UAE	United Arab Emirates
USAID	U.S. Agency for International Development
USPHS	U.S. Public Health Service
VAX	vaccination
WBC	white blood cell
WHO	World Health Organization



## Introduction

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In 2012, at the request of the Ministry of Planning (MOP) and the Ministry of Health (MOH) of the Kurdistan Regional Government (KRG), the RAND Corporation has continued to develop and implement policy recommendations for improving the health care sector in the Kurdistan Region—Iraq (KRI). In the first phase of its work, RAND focused on (1) primary care, (2) projecting health care demand and utilization, and (3) laying out the principles of health finance reform. The phase I report includes a full summary of the demographic and health profile of the KRI. This report summarizes RAND’s work in phase II.

In phase II, RAND was asked to address three separate but related areas—health care financing, implementation of earlier primary care recommendations, and patient safety and quality assessment and recommendations. The analysis described below in the areas of primary care and financing builds on work that RAND conducted beginning in 2010. The current activity was our first look at patient safety and quality issues in hospitals.

In **health care financing**, we analyzed the current situation in the KRI and developed a detailed road map of enabling and policy actions, to be implemented in two phases, that could overcome some of the challenges the KRG currently faces. The ultimate goal of these activities would be to establish an efficient, equitable, and accountable health insurance system that provided quality care to meet the needs of the people of the KRI. We were also asked to examine the issue of *dual practice* (DP)—the pattern of combined public and private practice among physicians, which saps hospital efficiency and threatens the KRG’s ability to meet its obligations under its proposed Constitution. We present recommendations for addressing the DP issue.

In **primary care**, we developed a detailed list of staffing, equipment, and services that should be available at various types of primary care centers and then developed a management information system to track these and other activities in order to improve efficiency and access to primary care in the KRI; trained regional staff on how to collect and enter the needed data; and collected and assembled the data provided to us in a data set that should facilitate decisionmaking and management of the primary care system. We also consulted with the MOH and the Directors General of Health on activities that they could pilot to test the feasibility of suggested reforms.

In **quality and patient safety**, we lay out a plan that the MOH could follow to design and implement a quality agenda.

Readers will note that reforms in each area reinforce and enable reforms in the other areas while also constituting separate foci of reform.

Our discussion is organized as follows:

- Chapter Two presents a road map for reforming the KRG’s health care financing system.
- Chapter Three outlines current and proposed health financing reform for the KRI.
- Chapter Four describes the dual practice (DP) challenge and presents viable options for addressing it.
- Chapter Five describes the primary care packages of staffing, equipment, and services that should be available at primary care centers and describes the development and initial implementation of a new KRG primary care management information system for improving management and planning.
- Chapter Six describes our assessment of overall health care quality and patient safety in the KRI and lays out an approach for enhancing quality and safety.
- Chapter Seven presents brief concluding observations.

## Health Financing Literature

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### Introduction

The way a country finances its health care system is fundamental to the country's ability to meet its national health objectives. The financing system determines the resources available to fund health care and provides the incentives that are critical to providing people with good access to high quality care at a reasonable cost. As the KRI modernizes and as the KRG considers how to finance its health care obligations to the people of the region, we review how the health system is financed so that the KRG can improve its functioning and, ultimately, the health of KRI citizens.

As it seeks to improve the functioning of the public health care system, now is an appropriate time for the KRG to begin evaluating future health care financing options, to craft a strategic health financing plan, and to establish mechanisms to achieve desired outcomes. To achieve these objectives, the KRG asked the RAND Corporation to examine the current health care financing system and to develop options and a strategic road map to help guide reform efforts.

As part of this exercise, RAND researchers interviewed multiple health care leaders, reviewed the available literature and data, examined the key constraints and barriers to change, helped the MOH articulate a health financing vision, and developed the strategic approach requested. Figure 2.1 provides a schematic diagram of our approach.

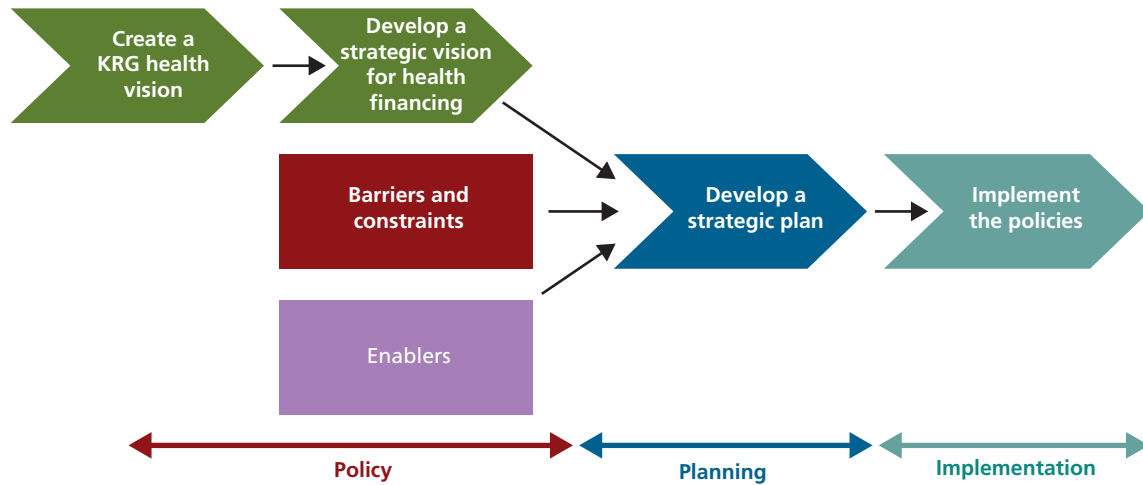
### Health Care Financing Literature

The World Health Organization (WHO) has defined health care financing as the “function of a health system concerned with the mobilization, accumulation and allocation of money to cover the health needs of the people, individually and collectively, in the health system” (WHO, 2010, p. 72). Further, WHO states that the “purpose of health financing is to make funding available, as well as to set the right financial incentives to providers, to ensure that all individuals have access to effective public health and personal health care” (WHO, 2000, p. 95).

### Fundamental Questions

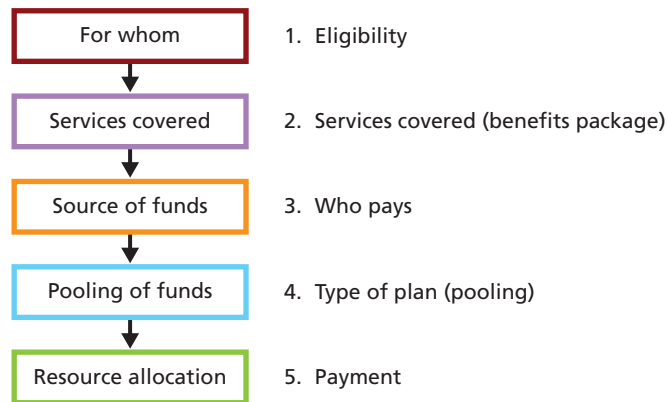
Health care financing addresses fundamental questions about health and health care. A health care financing system determines who pays for health care, how much they pay, and how they pay. It also determines the kind of care that is provided and to whom it is provided (Figure 2.2).

**Figure 2.1**  
Approach Used to Examine Health Financing Reform



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**Figure 2.2**  
Basic Elements of Health Care Financing



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The answers to these complex questions, as reflected in the collection of funding resources and payment for health services, establish the incentives under which both providers and patients operate. Ultimately, the answers to these questions play a major role in determining whether a system provides good access to care and at what level of quality and cost. Policymakers in all countries must answer these questions, whether directly or indirectly, and their answers characterize the country’s health financing system. (For a more complete discussion of these issues, see Moore et al., 2012, and Anthony, 2012.)

**Eligibility: Who Is Covered**

Eligibility determines who has the right to access care, which can be paid for or provided by the public or private sector. Many countries in the world have designated access to a basic package

of health services to be a “right” of all citizens. Most governments, including the KRG, have codified this principle in their Constitutions or in law. Articles 20 and 21 of the proposed KRG Constitution state that “the regional government shall provide social security benefits in cases of illness, disability, unemployment, or old age” and that “the regional government guarantees to protect public health through consistent efforts to provide medical services in the fields of prevention, treatment and medication.” Article 30 of the Iraqi Constitution stipulates that “the state shall guarantee to the individual and the family—especially children and women—social and health security, the basic requirements for living a free and decent life, and shall secure for them suitable income and appropriate housing” (Iraq Ministry of Health, 2012, p. 18).

In short, all KRI citizens have a right to basic health care services. Historically, Kurdish citizens have believed that they have a right to free health care in public facilities, although the law does not specify that.

### ***Services Covered: Benefits Package***

All national and private financing plans need to determine what services will be covered under the plan. The definition of the benefits package must not only be sensitive to services that offer good value but also reflect the level of resources available to pay for the care covered. There is general agreement among most health policymakers that a national plan should offer a basic package of services, including preventive and primary, emergency, hospital, and physician care, as well as access to essential medicines. However, the challenge is to define coverage in detail and to define criteria and processes for updating coverage lists to adjust for new technologies that evolve in the future.

In the KRI to date, no benefits package has been defined. In many areas in the KRI, the lack of funding has led to the absence of modern equipment and training, which makes provision of some services impossible. In effect, services are rationed by availability, and some needs remain unmet.

### ***Sources of Funds***

A key health care financing function is identifying and procuring the resources needed to fund the health care system. Usually, resource collection systems are designed to ensure that, as far as possible, resources are (1) raised in an equitable and efficient way; (2) adequate to cover the full range of health covered services, including public health and primary care; and (3) adequate to protect people who are sick, injured, or too poor to pay for services.

The source of funds varies depending on the system and the level of a country’s development. There is almost always more than one funding source. Funding often comes directly or indirectly from individuals (e.g., taxes, insurance co-pays and other cost sharing, insurance premiums), corporations (e.g., taxes and payments for employee health insurance benefits), government (e.g., national, state, and local budgets), and international aid. The source of funding often has implications for the equity of a health care system. This is especially true for the portion of health care spending that is financed through out-of-pocket payments.

In the KRI, the primary source of funding for all government services today is the 17-percent allocation from the Iraqi budget to which the KRG is constitutionally entitled; this allocation comes primarily from oil revenue. Small co-pays and a fee for special public/private arrangements generate small amounts of additional funding.

### ***Pooling of Funds***

Whatever the nature of the system, all national health care financing systems pool revenue in some way (e.g., revenues are collected and placed in a fund to be distributed according to need). Indeed, one of the core principles of insurance is to pool funds in order to spread risk. Systems that pool revenues are designed so that they both *efficiently* and *equitably* manage health risk. For example, if an individual had to pay for the full cost of some very resource-intensive procedure, such as a liver transplant, the situation would most likely be financially catastrophic. However, liver transplantation is rare, so, if one averages the per capita cost across a large number of people, the average payment is only a small fraction of any one individual's income. The same principle applies to less rare, but also costly, procedures, such as coronary artery bypass surgery.

The usual way to spread risk is to pool funds through the national budget or some kind of insurance system—public (national, state, or local), corporate, or private. National systems can be designed so that the government manages or closely regulates the insurance mechanism but does not provide health services; this arrangement is referred to as *social health insurance* (SHI). Examples of high-income countries with SHI systems include Germany and Japan.

In a few countries (e.g., Switzerland), law requires that all people purchase private insurance through private insurance providers. In most countries, government-run or government-regulated public insurance pools are organized at the national level, but some countries have organized their public insurance funds on a regional or state level. For instance, Canada has provincial health insurance funds that follow national guidelines and regulations, but the funds are organized and managed at the provincial level. Financing of SHI systems is often through a blend of income-related payroll and general tax revenue.

Alternatively, in a National Health Service (NHS) system, the government collects funds and acts as a health care provider. Most systems based on an NHS model have compulsory universal coverage, financed from general government revenues; care is provided predominantly by the public sector. Examples include the United Kingdom before reforms were introduced by Prime Minister Margaret Thatcher and the Scandinavian countries.<sup>1</sup> Health care delivery in these countries is organized around distinct geographic administrative units.

In the KRI, pooling is achieved through the KRG budget process. The KRG collects revenue and receives its 17-percent allocation from Iraq, then allocates a portion of its budget to health care providers. Because there is very little insurance in the private sector, private sector care is, in effect, provided on a cash basis by individuals without pooling of risk.

### ***Allocation of Resources or Payment***

The final fundamental issue to consider is *resource allocation*—the purchasing of services and inputs. This is the process by which funds are paid to providers in order to deliver health services. Purchasing can be performed passively or strategically. *Passive purchasing* implies following a predetermined budget or simply paying bills when presented. Strategic purchasing involves a continuous search for the best ways to maximize health system performance by deciding which interventions should be purchased, how, and from whom. Strategic purchasing can occur at the health system level, or it can be devolved to groups of, or individual, facilities and providers.

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<sup>1</sup> Today, the system in the United Kingdom is no longer the pure NHS it was before Margaret Thatcher became prime minister. It is very much a mixed public and private system.

The way in which services are purchased should encourage purchase of the *right amount* of the *right kind* of services. Payment rates to service providers that are properly structured establish incentives for efficient and effective operation of the health care delivery system. Adequate payments are also necessary to enable providers to hire staff and purchase the other inputs (e.g., bandages) required to provide care. Health care funding is commonly used to purchase hospital care, emergency care, physician and nursing services, medicine, buildings and equipment, public health, primary care, laboratory services, rehabilitation services, information technology (IT) and medical records, dental services, and similar goods and services.

The method of *provider payment* constitutes an important part of the purchasing arrangement. Common types of provider payment methods found around the world include the following:

- Capitation: fixed per capita payment for a predetermined time, usually a month or year. The fixed amount usually includes outpatient and physician services plus medicines. These can vary greatly, ranging from rather complete packages of care, as is the case with health maintenance organizations, to much narrower packages, as is usually the case in primary health care centers (PHCs).
- Bundled payments, such as diagnosis-related groups (DRGs): payment of a set amount, based on the diagnosis and average costs irrespective of the costs of the care to the inpatient facility instead of the actual costs of the care
- Fee for service: pay for each service or procedure after it is rendered
- Global budgeting: provide a set yearly budget for a defined set of services
- Line-item budgeting: budget for services by such categories as salaries or capital
- Salary-based payment.

Payment systems for hospital services have changed dramatically worldwide in the past 25 years. Most countries today use some form of bundled prospective payment often based on diagnosis (e.g., payment based on DRGs) for hospital services. For example, in the United States, Medicare hospital services are reimbursed based on the DRG to which that service is assigned.<sup>2</sup> Thus the hospital receives a “standard” payment for the DRG to which a hip replacement or a caesarian delivery is assigned, irrespective of the resources the hospital utilizes to treat the patient or the length of time the patient is in the hospital.<sup>3</sup> Research has shown that the DRG system incentivizes hospitals to be more efficient without jeopardizing the quality of care. Of course, hospital lengths of stay and hospital costs are highly correlated.

Many countries use more than one payment method. For instance, in the United States, some insurance companies may pay a particular physician on a fee-for-service basis, while another company may pay even the same physician a capitated rate or a rate based on some fee schedule for the same service. In many countries, physicians are salaried, while hospitals are paid based on a bundled payment for a diagnostic group. In the KRG, hospitals are funded by

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<sup>2</sup> Medicare is the large federal insurance program in the United States that covers those who are over age 65 or who are disabled or on renal dialysis.

<sup>3</sup> In fact, the Medicare system is a bit more complicated. There are certain adjustments made to the standard DRG rate to take into account such factors as rural location or whether the hospital is a teaching hospital. There is also an allowance made for *outlier cases*, such as when a case is far more costly than the norm for reasons that are not the fault of the facility. Burn cases, which often require many months in the hospital to resolve and in which individual patients respond quite differently and unpredictably to treatment, are good examples of outlier cases.

budgets from the MOH, and almost all medical staff are paid salaries directly by the Ministry of Finance (MOF) of the KRG.

### Flow of Funds

Another way to look at health care financing is to trace the flow of funds (i.e., follow the money). Figure 2.3 shows the flow of funds in a representative country in which coverage and access have already been determined.

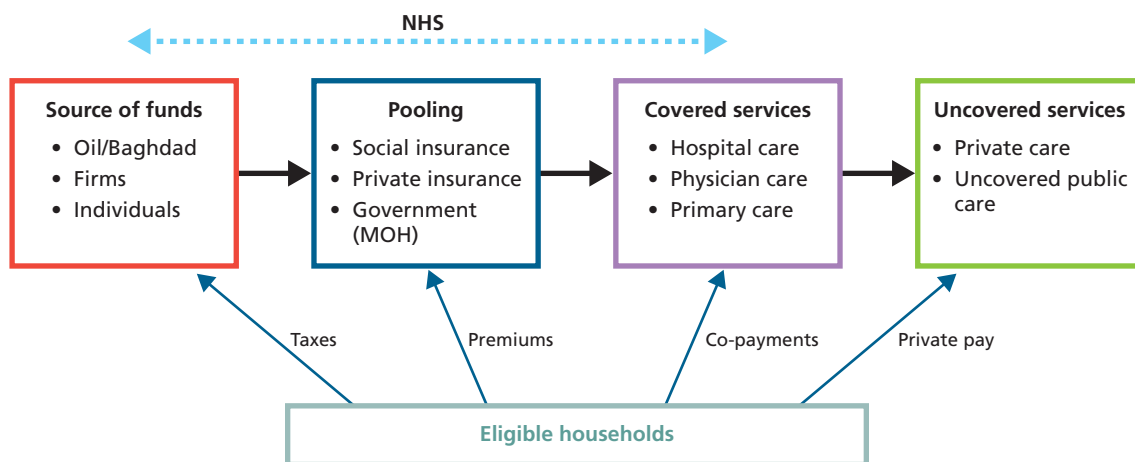
Except for aid from abroad or philanthropy, households (i.e., families) are the ultimate source of funding for the system, as well as the ultimate recipients of care. Households pay taxes to the government. The government also has other sources of funding, such as taxes from firms, fees, and rent. In the case of the KRI, sources also include oil revenue that comes via Baghdad. All sources of funding are pooled in the government or private or social insurance companies.

Once the government or insurance companies have collected the funding available to them, they must decide what care to pay for (typically, hospital, physician, and primary care) and how much to pay. Households may also pay directly to the pooling agent in the form of premiums or directly to providers in the form of user fees or private out-of-pocket payments.

### Current Health Financing System in the Kurdistan Region—Iraq

It is well known that, during Saddam Hussein's time, the Kurds were persecuted, and there was a systematic and intentional lack of investment in the Kurdish areas. The KRI still suffers from this legacy of neglect. Although the KRI has been experiencing rapid growth in the past few years, it is much like a middle-income country with respect to many structural considerations. For instance, its data, IT, and government administrative systems would be hard pressed to support a social insurance program today. In health care, the KRI had a long history of excellence that suffered under Saddam Hussein's time because of the systematic underinvestment in the sector.

**Figure 2.3**  
Money Flows in a Health Financing System





That said, household incomes are rising, education levels are high, and social cohesion and a national purpose are strong. The KRI also has a democratic government and the skills needed to run it. The population is relatively young and has been rapidly growing since the First Gulf War.

### Demographics

According to the official KRG website, the 5.2 million

people living in the Kurdistan Region are Kurds as well as Assyrians, Chaldeans, Turkmen, Armenians, and Arabs.

The Region has a young and growing population, with 36% aged 0–14 years and only 4% aged over 63. The median age in Kurdistan is just over 20, meaning more than 50% are less than 20.

The Kurdistan Region's demography has changed considerably in the last few decades mainly because of forced migration by the previous Iraqi government, which is one of the main reasons for the movement from the countryside to towns and cities. By 2001, at least 600,000 people were internally displaced mainly because of the previous Iraqi regime's policies since the 1970s. This included more than 100,000 people expelled in November 1991 alone from Kirkuk by the Iraqi government. According to a [United Nations Development Programme] survey, 66% of people living in Duhok province have been forced to change their residence due to war at any point in their lives, while the figures in Suleimaniah and Erbil are 31% and 7%, respectively.

After the Gulf Wars ended, people who had fled to Iran, Turkey, and elsewhere began to return, and, as life became more normal, fertility rates rose (KRG, 2010).<sup>4</sup>

### Health Indicators

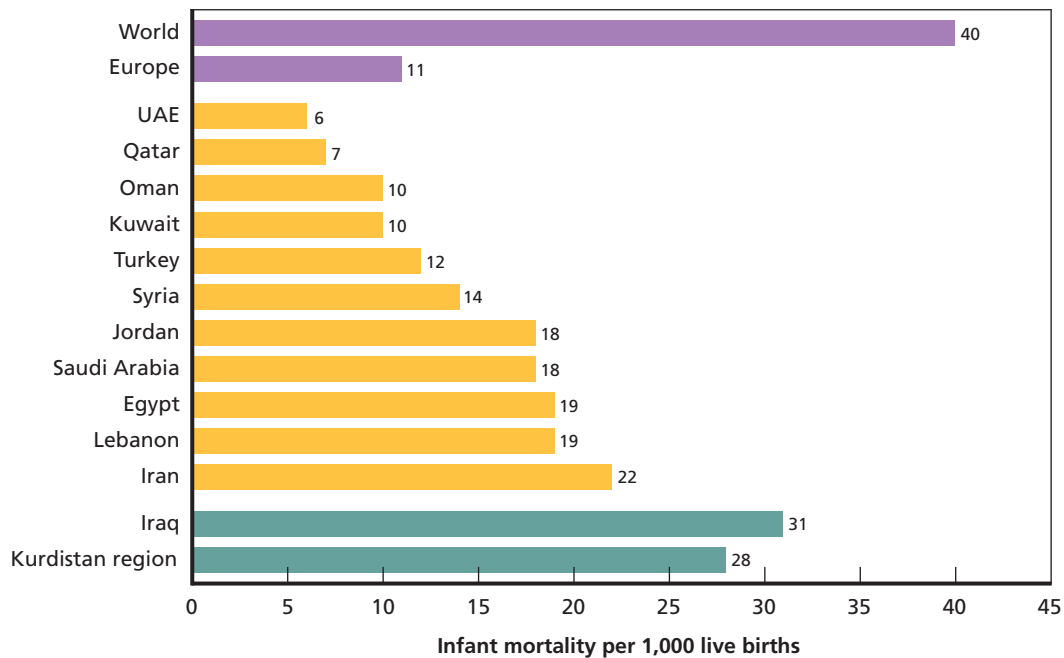
As of 2008 and 2009, health indicators, such as life expectancy, mortality, infant mortality, and other macro health indicators, were at levels better than world averages and better than those in Iraq as a whole but far below those of Europe or developed Gulf states. One example is the region's infant mortality (Figure 2.4).

The leading causes of death in adults in the region are largely consistent with patterns seen in countries in the Middle East and North Africa, including injuries (mostly caused by road traffic accidents), cancers, stroke, and cardiovascular disease. As economic development continues, the incidence of communicable disease will most likely continue to fall, which will probably see the KRI have a pattern of health similar to those in the developed Gulf countries.

The picture of health resources or inputs, such as physicians, nurses, and hospital beds, tells a similar story. For instance, the number of physicians per 10,000 people is higher in the KRI than in Iraq itself but lower than in neighboring Arab states, such as Turkey, Lebanon, and Jordan, which tend to be more developed, but higher than in Iraq overall and higher than in impoverished Arab states, such as Syria or countries in northern Africa. That said, health resources per capita lag far behind those in developed Arab states and Europe. The need for

<sup>4</sup> Because no official census has been conducted in many years and because what should constitute the KRI remains in dispute, any overall population number is an estimate.

**Figure 2.4**  
**Infant Mortality Rates in the Kurdistan Region and Other Selected Economies, 2010**



SOURCE: Kurdistan Regional Government, 2013, p. 5.

NOTE: UAE = United Arab Emirates.

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rapidly expanding numbers of physicians, nurses, and hospitals was chronicled in detail in RAND's phase I report (Moore et al., 2012), which included detailed health need projections for the KRI.

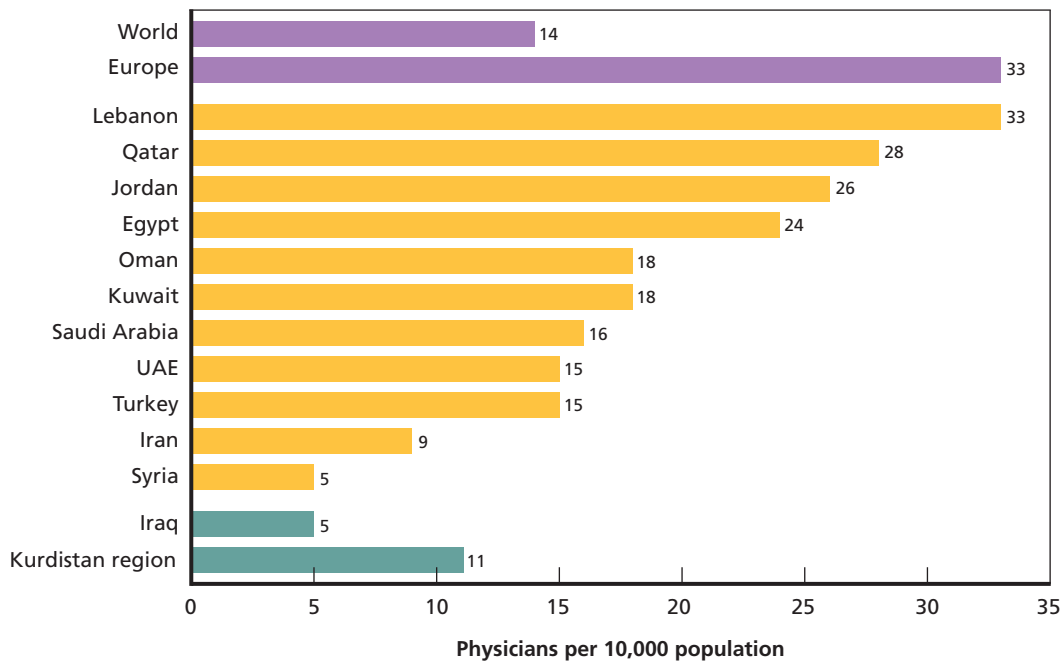
### Public Sector Health Spending

If one examines the total dollars spent on health care per capita across the region, the results vary greatly. It is a little hard to compare these numbers because oil rich states have much higher gross domestic products (GDPs) and budgets, so the amount being spent is less in percentage terms in such countries as Qatar or Kuwait but greater in dollar terms than those of states without oil (see Figure 2.6). The KRI and Iraq have oil resources, but those are not yet being fully exploited. Health care has been rising as a percentage of budgets as Iraq has met some of its immediate needs after the last Gulf War (e.g., electricity, water) but still is behind high-income countries and even countries to which it seeks to be compared: Jordan and Turkey.

A clearer picture is obtained when one looks at total dollars per capita spent on health care in 2010. Consistent with the patterns noted above is the fact that the KRI and Iraq as a whole spend more than the large non-oil-rich countries of the Middle East, such as Turkey or Syria (see Figure 2.7), but far less than high-income countries or the developed countries of the Gulf, such as the UAE, Qatar, or Saudi Arabia.

At this time, funding for the KRG's public health sector comes from public budget allocations. Most of the funding flows from the KRG central budget through the MOH to care providers (hospitals, primary health care centers, and salaries for personnel). Funding for the KRG central budget comes primarily from the 17-percent allocation from Baghdad. Some funding

**Figure 2.5**  
**Physicians per 10,000 Population in the Kurdistan Region and Other Selected Economies, 2008**



SOURCE: Kurdistan Regional Government, 2013, p. 7.

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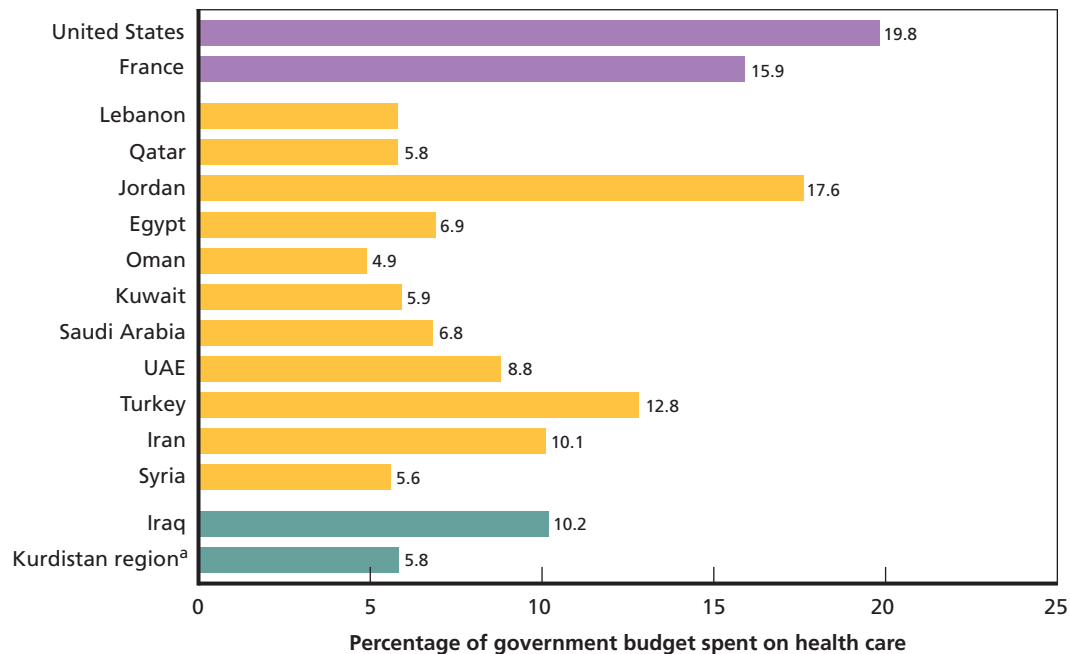
for investment or directly purchased goods and equipment also comes to the health care sector directly from Baghdad or from the governorate. Although approved by the MOH, funds flow directly from the MOF of the KRG to the governorate level health Director General (DG). It is also worth noting that Iraq today is a federation with the KRG exercising authority over the KRI but the limits of which are constantly tested and not fully agreed upon. Within the context of this study, that means that the KRG has great policy flexibility but also has to function within and in collaboration with the overall health care system established in Baghdad.

Flow of funds for capital investments is more complicated. Funding comes (1) from the KRG budget from the MOF to the governorate health DGs, (2) from the governors' budgets, or (3) from Baghdad either directly in the form of equipment or indirectly through the governors.

At present, revenues toward financing the public health care system in KRI from other sources are minor. For example, individuals pay very small user fees for public health services: In PHCs, patients pay 250 dinars (\$0.21) to receive a ticket to be seen and 500 dinars (\$0.42) if they need medicines. However, taxes and fees could become an important source of future funding. The health sector currently consumes about 5.8 percent of the KRG budget, and the experience of other countries suggests that this percentage will grow considerably in the next ten years.

Although exact figures are not available, some private individuals make substantial out-of-pocket payments for private medical care, which is typically care provided in the afternoon and evenings by the same physicians who work in the public sector in the morning. There is

**Figure 2.6**  
**Government Expenditures on Health, 2011**



SOURCES: WHO, undated; Kurdistan Region Statistics Office (KRSO).

<sup>a</sup>Data for the Kurdistan region are for 2013.

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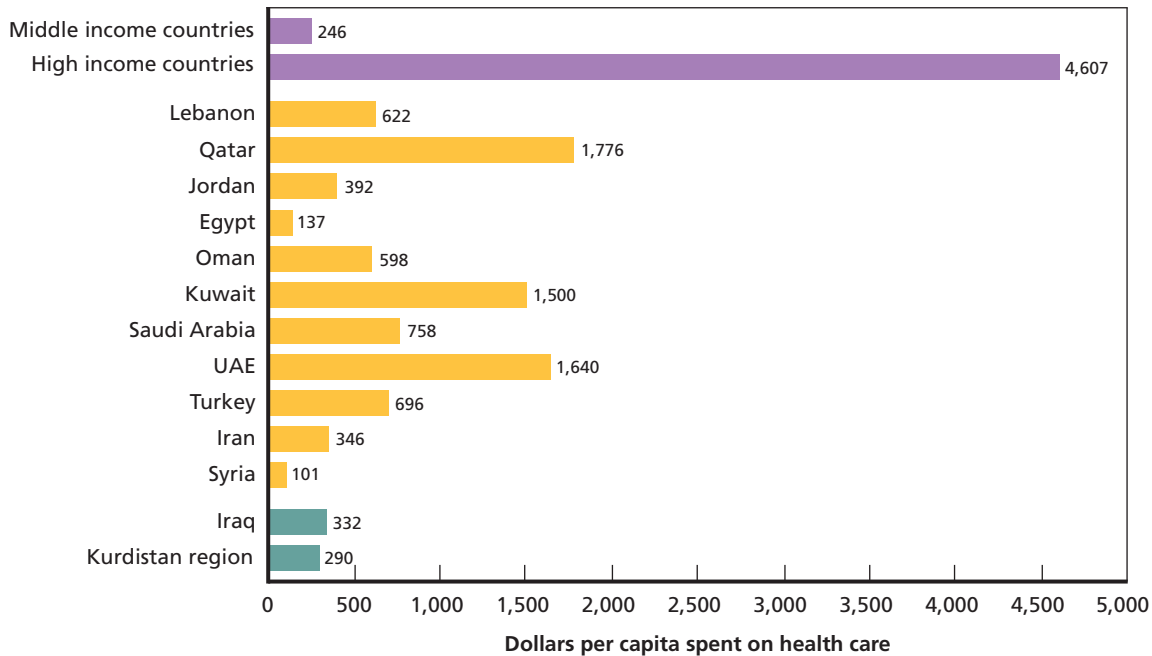
also a growing number of private hospitals, particularly in Erbil, which are much smaller than the public hospitals.

The government also pays the operating expenses of the medical facilities. The majority of these costs are salaries (e.g., physicians, nurses, nurse midwives, dentists, pharmacists, lab technicians, ambulance drivers, cleaners), but public budgets also either directly or indirectly pay for medicines, laboratories, dental care, vaccines, disposables, ambulance expenses, pension expenses, training and education, and other consumables and services.

The government pays for the health care capital expenses through investment budgets. These include purchase of major equipment, buildings, and other larger capital expenditures. Investment budget allocations are made available by the MOH through a process administered by the MOP, the governors of the governorates, and directly or indirectly from Baghdad.

The public health care budget (operational plus investment budget) for fiscal year 2013 was set at 959 billion dinars, of which 705 billion dinars were dedicated to operational expenses and 254 billion dinars were allocated to investment. Health care receives 5.8 percent of the public budget, which is low by international and even regional standards. In interviews, KRG officials indicated that the initial budget amounts were not nearly sufficient to meet the levels that providers knew to be necessary to cover basic care and medicines. In general, when the governorates that control the local budgets reach their budget ceilings, they generate additional resources by transferring funds from less important areas, by reducing the investment budgets, and by requesting supplements from the MOH and MOF.

**Figure 2.7**  
**Dollars per Capita Spent on Health Care, 2011**



SOURCES: World Bank, 2010, Table 7.15; KRSO.

NOTE: Data for Iraq and the Kurdistan region are imprecise because the size of private sector expenditures is estimated only.

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### Access and Utilization

In our first-year health report, *The Future of Health Care in the Kurdistan Region—Iraq: Toward an Effective, High-Quality System with an Emphasis on Primary Care*, we examined access and utilization of health services (see Moore et al., 2012, pp. 29–42). We projected future demand under a variety of scenarios and estimated need and supply of hospital beds and physician services to meet that need. The report summarized the situation as follows:

In the base case and in the three scenario projections, population growth is the main driver of health care use in the near future. Moderate population growth alone could drive as much as a 20-percent increase in both inpatient and outpatient health care utilization by 2015 and as much as a 40-percent increase by 2020. This projected growth implies the need for a significant increase in the health care workforce and hospital capacity. Presently, the number of physicians is increasing at about a rate that is sufficient to maintain the present physician-to-population ratio. However, the Kurdistan Region's physician-to-population ratio is smaller than the ratios of all its neighbors. As care at international levels begins to be demanded, the need for physicians and other health inputs will rise significantly. We cannot reasonably project the number of hospital beds, as this is so capital-intensive and budget allocations are not secure. That said, bed capacity is also behind international norms and will probably worsen given the rate of present new-bed construction. (p. 42)

At an international “Congress on Reform and Development of the Healthcare System in the Kurdistan Region” held February 2–4, 2012, in Erbil, presenters estimated that the private sector represented 20 to 30 percent of the total spent on health care; the remainder was spent

by the public sector. Using these estimates, we can approximate the percentage of GDP going to health care at about 3 percent. This compares with the estimate for Iraq as a whole in 2007 at 2.5 percent, Jordan at 8.9 percent, Turkey at 5 percent, and most European countries in the 8- to 10-percent range (World Bank, 2010). Therefore, the amount of GDP spent on health care today is low by international standards and can be expected to rise as the KRI improves access to care.

Data obtained from the MOF indicate that the operational public sector health care budget for 2011 has been set at 485,545 million Iraqi dinars, which is a 17-percent increase over 2010. Nearly 80 percent of the total goes to fund salaries. The number of public employees to be funded in the health sector rose 8 percent in 2011 to 42,236. Duhok saw the fastest increase in the number of employees, at 15 percent; budgeted health sector employment rose by 6.5 percent and 7.5 percent in Erbil and Sulaimaniya, respectively.

The process for setting budgets begins with the MOH querying each of the five KRG DGs about their needs for the coming year. The MOH reviews this input and fashions an operating budget, which is discussed with the DGs. That budget is then presented to the MOF, which reviews the request and makes a budget determination that is almost always smaller than requested. DGs can and do request top-ups to their budgets as the year goes on; they also reallocate funding to pay for priority areas, such as salaries and medicines.

Note that medical personnel are paid a salary directly by the KRG's MOF, and facilities receive a budget. There is no relationship between pay and performance or even between pay and the number of hours worked, and the system does not reward facilities that do a good job. Because money does not “follow the patient,” this type of purchasing provides no incentives for people to work harder or to provide high quality care. Historically, employment in the government sector, including the health care sector, has meant a stable, steady job. Therefore, it is not surprising to learn that many clinics and hospitals have staffing levels that experts indicate are much higher—sometimes by as much as 50 percent—than needed to run an efficient hospital or clinic. Hiring decisions have historically been made by the Council of Ministers, which means that they were motivated by more than considerations of efficient operation of the facility. Ironically, there is a projected shortage of physicians, but supply of support staff is in excess of what is needed.

As indicated above, the private sector is estimated to account for 20 to 30 percent of KRI health care spending. A substantial amount of care is provided by physicians working in their own private offices and financed by individuals out of their own pockets. There is also a growing number of private hospitals and many private pharmacies. All of these facilities expect to be paid cash when services are rendered. Although the facilities charge reasonable fees by Western standards, they are far more expensive than care in the public sector in the Middle East, which is very highly subsidized.

### **Proposed Legal Changes**

A proposed law was introduced in the KRG Parliament a few years ago to implement a health insurance scheme for government employees. The proposed law also called for the establishment of a mechanism within the MOH to manage the insurance program.

Except for a few foreigners, almost no one in the KRI is covered by private insurance. In the past year, a few insurance companies have opened and are providing health insurance, but the number of covered people at this point in time is extremely small. If the KRG were to seriously consider a modern social insurance system, it would need to encourage, as well as

regulate, the formation of private insurance companies so that the skills necessary to manage an insurance system that collects premiums, adjudicates bills, and pays providers can be developed in the KRI. Indeed, today in the KRI, common types of insurance (auto, home, and life insurance) are not routinely available or used.

In terms of **eligibility**, currently all Iraqi citizens, whether they live in the KRI or not, can avail themselves of KRG health facilities and medicines under the same terms as Kurdistan residents. Non-Kurdistan residents who are not Iraqis are not afforded the same protection under the Constitution.

In Kurdistan, all citizens are eligible for a broad package of health care, dental, and emergency service **benefits** that are provided in public hospitals and PHCs. The services provided are limited by the budget, available equipment and medicines, and the education and training of the staff. We are not aware that a detailed list of covered services has been articulated to date or that a process for determining services to be covered has been specified.

In Kurdistan, one safety valve for lack of service availability is approval to receive care abroad. In addition to the KRG, political parties also pay for care abroad for members of their parties when and if the care is deemed necessary and is not available in the KRG or Iraq.

## Health Financing Challenges Facing the Kurdistan Regional Government

As they craft a strategic health financing vision and plan, KRG policymakers will need to overcome some challenges, including the following:

- **Insufficient funding:** Funding is insufficient—particularly in the public system—to adequately fund the demand for health care today, and the situation will worsen as the population grows and incomes increase (see Moore et al., 2012). In addition, the number of physicians and beds per capita in the KRI is low compared with similar countries. This imbalance, coupled with rapid economic growth, is likely to increase the resources needed to fund the system far beyond current funding levels. Finally, many of the reforms described in this chapter, as well as the reforms discussed related to DP among physicians (i.e., the mixing of public and private sector service by physicians), will require additional funding to implement.
- **Perception that health care should be free:** Constitutionally, it is clear that the KRG views health care as a basic human right and is publicly committed to providing a basic package of care to all people living in Kurdistan. However, people believe that they are entitled to free or almost-free care at the point of service in the public sector,<sup>5</sup> which is not exactly what the present KRG or Iraqi Constitutions provide. This issue needs to be clarified, and the extent and limitation of the public commitment must be clear to all involved, or real financing reform will be difficult to achieve.
- **Lack of data and information systems:** The data needed to make good management decisions, set financing policy, and manage a modern financing system are not currently available in the KRI. The information, analysis, and research required to guide good policy, as well as to manage the system, will, of course, depend on the policy decisions

<sup>5</sup> Care is essentially free, except for the very small registration and medicine fees collected.

made. However, without this information, it is unlikely that successful policy reform can be achieved.

- **Inadequate organizational capacity of the MOH:** Currently, the MOH does not have sufficient organizational capacity, trained personnel, or the funding required to develop, implement, or manage the change that is envisioned in health care financing reform. In order to successfully pursue the reform agenda outlined in this report, the technical capacity of the MOH will need to be enhanced. Among other areas that should be examined is the present structure in which the MOH both sets policy, as well as manages the provision of services (i.e., hospitals and PHCs). Many countries have found that splitting these functions is more efficient.
- **Lack of regulatory and policy process:** There is no clear policy or regulatory process in the KRI's health care system. Most key financing changes must go to the Council of Ministers—a cumbersome arrangement at best.
- **Inappropriate budgets:** The annual public sector health care budget and individual hospital budgets to date have been based on historical trends, not on the amount or quality of services rendered. Furthermore, operational and investment budgets are not closely linked; the budgets are under the responsibility of separate ministries, a separation that can cause discontinuities. The budget process also lacks transparency.
- **Small co-payments:** In the public sector, individuals have very small co-payments for health care services, which are too low to raise funds or to provide incentives for appropriate use of the system.
- **Hospital sector hampered by physical state of the facilities:** The current situation in public hospitals presents many challenges. First, in many cases, the hospital buildings need repair and modernizing as a result of years of under-investment during the Saddam period. New facilities are needed, and almost all facilities need updated equipment and technology. The way hospitals are funded and managed today also presents a hurdle to change. Currently, hospital administrators have very little authority and minimal flexible budgets. Almost all salaries, which constitute the majority of expenses, are paid directly to staff by the MOF; purchases of drugs and equipment are also centralized. Hiring of staff is currently at the Council of Ministers level. In short, hospital directors have little authority or ability to manage resources within their facilities. Finally, most hospital administrators are physicians without training or experience in hospital management.
- **Inappropriate incentives:** Few, if any, financial incentives embedded in the health care financing system reward work, performance, or productivity. In the hospital sector, administrators cannot make financial trade-offs, introduce efficiencies, and then use the funds gained for their own hospital improvements. Neither health care providers nor hospital administrators are rewarded for the amount or quality of their work. In short, the system as currently constituted does not have incentives that promote efficiency or quality, which are key components of the KRG health care vision.
- **Physician DP in both the public and private sectors:** The DP approach of physicians is a major challenge. Doctors are paid a salary and given a pension to work in the public sector. Remuneration is completely divorced from the amount of work performed in the public sector, its quality, physician productivity, or where care is provided (e.g., remote rural areas). In addition, payment per procedure is much lower in the public than in the private sector. As a result, physicians have little incentive to provide quality services in the public sector and devote half of their workday to seeing private patients, who pay directly



for care. The system is inefficient, robs the public sector of adequate physician personnel to staff hospitals in the public sector in the future, and inhibits reform.

- **Unguided growth of private sector health care:** The private health care sector is rapidly expanding without regard to demonstrated need and without regulations to manage that expansion in the public interest. There are currently no clear strategic investment processes or investment criteria to funnel expansion in the public interest.

In spite of these many challenges, the timing is ideal for the KRG to make key decisions about the future of its health care system. The country is growing and has significant resources—both human and mineral—to support its aspirations. The lack of an extensive entrenched system also offers the KRG a real opportunity to develop and implement a strategic health care vision that improves the availability of high quality care and provides it more cost-effectively. Many of the problems listed above can be resolved with policy development that recognizes the barriers and is designed to overcome them.



## Health Financing Reform in the Kurdistan Region—Iraq: A Way Forward

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### Kurdistan Regional Government Health Financing Vision

The draft of the KRG Constitution clearly states the government’s view of health and health care as basic human rights and reaffirms the KRG’s commitment to ensure that all residents have access to quality health care at a reasonable price. After discussions with the MOH, the MOP, and other health experts, we developed vision statements to guide future policy and reform (Figure 3.1).

### Approaches to Health Care Financing

Although there are many variations in exactly how countries finance their health care, there are four general types that account for most of the systems: (1) an NHS, which, in general, is funded by public budgets directly or by dedicated taxes or both; (2) SHI; (3) private health insurance; and (4) private payment, often referred to as *out-of-pocket expenses* (see Figure 3.2). In fact, *almost all countries have mixed systems*. A public system often operates side by side with a private system with a very different financing scheme, and, in almost all cases, individuals are also partly or entirely paying for some services directly in cash. Currently, the KRI has a budget-based NHS that funds and provides public health care while some individuals purchase care in the private sector, which is privately funded.

**Figure 3.1**  
Kurdistan Regional Government Health Care and Health Care Financing Vision Statements

KRG health vision	Establish a health system that provides high-quality services efficiently to everyone to prevent, treat, and manage physical and mental illnesses and injuries.
Health financing strategic vision	Establish a national health insurance system, supplemented by private insurance, that ensures public access to high quality, efficiently delivered health care.

RAND RR490-3.1

**Figure 3.2**  
**Health Care Financing Strategic Approaches**

National Health Service (NHS)	Government funds health care, which is usually financed out of the public budget and special taxes, and provides most health care services.
Social Health Insurance (SHI)	Government finances health care but does not provide most services. Funding usually comes from dedicated taxes (e.g., wage tax) supplemented by government budgets.
Private health insurance	Individuals or companies purchase private insurance that pays providers for services.
Private pay	Individuals pay for services in cash out of their personal funds.

RAND RR490-3.2

### Public Budget–Based National Health Service Systems

Public budget–based systems are found in many developing countries and in countries without mature data-collection or management systems (typically paired with a significant private sector in which patients pay directly for care from their own funds). Generally, in such systems, central budgets fund an MOH that, in turn, funds and operates publicly owned health care facilities.

Public budget–based systems have some advantages. They can respond quickly to changes in government policy, require less sophisticated management systems to operate, have low administrative costs, and allow costs to be easily controlled through the budget process. On the other hand, they have a tendency to underfund the health sector, invest slowly in new technologies, include few incentives that encourage efficiency or quality, are controlled by the politically powerful, and tend to impede long-term planning because funding depends on budgets that may change from year to year.

### National Health Service Funded by Dedicated Taxes

In countries where a large amount of public care is financed through a tax-based national health system, such as the United Kingdom in the early days of its NHS,<sup>1</sup> a public insurance fund not only collects money and pays for services but also owns and operates facilities that provide the services. Commonly mentioned advantages of NHSs are efficient operation, equitable funding, and good control of physician and hospital costs. On the other hand, critics point to certain disadvantages: Combining policy with delivery of services is complex and requires sophisticated and skilled management and medical personnel to oversee and operate the system; policy often conflicts with the desire of richer individuals for better care than

<sup>1</sup> Today, the system in the United Kingdom is no longer the pure example of an NHS that it was before Margaret Thatcher became prime minister. It is very much a system mixed with payment reform, private general practitioners, and corporatized hospitals.

that provided in the public sector; and rationing takes place via waiting time, which frustrates many patients and may lead to the growth of secondary, private insurance markets.

### **Social Health Insurance**

Although SHI systems may receive a good deal of funding from the public budget, they are usually set up to be operationally independent of the government. However, funding usually comes from a payroll or employment tax levied on firms that is paid directly into a social insurance fund. The social insurance fund then, in turn, contracts for—often collectively—the provision of care among private and public providers. Social insurance funds are usually established by law and are thought to allow for independent operation and equitable contribution to the funds.

This structure has the advantage of keeping funding independent of the political process; including incentives that reward quality and efficiency; and having fairly stable funding, which allows for long-term planning. On the other hand, such a system is complex to operate. In addition, it is less progressive than general taxation systems, may discourage hiring if funded by a wage tax, and can be difficult to manage because it requires a good deal of coordination between providers and payers.

### **Private Health Insurance**

Private health insurance systems entail individuals or families purchasing private health insurance. At the country level, the government can mandate that all individuals or companies purchase private insurance for their employees or themselves. There are many problems with such a system, and generally such a system has not been effective as a national strategy.

Private insurance systems have some advantages. They give people a mechanism through which to supplement government programs so that they can cover perceived gaps and spread their risk, have the ability to offer flexible benefits crafted to individual needs, and offer public officials the presence of private sector providers with whom they can contract if they so desire.

However, private insurance systems can encourage development of two-tiered medicine, with the private system covering wealthier and healthier individuals and the public system covering poorer and sicker individuals. In addition, private insurance systems may discriminate in selecting their clients so as to avoid individuals, such as the elderly, who are at higher risk for poor health; usually cover primary and preventive care inadequately; and favor profits over the best interest of the community.

Almost all countries allow private health insurance to operate side by side with a national public system so that those who are able to pay and want better coverage can purchase additional supplemental coverage. The key question then becomes whether private insurance is a supplement to the public system or whether people should be allowed to purchase replacement private insurance and then opt out of the public plan (for more information, see Moore et al., 2012). If opting out of the public system is allowed, then, in general, it is wealthy individuals and companies that opt out, leading to two-tiered medicine. It also greatly reduces the government's leverage to implement policy change across the entire system because the potential to opt out reduces the government's power.

## A Two-Phase Strategic Approach to Reforming Health Care Financing in the Kurdistan Region—Iraq

After analyzing and considering the available strategic options and recognizing that today's budget-driven approach to financing is a kind of NHS, the KRG MOH has decided on a two-phase strategy for reforming health financing in the KRI (Figure 3.3). In phase I, the KRG will seek to move from its present system to an efficient and effective modern NHS with supplemental private insurance, which we call an Accountable NHS (A-NHS). Once this is achieved, which will take a good many years and include a wide array of policy actions described below, the KRG may wish to consider moving to a social insurance system with supplemental private insurance.

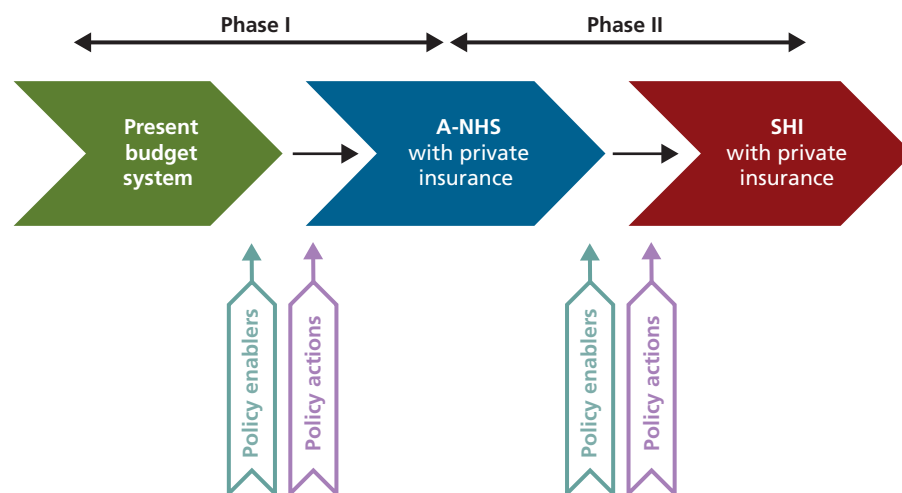
To implement even phase I of this two-phase strategy, the KRG will need to take multiple policy actions. First, however, the KRG must put in place a set of prerequisite policy enablers that are essential if the policy actions are to be possible and effective.

In the next two sections, we lay out a road map that KRG policymakers could follow to achieve financing reform. In sections devoted to both phase I and phase II of the effort but primarily to phase I, we describe both the enablers and policy actions needed to move from the present situation to an A-NHS and then on to a social insurance system should KRG policy leaders decide to do so. We deal with phase I in greater detail than phase II, which cannot be fully described until the details of phase I are worked out and implemented because phase II decisions will partly depend on those decisions.

### Phase I: Establish an Accountable National Health Service in the Kurdistan Region—Iraq

Phase I would establish a health financing system in which the government continues to be responsible for providing services; however, revenue collection, incentives, and managerial responsibility would differ significantly from the status quo. The new NHS system would include everyone and help reform the entire public health delivery system. That said, the insur-

**Figure 3.3**  
Overall Health Care Financing Strategy for the Kurdistan Regional Government



ance component will initially apply to only a subset of the population because a wage tax cannot presently be applied to the large number of workers in the informal sector. Overall, we envision a system in which the package of benefits is well defined; some groups of individuals, where possible, pay a wage tax to fund a national health insurance pool that helps support health services; and incentives are realigned to encourage improved efficiency and quality on the part of hospitals and doctors. At the end of phase I, hospitals will be independent cost centers that control their own budgets, and new rules and incentives concerning physicians working in both the public and private sectors will have been put into place. We envision a new agency—either part of the MOH or independent of it—that will manage a health insurance fund, collect contributions from the central government, and distribute them to service providers.

The desired result is a far more efficient system that provides significantly better care, more clearly meets the needs of the people, and encourages higher levels of health and productivity in the population. The system will provide more adequate funding for health services but will also include incentives that reward productivity and quality.

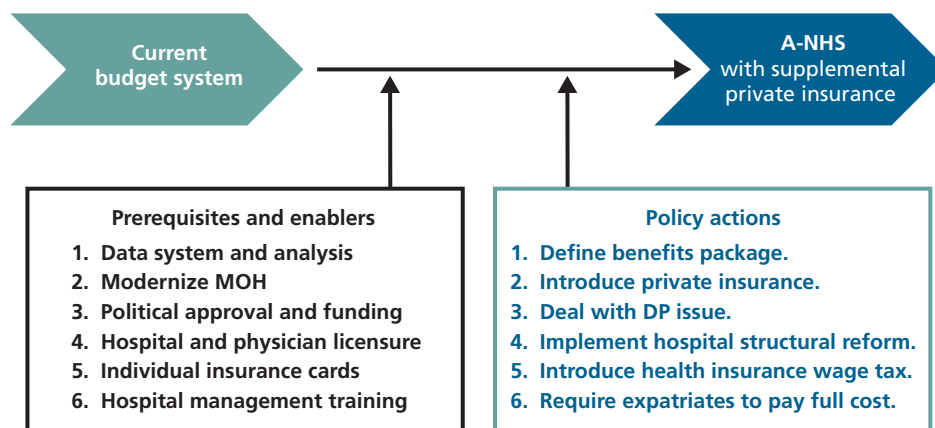
### **Phase I Prerequisites and Policy Enablers**

Before the MOH begins to consider and implement the policy changes described below, there are prerequisites and policy enablers that will need to be put into place in order to be able to implement the policy actions contemplated (Figure 3.4).

#### Data Systems and Analysis

Implementing and managing a modern national health insurance system as envisioned requires a substantial amount of data to make good policy and to manage the system effectively. Needs include data to set and manage the benefits package, to determine what physicians should be paid and how to encourage participation and efficiency in the public sector, to establish the budgets of hospitals, to set national budgets that deal with present and future financing needs, and to monitor and evaluate health system utilization and change.

**Figure 3.4**  
**Phase I: Realizing an Accountable National Health Service**



*Action Items*

The MOH should assemble or contract with a group of experts to help define the data needed to achieve its objectives. Once this exercise is completed, the MOH will need to set in motion processes to collect, analyze, and transmit the data to the policy leaders and managers who need it.

*Timeline*

This activity should begin immediately and be completed in the two years after the KRG adopts and commits to a financing reform agenda. (All subsequent timelines utilize the adoption of and commitment to a comprehensive financing reform agenda as the starting point for the target dates given.)

**Modernize the Ministry of Health**

Despite the dedication of many skilled professionals at both the national and governorate levels, the MOH currently does not have the resources, expertise, or organizational structure to effectively manage a modern financing system. Enabling the MOH to design, implement, and manage the reform agenda in financing and other areas will require greater resources, training for current employees, and a good deal of capacity building.

*Action Items*

We recommend that a consultant group be retained to review the organizational structure and the technical and personnel requirements of a modern MOH. This analysis should flow from the functions the MOH needs to perform to achieve its vision and support efficient policy development, planning, regulation, research, and the provisions of services. Policy leaders should also examine separating policy from delivery of care functions into two groups, much like Qatar and the UAE have done to improve efficiency.

Once the needs of the MOH have been determined, the ministry will need to secure the funds required to support the plan to enhance its capabilities. It will need to hire staff, initiate additional training, obtain more office space, upgrade computer capacity, and implement the plan. It will take about two years for the MOH to achieve the required capabilities; progress will depend to a large extent on the amount and timing of resources available. The MOH should also establish a process that guarantees ongoing quality improvement. Modernizing the MOH is an essential step in achieving all the contemplated reforms.

*Timeline*

The process of enhancing the capabilities of the MOH should begin immediately and be sustained over time through continuous quality improvement. Processes to monitor needs, gauge progress, and improve performance will be ongoing.

**Improve Public Sector Services**

Hospital and physician quality will need to be improved partly through physician licensure and hospital accreditation and guaranteed if the financing policy changes are to work. Currently, many people do not believe that care is good in the public sector, so they seek care in the private sector. Improving quality is essential: People desire and demand safe, high quality care, which both the draft KRG Constitution and the national health care vision have set as a



KRI goal. From a policy perspective, people will be willing to pay more if they believe that the health care system provides good care.<sup>2</sup>

#### *Action Items*

As a first step, we recommend that the KRG implement a hospital accreditation system, using one of the currently accepted international systems. We also recommend establishment of a better licensure system for physicians that includes standards and requirements for continuing education. Such actions, described in detail in Chapter Six, will set a floor below which quality cannot fall and will underpin a process of continuous quality improvement.

#### *Timeline*

The KRG should adopt this system within two to three years.

#### **Issue Public Health Insurance Cards**

To implement any kind of reform, the KRG will need a system to control access to care and to facilitate data collection and improvements in patient care. The easiest way to meet both of these needs is to issue insurance cards to everyone and require that they present them to receive care in the public sector. Each card will need to have a unique number. Individuals who are not required to pay a wage tax could be charged a small fee for the cards (see discussion below). All foreign workers would also be required to have such cards to receive work visas. The MOH will need to develop some process to provide cards for vulnerable individuals who cannot pay for cards.

#### *Action Item*

Develop a system and issue insurance cards to the entire population. Require as part of the visa process that foreign workers pay for and receive insurance cards.

#### *Timeline*

This should be implemented within two years.

#### **Address Hospital Management**

Currently, there is a lack of well-trained hospital managers in the KRI, making policy changes—many of which will be carried out in hospitals—difficult to implement. Later, we discuss policy changes designed to make hospitals independent cost centers with control over budgetary and personnel decisions, but these changes will not succeed and the quality of care in general will not improve without better hospital management. At present, hospital managers are usually respected physicians who have little if any management training or skills; they also have little authority and small discretionary budgets.

#### *Action Items*

To improve the level of hospital management, we recommend that the KRG do the following:

- Set minimum standards for hospital managers and upgrade the standards over time.
- Establish a series of ongoing hospital management training courses for existing hospital managers. These courses could be staffed by management-trained KRI leaders and edu-

<sup>2</sup> Individual payments can be in many forms, such as a higher wage tax to pay for health insurance; a higher coinsurance rate, which is the percentage of the total bill that the insurance company deems appropriate that the individual pays; or higher deductibles, which is the amount an individual has agreed to pay upfront before insurance begins to pay.

cators to the extent that they exist, but they would need to be supplemented with skilled international consultants.

- Send a selected few skilled individuals overseas for training and education.
- Increase the existing pool of hospital management expertise. Increasing the existing pool of hospital management expertise by even a small amount over a very short period of time would significantly enhance health care management in the public sector because there are so few major public hospitals.

#### *Timeline*

This should begin as soon as possible and be ongoing.

#### **Phase I Policy Actions**

Once the prerequisites are in place or being put into place, policy actions to implement phase I of the road map can be undertaken (see Figure 3.4).

##### **Define the Public System Benefits Package**

A fundamental step in creating an insurance system is to define what services are, and are not, covered, whether in the public or private sectors. Without a clear definition of what is covered, it is actuarially impossible to estimate the value of the benefits being provided, a value that is the basis for rate setting. Because technology and availability of medical equipment, procedures, and pharmaceuticals change over time, a process must be established by which new technologies will be evaluated and decisions made on which new technologies and services will be covered in the benefits package. No matter what the process, it needs to be very well thought out, clear to all, and publicly available. From a policy perspective, governments must balance the generosity of coverage with the cost of providing it (Institute of Medicine [IOM], 2001). The more services that are covered—particularly high-technology services—the higher the cost of providing care. Thus, governments must also weigh coverage decisions with the public benefit and resource availability.

Finally, clearly defining the benefits package to which people are entitled would fulfill the intent of the proposed Constitution while setting limits on free care and establishing a rational policy process for making difficult individual coverage decisions.

#### *Policy Action*

We recommend that the MOH establish a committee of medical experts and policy leaders to define a benefits package for existing medical services and technologies and outline procedures and criteria for evaluating new technology and updating the package regularly. The MOH also needs to develop criteria to justify treatment abroad; the criteria should be consistent with the defined benefits package.

#### *Timeline*

This should begin in two years.

##### **Introduce and Encourage the Growth of Private Insurance**

Although a few private health insurance firms have opened in the past year, in general, there is very little private insurance available in the KRI. From a health perspective, encouraging formation and penetration of the market by private insurance companies has several benefits. If the companies are well established and have international experience, they will have the skills necessary to operate in the marketplace. These skills include claim processing, paying claims,

setting benefits packages, paying providers, evaluating risk and new technologies, collecting and using data to guide their business practices, and drug management. Such skills are important in the management of both public and private health insurance. It should be noted that a private health insurance marketplace would also need to be regulated by the government of the KRG if it is to function well, fairly, efficiently, and effectively. All countries with effective private insurance plans have bodies and sets of rules and regulations to oversee and monitor the functioning of private insurance companies. This capacity and capability do not presently exist in the KRI and—to ensure that consumers are protected, the market is regulated, and insurance companies are properly monitored—would need to be developed, most likely in the MOH, as private health insurance expands.

Once these skills are available in Kurdistan, the KRG would have the option of contracting with the private sector to help process claims and perform other functions that the MOH defines; such arrangements are common in many other countries (e.g., Germany, United States, France). In addition, having private insurance available would enable individuals to spread their risk and not be held responsible for catastrophic health expenses beyond their premium and deductible expenses. Finally, a private insurance option will be necessary to fulfill the health financing vision of having an efficient and effective national health insurance system with the option for individuals to obtain supplemental health insurance.<sup>3</sup>

#### *Policy Action*

The KRG should review its insurance laws and policies and modify them to facilitate creation of new companies and encourage outside private sector firms to invest in the KRI.

#### *Timeline*

The KRG should begin this process within one year.

#### **Reform the Dual Practice Issue (Physicians Working in Both the Public and Private Sectors)**

This is a critical issue that almost all health policy leaders realize must be addressed if efficiency and quality are to be improved in the health care sector. The present situation saps physician staffers who are needed in the public hospitals and makes other reforms very difficult. This issue is discussed in detail in the following chapter, in which specific options for short- and long-term action are laid out.

#### **Increase Public Hospital Efficiency**

As discussed earlier, public hospitals in the KRI are currently burdened with an operating structure that almost guarantees that they will not operate efficiently. Hospital managers are usually respected physicians who have little authority and minimal flexible budgets or hiring authority. Staffing levels and hiring decisions are approved at the Council of Ministers level, and salaries are paid directly to medical staff by the MOF. Medical supplies, equipment, disposables, and drugs are provided from central distribution sites and are funded out of the governorate DGs' budgets. Finally, because physicians are not made accountable, they work in the public hospitals for a few hours and then leave for their private sector practices. This has led to

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<sup>3</sup> We believe that supplemental insurance would add positively to the KRI health care arena. On the other hand, we believe that the KRG should not allow people to carry private insurance and opt out of the government system. Such policy inevitably leads to two-tiered medicine and would be counter to the region's goals for the future.

a situation in which hospitals operate very inefficiently and there are no incentives for improving performance.

### *Policy Actions*

We recommend that the KRG make hospitals independent cost centers and give them responsibility for their financial performance. This would include giving managers the authority to hire and fire staff and set performance standards in the facilities. We suggest that hospitals be given an overall budget with performance targets, which they could spend as they see fit—e.g., on staffing, equipment, drugs, or other needed items. If they achieve efficiencies in any one year, they should be able to invest the savings in their facilities as they see fit. This change will be particularly important as the KRG moves to a system of insurance with payment based on bundled payments that encourages and rewards efficiency and higher quality.

Other actions could include the following:

- Operate public hospitals 24 hours a day and allow hospitals to convert or rent out facilities to the private sector if they wish.
- Require that new private hospitals give a hiring preference to medical staff who may be laid off in the public sector as hospitals move to operate more efficiently.
- Consider the full range of public/private partnerships in which the private sector builds new hospitals that offer subsidized reduced rates to patients in exchange for negotiated future payments from the KRG.

### *Timeline*

We believe that transitioning hospitals to cost centers will take years to implement, but pilot hospitals could be tested almost immediately. Introducing these concepts in some of the newly constructed hospitals should be considered because it would allow them to operate in the new, more efficient mode from the beginning.

### *Introduce Health Insurance Among Some Groups*

Finally, to fulfill the vision of an efficient and effective NHS funded in part by insurance, the KRG will need to address how to design a health insurance system to help adequately fund the public health care sector. As the Kurdistan parliament proposed for government employees, we recommend that the system begin by establishing a single health insurance system for salaried employees to include all government workers, as well as employees in firms above a certain size and all foreign employees. We suggest that the KRG continue to highly subsidize the system out of the federal budget and that premiums for individuals be set at a fairly low rate initially to gain acceptance and compliance with the system. Premiums could be set so that the amount of funding available rises for the health care sector overall, which would partly be achieved by requiring that firms employing foreign workers pay the full actuarial cost of the public insurance packages of the employees they hire. Although the NHS would cover everyone, collecting health insurance premiums via a tax system is not feasible in the KRI today because of the large size of the informal sector, which does not keep proper records or pay taxes. As time goes on and accounting and reporting in the private sector improve, the goal would be to apply the wage tax to everyone who is not exempted because they are too poor to pay or in a special exempted category (e.g., aged).

There is already a system in place that levies a kind of wage tax on salaried employees. Public sector employees have 14 percent deducted from their pay: Seven percent is labeled a

tax, and 7 percent is secured to support later pensions. We are told that all of these funds are put into the central budget and that there is no separate fund for pensions. In the case of health insurance, we suggest setting up a separate agency that would manage an identifiable public health insurance fund. Monies collected from all parties would flow into this insurance fund and then be paid out to the providers of services in accordance with policies established (see Figure 3.5).

**Policy Actions**

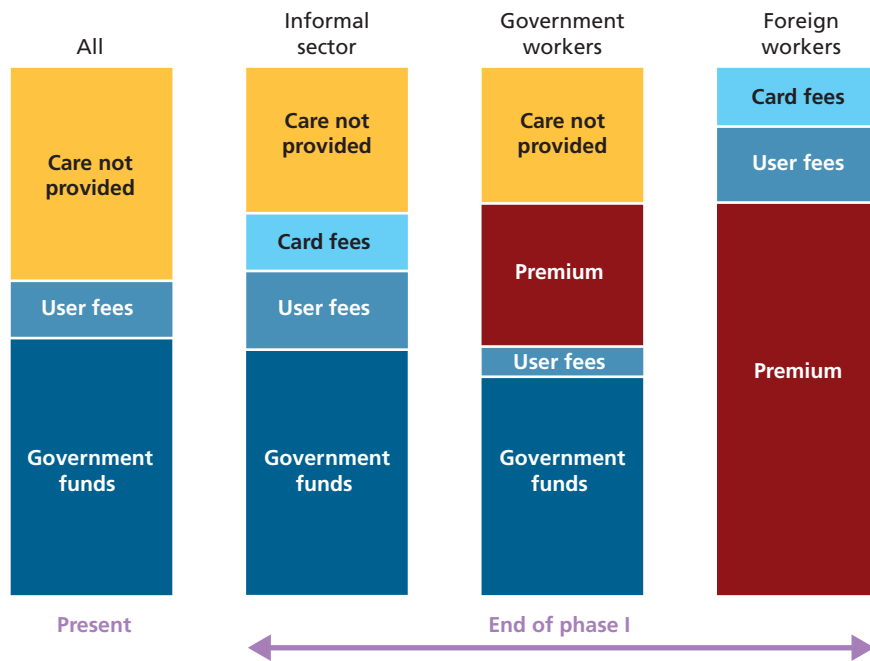
Implementing this complicated plan will take time. In this section, we describe the necessary steps for successful implementation.

**Step 1: Establish a National Health Service Agency and Staff It Adequately.** This agency could either be in the MOH or function as an independent agency. The agency would be responsible for managing the NHS system, implementing the actions below, and collecting and distributing funds to service providers. The latter function would need to be done in coordination and cooperation with the MOF and the MOH.

In order to establish this agency, either the MOH or hired consultants need to define the agency’s function; governance rules; and required resources, regulatory procedures, and processes for communicating with providers, businesses, and beneficiaries.

**Step 2: Estimate the Present Actuarial Cost of Providing the Public Health Benefits.** This is a necessary step for setting premiums and understanding how future changes to the benefits package will affect costs. In order to do this calculation, the work of the committee defining the benefits package must be completed. We suggest that the MOH contract with a consulting group to make the calculation. The calculation will need to be updated yearly; thus,

**Figure 3.5**  
**Public Health Funding by Revenue Source**



any group providing consulting assistance should be asked to transfer the methods and technology used so that the MOH can replicate the calculation in the future.

**Step 3: Define Which Groups Will and Will Not Participate in the Health Insurance Pool.** Which groups would participate in the health insurance pool would probably have to be legislated by the parliament, but we anticipate that the pool would include groups that can be easily tracked and that are already paying a wage tax. That would include all government employees, all employees of firms over a certain size, and all firms that hire foreign (non-Iraqi) workers.

**Step 4: Issue Insurance Cards.** These cards would be similar to the public health insurance cards described earlier but should be different so that people paying insurance can be identified. Because these individuals would be paying a wage tax, we suggest that the health service agency (HSA) provide their cards without charge. We also suggest that this group of wage-tax payers receive extra benefits (e.g., lower co-payment amounts, special clinic hours, shorter waiting times for surgery) so that they see some personal value in the new system.

**Step 5: Set Wage-Tax and Federal Budget Contributions to Fund the Health System for Various Groups.** These groups include people covered by health insurance who pay a wage tax, foreign workers, and everyone else.

Figure 3.5 illustrates how the new funding approach might work. Currently, public health care is funded almost entirely through national budget allocations supplemented by some very small co-payment amounts. A good deal of care that is medically appropriate and covered in theory currently is not being provided because of lack of funds, equipment, or trained professionals. We label this “Care not provided” in the figure.

We propose that (1) non-wage earners pay a card fee and co-payments, (2) salaried employees who will be subject to the wage tax as defined above pay a small wage tax, and (3) the full actuarial cost of the insurance be required to be paid for foreign workers as a condition of receiving a long-term work visa. As a general rule, we would envision that firms that employ workers would be responsible for paying for those workers’ insurance. In the case of people entering to work as either household servants or individual workers, a process will need to be established to ensure health insurance coverage, such as purchase at the airport or at a hospital at the first time of use.

We would also encourage the implementation of taxes on cigarettes and liquor that could be dedicated to funding health care because these activities increase health care costs. Such a proposal has been introduced into the KRG parliament and is receiving active consideration.

We would expect the KRG budget to continue its substantial contribution to public health funding. All the premium payments and contributions from the national budget would flow into the health insurance fund, which would, in turn, make payments to providers (e.g., hospitals and PHCs). The MOH and MOF would need to work out the details of such an arrangement, but we expect that the MOF would continue to make budgetary allocations to the HSA fund. All else the same, the amount the government provides per capita should fall. The total contribution of the government to the HSA, however, could rise if the population grows rapidly or ages significantly or if the level of care and the technology to support it increases rapidly. This rate of increase, however, we would expect to be at a reduced rate (e.g., reduced by perhaps half the amount of funding brought in from premium payments).

There is a literature that discusses the possible negative consequences of implementing a wage tax. A payroll tax could, in theory, discourage job and capital formation, especially among small and medium enterprises as it has in some of the Organisation for Economic Co-

operation and Development countries (Wagstaff et al., 1999). It could also, in theory, encourage a two-tiered system by providing better benefits to those who pay. We do not think that these theoretical potential problems would apply to the KRI. The proposed wage tax we envision here is relatively small and would affect primarily government workers, who account for about 50 percent of those employed. Government jobs are coveted in the KRI today because of their stability and pension benefits, which would not change with the implementation of a health insurance wage tax. Thus, the employment effect is likely to be very minimal. This situation should be monitored but is not likely to change until business develops to the point that private sector jobs are more competitive with the public sector, i.e., they pay a good deal more and are stable.

**Step 6: Require Foreign Workers to Pay the Full Actuarial Cost of the Benefits.** All oil-rich countries in the region have seen the number of foreign workers expand rapidly to service the petroleum industry, work as household servants, construct needed buildings and infrastructure, and provide expertise not domestically available. This pattern is likely to be repeated in the KRI. Because the firms employing these workers in general are very well off and well financed, we suggest that they be charged the full actuarial value of the health insurance benefits. This would already have been calculated, as described above, in step 2. The firms would be required to purchase health insurance through the HSA for all of their foreign workers in order for them to obtain long-term work entry visas. This policy change would provide significant and growing resources to help fund the health care sector.

The flow of funds from sources of revenue to the HSA would look something like the flow shown in Figure 3.6. Dedicated health-related taxes (e.g., tax on cigarettes) and wage taxes would be collected by the MOF and then transferred to the HSA. The MOF would also be expected to provide funding for the poor and disabled. The HSA would also receive funds directly for premiums paid for foreign workers and for insurance cards, which the HSA would issue. The HSA would utilize these funds to make payments to health care providers, as well as to administer the HSA. The health care system (hospital, clinics, and physicians) would also collect patient user fees, which would be deducted from the amount of each claim. If policy leaders so decide, these user fees could differ for those paying for insurance and those who are not. In addition, the system could receive payments from private insurance companies and philanthropy provided by domestic or international sources.

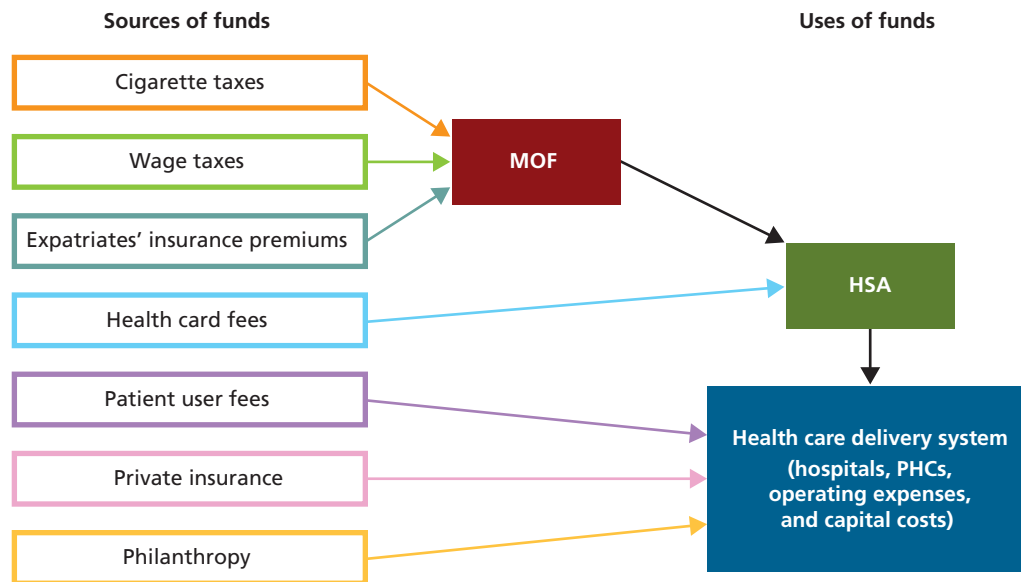
### ***Concluding Comment***

Moving to a well-functioning A-NHS will take many years, during which policymakers should expect much to change. The revenue available from the KRG, as well as the Iraqi budget, could change drastically depending on the evolving policy and revenues from oil. Depending on the rapidity of development, availability of data, and the MOH's capacity to manage and regulate the health care system, alternative policy choices that are not feasible today would become possible. We recommend that the KRG constantly review and alter plans but always keep in mind achieving a situation in which the public sector can deliver quality health care efficiently to all. This is, in effect, the national aspiration as expressed by the draft Constitution and policymakers.

### **Phase II: Social Health Insurance in the Kurdistan Region—Iraq**

After a fully functioning A-NHS has been well established, KRG policy leaders may wish to consider implementing an SHI system with supplemental private insurance to fund public

**Figure 3.6**  
Flow of Funds at the End of Phase I



RAND RR490-3.6

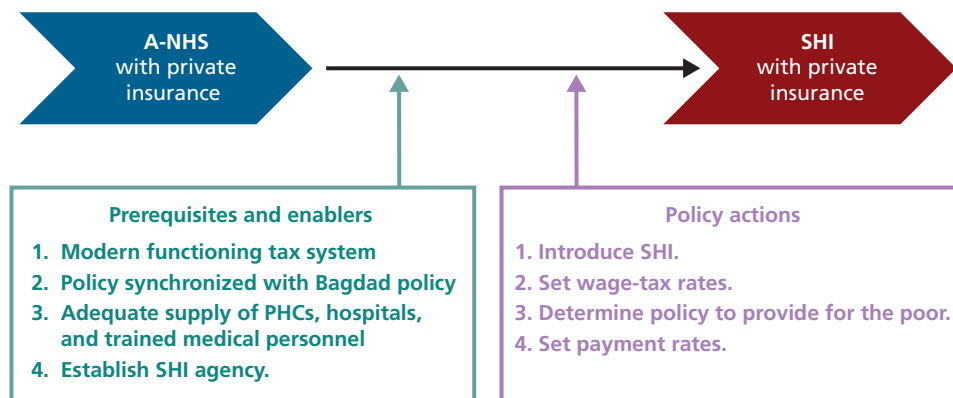
health care in the KRI. As in phase I, making this policy leap would require putting enablers in place and implementing policy actions (see Figure 3.7). We summarize some of the key issues in this section.

**Prerequisites and Enablers**

**Have a Modern Tax System**

In order to fully implement a social insurance system, the KRG will need to significantly enhance its ability to collect and levy taxes. Today, much of the economy functions in what is called the *informal sector*, in which goods are purchased for cash and little accounting takes place. To include a much larger share of the population in insurance arrangements, the gov-

**Figure 3.7**  
Phase II: Moving from an Accountable National Health Service to Social Health Insurance



RAND RR490-3.7



ernment must require businesses—even small businesses—to keep good records, and it must develop a system that enables taxing the employees of these businesses.

#### Synchronize Policy with Baghdad

Given the ability of all Iraqi citizens to receive care in public facilities throughout the country, it is difficult to see how a system such as an SHI could operate within the larger Iraqi system without a good deal of collaboration and system synchronization.

#### Set Up a Social Health Insurance Agency

For phase I, we described establishing a national HSA, which could form the basis of a new Social Insurance Agency (SIA). The new SIA would have all the functions of the old HSA; however, its job would likely be far more complex. The payments would probably be what are called *bundled payments* (particularly to hospitals). Bundled payments provide a single payment for bundles of related services during an episode of care—for example, a heart operation—rather than paying a hospital, physicians, and other medical providers separately for each service. The expectation is that this approach would encourage efficiency. Processing bills and paying claims, as well as setting up and adjudicating payment, coverage, and beneficiary policies, are far more complex tasks than the role envisioned for the HSA in phase I.

### **Policy Actions**

#### Introduce Social Health Insurance

Moving to a social insurance system would be complex and require a good plan and adequate time to put the system in place. The KRG could use the structure of the HSA and adapt it to perform the additional functions of an SHI system. In particular, the new agency would need to be able to set rates, process claims, and make payments to providers, including physicians, hospitals, and public health clinics. Establishing systems to make payments to providers with incentives to encourage efficiency and quality would be a major undertaking. There are many such systems, but most today use a bundled payment approach. PHCs would need to be treated differently and probably would need a basic budget to provide their public health functions and also be allowed to submit claims to the SIA for specific procedures.

Finally, all social insurance systems have had to deal with those who cannot afford insurance. The KRG would also need to consider this issue and develop an approach that guaranteed care to people who cannot pay.

Much as was envisioned for the HSA, workers would be asked to pay a wage tax. As the economy matures, we would expect more and larger private companies to evolve, which would lead to more salaried employees, and therefore a higher percentage of workers paying the wage tax. Those not paying a wage tax would need to purchase their insurance or be covered by the plan that would be established to deal with the poor, such as required payment that the government picks up for the poor. All of these are complex policy decisions with difficult implementation issues that would need to be worked out in detail before such a system is fully introduced.

#### Set Wage-Tax Rates

The SIA, in collaboration with the MOF, would need to set wage-tax rates and SHI rates. Foreign workers would pay the full actuarial cost of coverage. Rates could vary by income, with the federal budget subsidizing care for some groups, such as the poor. The KRG may decide to subsidize care, in which case the wage tax need not be set at the full actuarial cost of care.

In any case, the amount of the federal budget committed to paying for health care would be expected to fall significantly.

#### Establish a Policy to Cover the Poor and Disabled

As mentioned earlier, the government would need to develop a system to provide care for the poor. For instance, people who meet certain criteria could apply for and receive their insurance cards for free from the government. The government would need to calculate the cost of the care they are likely to utilize during the year and make a payment to cover this amount to the SIA, which would, in turn, be making payments to providers of services.

#### Set Payment Rates

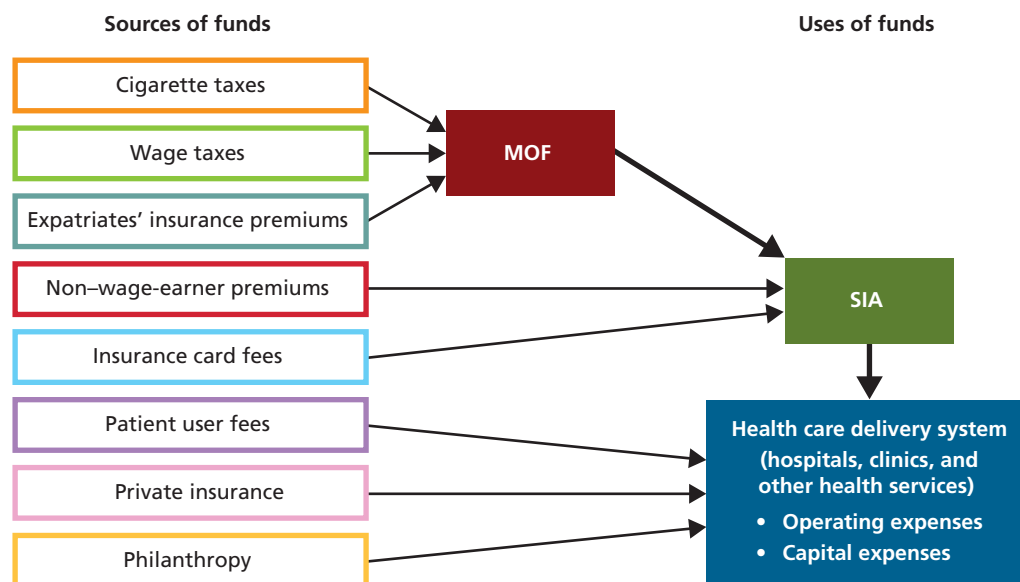
The MOH and the SIA would need to finalize a method to pay providers and establish payment rates; they would also need to establish a system to receive and review claims and make payments. See Figure 3.8 for what the flow of funds after such a policy is implemented would look like.

#### Summary and Conclusion

A country's health care financing system is an essential component of its health care system; indeed, financing enables all other parts of the system. The financing system facilitates equitable collection of sufficient resources in order to offer efficient, quality care to all segments of society. The financing system embodies incentives that help determine efficiency and quality of care, as well as the compensation providers will receive. The system also reflects a country's basic cultural and economic values. All countries have unique systems, usually involving more than one form of financing.

Kurdistan currently lacks the sophisticated data, IT systems, and managerial skills required to successfully operate more management-intensive systems, such as social insurance

**Figure 3.8**  
**Flow of Funds at the End of Phase II**



or national health plans. These requirements must be in place before the KRG can successfully embark on reform. Once these are in place, the KRG plans to transform its present budget-based financing system into an NHS with proper incentives to encourage efficiency and quality; the new NHS would be partly funded by a wage tax on salaried employees. In the future, the KRG may wish to move to a social insurance system. This chapter has laid out a road map to help the KRG achieve this vision and listed specific policy actions that will need to be taken along the way.

The plan focuses on the next five to seven years and envisions a phase I in which the KRG moves from its present budget-based system, which is devoid of incentives for efficiency or quality, to an A-NHS. At the end of phase I, with an A-NHS in place, the government will have answered the basic questions of eligibility (all people living in the KRI), coverage (a benefits package will have been developed and shared with the public), funding (wage taxes, co-pays, government budget, and full cost of care by foreign workers or their companies), pooling (would happen in the NHS), and resource allocation (resources would be allocated to providers of services in a manner that rewards work and productivity). At the end of phase I, the KRG may wish to consider moving to an SHI system. If it does so, in phase II, the questions above would all be answered the same way except that everyone would be expected to obtain insurance coverage and the social insurance system would process and pay claims based on a payment model that encouraged efficiency and increased productivity.



## Dual Practice: Options for Dealing with Combined Public and Private Practice Among Physicians

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### Introduction

#### Defining the Policy Question

Nearly all physicians in the KRI work part time in both the public and private sectors. In the health care delivery arena, this arrangement is often referred to as *dual practice*. In the KRI, most physicians work for a few hours in the public hospitals or clinics in the morning and spend the afternoon or evening in their own private clinics. The number of hours spent in public and private practice varies by physician and hospital or clinic. Currently, no data are available to quantify the amount of time spent in public versus private practice, but it is clear to most policymakers in the KRI that the DP situation must be addressed if the health system is to be reformed so that it functions more effectively and provides higher-quality care. In a recent interview, the MOH labeled the DP issue as one of the biggest problems facing the KRI's health care sector (Raouf, 2012).

Although physicians commonly work in both the public and private sectors—particularly in the Middle East—this was not so pronounced in the KRI until after the First Gulf War in 1991. At that time, with the country in deep recession and subject to coalition sanctions, the Iraqi government under Saddam Hussein stopped paying physicians' salaries regularly. In response, physicians began to treat patients more often in the evening in personal clinics they opened to generate income.

In the past 20 years, DP has become common. In fact, some physicians spend very little time in public sector clinics or hospitals before heading to their personal offices or private hospitals. The situation is exacerbated by the fact that, once a physician finishes training and registers with the national doctors' union, he or she receives a salary for life and a guaranteed pension upon retirement. Neither the salary nor pension is tied to the amount or quality of work performed in the public sector.

Widespread DP has generated other concerns. The high fees that physicians can collect in the private sector, as well as the lack of a strict licensure system, have encouraged paramedically trained personnel, as well as other unqualified personnel, to claim to be physicians and set up private sector clinics.

The MOH of the KRG asked the RAND Corporation to investigate the DP problem and develop options for dealing with it.

The KRG has articulated goals for its health care system, including the following:

- Guarantee access to health care as a right for all KRI residents.
- Improve care.
- Improve the level of health of the community.

In general, guaranteeing access to care has meant being sure that the KRI public health care sector makes care available at very low cost to everyone in the region. Central to achieving this objective is having sufficient manpower in the public facilities to provide the care needed. Many people have chosen to utilize the private sector at their own expense because they feel that they get quicker, higher-quality care there. Our observations and discussions in the KRI since 2010 suggest that private sector care is indeed more timely but more expensive and lacks standards to guide quality.

Recently, policymakers have endorsed moving to a national insurance–based health care financing system. This could be a national health system, in which the government both finances and provides health care services, or a social insurance system, in which the government finances but does not directly provide care. Once such a system is in place, payment rates to physicians in the public and private sectors could be the same per procedure, facilitating competition. However, until a financing system is implemented and sufficient data systems are in place, the government must ensure adequate manpower in the public sector to achieve its objective of guaranteeing access to care.

Thus, a central policy question is this: How can the government address the DP issue in the immediate future to guarantee adequate manpower in the public sector while also putting in place policies that enable reforms in financing and other areas to proceed smoothly?

This chapter summarizes the results of our efforts to frame policy options for the KRG in addressing this question. The discussion is organized as follows: (1) a review of the literature about the theory of DP, as well as lessons learned from DP experiences in other countries; (2) a description of the current status of DP in the KRI; (3) policy constraints that KRG decision-makers face; (4) an overview of policy options open to the KRG; (5) a possible plan for policy change; and (6) conclusions and recommendations.

## What the Literature Says About Dual Practice

### Definition of Dual Practice

*DP* describes a situation in which a physician sees patients both in the public health care system and in the private sector. For specialist physicians, DP may lead to arrangements with hospitals that allow physicians to see patients from both systems in the same facility. In most cases, private patients pay out of pocket for their care. Many people are willing to pay more to access care in the private sector because that care is often of higher quality, is subject to fewer queues and waiting lists, and may offer more amenities than public sector care does.

DP has two principal effects on a health care system and the health of populations. First, DP affects the efficiency of health care delivery; the net impact can be positive or negative. Second, DP affects equity in terms of access to health care. Most health care systems in high-income countries limit, rather than prohibit, DP. The limits on DP in these systems are designed to promote equity across individuals of different income levels, ensure sustainable

public systems, and prevent public subsidization of private practice. Despite restrictions, DP remains an accepted and integral component of health care systems in many high-income countries (Ferrinho et al., 2004), a fact that suggests that policymakers understand and appreciate at least some of the benefits from care provided in the private sector.

Policymakers in low- and middle-income countries usually face very different situations when dealing with DP. In developed countries, there are usually enough physicians to serve both the public and private clinics, reimbursement systems allow for payment options to be used to ensure quality and supply, and payment rates are sufficient to entice physicians to work in the public sector. In less developed countries, budgets are not sufficient to pay public sector providers anywhere close to what they can make in the private sector, and often there is simply a shortage of physicians—particularly well-qualified ones—serving the public sector. Decisionmakers in such countries may want to impose limits on DP; however, to do so, they may have to overcome significant administrative, data, and political hurdles.

### **Impact of Dual Practice on the Efficiency of Care**

DP can have positive or negative effects on health care system efficiency; the net effect varies by country. DP acts to *increase efficiency* in the allocation of health care by offering the opportunity to purchase care in the private sector to patients who are willing to pay for high quality physicians, better access, or more amenities. DP can also increase access by giving physicians a profit incentive to work longer hours or see more patients.

However, the profit incentive could *decrease efficiency* in the health care system if physicians shift patients to the more lucrative private sector, or if they simply do not work hard during the time they are paid to provide care in the public sector. The latter behavior is common in many health care systems with DP, including Italy (France, Taroni, and Donatini, 2005), Costa Rica (Savedoff and Gottret, 2008), and Indonesia (Bir and Eggleston, 2003). Finally, DP often facilitates informal payments to providers working in public facilities (Lewis, 2000; Siskou et al., 2008).

### **Impact of Dual Practice on the Equity of Access to Care**

DP decreases equity in the type and quality of health care received by individuals at different income levels (Siskou et al., 2008). Individuals who receive care in the private sector pay for it out of pocket or through their own private insurance; these payment options are typically not available to low-income individuals.

### **The Theory of Dual Practice**

Theory related to DP in health care has only recently emerged in the literature. Because of the scarcity of data on care provided in the private sector, there are only a few empirical studies available to test theoretical predictions. Still, there is growing consensus—some positive and some negative—about the effects of DP:

- DP may, under the right conditions and right regulations, improve the quality of the public system.
- DP may, under the right conditions, improve social welfare (Eggleston and Bir, 2006).
- Developed countries with more sophisticated financial and regulatory systems have more policy options for addressing DP-related concerns than less developed countries do.

### ***Improvements in the Public System Stem from Two Sources***

First, private practice may act as nonwage compensation, which increases the likelihood that high quality providers will participate in the public system (Bir and Eggleston, 2003; Eggleston and Bir, 2006). Governments often cannot offer competitive wages or appropriate performance-based incentives in the public system (Biglaiser and Ma, 2007; González, 2004). In theory, by allowing private practice, governments essentially expand the public sector compensation package for providers who can attract patients in the private sector. If limits were imposed on the private sector compensation of physicians who also worked in the public system, high quality providers would choose to work only in the private sector, depriving the public sector of skilled providers. There is some empirical evidence supporting this hypothesis.

DP may also improve the public system. If providers increase efforts to improve quality of care in the public system in order to build the reputation necessary to operate a successful private sector business, this would cause the overall quality in the public sector to rise (González, 2004). Limits on private sector care could then decrease incentives to provide high quality care in the public sector.

Other improvements resulting from DP can occur at the broader social welfare level. Allowing affluent individuals to purchase the presumably higher-quality care that they demand at a higher price reduces the mismatch between demand and supply. In other words, when private practice is prohibited, the entire population must receive care in the public system even though some individuals would be happy to pay more to access care in the higher-quality, more expensive private sector (Siskou et al., 2008).

Theoretical models do not directly consider the equity implications of DP, although they recognize the basic result that higher-income individuals will be able to afford care in the private sector while lower-income individuals will not.

### ***Theory Also Predicts Negative Consequences from Dual Practice in Three Ways***

First, DP can lead to a two-tiered health care system in which high quality physicians (who can command higher compensation) spend most or all of their time in the private sector, while lower quality physicians become solely public-system providers. This obviously widens the disparity between the care that the rich and poor obtain. Whether or not a two-tiered system develops hinges on the relative compensation in the public and private sectors and on the government's ability to adequately regulate private practice, e.g., to impose caps or limits on private practice. Second, DP can lead to implicit subsidization of private practice by the public system if providers use public facilities to see or recruit private patients, unless contracts governing such behavior are written and enforced between providers and facilities. Third, DP may promote induced demand, i.e., higher utilization rates for private sector care because physicians in the public sector refer patients to their private clinics, where more services are usually ordered.

### **Other Dual Practice Policy Issues**

There are two other policy issues that are not fully addressed in the theoretical predictions summarized above. First, the extent to which the public system subsidizes care in the private sector is not always clear. For example, do patients in the private sector pay entirely out of pocket, or are providers reimbursed by the public system for care provided in the private sector? The answer to this question determines whether the negative consequences of induced demand or free riding are borne by the public system or by individuals. Second, the theoretical models



assume that health systems or governments will monitor, regulate, and enter into business arrangements with every DP provider, which clearly is not the case in the KRI (Biglaiser and Ma, 2007). This is not a reasonable assumption in all cases, and particularly not in low- and middle-income countries.

## **The Current Dual Practice Environment in the Kurdistan Region—Iraq**

Physicians providing services in the KRI public system today are not restricted in how, when, or where they provide care in the private sector. Physicians often see patients in the public system in the morning, whether in hospitals or primary health centers, and devote the rest of the day to private practice (Moore et al., 2012). The amount of time spent in the public sector varies, but, in our key stakeholder interviews, we were told that it is often for only a few hours or in some cases not at all. Work outside the public sector also varies. Most physicians maintain their own private clinics, but some work in private hospitals or in private groups.

### **Physician Compensation**

Once a physician in training completes course work, one or two years of postgraduate clinical training, and the required year of service in a primary health care clinic, he or she can register with the doctors' union, thereby becoming eligible to receive a salary for life, as well as a guaranteed pension upon retirement. The physician's level of pay varies by seniority, including rank or title, but compensation does not vary as a result of the amount of time worked per day, week, or month in the public sector or the quality of services provided. In short, in the public sector, there is almost no relationship between performance and pay.

Furthermore, physician salaries are paid directly to the physicians by the KRG MOF. Hospital administrators have no control over the salaries of the physicians working in their hospitals, and no real ability to either reward hard work or reduce the pay of someone who is not working productively or performing well. The same is true of district health officers overseeing primary health physicians working in PHCs in their areas. Upon retirement, all physicians who have registered with the doctors' syndicate receive a pension for life irrespective of the amount of time they worked in the public sector.

In the private sector, doctors are almost always paid directly in cash by patients or their families. The amount charged varies by the demand for particular services but can be many times that charged in the public sector. Fees charged in the private sector are supposed to be below a specified limit, but key stakeholders we interviewed told us that this rule is almost never enforced. Unfortunately, there are no hard data on fees or amount of income that private sector care brings to clarify this situation, making it a high priority for research in order to inform future policy.

All countries dealing with DP-related issues must confront them in the context of their own systems and situations. In the KRI, that reality includes the following:

- A shortage of physicians available to meet demand in the public sector today and into the future
- Public expectations that all services will be available virtually free of charge in the public health care sector

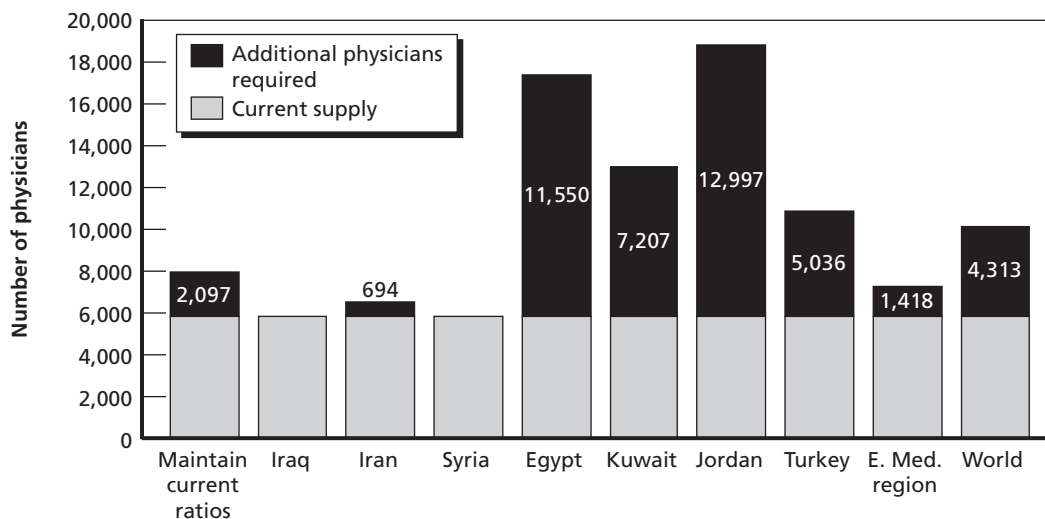
- A budget that is too constrained to meet all the demands being placed on the government today. In particular, it has resulted in physicians being paid far less than they can receive in the private sector.

Earlier RAND research (Moore et al., 2012) clearly documented that the number of physicians needed to meet the demands of a future growing population will be considerably greater than the number currently being trained. Because the number of newly trained physicians basically matches the number of physicians leaving the workforce either through retirement, death, or immigration from the region, there will be no net increase in physician supply.

The future deficit in physician supply is even greater if one considers that demand for physician services will rise as incomes rise, that the number of physicians per capita is much smaller in the KRI than in most neighboring countries (see Figure 4.1), and that the number of physicians working in the public sector is considerably below that required under current policies. Because the KRG is committed to maintaining access to health care as a right of citizenship, the future need for a much larger number of physicians or for greatly improved physician productivity in the public sector is clear. Furthermore, given all the development needs in the KRI, the budget for health will likely continue to be constrained below what sector leaders would like or is needed to fully deal with all the health issues at hand or, in particular, the extra cost needed to implement a successful policy to deal with DP.

The overall goal of the KRG is to maintain health care as a right for all citizens, and public hospitals and PHCs are central to achieving that goal. Therefore, policy reform with respect to DP should be sensitive to making available—either directly or indirectly—an adequate number of well-trained physicians for public facilities.

**Figure 4.1**  
Additional Physicians Needed in the Kurdistan Region—Iraq in 2020 Beyond Current Levels, by Utilization Rate (number of physicians per capita)



## The Private Sector

KRI physicians work in one of three private sector settings:

- Private clinics (usually one- or two-room offices with perhaps some laboratory capability)
- Multi-physician clinics (these are often elaborate facilities with multiple rooms and modern equipment)
- Private hospitals, which vary in size and sophistication. The number of private hospitals is increasing rapidly. These hospitals generally have established prices that are many times those for the same procedure in the public sector. Private hospitals are also considerably smaller than virtually all public hospitals (e.g., 15 to 40 versus 100 to 300 beds).

## Public/Private Partnerships

Hybrid programs and experiments in the KRI, which can be described loosely as public/private partnerships, have emerged that are designed to better use the public infrastructure and incentivize physicians to spend time—particularly in the afternoon—working in public facilities. Three in particular are worth noting:

- **Clinics in public hospitals in the afternoon:** Some public hospitals, such as Rizgary, have opened clinics after hours in the hospital; physicians and other staff are paid extra to provide services in these clinics.
- **Private wings in public hospitals:** In a model that has been tried in southern Iraq, some hospitals in the KRI have rented wings to the private sector and collected fees, which they utilize to enhance the public part of the hospital.
- **Suli public/private consultant clinics (also referred to as consultant clinics):** In Suli, doctors use public clinic buildings to offer care to patients. They are eligible to charge considerably more than in the public sector but less than in the private sector. Patients are pleased because they are getting good care at a price that is lower than in the private sector. Studying this example in detail would offer insight into what the level of support must be to keep physicians working in the public sector. The model is now being expanded across the KRI.

## Policy Constraints

Decisionmakers in the KRI seeking to address efficiency and equity issues associated with DP face policy constraints, most of which were discussed in some detail in Chapter Two. Some key constraints are highlighted in this section.

### Data

Very few data—particularly management information data—are routinely collected and available for decisionmaking. Some data are collected in PHCs and hospitals, but the information usually consists of simple counts of patients, and sometimes either chief complaints or diagnosed conditions, entered on a paper form. Typically, the data are aggregated at the governorate level and rarely used for management purposes. Detailed data are not available. No routine data are collected that indicate how many hours a physician is working in public sector hospi-

tals and PHCs or how many procedures he or she performs. Also no data are gathered that can link outcomes to physicians or medical teams.

To achieve its long-term health system goals, the MOH will need to address this information gap. Indeed, it is already striving to do so. However, filling the gap is likely to take some years, and the current gap imposes a serious constraint on policymakers today.

### **Regulatory Complexity**

The regulatory complexity required to address physician DP is great, while the current ability of the MOH to regulate the health care system is limited. The MOH has limited trained staff and resources and few regulatory systems in place. These handicaps, combined with the lack of detailed data, substantially constrain policy choices.

### **Hospital Management**

As discussed in Chapter Two, hospitals are currently managed by untrained physician managers who have little authority over staffing, budgets, or investment spending. Being able to implement some of the reform options related to DP will require that greater control and authority be given to and exercised by individual hospitals.

### **Budget**

Finally, it is almost inconceivable that much effective change can be achieved without a significant increase in public budget allocations to raise public sector physician salaries so that they are more comparable to those in the private sector or to offer financial incentives that reward performance.

## **Policy Options**

Policy options available to KRG decisionmakers for addressing DP-related issues can be grouped into five categories:

1. Let the market evolve without constraints on DP.
2. Impose legal constraints on physician work in the private sector.
3. Impose constraints based on physician time, income, or some other variable.
4. Provide financial incentives to physicians.
5. Guarantee quality in the public sector.

### **1. Let the Market Evolve Without Constraints on Dual Practice**

As is the case in the KRI, many governments for one reason or other do nothing to regulate or control the health care market with respect to physician DP. The net effect on their overall health systems depends on their individual situations. As noted above, the present *laissez-faire* treatment of DP in the KRI has led to a situation in which improvements in the public sector in terms of efficiency, quality, and access would appear difficult to achieve without addressing the DP issue.

## **2. Impose Legal Constraints on Physician Work in the Private Sector**

### ***2.a. Impose Absolute Constraints on Dual Practice***

Some countries (e.g., Canada) require that physicians choose to work in either the public or the private sector; they are not allowed to work in both. A similar but less absolute policy is to require that physicians work a certain number of years after graduation in the public sector before they are allowed to work in the private sector.

Advocates of this approach point to the advantages of establishing a clearly defined system that is relatively easy to administer and implement as long as the government has the political will to enforce the policy. On the other hand, in the absence of adequate public sector compensation for physicians, such a policy often leads to two-tiered medical care with good physicians working in the private sector and offering better care to those who can afford to pay. The public sector is then populated generally by lower quality physicians, who cannot command the higher incomes in the private sector that better physicians can attract. Thus, public sector patients may receive poorer care.

In the KRI, the amount per procedure that physicians receive in the private sector—even after factoring out office and equipment costs—is far more than the compensation received by physicians for the time to provide the same procedure in the public sector. If the KRG decided to impose constraints on DP, it would need to allocate a substantial sum to increase public sector physician salaries, or the policy simply would not work. The literature is clear that, in situations in which this policy has been tried without adequately adjusting public sector compensation, physicians either ignore the constraints and the law or a two-tiered system evolves.

### ***2.b. Require Some Years of Public Service Before Private Practice Is Allowed***

Requiring a specified number of years of public service before private practice is allowed has also been suggested as a possible policy option for the KRI. In such a scenario, the MOH would require a new physician to serve a certain number of years (e.g., three to five) in the public sector before opening a private practice or working in private hospitals. Such a policy is similar to the current policy in the KRI that requires one year of service in primary care to be eligible to graduate with a medical degree.

Similar obligations are also routinely applied in other countries; for instance, in the United States, those whose training is paid for by the military, U.S. Public Health Service (USPHS), or other federal program are required to repay their training in kind by spending a certain number of years on military or USPHS active duty or providing medical care in designated underserved areas before they can retire to the private sector. There would probably be some objections from young KRI physicians to such a policy change. A phase-in period would be necessary; however, from both regulatory and cost perspectives, such a policy seems feasible.

## **3. Impose Constraints Based on Physician Time, Income, or Some Other Variable**

Countries approach the DP issue from different perspectives. Some are seeking to keep physicians working in the public sector, while others may be trying to limit the amount of time that a primarily private sector physician is allowed to work in the public sector, which is usually subsidized. In order to improve public sector efficiency and availability of care, which are key limitations today to improving supply, quality, and efficiency in the public sector, a key policy objective in the KRI needs to be to increase the amount of time physicians spend in the public sector. Although there are certainly other improvements that must also be made, we approach

the option of placing constraints on physician time worked in the public sector with that in mind.

Some approaches include tying private sector participation to hours worked in the public sector. They include the following:

- 3.a.\* Require that a certain number of hours be worked or procedures performed per day, week, or month in the public sector before private sector work is allowed.
- 3.b. Allow a private sector physician to work in the public sector only a specified number of hours, and limit public sector compensation and pensions accordingly.

Or one could tie private sector participation to income—for example, as follows:

- 3.c. Require that physician income outside the public sector not exceed a certain percentage of a physician's public sector income.
- 3.d. Allow a physician to make only a certain percentage of his or her income in the private sector.

Of the options listed above, only the starred option 3.a (requiring that a certain number of hours or procedures per specified time period be worked in the public sector) is feasible in the KRI today. Option 3.b is not appropriate to the problem being addressed because there is and will continue to be a lack, not an excess, of physician supply. Options 3.c and 3.d, which link private sector participation to income, are not feasible because data about income outside the salaried public sector are not readily available.

#### **4. Provide Financial Incentives to Physicians**

Financial incentives could be used creatively in a variety of ways, including these:

- 4.a.\* Tie public sector income to the number of hours worked in the public sector.
- 4.b.\* Tie public sector income to the number of procedures performed in the public sector.
- 4.c. Tie income to performance, including measures of both volume of services delivered and quality of service.
- 4.d. Tie physician income in the public sector to the quality of services provided in the hospital or clinic where the physician works in the public sector.
- 4.e. Pay similar rates per procedure whether performed in the public or private sector.

Requiring different levels of regulatory involvement, options 4.a and 4.b are feasible to implement. Options 4.c and 4.d are not feasible today because performance outcomes are not linked to physician involvement; neither physician nor hospital performance is currently tracked. Option 4.e is also infeasible today because the payment system is budget based and not designed to vary by procedure.

#### **5. Guarantee Quality in the Public Sector**

Some countries have tried to address the problem of physicians leaving the public sector by heavily investing in the public sector to guarantee that its quality is at least equal to that in the private sector and to ensure that incomes for physicians in the public sector are competitive with private sector incomes. Such an approach is being tried in Chile, which allocated large

sums to try to bring the public sector into parity with the private sector. Given the neglect of the KRI health care infrastructure during the Saddam era and the tremendous investment in both infrastructure and wages that would be required, this appears to be out of reach of the KRI today.

## Decision Criteria

The options in the five categories above, whether considered in isolation or as a package with other options, should be evaluated across objective criteria, with the KRG's overall health system goals in mind. Key criteria would include the following:

- The degree to which the option facilitates achievement of the KRG's national health care objectives
- Ease of implementation
- Regulatory complexity and feasibility given the KRG health system and other government systems and priorities
- The degree to which the option addresses the need for an adequate supply of high quality physicians in the public sector
- The degree to which the option promotes improvements in the quality of care
- The degree to which the option promotes equity (e.g., does or does not promote a two-tiered health care system)
- The effect on efficiency.

Table 4.1 lists some of the available options and shows our estimate of how each option measures up against the key criteria listed above. The table ratings reflect a three-point scale: positive (green), neutral (white), and negative (red).

## Proposed Policy Approach

There are multiple policy approaches that could help the KRG achieve its overall health and national objectives regarding the DP issue. In this section, we lay out a possible approach in three phases.

### Phase I: Prepare for Policy Change

#### ***Announce the Kurdistan Regional Government's Intention to Change Policy on Dual Practice***

As a first step, the KRG should consider announcing to physicians and the public its intentions to change policy related to DP. The MOH should then request input from physicians and other health professionals to ensure that policy changes are well thought out and that buy-in is achieved to the extent possible. This is particularly important for the physician community, which is likely to reject any call for change if it has not been consulted.

**Table 4.1**  
**Dual Practice Policies Measured Against Various Criteria**

Number	Policy	Implementation Ease	Regulatory Complexity	Supply of Public MDs	Quality	Equity	Efficiency
1.	Let the market evolve without constraints	●	●	●	○	●	●
2.a	Allow only public or private practice	●	●	●	○	○	○
2.b	Allow private practice only after a specified minimum number of years of public practice	●	●	●	●	●	○
3.a	Require minimum hours/day in public sector before private practice allowed	●	●	●	●	○	○
3.b	Private physicians limited in hours in public sector	●	●	○	○	○	●
3.c	Private income limited to percent of public sector total	●	●	●	●	○	●
3.d	Only certain percent of income allowed from private practice	●	●	●	○	●	●
4.a	Tie income to number of hours worked in public sector	●	○	○	○	●	●
4.b	Tie income to number of procedures performed	●	●	○	○	○	○
4.c	Tie income to performance (quality and quantity)	●	●	○	○	○	●
4.d	Tie income to hospital performance	●	●	○	●	○	○
4.e	Pay similar rates to private and public physicians	●	●	●	●	●	●
5.	Guarantee quality in public hospitals	●	○	●	●	●	●

**Implement Prerequisite Changes for Successful Dual Practice Policy Reform**

The procedural changes required will depend on the policies chosen, but they will almost certainly include the following:

- Adopt a system to collect the data needed to implement the approved policy changes (e.g., hours worked per day in the public sector by physicians, nurses, and other personnel).
- Using the data collected, conduct the analyses needed to implement the policies selected (e.g., what is the wage level that is needed to keep physicians working in the public sector; what is the impact of public/private partnership clinics, such as those in Sulaimaniya).



- Obtain a commitment from the government that it will support the policy and make the necessary funding available to implement the policy.
- Upgrade the staffing and regulatory capacity of the MOH through hiring and training.
- Implement a system of physician licensure, as well as a continuing medical education system to ensure that physician skills are up to date.

***Build on Existing Programs to Increase the Amount of Time That Physicians Spend in the Public Sector and in Public Facilities***

This policy will increase the supply of physician time in the public sector, which is one of the KRG's key policy goals for the immediate future. Some innovative public/private programs have been started in the KRI. These include opening private sector wings in public hospitals, afternoon outpatient care in public hospitals and clinics, and the Suli consultant clinic model. In each of these models, the public sector is subsidizing private sector participation of physicians, who can use the public health infrastructure and charge fees that are higher than they charge in the public sector but lower than those in the private sector. They help ensure health care access for a wider range of people and increase the availability of physician services at a price people can afford. They also utilize public capital more fully and, therefore, increase efficiency overall.

The Suli consultant clinic model is particularly interesting. In this case, physicians work in a public sector health center in the afternoon using PHC equipment and are allowed to charge significantly more than they could in the public sector but much less than they could in the private sector. This model increases the efficiency of the public sector by more fully using facilities, meets physician need for higher fees, and makes care available to a large segment of the population that might not be able to afford private sector rates but can afford these mixed-use clinics.

**Phase II: Reform Policy**

***Impose Mandatory Duration of Public Sector Service to Become Eligible to Work in the Private Sector***

Regulation or law could require physicians to work in the public sector for a minimum number of years before being eligible to work in the private sector. The rule would need to specify that the requirement be based on a certain average number of hours or a total number of hours worked per year to meet the threshold. For example, a year of service could be defined as working six hours (or any smaller number) per day on average for a specific number of days.

The number of years that should be required to meet the threshold is somewhat arbitrary but could reasonably be set at somewhere between three and five years following completion of postgraduate general medicine or specialty training. Requiring three to five years of service by fully trained physicians would ensure that physicians have sufficient training and experience to provide good care in the private sector, as well as ensure a pool of physicians of varying skills in the public sector.

It is naive to think that this policy would work well without (1) a way to track the number of hours and days a physician works in the public sector, (2) political will to enforce the policy, and (3) a significant increase in the pay for physicians working in the public sector. The literature indicates that, in the absence of these conditions, individuals will defy or get around the ban and work in the private sector anyway.

It is not clear what level of salaries would be needed in the public sector to achieve the KRG's policy objectives. We recommend a survey of young physicians to begin answering this question.

We also recommend phasing in this policy, exempting all physicians currently practicing and applying the policy only after a period of two or three years. In this way, few, if any, physicians would already have made arrangements to work in the private sector.

### ***Implement a System That Rewards Work and Productivity***

As indicated above, the KRG could reward work and productivity in the public sector by linking compensation or pensions to any of the following:

- Time (number of hours or days worked)
- Number of patients seen
- Number of procedures performed
- Income (percentage of total income that could be earned in the private or public sector).

Other countries, with more sophisticated financing systems, have the option to vary physician payment rates in various ways to influence policy and use other innovative financial incentives, such as paying for specified levels of quality. However, such options are not feasible in the KRI today, where financing is based on budgets and salaries. In the future, the KRG may wish to consider implementing a financial incentive system, as we discuss further below.

As we noted above, the information needed to implement a policy based on time, procedure, or total income is not routinely collected in the KRI. In the foreseeable future, the KRG will be able to collect accurate data from physicians on the amount of money they collect in the private sector, which is primarily on a cash basis. It will be vastly easier to collect data on hours worked in the public sector than on either procedures performed or performance quality. Although it would be helpful to collect data on what types of patients physicians saw, classified by diagnosis, translating that into time and payment rates is not an easy undertaking. With this in mind, we would suggest that the KRG begin its DP policy reform based on hours worked in the public sector. Over time, as it develops systems to track work by visits, procedure, and quality, it may wish to supplement the initial system with these variables.

*A time-based policy* could be implemented as follows:

- **Data:** Develop and implement a data system that tracks the number of hours per day that a physician works in the public sector.
- **Compensation:** Phase in a plan that links compensation to hours worked.
- **Pensions:** Tie pension eligibility or amount to time worked in the public sector.

### ***Develop Data Systems***

The MOH will need to develop a way to track hours worked per day in all public sector hospitals and PHCs. This can be achieved through signed time sheets, a punch clock, or even a monitor. In principle, tracking number of patients seen is a potential complementary measure related to time spent, but not an adequate substitute on its own. Once the system is in place, the data can be reported electronically to the MOH on a weekly, biweekly, or monthly basis;

the MOH can pass the data on to the MOF, which pays salaries.<sup>1</sup> We understand that physicians are currently expected to work in the public sector from 8:00 a.m. to 2:00 p.m. or six hours per day; in stakeholder interviews, we were told by everyone interviewed that few physicians who have completed their training (i.e., are no longer senior house officers) work that many hours in the public sector.

### ***Link Compensation to Hours Worked***

#### **Option 1**

The MOF could simply pay a percentage of the salary owed based on the fraction of six-hour days per month worked, as documented in the data collected. If the policy is adopted, we recommend that the system be phased in. For instance, in a three-year phase-in, in year 1, a physician might receive 100 percent of his or her salary for an average of four hours worked per day; in year 2, 100 percent for five hours worked on average; and, in year 3, 100 percent for six hours worked on average. Someone who works four hours per day on average would receive 100 percent ( $4/4$ ) of his or her salary in year 1, 80 percent ( $4/5$ ) in year 2, and 66 percent ( $4/6$ ) in year 3. Because the MOF pays wages periodically, probably the best approach would be to apply the previous month's average to the current month's wages and continue that into the future. An even better and fairer approach that would smooth out the trend would be to average the previous three or even six months and use that average as the basis of the calculation.

We emphasize that, because physicians in the public sector are paid far less than those in the private sector, a substantial increase in salaries will be required if this policy is to succeed. There is then a need to determine what doctors will need to earn in the public sector for a full day's work in order to convince them to work in the public sector for the full day before leaving for any private sector work. We anticipate that this would be substantially higher than is now paid both to compensate for more hours worked and to make up for wages being much lower in the public than private sector. Public sector wages will never match the private sector level, but the security of receiving a constant income coupled with the public sector providing facilities and equipment would compensate for some, if not a good deal, of the difference. Consultant clinics are a good alternative for study, in which doctors choose to work in public facilities in the afternoon for higher pay but still about half of private sector pay, according to the physicians we interviewed working in these facilities.

#### **Option 2**

Another option would be to pay physicians a base pay plus a bonus that would vary depending on the number of hours worked. Such a policy would have the advantage of being more easily accepted than option 1 because physicians would have nothing to lose. For example, in this option, physicians who worked four, five, or six hours per day on average would receive bonuses of an extra 10, 20, or 30 percent, respectively, over their base pay. Exactly what bonus level is required to motivate the desired behavior would need to be studied. Over time, the system would be changed to be sure no bonus was being given to physicians not working a full work day as established by the KRG.

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<sup>1</sup> In the future, when and if hospital managers are given control over hiring and firing, as well as the level at which they pay their staffs, including physicians, this policy should be reconsidered.

**Enforcement**

All of these systems require accurate reporting of data. The MOH would need a system to inspect the data it is receiving on a routine basis and would need to enforce data-collection rules. In the absence of enforcement, the entire system would quickly become corrupted and not work properly.

**Physician Pension Reform**

The KRG should consider imposing minimum requirements on the number of years of public sector service required to be eligible for a public pension. With data on hours worked, the MOH could easily design a policy that ties receipt of a pension to a certain number of years of service. A year of service simply needs to be defined in terms of hours per year. Almost all businesses in the private sector require a number of years of service before employees are eligible for pensions; often, the size of the pension is linked to the number of years of service. Implementing such a policy would offer a future incentive for physicians to stay in the public sector.

The number of years required to be eligible is somewhat arbitrary and could be varied as the policy is phased in. Pension amounts could also be tied to number of years of service once the government clearly defines what qualifies as a year of service. For instance, if hours were tracked, it would be simple to count total hours and divide by the number of hours the government decides is sufficient in a single year. (So, if there were 200 nonholiday and nonweekend days per year, multiplied by six hours per day, a year of service would be 1,200 hours per year.) An alternative would be to set a threshold number of hours that must be worked in a calendar year for that year to qualify as a year of service. For instance, the KRG might announce that, in three years, it will require at least ten years of public service, defined as working a specified number of hours per year in the public sector, for a physician to be eligible for a full pension. A variation on this policy would be a graduated scale. For example, a physician with nine years of public service would receive 80 percent of the full pension amount; one with eight years would receive 60 percent; one with seven years would receive 40 percent; and one with six years would receive 10 percent.

In the above example, the government would need to decide (1) the average number of hours per day (or, alternatively, the number of hours per year) a physician should work to be eligible, (2) the length of time a physician should work, (3) any graduated scale, and (4) the phase-in policy.

We suggest that any policy related to pensions be phased in over several years to be as equitable as possible to people just entering the medical profession. However, linking pensions to years of service would, in effect, reduce total pension amounts unless the government reviews and raises average pension amounts. If the government wants to ensure an incentive to work in the public sector, the amount of the pension per year of service should increase as the years of service increase. We would also note that pension reform is a national issue and that, in other areas, the link between time worked and pension amounts needs to be addressed in a national context.

**Phase III: Continue to Revise and Update Policy as Data and Policy Tools Change**

In phase III—realistically, at least three to five years in the future—the changes made should be evaluated and revised, given better information and policy instruments that might become available as the sector continues to mature and regulatory systems are perfected. A new financing system that allows differential payments to physicians would open up policy options that

are not feasible today. When and if hospitals become cost centers with the ability and responsibility to manage themselves, another new set of policy options becomes feasible.

### ***Reform Financing***

Future changes that are being contemplated in the financing system would have a dramatic effect and provide new opportunities for managing the DP issue. If the KRG moves to a social insurance system, paying providers differentially for where they perform services and for the nature and quality of those services becomes more feasible. In a social insurance system, payments are usually made to hospitals on a bundled payment basis, such as DRGs, to encourage efficiency. These payments may or may not include a physician component. Paying public and private sector hospitals similar amounts per procedure would stimulate competition between the public and private sectors.

### ***Make Necessary Hospital Reforms***

For the KRG to reform the financing system, hospital reforms will be necessary. Hospitals need to have the ability and latitude to introduce incentives that reward work and productivity, as well as the authority to make decisions affecting personnel and management. This could be achieved in a variety of ways, but perhaps the simplest in the current system would be to transition to giving hospitals a global budget (i.e., a fixed yearly allowance) that they can use as they see fit—e.g., for salaries, equipment. A minimum level of quality would need to be enforced and guaranteed in public hospitals through regulation and licensing. The MOH is already engaged in enacting a hospital licensure system based on international standards. If improvements in quality and management of hospitals, as well as availability of resources to do their jobs, are not achieved, it is unlikely that physicians would want to work more in the public sector or that incentive structures to reward those who do would be enough to induce the desired behavior.

## **Conclusion**

To move forward with KRI health system reform, KRG decisionmakers must make key policy decisions and take concurrent actions, all of which act to reinforce the others. Dealing with the physician DP issue is one of those actions. In summary, to deal with the DP issue, we recommend that the KRG do the following:

- Begin to collect the data needed to better understand the situation and to enable policy-makers to make, monitor, and enforce policy reform efforts.
- Link public sector physician compensation (both wages and pensions) to time worked in the public sector.
- Give hospitals the authority to compensate physicians for good performance, which would require changes to the present way hospitals are financed and the authority that managers can exercise.

Policy reform will take years to implement wisely and should be phased in to limit disruption and to provide flexibility as changes in other policy areas also occur.

We have identified areas in which additional data, research, and analysis are needed to enable the suggested approach to be implemented wisely. This data effort could proceed at any time.

## Primary Care

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### Introduction

In 2010, RAND researchers assessed the primary health care system in the KRI and offered approximately 60 specific recommendations that addressed three key elements of the system and the following broad action areas under them:

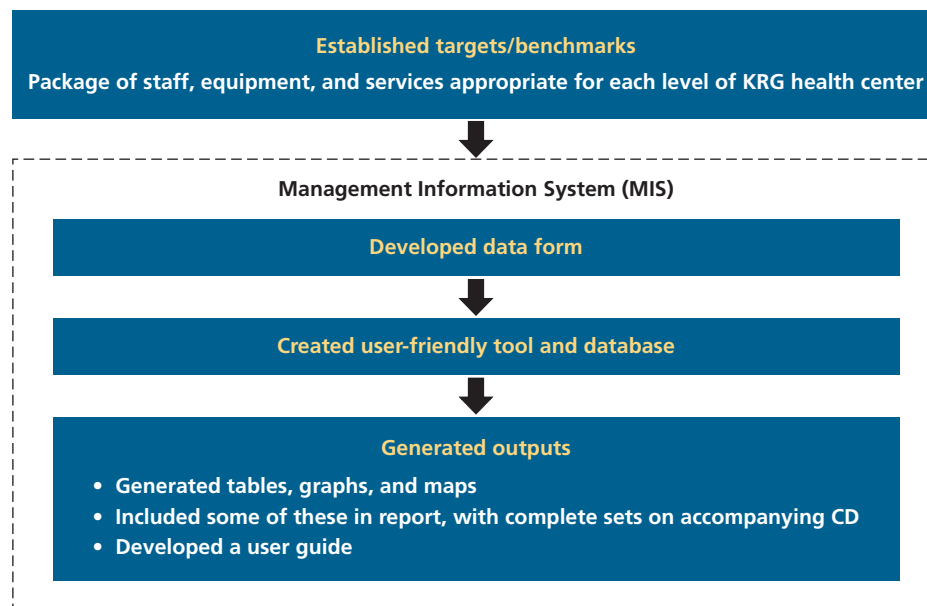
- Organization and management of primary care facilities and services
  - Efficient distribution of facilities and services
  - Development and implementation of a system for referrals and continuity of care
  - Development and implementation of a program for continuous quality improvement
- Health workforce
  - Enhancement of professional qualifications through education and training
  - Improvement of the distribution and performance of the health workforce through specific human resource management interventions
- Health information systems
  - Development and implementation of health management information systems (MISs)
  - Enhancement of surveillance and response systems.

Over the course of 2012 and in consultation with the KRG Minister of Planning and Minister of Health, we focused on standardization of the services to be provided at main health centers (ones with physicians) and sub-centers (without physicians) and development of a systematic way to track and manage progress. These two critical activities will anchor further primary care capacity building into the future. These activities are summarized in Figure 5.1 and detailed in the remainder of this chapter, including several illustrations of key outputs. We note that, as of late November 2012, when this report was prepared, data had been received only from Duhok; some (incomplete) data from Erbil and Sulaimaniya were received in June 2013 and were still being processed as of August 2013. Therefore, this report reflects data primarily from Duhok.

### **Establishing Targets/Benchmarks: Standardization of Primary Care Services at Different Levels of Care**

Primary care services are intended to meet the preventive and curative health care needs of the population and be provided safely and effectively at health centers. In the KRI, there are

**Figure 5.1**  
**Two Key Activities During 2012: Kurdistan Regional Government Primary Care**  
**Benchmarks and Management Information System**



RAND RR490-5.1

three main types or levels of health centers, with different patterns of staffing, equipment, and services:

- Sub-centers, typically staffed by at least one nurse and one paramedical assistant
- Main PHCs, typically staffed by at least one general physician each
- A new type of more comprehensive family medicine center, typically staffed by family medicine professionals, such as specialist physicians in internal medicine, pediatrics, and maternal health.

Although some services cannot be provided at sub-centers or even main centers because they are not designated to have the relevant personnel or equipment, our 2010 assessment suggested that there are significant opportunities to expand services at all levels. In particular, there are opportunities to provide basic, “core” primary care services, such as child growth monitoring (GM), vaccinations (VAX), oral rehydration solution (ORS) therapy, and antenatal care (ANC), at many more centers than currently provide these services. There are also significant opportunities to initiate basic screening and follow-up for chronic diseases, such as hypertension and diabetes, which are increasingly important causes of disease burden in the KRI population.

Until 2012, the MOH had not established the benchmarks or standards for which services should be provided at each type of health center. RAND researchers developed a tailored set of recommended targets/benchmarks for the KRG based on 2009 recommendations from the World Health Organization for Iraq, their own numerous visits to health centers in all three governorates, and discussions with health officials from health centers, Departments of Health (DOHs), and the MOH. Our recommendations are outlined in Table 5.1. Table 5.1



**Table 5.1**  
**Primary Care Services for Different Levels of Health Centers in the Kurdistan Region—Iraq, 2012:**  
**General Benchmarks for Size of Population Served, Referral Systems, Staffing, and Basic Services and Equipment**

Description	PHC Sub-Center (sub-center, type D, remote area)	Main PHC (district or sub-district, type A or C)	Family Medicine Center
Size of population served (catchment population)	5,000–10,000	10,000–30,000	20,000
Organized referral system out to and back from referral providers (e.g., diagnostic or specialty services)	Paper, eventually electronic	Paper, eventually electronic	Paper, eventually electronic
<b>Staffing</b>			
Nurses, college (nursing school) level	1–2	≥1 (function of population)	≥8
Nurses, institute level	1–2	≥1 (function of population)	
Pharmacists	0	≥1	≥2
Laboratory staff	0	≥1	≥6
Physicians	No	Yes	Yes
GPs	0	1–2	2
Specialized physicians	0	0	2
Paramedical staff	1–2	More than 1–2	More than 1–2
<b>Basic outpatient services to be offered</b>			
Basic first aid	Yes	Yes	Yes
Maternal and child health	Yes	Yes	Yes
Injury management	Minor, referral	Minor	Minor
Health education (information, education, and communication) activities	Yes	Maybe	Yes
Immunizations	Yes, or mobile	Yes	Yes
Curative services	Basic	Yes	Yes
Communicable-disease management	Minor	Yes	Yes
Pharmacy services (essential medicines)	Some	Yes	Yes
Hypertension screening	Yes	Yes	Yes
Hypertension or diabetes management	Basic	Yes	Yes
Mental health services	No	Basic	Basic
Dental services	No	Yes	Yes
Laboratory	No	Yes	Yes
Assistance in normal delivery	No	Some	Yes

Table 5.1—Continued

Description	PHC Sub-Center (sub-center, type D, remote area)	Main PHC (district or sub-district, type A or C)	Family Medicine Center
Basic equipment at health centers			
Pharmacy supplies (e.g., medications)	WHO basic	Yes	Yes
Computer for administrative and patient records	No	Yes	Yes
Microscope	No	Yes	Yes
Centrifuge	No	Yes	Yes
Autoclave	No	Yes	Yes
Non-dental X-ray	No	Yes	Yes
Dental X-ray	No	Yes	Yes
Dental chair	No	Yes	Yes
Dental tray	No	Yes	Yes
ECG machine	No	Maybe	Yes
Ultrasound or sonogram	No	No	Yes
Beds	No	Some	Yes

NOTE: Green = currently offered. Yellow = new. Red = not appropriate. GP = general practitioner. ECG = electrocardiogram. Referrals are made to the next-higher level of center.

indicates packages of care that define staffing, equipment, and types of services for each level. It also indicates whether the staff and services are typically offered already (green), would be new at a specified level of center (yellow), or would not be appropriate for a given level center (red). Table 5.2 indicates similar information for specific services within each major type of service. According to our assessment during 2010, there are two main areas for improvement: (1) ensuring that staffing, equipment, and services that are, in principle, currently available at a given level of health center are indeed available at all such centers throughout the region; and (2) introducing new services at specified levels of health centers. Just a few examples of the former include ensuring that all main PHCs have at least one physician and that child growth monitoring, vaccinations, and oral rehydration therapy (treatment on site) for mild to moderate diarrheal dehydration are actually delivered at all sub-centers, as well as main PHCs and family health centers. Examples of the latter include adding hypertension and diabetes screening to all main PHCs and hypertension screening to all sub-centers.

The Minister of Health reviewed these, had them translated into Kurdish, consulted with DOHs, and approved them as KRG policy. These packages serve as targets for managers at MOH, DOH, and district levels to use for planning, budgeting, monitoring, and focusing their management efforts. As such, they will underpin further capacity building of the KRG primary care system.

**Table 5.2**  
**Primary Care Services for Different Levels of Health Centers in the Kurdistan Region—Iraq, 2012:**  
**Specific Services**

Description	PHC Sub-Center (sub-center, type D, remote area)	Main PHC (district or sub-district, type A or C)	Family Medicine Center
Management of specific communicable diseases			
Urinary-tract infection, diagnosis	No, refer	Yes	Yes
Urinary-tract infection, treatment	No, refer	Yes, refer as needed	Yes, refer as needed
Conjunctivitis, diagnosis or treatment	Yes, refer as needed	Yes, refer if severe	Yes, refer if severe
Typhoid, clinical diagnosis	Refer suspected	Yes	Yes
Typhoid, treatment, uncomplicated	No	Yes	Yes
Hepatitis, clinical diagnosis	No, refer	Yes	Yes
Schistosomiasis, clinical diagnosis	Refer suspected	Yes	Yes
Schistosomiasis, treatment, uncomplicated	No	Yes	Yes
Leishmaniasis, clinical diagnosis	No	No, refer	No, refer
Management of noncommunicable diseases			
Hypertension, screening	Yes	Yes	Yes
Hypertension, case management	No	Yes, refer if severe	Yes, refer if severe
Diabetes, screening	Clinical, refer	Yes	Yes
Diabetes, case management	No	Yes	Yes
Arthritis, diagnosis	Refer	Yes	Yes
Arthritis, case management	Symptomatic	Yes, refer as needed	Yes, refer as needed
GI disease (e.g., peptic ulcer), diagnosis	Refer	Refer suspected	Refer suspected
GI disease, case management	Refer	Refer if severe	Refer if severe
Epilepsy, identification or treatment	No	Yes	Yes
Mental health services			
Psychosis, identification or biopsychosocial management	No	Yes	Yes
Anxiety disorders (e.g., posttraumatic stress disorder, panic disorder)	No	Yes	Yes
Depression, identification or biopsychosocial management	No	Yes	Yes
Substance abuse, identification or education	No	Yes	Yes

Table 5.2—Continued

Description	PHC Sub-Center (sub-center, type D, remote area)	Main PHC (district or sub-district, type A or C)	Family Medicine Center
Laboratory services <sup>a</sup>			
Urine			
Pregnancy test	Possibly	Yes	Yes
Analysis (for protein or sugar, e.g., via dipstick)	Yes	Yes	Yes
Microscopy for WBCs	No	Yes	Yes
Hematology			
Hgb or Hct	No	Yes	Yes
WBC or platelet count	No	Yes	Yes
ESR	No	Yes	Yes
Blood grouping or Rh factor	Possibly	Yes	Yes
Serology			
Widal (typhoid)	No	Yes	Yes
Biochemistry			
Blood glucose	No	Yes	Yes
Renal function test	No	Yes	Yes
Liver function test	No	Yes	Yes
Lipid profile	No	Yes	Yes
Parasitology			
Malaria smear, collection or examination	No	Yes	Yes
General stool exam for ova or parasites	No	Yes	Yes
Bacteriology			
Gram stain (bacteria)	No	Yes	Yes
Ziehl-Neelsen stain (tuberculosis)	No	Yes	Yes
Rapid bacterial testing	No	Yes	Yes
Other diagnostic services			
Ultrasound	No	Some	Yes

NOTE: Green = currently offered. Yellow = new. Red = not appropriate. GI = gastrointestinal. Hgb = hemoglobin. Hct = hematocrit. WBC = white blood cell. ESR = erythrocyte sedimentation rate.

<sup>a</sup> A 2009 WHO/Iraq MOH document indicates several lab tests that should be performed at sub-centers.

## The Kurdistan Regional Government Primary Health Care Management Information System

Assuming that the KRG wishes to strengthen its primary health care system as broadly as we recommend and to be consistent with global best practices, it will need a good way to track progress along all of these dimensions—from population coverage to staffing, equipment, and services offered. An ideal management information system would be simple yet powerful, collecting key data on a regular basis and serving as yet another management tool for KRG policymakers. In 2012, we worked closely with the KRG MOH and DOHs to develop such a system. Specifically, we did the following:

- Developed, tested, and refined the MIS data form (Figure 5.2)
- Developed a menu of MIS data outputs: standardized tables, graphs, and maps (Figure 5.3; see also Tables 5.3 and 5.4)
- Developed a system to process data, create a database, and generate the data outputs (Figure 5.4)
- Provided training for all DOHs in the use of the MIS form
- Generated data outputs (tables and graphs) based on data collected during 2012 (selected examples in Figures 5.5 through 5.10)
- Developed a short, fully illustrated MIS user guide.

As noted earlier, the MIS is new to the KRI; by late November 2012, data had been collected and formatted in English (for processing by RAND) by only the Duhok DOH. Data had been collected for Erbil and Sulaimaniya centers and was subsequently sent to RAND for processing in June 2013, but formatting in English was still under way as of August 2013 (during processing, we recognized that many of these data were incorrect or incomplete). In addition, global positioning system (GPS) coordinates were collected; however, as of August 2013, health center names were still being translated into English, data were still being entered, and MIS maps were still being created. Further data collection and processing continue into the third phase of the project (2013–2014).

The selective data that follow reflect primarily the Duhok data collected during 2012 but, in some instances, also include Erbil data that we extracted manually from reports published by the DOH in 2010 and 2011. Despite the incompleteness of the data in this report, we can make some important observations. Once the data are complete and all tables, graphs, and maps are generated during the third phase of the project, even more insights—for all governorates and for the region as a whole—will become possible. The data available to date, mainly from Duhok, indicate the following:

- Population coverage by health centers varies widely by governorate and district.
- Afternoon and overnight services are not yet widely available at main PHCs, and the distribution of centers with such services varies widely by district.
- Nearly every main PHC in Duhok has at least one physician. Of the total 183 physicians in these centers, 131 (72 percent) are GPs; 39 (21 percent) are family medicine specialists; and the remaining 13 (7 percent) are specialists in obstetrics or gynecology (four), internal medicine (four), surgery (three), pediatrics (one), or another specialty (one).

**Figure 5.2**  
**Kurdistan Regional Government Primary Health Care Management Information System Data Form,**  
**Page 1**

	Data item	Data Codes	Response (FILL IN "ALL" GRAY BOXES)			
Report	HEALTH CENTER NAME					
	Date report completed	Year:	Month:	Day:		
	Name of person completing report					
	Telephone					
	Email					
Basic information about Health Center	Location - governorate and DOH	Governorate:	DOH:			
	Location - district and sub-district	District:	Sub-District:			
	Location - GPS coordinates	Latitude:	Longitude:			
	Type of health center	Branch (BR) , main PHC (PHC), family center (FAM), specialized medical center (SMC), other (OTH)	Health center ID code:			
	Population of catchment area	Population:				
	Health center operating times	# hours per day:	# days/wk:			
	Provide afternoon or overnight services?	0=no, 1=yes Afternoon?	Overnight?			
Staffing	At least one medical doctor?	0=no, 1=yes				
	# GPs	Total number GPs:	# Rotating:	# Permanent:		
	# Family medicine doctors	Number:				
	# Ob/gyn doctors	Number:				
	# Internal medicine doctors	Number:				
	# Pediatric doctors	Number:				
	# Radiologists	Number:				
	# Surgeons	Number:				
	# Other med doctor - specify	Number:	Type:			
	# MEDICAL DOCTORS - TOTAL	Total number of medical doctors:				
	# NURSES (total)	Total number of nurses:	# Male:	# Female:		
	# nurses- college (nursing school)	Number:				
	# nurses - institute (diploma)	Number:				
	# nurses - preparatory (high school)	Number:				
	# nurses - trained	Number:				
	# Midwives	Number:				
	# DENTISTS	Number:				
	# PHARMACISTS	Number:				
	# Biologists (lab)	Number:				
	# Chemists (lab)	Number:				
	# Laboratory technicians	Number:				
	# Medical assistants	Number:				
	# Dental assistants	Number:				
	# Pharmacy assistants	Number:				
	# Radiology assistants	Number:				
	# Prevention assistants	Number:				
	# Management and administrative staff	Number:				
	# Service staff (driver, cleaner, etc.)	Number:				
	# Other staff	Number:	Describe:			
		TOTAL number of staff:	TOTAL Number:			
Equipment and Supplies	Functional landline telephone	0=no, 1=yes Have?				
	Computers	0=no, 1=yes Have?	Functioning?	Trained user?		
	# Computers	Number:				
	Who uses computer?	1 = admin/mgt, 2 = pharmacy, 3= doctor/nurse, 4 = lab, 5= more than one of these				
	Internet access available?	0=no, 1=yes Have?				
	Microscope	0=no, 1=yes Have?	Functioning?	Trained user?		
	Centrifuge	0=no, 1=yes Have?	Functioning?	Trained user?		
	Autoclave	0=no, 1=yes Have?	Functioning?	Trained user?		
	Ultrasound / sonogram	0=no, 1=yes Have?	Functioning?	Trained user?		
	ECG machine	0=no, 1=yes Have?	Functioning?	Trained user?		
	X-ray (not dental)	0=no, 1=yes Have?	Functioning?	Trained user?		
	Dental X-ray	0=no, 1=yes Have?	Functioning?	Trained user?		
	Dental chair	0=no, 1=yes Have?				
	Dental "tray" (equipment)	0=no, 1=yes Have?				
	Labor theater?	0=no, 1=yes Have?				
	Ambulance?	0=no, 1=yes Have?				
	# Beds	Number:				

**Figure 5.3**  
**Kurdistan Regional Government Primary Health Care Management Information System Data Form,**  
**Page 2**

	Data item	Data Codes	Response (FILL IN *ALL* GRAY BOXES)			
Appointments and Referrals	Appointment system?	0=no, 1=yes				
	Follow up clients who do not return?	0=no, 1=yes				
	Organized system for referrals OUT from health center?	0=no, 1=yes, paper, 2=yes, electronic				
	Organized referral FEEDBACK system?	0=no, 1=yes, paper, 2=yes, electronic				
Record-Keeping	Patient medical record - at center	0=no, 1=yes, paper, 2=yes, electronic				
	Family health record	0=no, 1=yes, paper, 2=yes, electronic				
	Inventory management log: lab	0=no, 1=yes-paper, 2=yes-computer, 9=NA				
	Inventory management log: pharmacy	0=no, 1=yes-paper, 2=yes-computer, 9=NA				
Services	Child growth monitoring	0=no, 1=yes				
	Vaccination (VAX)	0=no, 1=yes				
	ORS - Oral rehydration - packet for home	0=no, 1=yes				
	Oral rehydration - start treating at center	0=no, 1=yes				
	Antenatal care	0=no, 1=yes				
	Maternity (labor & delivery)	0=no, 1=yes				
	Family planning	0=no, 1=yes				
	First aid / minor injury care	0=no, 1=yes				
	Treatment of acute illnesses	0=no, 1=yes				
	TB treatment (DOTS)	0=no, 1=yes				
	Hypertension	0=no, 1=yes Screening?	Follow up?			
	Diabetes	0=no, 1=yes Screening?	Spectro?		Follow up?	
	Mental health services	0=no, 1=yes Screening?	Follow up?			
	Health education / promotion	0=no, 1=yes				
	Community outreach	0=no, 1=yes				
	Dental	Dental unit/service?	0=no, 1=yes			
	Dental - restorations (fillings)	0=no, 1=yes				
	Dental - simple extractions	0=no, 1=yes				
	Dental procedures (dentures)	0=no, 1=yes				
	Diagnostic	Any laboratory service?	0=no, 1=yes			
		Lab - Hgb/Hct	0=no, 1=yes			
		Lab - WBC	0=no, 1=yes			
		Lab - ESR	0=no, 1=yes			
		Lab - blood glucose	0=no, 1=yes			
		Lab - blood smear for malaria	0=no, 1=yes Collect?	Examine?		
		Lab - urine WBC	0=no, 1=yes			
		Lab - urine pregnancy test	0=no, 1=yes			
		Lab - urine protein	0=no, 1=yes			
		Lab - Stool examination (ova/parasites, fecal coliforms)	0=no, 1=yes			
		Lab - other tests?	Any other tests? (0=no, 1=yes)	Specify:		
		Radiology unit/service?	0=no, 1=yes			
	Ultrasound services?	0=no, 1=yes				
	Pharmacy	Basic essential medicines	0=no, 1=yes			
More than basic essential medicines		0=no, 1=yes				
Use of computer for pharmacy services		0=no, 1=ordering, 2=inventory, 3=both				

NOTE: DOTS = directly observed treatment, short course.

RAND RR490-5.3

- About two-thirds of main PHCs in Duhok have a dentist: The range is from 43 to 87 percent of centers across Duhok’s seven districts. However, most Duhok centers that have a dentist do not have dental X-ray equipment.
- Most centers in Duhok do not have a pharmacist.
- Less than 1 percent of nurses at main PHCs in Duhok have nursing-school training; about one-third have institute or preparatory training, and two-thirds have diploma-level training. At Duhok sub-center PHCs, only Amedi and Sumail districts have any nurses with institute- or preparatory-level training; all other districts have only diploma-level nurses.

**Table 5.3**  
**Menu of Standardized Tables and Graphs from the Kurdistan Regional Government Primary Health Care Management Information System**

Number	Title or Description	Graph
<b>Basic information</b>		
1	Number of health centers, by type 1a. By district 1b. By sub-district	0
2	Population coverage by health centers 2a. By district 2b. By sub-district	2
3	Health center operating hours, by facility type 3a. By district 3b. By sub-district	0
4	Provision of on-call services at main PHCs 4a. By district 4b. By sub-district	1
<b>Staffing</b>		
5	Professional staff types at sub-centers and main PHCs 5a. By district 5b. By sub-district	4
6	Number of doctors and nurses at sub-centers and main PHCs 6a. By district 6b. By sub-district	0
7	Number of professional staff, by type, at sub-centers and main PHCs 7a. By district 7b. By sub-district	0
8	Training level of nurses at sub-centers and main PHCs, number 8a. By district 8b. By sub-district	0
9	Training level of nurses at sub-centers and main PHCs, percentage 9a. By district 9b. By sub-district	1
10	Number of doctors, by type/specialty, at sub-centers and main PHCs 10a. By district 10b. By sub-district	0
11	Number of subprofessional staff, by type, at sub-centers and main PHCs 11a. By district 11b. By sub-district	0
<b>Equipment</b>		
12	Presence and functional status of designated equipment at main PHCs 12a. By district 12b. By sub-district 12c. At specific PHCs 12.1. Computer and Internet access 12.2 Presence of lab and X-ray equipment: microscope, centrifuge, autoclave, non-dental X-ray, dental X-ray 12.3. Functional status of lab and X-ray equipment: microscope, centrifuge, autoclave, non-dental X-ray, dental X-ray 12.4. Equipment alert summary: lab or X-ray equipment either not functional or without trained user—microscope, centrifuge, autoclave, non-dental X-ray, dental X-ray	10



Table 5.3—Continued

Number	Title or Description	Graph
13	Percentage of main PHCs with labor theater, ambulance, and beds 13a. By district 13b. By sub-district	3
Patient management		
14	Appointment and referral systems, by facility type and sub-district 14a. By district 14b. By sub-district	4
Services		
15	Percentage of sub-centers and main PHCs with dental, laboratory, and radiology services 15a. By district 15b. By sub-district	3
16	Percentage of main PHCs with dental unit, staff, and equipment 16a. By district 16b. By sub-district 16c. At specific PHCs	1
17	Percentage of sub-centers and main PHCs providing specified core services 17a. By district 17b. By sub-district	4
18	Number of core services provided by sub-centers and main PHCs (core services: GM, VAX, ORS, ANC) 18a. By district 18b. By sub-district 18c. At specific PHCs	0
19	Percentage of sub-centers and main PHCs providing specified additional services 19a. By district 19b. By sub-district	6
20	Percentage of sub-centers and main PHCs providing chronic disease screening and management 20a. By district 20b. By sub-district	6
21	Percentage of sub-centers and main PHCs providing specified dental services 21a. By district 21b. By sub-district	3
22	Percentage of sub-centers and main PHCs providing specified laboratory blood testing services 22a. By district 22b. By sub-district	6
23	Percentage of sub-centers and main PHCs providing specified urine and stool testing services 23a. By district 23b. By sub-district	3
24	Percentage of sub-centers and main PHCs providing specified pharmacy services 24a. By district 24b. By sub-district	3
25	Percentage of sub-centers and main PHCs using pharmacy management systems 25a. By district 25b. By sub-district	1

**Table 5.4**  
**Equipment at Main Primary Health Care Centers in Duhok**

Jurisdiction	Number of Main PHCs	Percentage with a Microscope	Percentage with a Centrifuge	Percentage with an Autoclave	Percentage with a Non-Dental X-Ray	Percentage with a Dental X-Ray
Duhok, total	62	74	71	66	31	15
Duhok (city)	15	87	80	87	47	20
Sumail	8	75	75	75	38	0
Zakho	13	77	77	54	23	15
Amedi	8	88	88	75	37	25
al-Shikhan	5	60	60	40	0	0
Akrah	7	43	29	71	0	0
Barda Rash	5	60	60	20	40	40

SOURCE: Duhok DOH data.

**Figure 5.4**  
**Management Information System Menu Page**

**KRG Health Management Information System**

**Reports and Graphs**

Reporting Levels

- District
- Sub-District
- Health Center

Governorate

- All of KRG
- Duhok
- Erbil
- Suleimaniah

Report Types

- Reports
- Graphs
- Reports and Graphs

Report Groups

- Basic Information
- Staffing
- Equipment/Supplies
- Patient Management
- Record-Keeping
- Services

Specific Reports

- 1-# Health centers
- 2-PHC population coverage
- 3-Operating hours
- 4-On-call services
- 5-Professional staff types
- 6-# Doctors, nurses
- 7-# Other professional staff
- 8-Nurse training level, #

Run Reports

**Data Operations**

Import Center Data

Import Data for Multiple Centers

Edit/View Center Data

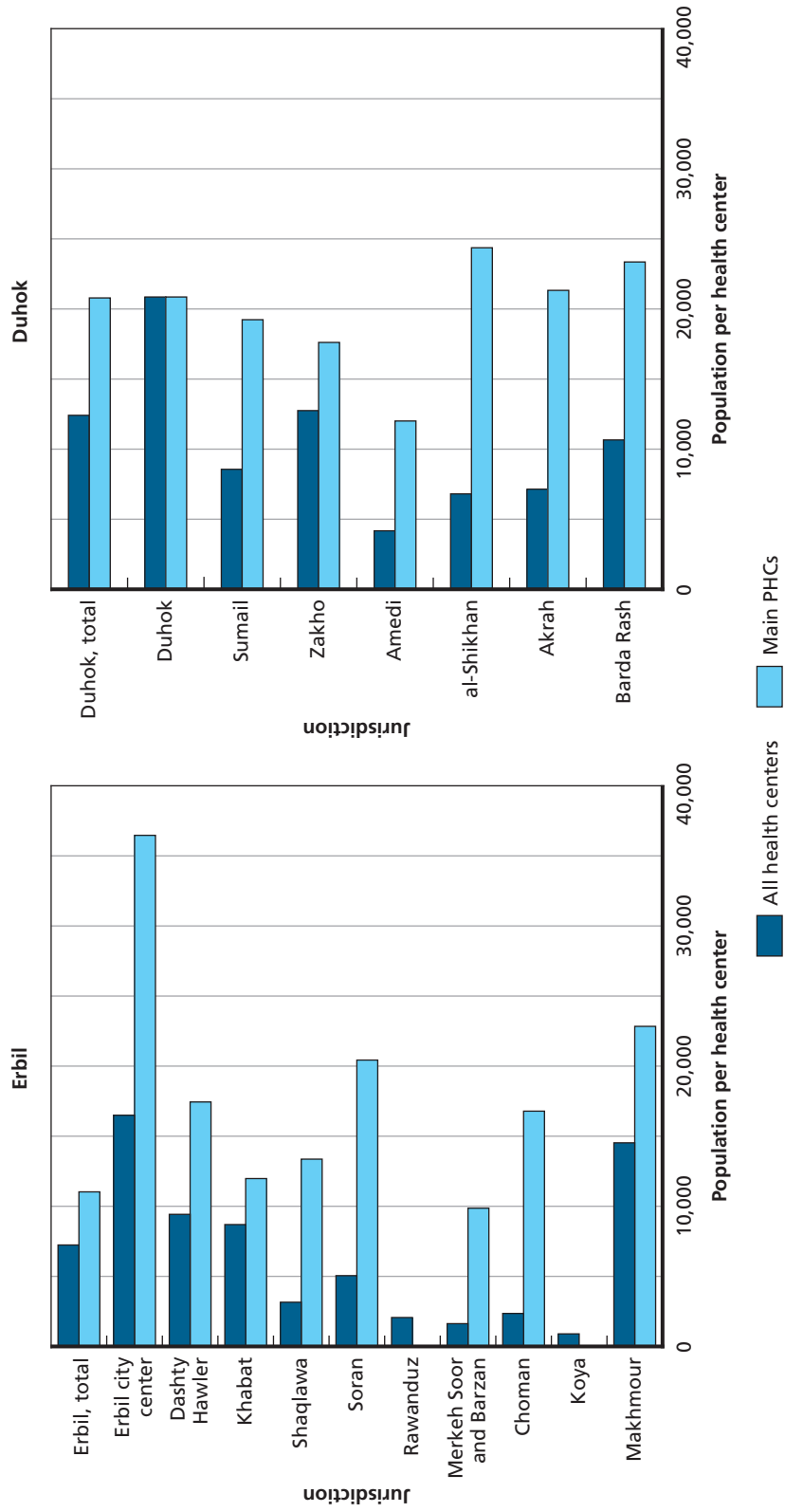
Edit/View System Data

Enter New Center

Exit

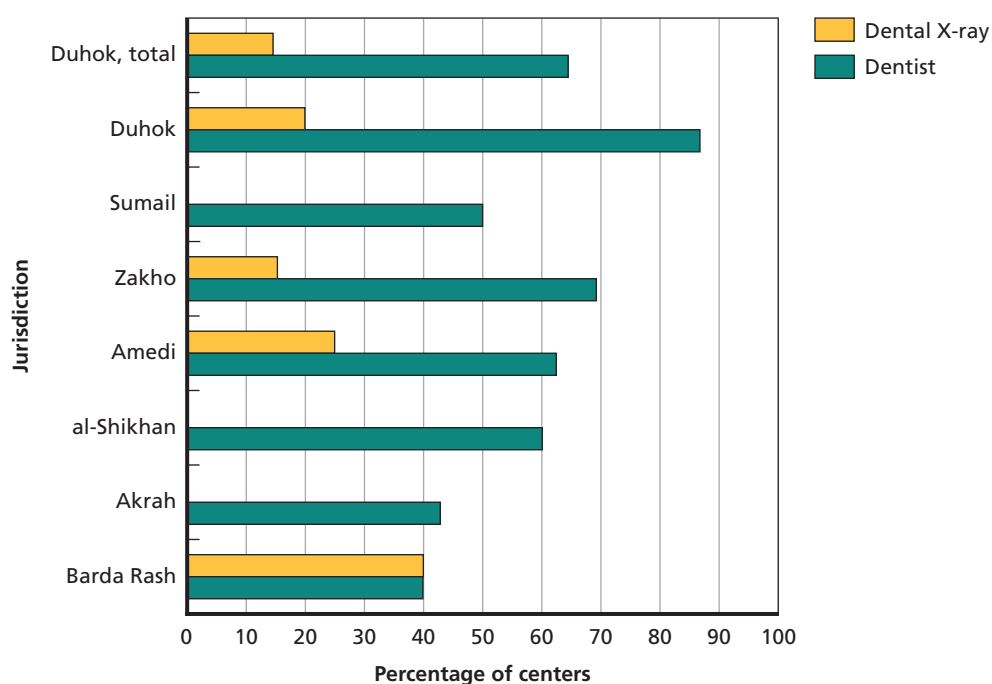
RAND Corporation  
 Copyright 2012  
 RAND Corporation

**Figure 5.5**  
**Population Coverage by Kurdistan Regional Government Primary Health Care Centers, by Jurisdiction**



SOURCES: Duhok DOH data; Wahab and Petros, 2011.  
 RAND RR-490-5.5

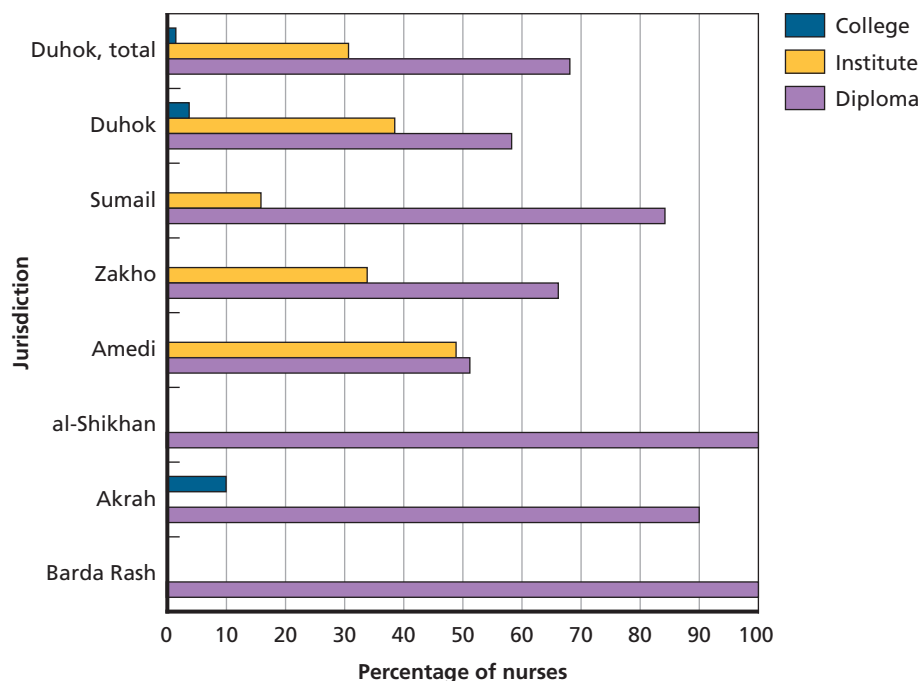
**Figure 5.6**  
**Main Primary Health Care Centers in Duhok That Have at Least One Dentist or Piece of Dental X-Ray Equipment**



RAND RR490-5.6

- Most main PHCs in Duhok have at least one computer; nearly all computers are functional, and most have a trained user. Very few have Internet access.
- In four of Duhok's seven districts, most main PHCs have a microscope, centrifuge, and autoclave; in the other three districts, most centers lack one or more of these items. Most centers with equipment also have trained users, but only microscopes are reliably functional; centrifuges and autoclaves are not functional in most centers that have them.
- In Duhok, X-ray equipment is not commonly available at main PHCs; only about half of non-dental X-ray equipment is functional, and only about half have a trained user.
- In four districts outside Duhok city, most main centers have at least one bed; in the other two districts, about one-fourth of main centers have at least one bed.
- In six of Duhok's seven districts, all sub-centers and nearly all main PHCs have a system for referring patients out for further diagnostic or clinical services.
- About three-fourths of main PHCs in Duhok have a laboratory. The most commonly available tests are blood testing for hemoglobin (Hgb) or hematocrit (Hct) (in 71 percent of main PHCs) and glucose (73 percent), as well as blood testing for white blood cells (WBCs) and erythrocyte sedimentation rate (ESR) (60 percent for both). About two-thirds of Duhok's main PHCs perform urinary pregnancy testing; about half provide stool testing for ova and parasites.
- In Erbil, most main primary health care centers, as well as sub-centers, provide growth monitoring; main primary health care centers in Erbil also provide vaccinations, oral rehydration solution, and antenatal care, but far fewer sub-centers provide these services. Nearly all Duhok main primary health care centers provide growth monitoring and vac-

**Figure 5.7**  
**Education Levels of Primary Health Care Center Nurse Staffing in Duhok**



SOURCE: Duhok DOH data, 2012.

RAND RR490-5.7

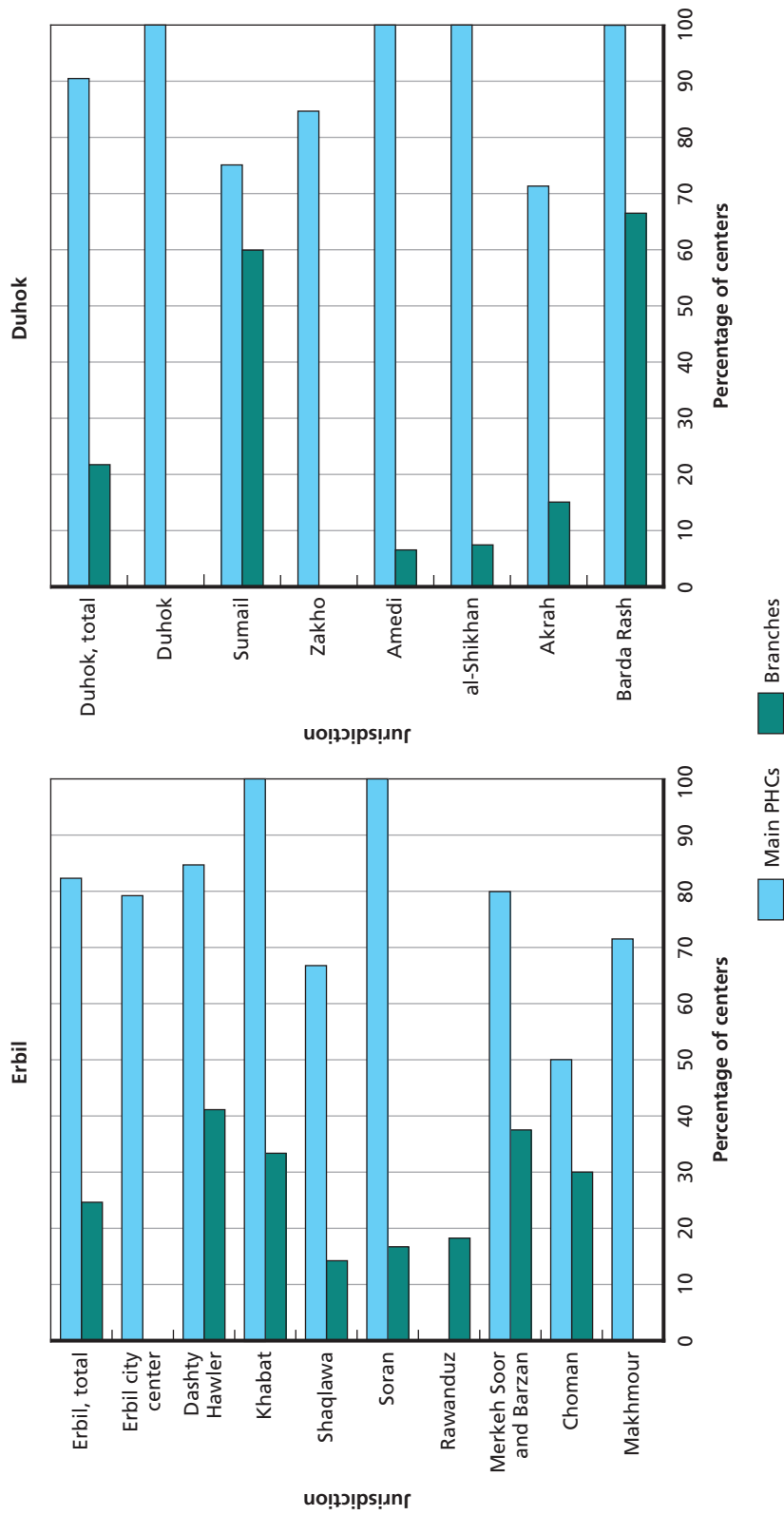
cinations; about three-fourths also provide oral rehydration solution and antenatal care. These services are far less frequently available at Duhok's sub-centers.

- About one-third of Duhok main PHCs provide mental health screening—mostly in two districts.
- Nearly one-half of main PHCs in Duhok provide hypertension management; none provides management for diabetes or mental health.
- Virtually all Duhok main PHCs and sub-centers provide pharmacy services with basic medications; about half of main PHCs, but very few sub-centers, provide more than basic medications. About one-fourth of Duhok main PHCs have a computerized pharmacy management system.

### Additional Technical Assistance

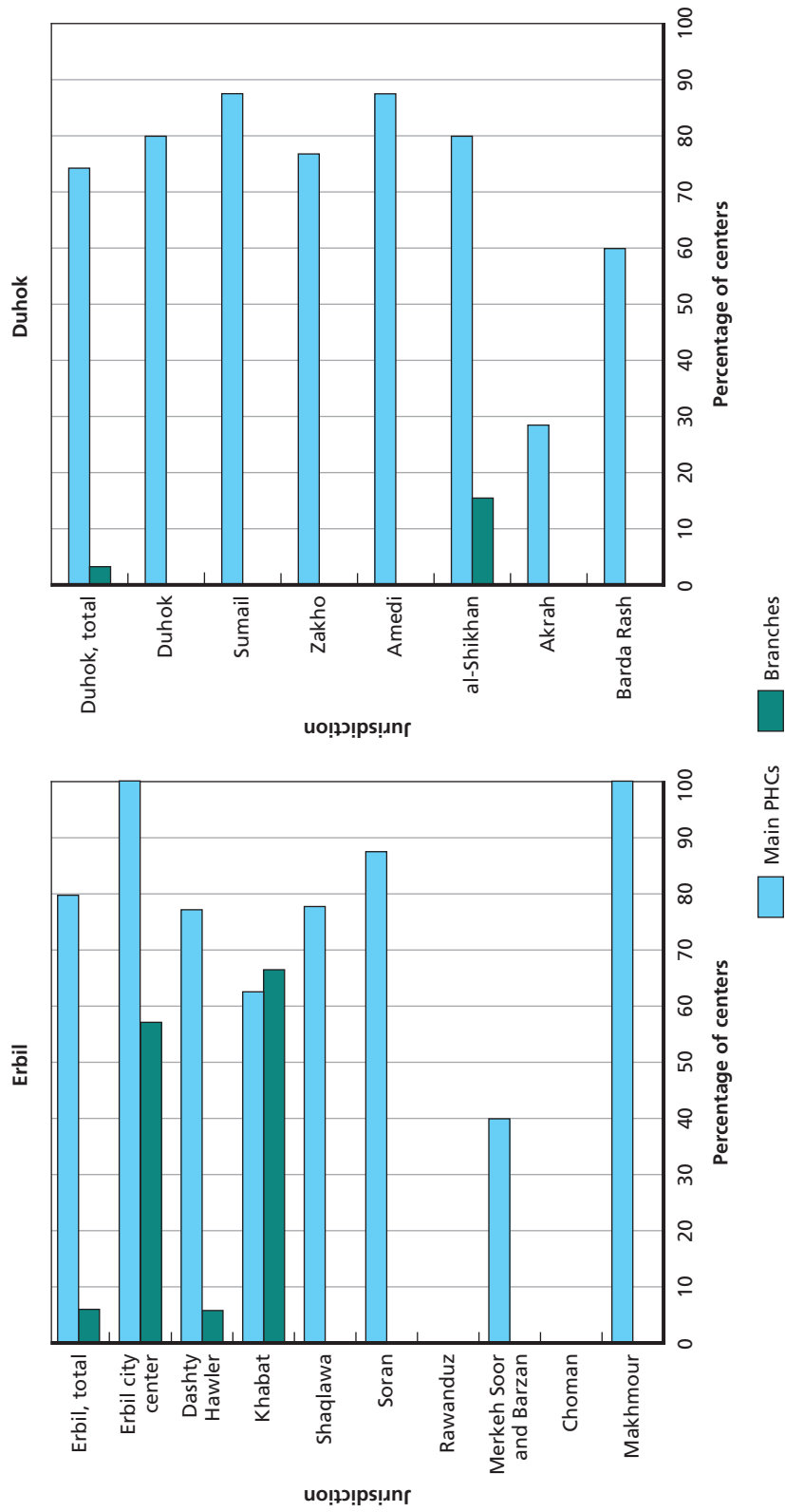
We provided limited technical assistance to the MOH as it was dealing with the October 2012 cholera outbreak in Sulaimaniya. Drawing on her experience in investigating disease outbreaks during her service as an epidemiologist at the U.S. Centers for Disease Control and Prevention, RAND team member Melinda Moore developed guidelines for investigating foodborne illness. Investigation of outbreaks of acute infectious diseases follows several simple steps. The purpose of the guidelines, which were translated into Kurdish, was to help the MOH detect the source of the outbreak and institute measures to limit disease transmission while also treat-

**Figure 5.8**  
Health Care Centers Providing Vaccination Services



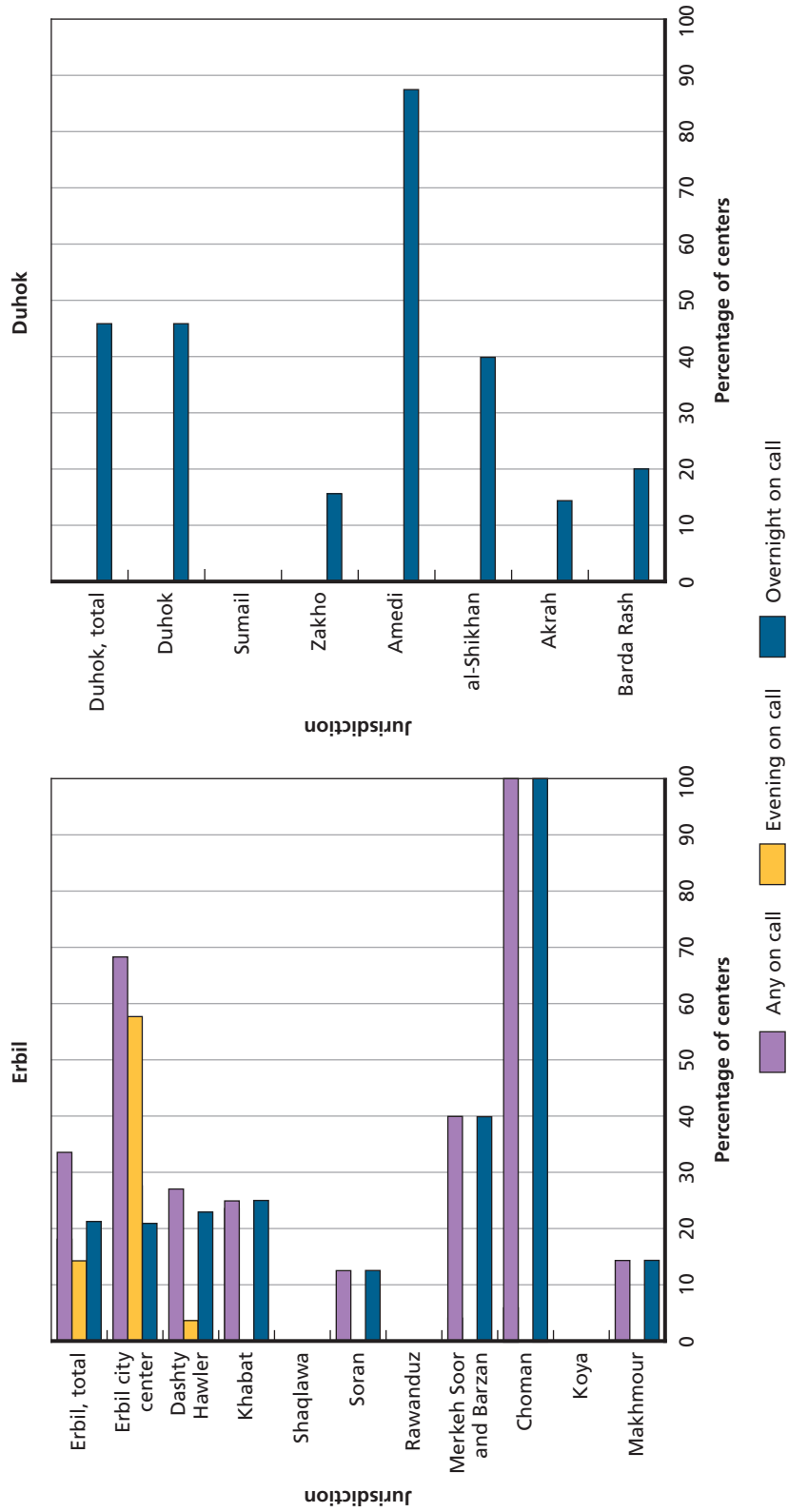
SOURCES: Duhok DOH data; Wahab and Petros, 2011.  
RAND RR490-5.8

**Figure 5.9**  
**Availability of Laboratory Services at Main Primary Health Care Centers**



SOURCES: Duhok DOH data; Wahab and Petros, 2011.  
 RAND RR990.5.9

Figure 5.10  
Afternoon and Overnight Services at Primary Health Care Centers



SOURCES: Duhok DOH data; Wahab and Petros, 2011.  
RAND RR490-5.10



ing cases. Dr. Moore also met with the Minister of Health and his team to discuss the specifics of the ongoing investigation and offer specific suggestions to them.

## Conclusions and Recommendations

The KRG made important strides in enhancing its primary care system during 2012. In particular, the establishment of a standardized package of services and corresponding staffing and equipment appropriate for each level of health center provides targets for health planners and managers. The MIS measures specific features of staffing, equipment, and services at each center and thereby enables informed decisions by managers. The early data, mostly from Duhok, suggest many opportunities for the KRG to clarify policy or improve practice, as indicated by the following questions:

- Is the large variability in number of people covered by different centers acceptable, or should this be better standardized as a matter of policy and practice?
- What centers should offer afternoon or overnight services?
- What should the physician and nurse staffing pattern be in different types of centers (i.e., how many physicians of what type, how many nurses with what level of training), and how can distribution of these professionals be improved?
- Which centers should have at least one dentist? Which dental services should be offered?
- Which centers should have X-ray equipment? How can the DOH or MOH ensure that X-ray equipment remains functional?
- Which centers should have a laboratory? What laboratory tests should be offered? What equipment is essential for these laboratories? How can the DOH or MOH ensure that equipment remains functional?
- Which centers should have a pharmacy? What drugs should be available?
- Which centers should have at least one computer? How many computers should such centers have? How should computers be used, and by whom?
- How can the DOH or MOH help ensure that all centers offer the full range of services appropriate to their level (e.g., main centers, sub-centers)?
- What is the best way to introduce chronic disease screening and simple management in centers that do not presently provide these services (e.g., screening and management for diabetes, hypertension, mental health disorders)?

It will be important to fully institutionalize the new KRG primary health care MIS that we developed so that it becomes routine—easy to collect, process, and present data—and is used by managers and planners at all levels from district to governorate to region. The system can also be used within the context of the large U.S. Agency for International Development (USAID)–supported primary health care project, with small adaptations as needed to capture elements in the USAID-supported programming that are not yet included in the new MIS that we developed. We will continue to work with counterparts across the KRI to fully establish the system, transfer all data capabilities, and use the data for routine reporting and management purposes. The KRG may also wish to take a similar systematic approach to enhancing other health data systems, notably those for public health surveillance, hospital and health center

utilization and costs, and electronic health records. RAND has the expertise and experience and stands ready to collaborate with the KRG in these areas.

## Quality and Patient Safety

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### Introduction

For the past two years, RAND has worked closely with the MOH and the MOP to examine ways to improve the health care system in the KRI. Last year, this work culminated in detailed briefings and a report titled *The Future of Health Care in the Kurdistan Region—Iraq: Toward an Effective, High-Quality Health Care System with an Emphasis on Primary Care* (Moore et al., 2012). Also, in February 2011, RAND participated in the International Congress on Reform and Development of the Health Care System in the Kurdistan Region.

After discussions with colleagues at this meeting, and with input from the MOH and MOP, the MOH asked RAND to conduct an assessment of overall health care quality and patient safety in the KRI and to develop an approach for enhancing quality and safety. This chapter describes that assessment. It also lays out the elements of a potential quality improvement plan, with the overarching goal of ensuring that the residents of the KRI are afforded the safest possible health care, consistently with international standards for safety and quality.

The research focused on improving the safety of health care services for individuals requiring and seeking care in the KRI's hospitals and related acute-care facilities (e.g., accident and emergency care). Our discussion is based on site visits and discussions with officials, health care managers, and care providers in Erbil, Duhok, and Sulaimaniya. However, although it is appropriate to focus initial efforts on hospital providers of care, it will be important to ensure that the long-range focus incorporates increasing quality of care throughout the health care system, including services provided in PHCs and other ambulatory venues.

### The U.S. Institute of Medicine's Six Domains of Health Care Quality

The RAND team assessed patient safety and quality in the context of the six domains of health care quality articulated by the IOM in 2001, expressed in the influential publication *Crossing the Quality Chasm: A New Health System for the 21st Century* (IOM, 2001). Specifically, the IOM framework identifies the following domains (see also Figure 6.1):

- **Safe:** avoids harm to patients from the care that is intended to help them
- **Effective:** provides services based on scientific knowledge to all who could benefit and refrains from providing services to those not likely to benefit (avoids underuse and misuse, respectively)
- **Patient centered:** provides care that is respectful of and responsive to individual patient preferences, needs, and values and ensures that patient values guide all clinical decisions

**Figure 6.1**  
**IOM Six Domains of Health**  
**Care Quality**



RAND RR490-6.1

- **Timely:** reduces wait times and sometimes-harmful delays for both those who receive and those who give care
- **Efficient:** avoids waste, including waste of equipment, supplies, ideas, and energy
- **Equitable:** provides care that does not vary in quality because of personal characteristics, such as gender, ethnicity, geographic location, and socioeconomic status.

## Initial Findings from Our Quality Assessment

Kurdistan’s health care professionals understand the importance of quality and safety in health care. Given the tradition of excellence that previously existed in the region, those providing care recognize many of the limitations in their ability to deliver care in the current practice milieu. That observation, consistently found in hospitals in all three provinces within the region, is an important one. When it comes to driving change and improvement, the biggest enabler (and potentially the largest opposition) is the cadre of professionals who will be involved in the change and responsible for “owning” the future health care delivery system.

In our discussion, we focus on the overall quality of patient care in Kurdistan’s hospitals. Most of our visits were to public facilities; however, the need for improving safety and quality applies to all facilities. The challenges in both the public and private sectors differ, but the principles and attention to the key domains of quality apply equally to both sectors. For example, major hospitals in the public sector are older than those in the private sector (which are also smaller) and probably older than smaller public sector hospitals (such as district level general hospitals and specialty hospitals), and physical plant infrastructure is more of an issue in the older facilities than in some of the newer hospitals. However, ensuring that the infrastructure is sufficiently robust to provide care consistent with national and international quality standards must be a priority irrespective of when the physical building was erected.

Given the current state of health care delivery in the KRI, an explicit assessment against each of the IOM goals was not possible. However, some initial specific efforts are beginning in some domains of quality (e.g., safety). By contrast, DP as it exists in the region creates a system

that is not equitable for all patients, encourages inefficiencies in the delivery of care, and challenges the combined public and private systems (mostly the public system) when attempting to provide timely care. Because physicians have split loyalties between their public and private practices, the delivery system that exists is more provider-centric than patient-centric.

### **Specific Quality Improvement Efforts**

During visits in Erbil, Duhok, and Sulaimaniya, we observed specific initiatives that clearly reflect an interest in improving safety and quality. For example, in Rizgary Teaching Hospital, we heard about initiatives to improve infection control through better hand washing. Efforts to improve this critical aspect of infection control were being deliberately designed to address multiple stakeholders, including doctors, nurses, and pharmacists, working together to change practice.

Perhaps the most specific patient safety intervention about which we learned was the plan to conduct a standardized patient safety survey in Duhok at Azadi Teaching Hospital. The hospital had plans to conduct the Agency for Healthcare Research and Quality Survey on Patient Safety Culture. Duhok is using a version that has already been translated and used in other countries in the Middle East. Although still in the planning and initial measurement stages, this initiative will provide an effective baseline from which to measure further changes and improvements in quality and safety.

Because this survey has been validated, the KRG will be able to benchmark patient safety and quality in the KRI against other systems in the geographic area. Through this initiative and others, it will be possible to learn from providers with best practices to implement similar changes in Kurdistan. Health care leaders throughout the region should take the opportunity to learn about the challenges and successes with conducting the survey at Azadi Teaching Hospital and develop plans to conduct a baseline survey at all major facilities throughout the region, including private facilities, to the extent possible.

Informal discussions with current practitioners at hospitals in Erbil and Duhok suggested that, although many safety practices were known, neither the infrastructure nor the common practice existed to follow safe procedures consistently. For example, when speaking to several individuals engaged in the practice of anesthesiology, we were told that patient identification practices were not consistently followed, although providers were well aware of appropriate initiatives in Australia, the United Kingdom, and the United States. We also learned that, when adverse events occurred, there was no systematic approach to identify the root causes for error. Rather, the usual response was to identify who was responsible for the error and define the extent to which responsibility should be assigned to individual practitioners. Little emphasis was given to system causes of error, even though studies repeatedly show that most errors reflect a weakness in the system that causes well-intended individuals to negligently harm patients.

We also learned that progress is being made with respect to patient rights. Efforts are under way to ensure that patients understand both their rights and their responsibilities when seeking health care services. But there is a sense that informing patients and providers about rights and responsibilities is not sufficient: Enforcing patient rights requires a law for backup. We were informed that the public requested a law on patient rights and rules and that the parliament is leading the effort to pass this legislation. The document has been drafted and is currently being reviewed by the MOH.

Ensuring that patients understand their rights and responsibilities is consistent with the patient-centeredness domain of the IOM's quality domains discussed above. Informed by dis-

cussions with the MOH, we understand that the law would provide a basis for patients (and potentially providers) to take legal action when they feel that their rights have not been upheld. The laws articulate a pathway for individuals to seek legal recourse when their rights are violated. However, the RAND team strongly believes that it is more important to identify pathways for future improvements to ensure that there are fewer instances in which patients or others feel the need to turn to the legal system for resolution. Specifically, as the KRI develops a safer, high quality health care system, the number of situations in which patient rights are compromised should consistently decline.

### **Lack of a Strategic Plan for Achieving Patient Safety**

We observed specific initiatives in Kurdistan’s hospitals designed to enhance patient safety, and specific legislation intended to protect patient rights. However, *what was lacking was a consistent, organized plan for improving the quality and safety across all health care facilities*. Most efforts, although both admirable and contributory to the overall increase in quality of individual facilities, appeared to depend on the initiatives and desires of specific individuals within isolated hospital systems.

The focus on quality and safety is important to all who seek care within the region. Future efforts must focus on developing an infrastructure and system that capitalize on the enthusiasm of those already engaged in improvement activities while driving similar and consistent practices as a regional goal, within both the public and private sectors. The infrastructure must include mechanisms to specifically set quality improvement goals and objectively measure progress toward those goals. Establishing measurement quality improvement goals, informed by the quality domains, would allow KRG leaders to drive improvements in health care delivery. The next section maps a pathway forward to strategically develop a plan.

## **The Way Forward**

Additional meetings and visits to public and private facilities throughout the region confirmed the findings suggested by the examples noted above. Specifically, providers generally strive to provide the best possible patient care but recognize many of the constraints that currently exist in the system. We heard of supply-chain challenges across the public system, both in hospitals and in ambulatory care settings. Processes of care and physical plant layouts, particularly in older facilities, are not conducive to optimal delivery of patient care.

Although there appears to be adequate staffing in most public facilities, concerns exist regarding the training and competency of many of the staff currently holding patient care-related positions. Quality health care depends on a trained and competent workforce. Patient safety and quality concerns abound when staff are inadequately trained to provide care consistently with accepted standards. The public system is also challenged by the competing interests of its professionals. For example, physicians are encouraged to become part of the public health system as a way to attain long-term personal financial security. However, they have mixed allegiances and spend much more time in the private sector, in which immediate earnings are considerably higher. This DP phenomenon and the challenges it poses to other essential health care reforms were discussed in detail in Chapter Four.

Achieving the quality and safety vision of the KRG leadership will necessitate restructuring the health care system with a focus on optimizing quality. Simultaneous changes in the

financing of health care with standards for safety and quality would ensure that incentives are aligned to optimize care delivery. Further, incentives for quality and safety must ultimately apply to all providers of care, including both the public and private sectors and both hospital and ambulatory care. Patients seeking care anywhere in the KRI should be assured the same level of quality care irrespective of where they choose to receive that care. Because ensuring the safety and welfare of its citizens is the primary role of government, the KRG has prioritized implementing a consistent quality and safety structure across Kurdistan's health care venues.

Informed by our findings and input from the MOH and MOP, we recommend four concrete activities to guide the KRI's health care providers toward international standards. The activities would fundamentally change the structure of and expectations for the health care system. Given the current health care infrastructure, the KRG could begin work on each of these initiatives in the coming year. The first recommendation, which focuses on achieving accreditation for health care facilities, is a phased activity that could begin now, although full implementation should occur in the next five years. The other three recommendations could be implemented in the next year.

### **Recommendation 1: Establish a Regional Leadership Team**

A regional leadership team should be established to help solidify the quality and safety goals of the region. If KRG leaders accept the Joint Commission International model, that would be implemented initially in KRG hospitals. We recommend that five teams, one for each essential, be established to become experts in the content of that essential and the elements within each essential. A potential organizational structure is shown in Figure 6.2. Each team can establish specific goals for hospitals within the region and identify unifying programs and concepts to help facilities reach those goals.

We recommend that the chairs of these five teams become part of a KRG quality health council led by the MOH and MOP. The council would have the following objectives:

- Ensure consistency in recommendations among groups.
- Provide continuity and coordination that would allow identification of strategies that cross essentials.<sup>1</sup>
- Review goals as they are developed to ensure that they address the key quality domains.
- Offer feedback to individual teams to refine their goals and objectives.

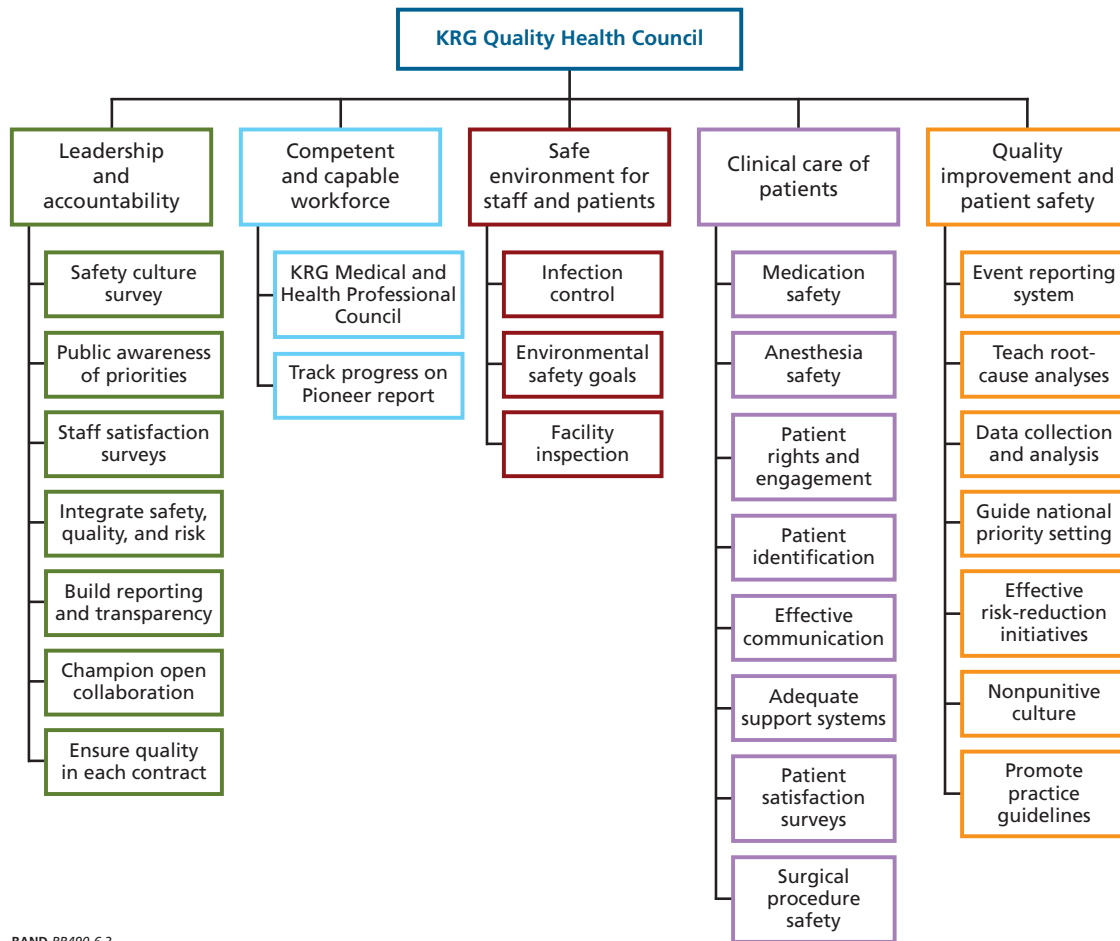
In essence, the KRG quality health council would serve as the quality and safety executive group, with responsibility for ensuring that the key quality domains are achieved by focusing collectively on the five essential components of the model, with the ultimate goal of achieving the quality and safety goals of the KRG.

The organizational chart provides some specific recommendations, consistent with the Joint Commission International Essentials, for each team to address as it begins its discussions. However, initial efforts must focus on those elements, guided by KRG leadership and health care leader input, that are most important to the region. In that spirit, the first meetings of each group should review the recommendations, determine which ones should be adopted first and which may not be appropriate, and suggest additional elements that may be most relevant to

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<sup>1</sup> The term *essentials* is used by Joint Commission International. These essentials can be thought of as major categories under which standards and guidelines are classified.

**Figure 6.2**  
**Potential Organizational Structure for Regional Leadership Team**



RAND RR490-6.2

maximizing quality of health care delivery in Kurdistan. The chair of each team, or a designee, might be appropriate for participation in the practicum (recommendation 3).

### **Recommendation 2: Pursue International Accreditation for Kurdistan Region—Iraq Health Care Facilities**

The KRG should develop an accreditation model for health care facilities that is consistent with internationally recognized standards for health care delivery. Accreditation efforts should begin with hospitals, with later expansion to other health care delivery venues, including primary and specialty care ambulatory facilities.

Hospital accreditation is an external evaluation of hospital competence and quality structures. Accreditation is a process to ensure that a hospital operates at a recognized, accepted, and required level of performance. Once a hospital meets an acceptable level of performance, it is deemed accredited. However, the accreditation *program* should be envisioned as a series of points along the road to quality health care practices.

The focus of accreditation is sustainability of quality health care practices and continuous improvement. Accreditation provides assurances to governments and licensing bodies that



health care facilities and their providers are operating at a recognized and required level of performance, and it provides assurances to those who use the hospital, including clinicians and patients, that the organization is maintaining high standards. Accreditation provides employees with the knowledge that their efforts for maintaining quality are recognized by external peers. Accreditation addresses the long-term sustainability of quality practices. Accreditation standards provide the road map to quality and patient safety.

Accreditation can occur at many levels, ranging from meeting locally developed requirements up to the level of meeting international requirements as developed and cited by the International Organization for Standardization (ISO) in its ISO 9000 (quality management) requirements (see ISO, undated) and related documents (e.g., ISO 9001:2008 [requirements for a quality management system; see ISO, undated] and ISO 15189:2012 [requirements for quality and competence in medical laboratories; see ISO, 2012], and by Joint Commission International (Joint Commission International, 2010), among others.

For many hospitals in Kurdistan, rapidly meeting the full requirements of international standards would be an exceedingly difficult task. (Indeed, this is true for hospitals throughout the world, in both developing and developed countries.) In order to ultimately meet international standards, the KRI should take a phased-in approach to hospital accreditation.

Some components of accreditation include tasks that require a sufficient complement of fully trained and competent staff with a strong working knowledge of quality management issues. Training of individuals is only one component in providing quality hospital services. Training provides a standardized didactic and practical experience to participants. Through training, individuals learn and become acquainted with concepts of quality hospital practices and tools to understand how to implement those quality practices (e.g., standard operating procedures, quality control records).

Countries and regions around the world have developed workable strategies for hospitals and other health care systems to ultimately meet full recognition status, based on the principles of continuous process improvement.<sup>2</sup> The program must recognize the importance of meeting internationally agreed-upon requirements and that strategies exist whereby full recognition could be achieved over a series of graduated, progressive steps such that, within a definable time period, hospitals in these countries could meet the recognized standards for accreditation.

International examples suggest that Kurdistan's hospitals can successfully pursue accreditation, working within the framework of existing national programs, such as the KRG MOH and MOP, with the assistance of knowledgeable content experts. Therefore, we recommend that a strategy be implemented leading to national and international accreditation of hospitals throughout the region. Implementation of the strategy would be phased in over no less than five years and implemented under the auspices of the KRG MOH. Using a phased-in approach to accreditation in Kurdistan will allow all hospitals to start along the pathway to improving patient safety and quality by using a common set of standards developed by internationally recognized experts in health care quality and delivery.

There are many models for accreditation. In this next section, we discuss the Joint Commission International accreditation model because it is internationally recognized and has been well received throughout the Middle East. Further, because so many hospitals and health

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<sup>2</sup> For example, clinical laboratories through the U.S. Centers for Disease Control and Prevention and WHO in Africa as part of the Strengthening Laboratory Management Toward Accreditation program.

**Table 6.1**  
**Middle East Hospitals Accredited by Joint Commission International**

Country	Hospital
Bahrain	Bahrain specialist hospital
Egypt	As-Salam International Hospital, Dar Al Fouad Hospital, Magrabi Eye Hospital
Jordan	Al Essra Hospital, Istiklal Hospital, Istishari Hospital, Jordan Hospital and Medical Center, Jordan University Hospital, King Abdullah University Hospital, King Hussein Cancer Center, Luzmila Hospital, Specialty Hospital
Kazakhstan	National Research Center for Maternal and Child Health
Kuwait	New Mowasat Hospital, Taiba Hospital
Lebanon	American University of Beirut Medical Center, Clemenceau Medical Center
Oman	Muscat Private Hospital, Starcare Hospital
Pakistan	Aga Khan University Hospital
Qatar	Al Khor Hospital (Hamad Corporation), Al-Amal Hospital, Hamad General Hospital, Rumailah Hospital, Women's Hospital
Saudi Arabia	Ajyad Emergency Hospital; Al Hammadi Hospital; Al Imam Abdulrahman Bin Faisal Hospital; Al-Ahsa Hospital; Al-Moosa General Hospital; Almana General Hospital, multiple sites; Dallah Hospital; Dr. Erfan and Bagedo General Hospital; Dr. Soliman Fakeeh Hospital; Dr. Sulaiman Al Habib Hospital, Arrayan; King Abdulaziz Medical City, multiple sites; King Fahad Medical City, Riyadh; King Fahad Specialist Hospital, Dammam; King Faisal Specialist Hospital and Research Centre, multiple sites; King Khaled Eye Specialist Hospital; Magrabi Eye and Ear Hospital, Jeddah; Mouwasat Hospital, multiple sites; Riyadh Care Hospital; Royal Commission Medical Center; Saad Specialist Hospital Saud Al-Babtain Cardiac Center; Saudi Aramco Medical Services Organization; Saudi German Hospital, multiple sites; Sultan Bin Abdulaziz Humanitarian City
Turkey	Acibadem Adana Hospital; Acibadem Healthcare Group, multiple sites; Alman Hastanesi-Deutsches Krankenhaus; American Hospital; Anadolu Medical Center; Ankara Guven Hospital; Medical Park Healthcare Group, multiple sites; Bayindir Hastanesi; BSK Metropark Hospital; Dünya Eye Hospital; Ege Saglik Hastanesi; Florence Nightingale Hospital, multiple sites; Hacettepe University Adult Hospital; Hisar Intercontinental Hospital; HRS Ankara Kadin Hastalıkları Dogum Hastanesi; Kent Health Group; Medicana International Hospital, multiple sites; Memorial Antalya Hospital; Memorial Sisli Hospital; Npistanbul Neuropsychiatry Hospital; Ortopedia Hospital; Ozel Medicana Hospitals, multiple sites; Ozel Pendik Bolge Hastanesi; Sema Hastanesi; Sifa Universitesi Bornova Saglik Uygulama Ve Arastirma Merkezi; TDV Ozel 29 Mayıs Hastanesi; Tobb Etu Hastanesi; Uludag Üniversitesi Saglik Kuruluslari; Yeditepe University Hospital
UAE	Al Ahalia Hospital; Al Ain Hospital; Al Corniche Hospital; Al Noor Hospital, multiple sites; Al Rahba Hospital; Al Salama Hospital; American Academy of Cosmetic Surgery Hospital; American Hospital Dubai; Belhoul European Hospital; Belhoul Specialty Hospital; Canadian Specialist Hospital; Cosmesurge and Emirates Hospital for Day Surgery; Dar Al Shifaa Hospital DOHMS Corporate Hospitals, multiple sites; Emirates Hospital; Emirates International Hospital; Gulf Diagnostic Center Hospital; International Modern Hospital; Latifa Hospital; Lifeline Hospital; Madinat Zayed Hospital; Mafraq Hospital; MEDCARE Hospital; New Medical Centre Specialty Hospital, multiple sites; Oasis Hospital; RAK Hospital; Sheikh Khalifa Medical City; Tawam Hospital; City Hospital; Welcare Hospital; Zayed Military Hospital; Zulekha Hospital, multiple sites
Yemen	Saudi German Hospital

systems in the geographic region have already sought accreditation (Table 6.1), there are colleagues in neighboring countries who can serve as resources for Kurdistan's health care leaders.

The Joint Commission International accreditation program defines five essentials for health care quality and safety. These requirements are consistent with the goals for the health care system that have been articulated by Kurdistan's providers and leadership. The essentials

provide a framework that is consistent with international patient safety and quality goals. Accepting these requirements and working toward meeting all relevant standards establish a pathway for each facility to ultimately achieve accreditation. Parallel standards exist for ambulatory care practices, freestanding clinical laboratories, and long-term care facilities.

The five essentials that make up the framework for accreditation are as follows:

- Leadership process and accountability
- A competent and capable workforce
- A safe environment for staff and patients
- Clinical care of patients
- Improvement of quality and safety.

Each essential element has specific criteria that more explicitly describe expectations for a high quality health care delivery system.

***Recommendation 2.a: Establish a Leadership and Accountability Team***

Effective leadership is essential for achieving quality improvement goals. Leadership must be strong throughout the organization, recognizing that senior facility leadership sets the direction for the entire organization, whether public or private. Leadership must be both administrative and clinical. Without the commitment of key leaders to champion change and reward quality improvement, efforts to improve quality and safety will be very slow at best.

In addition to local hospital leadership, it is critical for directorate and KRG health care leaders to set national expectations for quality and safety while encouraging each facility to learn from the best practices of neighboring and regional facilities providing similar services.

The following are the basic requirements for the *leadership process and accountability* essential of the accreditation framework. Not all requirements are applicable to all hospital settings; however, they provide a framework for hospital leadership to gauge their organization's leadership structure.

- Each organization develops a structure that identifies responsibilities and accountabilities.
- Quality and safety leaders are clearly identified and known throughout the system. Leaders are educated about their roles and responsibilities.
- There is open collaboration throughout the organization.
  - A mechanism is defined to collaborate and set policies and procedures supporting quality and patient safety and to promote daily cooperation among all providers responsible for patient care.
  - Safety and quality activities are reported to the organization and to the MOH each year.
- Quality is part of every contract for clinical and support services and serves as a criterion for future renewal.
- Quality, patient safety, and risk management are integrated specifically because they are interrelated components of the overall quality proposition.
- The organization complies with all applicable laws and regulations (Iraq, KRG, governorates).
- There is a commitment to patient and family rights.
  - Staff respect and protect these rights in the health care process.

- Every member of the health care team seeks to understand patient satisfaction with care processes, in part to respect their rights.
- High-risk clinical procedures and patients are identified.
  - Policies and procedures are developed to guide care of high-risk patients and of patients undergoing the highest-risk clinical procedures.
  - Adherence to policies and procedures is monitored to get information for improvement in staff training and policy and procedure use.
- Patients’ rights are observed when patients are involved in research.
- Appropriate oversight of tissue donation and transplantation is ensured.

**Recommendation 2.b: Establish a Workforce Team**

Patients seeking care in Kurdistan’s health care systems assume that the professionals providing care are competent and capable. They assume that the organizations from which they receive care provide an environment that promotes safe and effective care. Patients also assume that the health care organization has effectively reviewed a provider’s credentials before appointing him or her to the staff. Oversight includes supervision of individuals in training and new hires who are unfamiliar with local practices.

However, interviews with health care leaders suggest that many individuals providing care and those providing ancillary services lack the necessary education, training, and experience to do their jobs effectively. The “Iraq Public Sector Modernization Health Sector Assessment and Functional Review Report” (Iraq Ministry of Health, 2012) suggests that, although care in the KRI is better than that in most areas in Iraq, the plan for human resource development remains an ongoing challenge.

The KRG has already received guidance from Pioneer Healthcare Services on creating a structure to ensure the competency of Kurdistan’s health care professionals. Organization of the KRG medical and health professional council as outlined by Pioneer and adopting its guidance to ensure the initial and ongoing competency of Kurdistan’s health workforce should be a top priority. Pioneer’s report provides guidance for how to structure the KRG’s professional licensure and competency programs. Specifically, the region must take responsibility for establishing professional licensure requirements that are consistent with international standards for education, training, and experience. KRG requirements for continuing professional development as a criterion for relicensure at a specified frequency (e.g., every two years) should encourage continued growth of a competent workforce within the region.

The Pioneer report provides guidance to health care organizations to structure their own processes for peer review and competency assessment. This is an important aspect to ensure a quality health care system for the region going forward.

The following are the basic requirements for the *workforce* essential of the accreditation framework. Although not all requirements apply to all hospital settings, they provide a framework for hospital leadership to gauge their organization’s commitment to workforce improvement. Once focus expands to include ambulatory care, similar considerations apply.

- All staff have personnel files describing their credentials, privileges (as appropriate), competencies, and the results of annual evaluations.
- There is a peer-review process to review physician credentials and competency.
- There is a process to review nurse credentials and competency.
- Credentials and competency of other care providers are regularly reviewed.

- Staff members are oriented to their jobs. This involves orientation to where things are, how things work, and steps to ensure safe care.
- There is constant trainee oversight and supervision in Kurdistan's teaching hospitals.
- Those at the front lines know how to resuscitate patients (basic, advanced, cardiac life support).
- Staff are educated and competent in infection-control and prevention practices. Strategies address, for example, hand washing and waste disposal.
- There is effective communication among staff, including physicians; when a patient's care is transitioned to another provider, the handoff is clear.
- There is a process to ensure that staff know how to maintain their health and safety.

**Recommendation 2.c: Establish a Safe Environment of Care Team Within Each Facility**

Provision of quality care requires an environment that ensures that staff, patients, and visitors are not at risk of harm from the facility or facilities where care is delivered and received. Interviews with health care providers at facilities, particularly in Erbil, suggested that attention to the environment of care is variable. Professionals reflected that, when there was reasonable investment in the region's health care infrastructure, before the under-investment during the Saddam era, facilities were well maintained and in good repair. With restricted investments, attention to structural quality measures has not received appropriate attention.

Fortunately, health care professionals with whom we spoke all recognized the challenges they face, and many expressed a desire to see change and a willingness to participate in driving it. We heard that newer private hospitals were better, given the more recent construction; however, every health care leader with whom we spoke acknowledged that increased attention to environmental quality was needed at all facilities.

The following are the basic requirements for the *safe environment for staff and patients* essential of the accreditation framework. Not all requirements are equally applicable to all hospital settings; however, many do apply. They provide a framework for hospital leadership to gauge their organization's commitment to a safe environment for patient care.

- Buildings are inspected to identify risks to patients, staff, and visitors and to plan for reducing the risks and continuously improve the safety of the care environment.
- There is a list of hazardous materials in the organization and a plan for their safe handling, storage, and use. Hazardous materials are appropriately labeled, and there is a plan to address any handling or storage mishaps.
- There is a program to ensure that all occupants of the health care facility are safe from fire, smoke, and other emergencies.
- There is an inventory of all medical equipment, and qualified individuals provide appropriate inspection, testing, and preventive maintenance of the equipment.
- Safe drinking water and electrical power are continuously available to meet essential patient care needs.
- There is clear coordination and attention to infection-control processes.
- There is a hand hygiene program to reduce nosocomial infections.
- Gloves, masks, and other protections are properly used when needed.
- Staff understand how to properly dispose of (and not reuse) sharps (e.g., needles, scalpels) and infectious waste of all kinds.

**Recommendation 2.d: Establish Local Teams Focusing on the Clinical Care of Patients**

This component of the accreditation framework emphasizes coordination of care among all the stakeholders providing care. As health care becomes increasingly complex, and as care in Kurdistan returns to world-class standards, there will be an increasing need for coordination and focus among health care providers, communication between organizations in which practice occurs, and attention to safe practices. When we first began discussing safety and quality with leaders throughout Kurdistan, we initially focused primarily on the need to provide safe clinical care. However, following discussions with leaders throughout the region, we have expanded our discussion of patient safety to include all IOM components of quality, recognizing that patient safety in the clinical care of patients can be achieved only when there is a holistic approach to improving the delivery of care.

The following are the basic requirements for the *clinical care of patients* essential of the accreditation framework. As is the case with other framework essentials, not all requirements are applicable to all hospital settings; however, most requirements are applicable, and they provide a framework for hospital leadership to gauge their organization's commitment to delivery of safe and effective patient care.

- There is a process to ensure that a patient is correctly identified each time he or she interacts with a member of the health care team, including when a patient is undergoing a procedure or receiving medications or blood products and when patient specimens are collected. Two patient identifiers should be used to identify each patient.
- Informed consent is obtained from a patient before he or she undergoes any procedure or treatment that carries significant risk. Inherent in this element is that patients and families are sufficiently educated about options to make informed decisions about their care.
- A patient receives an assessment from his or her physicians and nurses that is sufficiently timely to inform subsequent processes of care.
- Clinical laboratory services are readily available and provided by individuals with sufficient training and expertise for the scope of testing provided. This should ultimately include certification of laboratory personnel, such as that adopted in 2012 by the Health Authority of Abu Dhabi for laboratories in that emirate. Laboratories establish reference ranges and validate tests consistently with good laboratory practice.
- Diagnostic imaging services (e.g., X-ray, ultrasound) are available and provide the scope of services necessary for patient care provided in the organization. This should ultimately include certification of radiologic technicians, as is done in some countries throughout the world. There is a focus on radiation safety standards when delivering care.
- Care is well documented so that the written record effectively communicates to all involved in patient care the details of care that has been received and plans for subsequent care.
- Patients who need anesthesia and sedation receive safe and effective care, including receiving the lowest level of anesthesia and sedation required to provide needed care at the lowest risk. Inherent in this element is the requirement that those providing anesthesia services are competent to do so.
- Surgical and other invasive services are appropriate to the patient's needs and based on a thorough assessment of the patient's condition. Both during and after surgical services, the patient is closely monitored to ensure stability.

- Medications are used consistently with safe medication practices. Only those providers shown to be competent prescribe, prepare, and monitor patients receiving medications. Extreme care is taken to ensure that the right medications are provided to the right patients at the right times.
- Patients and families (to the extent appropriate, based on family dynamics and customs) receive the necessary education on the care that is planned so that they can participate to the greatest extent possible in the patient's care and in the oversight of safe practices.

**Recommendation 2.e: Establish a Quality and Safety Team**

As they made clear in all discussions with the RAND team, Kurdistan's providers recognized that the care patients receive, particularly after the years of neglect in recent decades, was not at a level that was consistent with international quality standards. This recognition that health care systems are far from perfect is perhaps the most critical concept in the quality improvement framework. As the quality agenda is developed, the focus should not be on instantly achieving perfection; rather, the KRG and providers in the region must adopt a philosophy of continuous improvement. If the initial goal is perfection, most organizations will fail; that is certainly not the intent or goal of quality improvement. Once the focus becomes making the next day better than the previous one, then ultimately realizing international standards of quality becomes achievable.

The following are the basic requirements for the *quality improvement* essential of the accreditation framework. Most requirements apply equally to all hospital settings, and they definitely provide a framework for hospital leadership to gauge their organization's commitment to improving the quality of care.

- Each organization has an adverse-event (incident) reporting system in which providers can identify adverse or potential adverse events.
  - There are clear definitions for adverse events.
  - Providers feel safe in identifying adverse events in a nonpunitive environment.
- Events are analyzed regularly using a root-cause analysis approach to identify risky situations. Significant risks are addressed through appropriate risk-reduction strategies. Serious single events (e.g., death, major injury) should be handled as sentinel events and are examined immediately; any needed corrective actions are quickly implemented.
- High-risk processes and high-risk patients receive special attention so that appropriate monitoring can be performed to mitigate risks to the greatest extent possible.
- Organizations measure patient and family satisfaction with care and take steps to improve experiences with care and the people who provide the care. Patient perceptions of both safe and unsafe practices can be useful in guiding performance improvement efforts.
- Organizational leadership measures staff members' satisfaction with their leaders, recognizing that, when staff feel empowered, educated, and protected from inadvertently causing patient harm, their ability to provide optimal and safe care is dramatically enhanced. Providers at the front line of providing care often know key system weaknesses; when they feel safe identifying them to leaders, opportunities exist to reduce unsafe practices before they cause harm.
- Each organization has an easily accessible system whereby patients and families can voice complaints or concerns with the quality of care provided. Complaints are analyzed and

addressed. They often can serve as the harbinger for unsafe practices. Even if no issue is identified, feedback to those with concerns dramatically improves satisfaction with care.

- The organization and those providing care within it use appropriate clinical practice guidelines, pathways, and standards to determine the optimal course of care for each patient. International guidelines and pathways may need to be adapted for use in Kurdistan; however, the evidence for adaptation should be considered when making any necessary changes.
- Staff are educated in the principles of process improvement and understand their roles in continually improving care.
  - Staff are comfortable identifying opportunities to improve care and suggest strategies to optimize care.
  - Leaders create an environment in which all recognize that everybody owns quality. Although a quality improvement team can facilitate the process, the responsibility for achieving success in quality improvement must be seen as everybody's responsibility.
- Organizations measure outcomes of care and compare their outcomes with benchmarks from regional and international providers. As performance improvement efforts continue, local outcome metrics will show evidence of the success of those efforts that can be reported to the KRG and to the public.
- Patient safety and outcomes are communicated to staff and to the public. A credible performance improvement program increases staff pride in providing care and public confidence in receiving care.

### **Recommendation 3: Examine Accredited Hospitals to Learn How They Achieved Success**

Table 6.1 shows the many hospitals in the region that have attained Joint Commission International accreditation. The fact that many hospitals and hospital systems have adopted the Joint Commission International accreditation model confirms that such a model is both achievable and culturally appropriate. We would be happy to arrange for regional health care leaders and government policymakers to visit several facilities throughout the Middle East. The visits would have the following objectives:

- Understand the strategies that hospitals and countries have used to encourage accreditation.
- Determine the amount of effort and time that facilities required to achieve accreditation.
- Appreciate the value that accreditation brings organizations in terms of patient safety and quality of care.
- Begin to develop a network of colleagues within the geographic region who can provide support and guidance, given their similar commitment to the values of excellence in patient care.

### **Recommendation 4: Attend a Joint Commission International Practicum Program**

In a Joint Commission International practicum program, international and regional health care leaders present a hands-on educational program that solidifies participants' understanding of requirements and strategies. The program actually engages participants in the accreditation survey process of a participating hospital where the practicum is located. We recommend that the team from Kurdistan include regional government leaders and hospital leadership from two or three selected hospitals that commit to be the first to work toward accreditation. There



is an advantage to including individuals from teaching institutions, particularly those that have already started examining their commitment to quality (e.g., Azadi Teaching Hospital). Practicum participation would have the following objectives:

- Understand the specifics required to achieve accreditation using one set of standards.
- Acquire the necessary education regarding the process to effectively plan for implementation in the region.
- Develop a cadre of professionals who can train others on the principles of accreditation and the strategies for achieving the goal.
- Network with other health care providers and facilities that are adopting similar practices.

Joint Commission International sponsors regional practicum programs worldwide. Ideally, KRI professionals would participate in a program that is geographically close to Kurdistan, both to facilitate travel and to increase the likelihood of meeting more colleagues who can serve as relatively local resources. Although the locations of programs vary from year to year, it may also be advantageous to attend a program in a country where Kurdistan has contacts and consultants (e.g., Singapore).

## **Conclusion**

The set of initiatives we have recommended is ambitious. However, as was clear in our discussions with both the governmental and provider communities, the desire to improve Kurdistan's health care system is genuine and strong. A stepwise accreditation model, focusing on what is important and relevant to the people of Kurdistan, will have a visible and meaningful impact on both Kurdistan's providers and the citizens of the region.



## Summary and Conclusions

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This report summarizes our analysis of three distinct but intertwined health policy issue areas: financing, primary care, and quality and patient safety. The Minister of Health and the Minister of Planning selected these as areas of particular concern to the KRG as it continues to improve its health care system. We examined each issue, reviewed the relevant literature, explored the issue in discussions with key stakeholders, developed and assessed various policy options, and developed plans or approaches to overcome barriers and achieve stated policy objectives. In the area of primary care, we helped to implement a new MIS.

In the health care financing policy area, we developed a road map and strategy to guide health financing reform over the next decade. The road map laid out a two-phase approach that, in the next five to seven years, would lead to an effective and efficient A-NHS and eventually could lead to an SHI system.

We identified prerequisites, as well as policy actions, needed in each phase to achieve the established objectives, with a focus on phase I. In phase I, prerequisites of change included improved data systems, a modernized MOH, improvements in the quality of care in the public sector, issuance of health cards, and establishment of an organizational structure to manage the new structure. We also presented policy actions to be taken in the relatively short term, including establishing an NHS system funded by the KRG budget, as well as implementing a wage tax on salaried employees (those working in government service or for large firms). Employers of foreign workers would be required to pay the full actuarial costs of their insurance. Other policy actions include explicitly defining the package of publicly supplied health benefits to which the government obligates itself, hospital sector reform, and policy changes related to physicians who practice in both the public and private sectors.

If KRG policymakers decide to embark on further reform and implement a social insurance system, the report lays out how, at the end of phase II, a functioning SHI system could be established. SHI would be funded from revenues received from a wage tax, insurance premiums, and co-payments. An SHI agency would be responsible for developing payment policies, processing claims, and paying providers for the services they render. In both phase I and phase II, supplemental private insurance would be encouraged to supplement payment for uncovered or not fully covered services in the public sector and to help individuals spread their risk should they decide to use the private sector.

The term *DP* refers to the present practice in the KRI in which physicians, who are paid a salary to work in the public health sector, work only a few hours in the public hospitals before leaving for private practices each day. Physicians are also guaranteed a pension whose sum is not related to the amount or quantity of care they provide. After a detailed assessment, we concluded that DP in the KRI was inefficient and costly. It robs the public sector of the manpower

it needs to fulfill its obligations and is ultimately a significant barrier to overall financing and hospital reform.

The report describes policy options for addressing the challenges associated with DP and examines the options from a variety of perspectives, including effects on the supply of physicians in the public sector, ease of implementing new policies, regulatory complexity, quality of care, efficiency, and equity. After presenting the ramifications of alternative policies, we recommended a feasible approach to address the DP issue immediately—specifically, do not allow physicians to work in private practice until they have served three to five years in the public health sector, link wages to the number of hours worked, and reform physician pensions to link payouts to years of service. A year of service would need to be defined and linked to the amount of service provided in the public sector.

In the longer run, when better data systems are operational and hospital reform is complete, our plan envisions incorporating quality of care or procedures performed as variables so that a comprehensive pay-for-performance policy could be established. The discussion also calls for hospital reform and hospital management training programs.

In the area of primary care, we built on our extensive work of the past few years to begin implementing change. Drawing on our earlier research and experience, we developed primary care targets/benchmarks: recommended staffing, equipment, and a suggested list of services that we proposed should be the standard services offered at each type or level of health center. The recommendations for staffing, equipment, and services were vetted among health policy leaders in the KRI before being finalized. The Minister of Health accepted these as new MOH policy, had the document we developed translated into Kurdish, and disseminated it to the DGs of all governorates to use as their planning targets.

To support implementation of the policy, we developed an MIS so that the MOH could determine which health centers have the specified staffing and equipment and are providing the expected services; the MIS also provided tools for ongoing policymaking in a variety of areas. We developed and pilot tested the data form, revised it based on testing in Duhok and in-depth discussion with representatives from all general directorates, and began to implement it with the assistance of the MOH and DOHs in all governorates. The MOH translated the form into Kurdish and sent it to all DOHs for data collection. As of late November 2012, only Duhok had submitted completed data, but data were pending from the other governorates.

This report presents selected tables and graphs mainly from the Duhok data to illustrate how these data constitute a usable policy and management tool. The data enable the KRG to compare the standards of service with existing services, thus giving the MOH and DOHs a powerful tool to help manage primary care and guide policy reform.

We also provided some limited technical assistance to the MOH as it was dealing with the October 2012 cholera outbreak in Sulaimaniya.

Finally, we conducted an initial assessment of patient safety (a vital dimension of overall quality of care) in public hospitals in the KRI. The analysis showed that some real progress has been made in the past five years in improving quality, but much more would need to be done to bring the KRI up to international standards. Utilizing the landmark framework developed by the IOM in the United States, the report lays out an approach for proceeding in the broader quality arena. The approach would include hospital licensure by an internationally recognized body, such as the Joint Commission International, and better physician accreditation standards, including standards for continuing medical education, patient rights, and procedures for dealing with medical errors.

Although we have looked into different aspects of the health care system—financing, DP, quality, and information systems—it should be recognized that they are mutually reinforcing. For instance, without the information proposed to be collected in the MIS, it is hard to imagine the KRG successfully managing complex changes in finance. Improved practices for DP and quality are both important factors that must be implemented concurrently or before financing changes for policy success.

In these three policy areas, we have recommended specific, practical, achievable policy reforms. If fully adopted, the reforms would have a significant impact on improving health care in the KRI in the next several years and would provide incentives in the system that would lead to higher quality and greater efficiency in health care for all KRI residents.



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OBJECTIVE ANALYSIS.  
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**Kurdistan Regional Government**  
**Ministry of Planning • Ministry of Health**

In 2010, the Kurdistan Regional Government asked the RAND Corporation to help guide reform of the health care system in the Kurdistan Region of Iraq. The overarching goal of reform was to help establish a health system that would provide high-quality services efficiently to everyone to prevent, treat, and manage physical and mental illnesses and injuries. This report summarizes the second phase of RAND’s work, when researchers analyzed three distinct but intertwined health policy issue areas: development of financing policy, implementation of early primary care recommendations, and evaluation of quality and patient safety. For health financing, the researchers reviewed the relevant literature, explored the issue in discussions with key stakeholders, developed and assessed various policy options, and developed plans or approaches to overcome barriers and achieve stated policy objectives. In the area of primary care, they developed and helped to implement a new management information system. In the area of quality and patient safety, they reviewed relevant literature, discussed issues and options with health leaders, and recommended an approach toward incremental implementation.

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