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SOCIAL HEALTH PROTECTION PROJECT

SOCIAL HEALTH PROTECTION

PATIENT MANAGEMENT AND REGISTRATION SYSTEM OF THE CAMBODIAN HEALTH EQUITY FUND SYSTEM

Since 2013, the Social Health Protection Project, funded through USAID, has supported the Health Equity Fund (HEF) system and other social health protection mechanisms, which has expanded access to healthcare for 3 million Cambodians.

EXECUTIVE SUMMARY

Cambodia's rapid development has brought myriad benefits to its population, but many poor Cambodians still need support to access health services. By providing financing for inpatient and outpatient health services for 3 million patients at 1,175 health centers and 114 hospitals in 2018, the Health Equity Fund (HEF) as implemented by the USAID Social Health Protection Project has been successful providing access to healthcare, mitigating the negative impacts of illness on millions of Cambodian poor families. The HEF has become a central component of Cambodia's public health care system.

The Social Health Protection Project works to provide services for:

3 MILLION
Patients

at

1,175
Health Centers

and

114
Hospitals

INNOVATION SUCCESSES

The Patient Management and Registration System (PMRS) is an innovative cloud-based health information system that reliably ensures management of patient-level registration and basic clinical data at the health facility and manages monthly HEF payments to health facilities.

- By June 2018 all 114 hospitals that participate in the HEF and 100% of MoH Operating Districts were using the PMRS to manage the HEF in or for their health facilities.
- By June 2018, 88 of 117 hospitals and 176 of 1190 health centers were using the full PMRS for management of HEF and non-HEF patients.
- There has been strong feedback from clinicians and health facility administrators on the value of the PMRS, with 162 additional health centers and 12 referral hospitals across 7 provinces requesting PMRS installation of the full PMRS between January and June 2018.
- The newly semi-autonomous Royal Government of Cambodia (RGC) entity, the Payment Certification Agency (PCA), has committed to continuing use of the PMRS to manage the HEF.

NEXT STEPS

Moving forward, it will be critical that: the PMRS be continually updated to evolve in response to the needs of facilities and clients; data security is assured; there is work to engage and incorporate vertical health programs; and that there is consideration given to increasing the capabilities toward a fully functional electronic health record (EHR).

THE USAID SOCIAL HEALTH PROTECTION PROJECT IN CAMBODIA

The USAID Social Health Protection Project in Cambodia (SHP), implemented by University Research Co., LLC (URC) and partners, supports the Royal Government of Cambodia (RGC) to continue progress towards Universal Health Coverage (UHC) by supporting expansion of the Health Equity Fund system (HEF) and other social health protection mechanisms throughout the country. Working closely with the Cambodian Ministry of Health (MoH), the USAID SHP Project collaborates with Australia's DFAT, the World Bank, the Korean International Cooperation Agency (KOICA) and the German Federal Ministry for Economic Cooperation and Development to support the national HEF system.

THE SOCIAL HEALTH PROTECTION PROJECT WORKS WITH THE ROYAL GOVERNMENT OF CAMBODIA TO:

- provide technical assistance to institutionalize the HEF system into the RGC;
- provide independent fiduciary monitoring of the HEF including certification of invoices generated by facilities;
- develop and roll out the online nationwide MOH Patient Management and Registration System (PMRS);
- advocate use of HEF purchasing power to leverage quality improvements in health services; and
- setup community managed HEFs that provide locally financed complementary benefits to the poor and vulnerable.

NATIONAL CONTEXT

Cambodia's recent rapid economic growth is demonstrated by its gross domestic product (GDP) per capita having increased from US$295 in 1996 to US$1,579 in 2018. The population remains largely rural (78% in 2018), and though the proportion of Cambodians living below the poverty line has decreased, 13% of Cambodians were estimated to be living below the poverty line ($US 0.98) in 2018. It is estimated that by 2020, the total population will have grown to 16.5 million, with large numbers of elderly, children under 5 years, and women of reproductive age, leading to greater demand for health services.

Though there have been notable gains in maternal and child mortality, and control of major infectious diseases like HIV and malaria, Cambodia's health status still lags behind most nations in the region. Cambodia is undergoing an epidemiological transition, with a continued burden of communicable diseases along with an increase in the prevalence of non-communicable diseases (NCDs). NCDs now account for the largest causes of mortality in Cambodia: 52% in 2013 versus 32% in 2000.

THE HEALTH EQUITY FUND: PROVIDING ACCESS TO HEALTH SERVICES FOR THE POOR

Article 72 of the Constitution of Cambodia stipulates that "the health of the people is to be guaranteed," and that "poor citizens receive free medical consultations in public hospitals, infirmaries and maternities." Towards realization of these goals, the Ministry of Health has set forth the objective of achieving universal health coverage. In 1996, along with the institution of user fees, the Health Financing Charter called for exemptions for the poor at public health facilities, but this approach was largely ineffective in ensuring access to care for the poor. As a

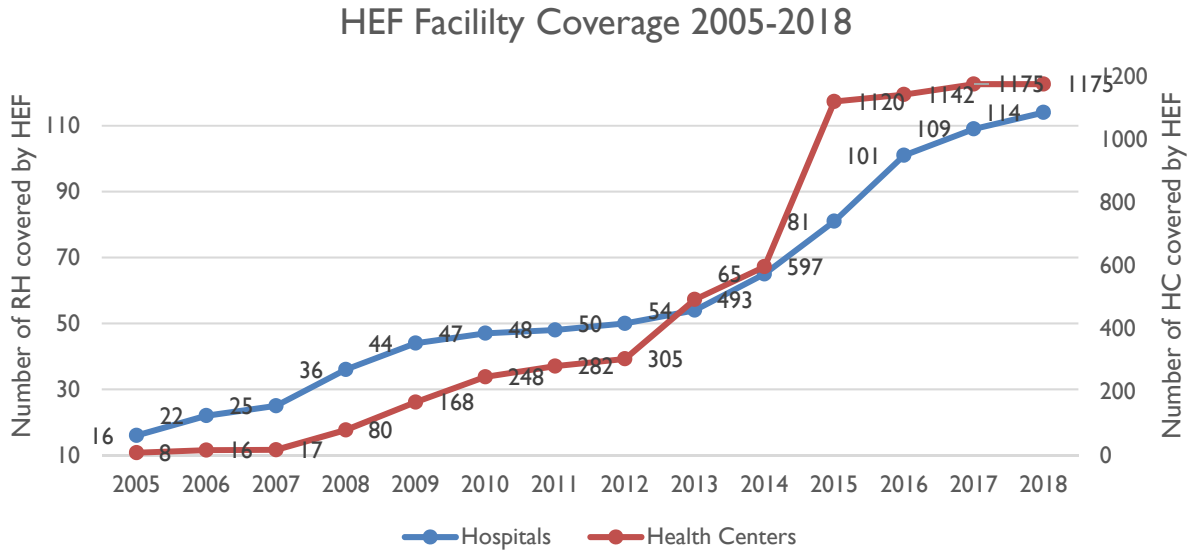

Figure 1. Facilities Utilizing HEF 2005-2018

result, the concept of health equity funds (HEF) was developed in 2003, and since that time has grown to be a core component of social protection in Cambodia.

The HEF is a health insurance program with payment for the poor and vulnerable residents of Cambodia to receive essential health services at public health facilities, subsidized by the pooled funds from the RGC and Development Partners (DPs). The HEF covers both medical services and non-medical benefits to the members of identified poor households. Under the HEF, medical benefits, including diagnostic and treatment health services, are purchased from health facilities, at no cost to beneficiaries. Non-medical benefits are also provided, including: 1) transportation reimbursements for institutional deliveries at health centers for in-patient and specialized out-patient services at hospitals; 2) caretaker food allowances for inpatients; and 3) funeral allowances to the caretakers of HEF beneficiaries who die while in hospital.

By 2015, the HEF had expanded to achieve nationwide coverage of the poor, providing approximately 3 million Cambodians with health care at public health facilities. Figure 1 shows that the number of referral hospitals (RHs) and health centers (HCs) covered by HEF increased steadily, reaching 114 and 1,175, respectively, in 2018.

An external evaluation of the hospitals in the HEF in 2016 concluded that it: 1) increased access to and utilization of hospital inpatient department services by the poor; 2) increased uptake of outpatient department services at hospitals by the poor; and 3) increased utilization by the poor for hospital newborn delivery services, routine consultations, and newborn deliveries.

As stated by the World Health Organization (WHO), timely and reliable data are critical to a functioning health system. Implementing the HEF required an informatics system that could reliably ensure management of patient-level data including registration and basic clinical information and manage payments to health facilities on behalf of patients. The Patient Management and Registration System (PMRS) was essential to achieving the ambitions of the HEF system.

INNOVATION DESCRIPTION: THE PATIENT MANAGEMENT AND REGISTRATION SYSTEM

Developed under the stewardship of the Cambodia Department of Planning and Health Information (DPHI) of the MoH, with significant technical assistance and programming support from the USAID SHP Project, the PMRS is a national web-based application used by public health facilities in Cambodia for management of patient and financial data. The system is a cornerstone for the expansion and linkage of social health protection systems as Cambodia moves towards Universal Health Coverage. The predecessor of PMRS, called the "HEF Operational Database", was developed in 2004 as a patient level-database at individual referral hospitals. The system grew and outstripped the capabilities of a distributed database. In an effort to respond to these challenges, URC worked with DPHI and the MoH under the previous USAID Better Health Services Project to develop the PMRS, which was rolled out in 2010 as a web-based database. Development has continued steadily since then, and by July 2012 the HEF had transitioned all HEF information management activities into the web-based PMRS as the core HEF patient management tool.

MANAGEMENT OF PATIENT DATA

As of December 2017, all health centers throughout Cambodia were using the PMRS, along with 114 referral hospitals. Initially developed for use only by the HEF, expanded utility of the PMRS was quickly recognized by hospitals, creating demand for system expansion to include the registration of non- poor patients, which became known as the "full PMRS". By June 2018, a total of 88 of 117 hospitals and 176 of 1190 HCs were using the full PMRS. By the end of June 2018, 2,426,184 patients had been registered into the PMRS.

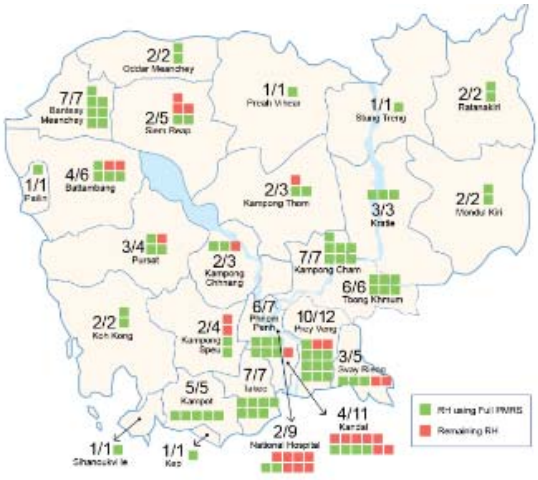

Figure 2. Number of hospitals using full PMRS in June 2018 (SHP 2018)

The PMRS manages patient data by:

1. **Generating a unique patient health identification number** for new patients. The development of a unique patient health identification number system was necessary for PMRS to track individuals longitudinally, and to mitigate duplication of charges to HEF. The system stores and manages personal patient details (name, address, contact details, photo, etc.), service utilization, and service fee accounting;
2. **Organizing the hard-copy patient dossier filing system.** The PMRS unique patient identification numbers facilitate improved paper-based information management for clinical care;
3. **Registering clients** into inpatient and outpatient services;
4. **Determining client eligibility for HEF;**
5. **Recording basic clinical information** related to each patient (including diagnosis at discharge) and utilization of clinical services; and
6. **Generating reports of service utilization** that are used by the independent monitoring entity.

In accordance with shifting priorities and requirements of government counterparts along with improvements in technology the PMRS has continued to evolve throughout the implementation of the USAID SHP Project. The SHP programming team has worked diligently to respond to these requests,

following guidance from USAID and the MoH. Innovations have included development of the full-PMRS and linked ward-based PMRS modules for hospitals.

MANAGEMENT OF FINANCIAL INFORMATION

Within the PMRS, there is a segregation of roles to help secure the integrity of financial data. See figure 3. PMRS financial information management functions include:

1. **Recording payments to facilities** on behalf of HEF clients, including user fees and HEF non-medical benefits;
2. **Recording cash advances to clients** and their families for non-medical benefit expenditures;
3. **Generating monthly aggregate HEF invoices** of medical and non-medical benefits for independent certification; and
4. **Monitoring the timeline of certification and payment transfer** by MOH.

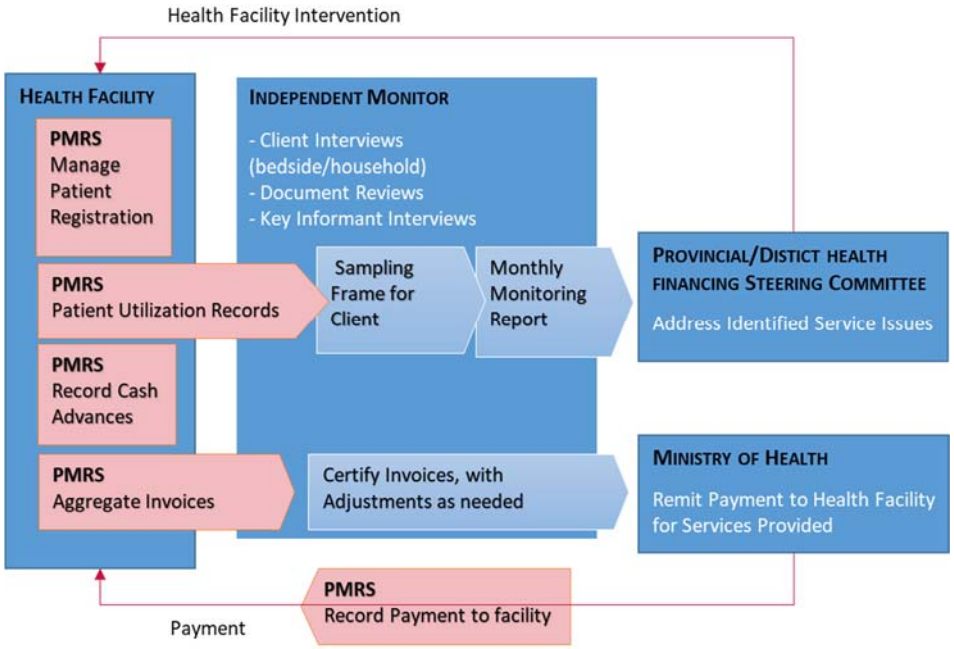

Figure 3. *HEF Financial Management Flow Chart (figures in red indicate PMRS functions)*

IMPACT OF THE PMRS

It is notoriously difficult to discern the ultimate impacts of information and communication technology interventions on health outcomes. In the case of the PMRS, however, evidence of added value can be found from anecdotal feedback received, spontaneous demand for PMRS by health facilities, and adoption of the PMRS by the national government.

"PMRS IS VERY HELPFUL IN TERMS OF PATIENT AND USER FEE MANAGEMENT…WE ARE COMMITTED TO MAINTAIN IT"
– Dr. Heng Thy,
Director, Ang Roka RH

1. The positive anecdotal feedback from clinicians and health facility administrators has been consistent and widespread. In one of many examples, Dr. Heng Thy, Director of Ang Roka Referral Hospital stated "PMRS is very helpful in terms of patient and user fee management. Taking into consideration its usefulness and the investment of the hospital and URC have put in, we are committed to maintain it". Such affirmation of the value of PMRS was instrumental in the constant expansion of PMRS over time.

2. Demand for PMRS by facilities has been strong and pervasive. For example, in the six months between January and June 2018 alone, 162 additional health centers and 12 referral hospitals across 7 provinces had requested installation of the full PMRS. Furthermore, health facilities are required to provide a minimum of 50% cost-share to facilitate system installation ($5,000 - $15,000), so their independent willingness to pay for the PMRS powerfully demonstrates the value placed on the system by facilities.
3. Finally, in September 2017, a Royal Sub-Decree was signed by the Prime Minister of Cambodia to establish the Payment Certification Agency (PCA), a semi-autonomous government entity that assumes the independent monitoring function throughout Cambodia. The PCA has committed to continuing use of the PMRS and has hired programmers and other technical staff to maintain and extend the PMRS indefinitely.

CHALLENGES

While implementation of the PMRS was successful, that success required overcoming some significant challenges. First, because the physical infrastructure of most health facilities is outdated, renovations needed to be performed to ensure that computers and other electronic equipment could be installed securely. Additionally, while the PMRS improved patient care and efficiency by making the retrieval of patient records systematic, new storage space for patient dossiers needed to be built in many cases.

Second, deployment of the PMRS to facilities revealed the lack of familiarity of clinicians with the global standard embodied in the International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10) that was integrated into the PMRS. The ICD-10 is the medical classification list by the WHO which contains codes for diseases, signs and symptoms, abnormal findings, complaints, social circumstances, and external causes of injury or diseases. Training of clinicians on the international standards of diagnosis was necessary for them to fully utilize the PMRS. URC also translated thousands of diagnoses into Khmer, so that clinicians using the PMRS can choose the correct diagnoses from drop-down lists in either English, French, or Khmer.

Finally, high health facility staff turnover remained a persistent challenge throughout SHP project implementation, which meant that there needed to be frequent training of new staff to use the PMRS, requiring additional resources. While this has not handicapped PMRS expansion, it should be taken into consideration in the planning of future expansion efforts.

NEXT STEPS AND RECOMMENDATIONS

The establishment of the PCA by the RGC, its subsequent commitment to use the PMRS moving forward, and the recent approval of a revised set of HEF standard benefits packages, has required continued expansion of the system and the capabilities of the PMRS. As the PCA moves forward, it will be important that:

- The PCA understands that web-based databases/internet interfaces need constant updating-- the PMRS is not a static system. As it deals with a complex and evolving set of issues and it needs to grow and change over time with additional programming and functionalities;
- The PCA takes steps to ensure continued data security as they transition to new servers to protect the valuable and sensitive information contained in the PMRS;
- The PCA continues to work with the various vertical health programs (HIV/AIDS, TB, Malaria, etc.) to use the PMRS unique health ID as a way of linking the various disparate patient databases in a way that would allow for the aggregation and sharing of information;

- The PCA considers increasing the electronic medical record component of the PMRS so that more clinical information about a patient's health history would be available to health providers when they were treating a patient.

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