

Human Resources for Health

Workforce Analytics for Design and Planning Report

OMAN: AN HRIS SUCCESS STORY



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Through the initial multi-country review Oman was identified for its exemplary investments in HRIS and data use, planning, and management practices.

Oman's investment in its health system was spearheaded by high-level leadership at the Ministerial level from the early 1970s; since independence, health system decision makers have relied on data for health system planning and development (Ben Halim, 2020). The foundation of the health system was a strong paper-based system and data use. Initially, all health information and HRH systems were manual and then databases were moved to Microsoft Excel and Access, with a gradual shift toward automation.

Systems in Place

There are currently three main information systems in Oman relevant to HRH: Mawred, Al-Shifa, and InfoBank. Work is currently underway to link Mawred and Al-Shifa and create interoperable systems, leading to a single, unified system for HRH. InfoBank will be abandoned once all data elements can be extracted from the integrated system. The unified system will eventually include data from other sectors relating to the health workforce, such as the private sector and universities (Elhadi, 2007).

Mawred was developed by the Ministry of Civil Service in 2007, designed for use across the whole public sector. The MoH (at the central level) began using the system in 2011. Mawred was developed to ensure that HR data are available in one database and organized by ministry. Each ministry implements Mawred according to its needs, and there is a committee responsible for implementing Mawred in each governorate. A Health Committee in the MoH is working to further customize Mawred with the Ministry of Civil Service to ensure that health workers are accurately classified by occupational title. By 2030, the MoH plans to rely totally on Mawred for its HR management needs.

Al-Shifa is a comprehensive HIS developed by the MoH in 2000, primarily to capture service delivery statistics (Al-Garbi, 2015; Khan, 2017). It was created to replace the paper system previously used by the MoH to manage its facilities, including HR, equipment, and supplies. A variety of MoH staff and end users participated in an iterative process with the Directorate of IT to design and maintain the system. Implementation began in a tertiary hospital in Muscat, progressed to secondary care facilities, and then was expanded to primary care facilities. As the system continued to evolve and develop, implementing the WISN process highlighted data challenges with Al-Shifa and users documented needs and recommendations to improve Al-Shifa in official letters. Task

BEST PRACTICE: COVID RESPONSE

During COVID-19 the Minister of Health, via his phone, knows where all staff are working, where each COVID patient is hospitalized, and how many beds and supplies are available.

NOTES ON REPLICABILITY

While the drivers of system development in Oman are unique, the technical progression of the system is potentially replicable (from a paper-based system toward an integrated system). Tracking the system development provides a sense of direction for other countries with different HRIS maturity levels.

forces were established to determine processes for implementing recommendations. It is currently in use across all facilities and includes fully integrated and accessible electronic medical records (EMR) for patients, e-referrals, and e-notification for disease surveillance. An IT Committee, comprised of secondary and tertiary care providers, provides feedback on all new requirements (e.g., forms, modules) and priorities for Al-Shifa.

An overview of Mawred and Al-Shifa is summarized in Table 8 on the following page.

Table 8 - System Overview

SYSTEM	MAWRED	AL-SHIFA
Year Developed	2007, used by MoH since 2011	2000
Lead Ministry	Ministry of Civil Service	Ministry of Health (run by Health Information and Technology Department)
Users	Multiple ministries in Oman (including MoH). At MoH, the Directorate of Administration is the main user	MoH users (e.g., healthcare providers)
HRH Functions Supported	Pre-service education, registration and licensure, payroll information, personnel actions, in-service training, attendance, performance	Registration and licensure, staffing gaps and needs, in-service training, workforce exit/attrition, attendance (in addition to electronic patient, supply, and equipment management functions)
HRH Data Elements	Staff name, staff ID number, specialty, nationality, gender, age, education details, types of training received, emergency leaves, annual leave, supporting documents (e.g., curriculum vitae), payroll, evaluation, exit/attrition	Each healthcare worker has an account in Al-Shifa (captures all administrative data from interview to retirement), workload, all data on patient care (e.g., case files)
Decisions Supported	Establish the number of health workers in a health facility (e.g., total number of cardiologists in a hospital)	To determine the workload (e.g., number of surgeries performed in a hospital)

The MoH Information and Statistics Department also has maintained a parallel mechanism for HRH data collection via standalone Excel sheets, referred to as the Infobank, since 2000. HRH data are manually collected from each health institution every month for the **Infobank** (the data in Mawred and Al-Shifa are updated less frequently). These data are reviewed at the central level and reported in the Annual Health Report, which is then used for workforce planning and decision making. The MoH will shift entirely to using Mawred once the system's data are confirmed to completely align with the InfoBank database. The MoH is in the early stages of unifying data in Mawred and Al-Shifa, so that all data will be available in one system and in-depth analyses can more easily be conducted.

Governance

Oman provides an exemplary case study for HRIS governance. **Governance structures have been established to oversee HRH systems and ensure data are used to support decision making, providing a clear vision and ensuring sustainability.** A central steering committee of health services, chaired by the Minister of Health, meets several times a year to oversee health workforce issues and information systems. Quarterly reports highlighting HRH achievements, challenges, and solutions are presented to the central steering committee, with an emphasis on maintaining performance across all governorates.

Since Al-Shifa was established, a central committee chaired by the Director General for Specialized Medical Care approves all major changes to the system. Every hospital in Oman also has an IT committee responsible for

regular updates and approving minor modifications. Oman's decentralized system of governance has been strengthened by local health managers using data for decision making, and the HIS was built to support this model.

There is engagement with HRH data at the highest levels of government for health systems development. Ministers and secretaries have been invested in planning and establishing health facilities in Oman using data to plan facility location and develop staffing plans. The MoH uses the WISN methodology to guide the establishment of staffing norms across all specialties in hospitals and health centers and monitors key HRH indicators to ensure that health workers are distributed according to the workload at a given health facility.

A major **driver of system development and data use is managing a dynamic expatriate health workforce** while at the same time building up a local health workforce. To address staff shortages and rationalize costs, country leadership allotted resources for building capacity of national staff by sending them abroad to train, reducing reliance on expatriate health workers. HRH data are used to determine the need for post-graduate specialty training and the number of fellowships required for health workers. These decisions are made in **collaboration with the Ministry of Higher Education and the Oman Medical Specialty Board** (Government of Oman). HRH data are also used to identify needs for creating local education programs (e.g., undergraduate programs for cardiology technicians) in collaboration with the Ministry of Higher Education.