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Steps Toward an Effective Health Management Information System in Lao People's Democratic Republic

A Thesis Submitted to the
Yale School of Public Health
Health Policy Division

In Candidacy for the Degree of Master of Public Health
Health Policy, Global Health Concentration

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ABSTRACT

Health Management Information System (HMIS) is a specially designed information system that assists in the management and planning of health programs, within the overall national Health Information System (HIS) that integrates data collection, processing, reporting and use of information to improve health service effectiveness and efficiency through better management at all levels, for all actors and institutions. HMIS plays a fundamental role in the overall HIS through organizing and streamlining the business processes of health programs and links the purchasers and providers.

In this study, data was collected through case study methods during a field visit to the Vientiane Province. Observations and interviews were conducted during site visits to the central processing offices (CPOs) of the insurance schemes and Vientiane government health facilities. Results show that the existing HIS is fragmented, unstandardized and repetitive because the HMIS processes are disparate and operate separately around the individual needs of the different insurance schemes. Analysis of results from the case study in Vientiane, Lao PDR points to three major underlying issues that must be addressed across the central, provincial and district levels of management and among the insurance CPOs – 1) lack of HIS awareness and collaboration, 2) need for coordination of international donor agencies and respective data requirements, and 3) need for capacity building to properly support and execute HMIS processes.

The development and implementation of a HMIS is particularly important in the current landscape of Lao PDR, with the recent National Merger of the insurance schemes. Effective integration of HMIS processes, will contribute to the Lao PDR vision towards developing “a unified HIS to provide timely, high quality, evidence-based information for policy formulation, decision making, program implementation, monitoring and evaluation for all national and international health stakeholders by 2015."

INTRODUCTION

What is Health Management Information Systems?

Health Management Information System (HMIS) is an essential component of the health system that plays a fundamental role in organizing and streamlining the business processes of health programs and links the purchasers and providers.[1,11] HMIS is a specially designed information system that assists in the management and planning of health programs,[2] within the overall national Health Information System (HIS) that integrates data collection, processing, reporting and use of information to improve health service effectiveness and efficiency through better management at all levels, for all actors and institutions.[3]

Why is HMIS important?

HMIS is vital at all levels of the health system, from national to institutional levels, as it forms the basis for evidence-based policy and informed decision-making.[6,11] It is particularly important in developing countries where evidence-based decision making is a useful tool for maximizing limited resources.[6,11] HMIS provides the evidence base for effective planning, implementation, evaluation, and scale-up efforts through readily available and reliable information.[6,12] Additionally, HMIS improves governance and accountability by increasing transparency within the HIS and the health system overall.[11]

Existing literature and research indicate that strengthening the national HIS provides the foundation across the spectrum of stakeholders from health care professionals to policymakers to improve the overall health system from a broader, comprehensive perspective.[7,11] Establishing an appropriate and effective HMIS is a positive step toward strengthening the country's national HIS.

The World Health Organization (WHO) states that investment in HMIS can produce multiple benefits, including better support for health policy at the national level and efficient management of health services at the local level.[1,12] HMIS empowers individuals and communities with timely and understandable health information towards improving the delivery and quality of services for patients. Additionally, HMIS streamlines operations between providers and payers, and broadens monitoring and evaluation for clinical staff, hospital administrators and policymakers to develop a stronger health system overall.[11,12] Although information systems cannot single-handedly transform and restructure service delivery, it can serve to improve the health system at all levels.[11]

Global HIS landscape

Although HIS has shown to be vital in ensuring reliable and timely availability of health information for operational and strategic decision-making, HIS in many developing countries are fragmented, unstandardized, and unresponsive to country needs.[8,12,27] This is because in low-resource settings, a health system is typically a series of vertical programs, each implementing their own information system to meet program-specific needs, without considering how their methods fit into the overall national HIS.[9] Without proper integration into the overall HIS, fragmentation and duplication can result.[10] Redundancy and inconsistencies occur among the methods, instruments, and requirements for data collection. Consequently, the overlapping responsibilities of reporting and recording data place a heavy burden on health workers.[10, 27]

International donors exacerbate the already fragmented and complex reporting systems.[27] Donor agencies usually require their own set of data in order for countries or health facilities to continue to receive funding support, which adds on to the existing data needs of the local administration and facilities. Furthermore, HMIS efforts may be ineffective because the behavioral aspects of organizations or systems are not taken into account. Countries must tailor the HMIS system to be appropriate and fitting to their needs instead of simply applying a system that works in one country to another or transferring private sector practices to the public programs.[11,12] From competing donor and national data demands to the lack of awareness in the overall health system, the myriad of obstacles has long hindered countries from instituting comprehensive and effective information systems.

Lao People's Democratic Republic HIS landscape

Currently, the Lao People's Democratic Republic (PDR) HIS lacks an effective HMIS due to similar factors that pose obstacles for HIS strengthening in developing countries across the globe. The HIS is fragmented, unstandardized and repetitive because the HMIS processes are disparate and operate separately around the individual needs of the different insurance schemes. This is mainly due to a rather narrow vision of what HIS responsibilities should entail, instead of a comprehensive view of how HIS fits into the overall health system. Consequently, the HIS is not appropriately attuned to the health system needs. The fragmentation and inefficacy is further exacerbated by the responsibilities of catering to the data needs of international donors.

Four insurance schemes exist in Lao PDR today. Each is administered and managed each according to its respective order of operations. The lack of an adequate HMIS infrastructure that integrates these processes across the schemes poses the problems of wasted resources, extraneous processes, lost time and efficiency, confusion for patients as well as providers, and ultimately a very fragmented delivery and management of services. The need for an integrated HMIS is particularly urgent in Lao PDR in the foreground of the National Decree that calls for the merging of the four insurance schemes under universal coverage while the sub-groups within the population are eligible for different benefits depending on employment or income status. The merger combines the entire population under universal coverage, yet no HMIS foundation exists to provide the HIS infrastructure to support such a merger. Simply combining the processes of the schemes would be neither sufficient, nor appropriate. Implementing an effective and suitable HMIS that can integrate the current business, work, and information flows of each respective insurance scheme is an imperative first step, enabling the merger and ultimately achieving universal coverage.

Lao PDR Health System and Health Insurance

Currently, there are four main health insurance schemes in Lao PDR:

1) State Authority Social Security (SASS) for civil servants
2) Social Security Organization (SSO) for private sector employees
3) Voluntary community based health insurance (CBHI) for the informal sector
4) Health Equity Fund (HEF) for those below the poverty line

The Ministry of Labor and Social Welfare (MoLSW) administers the health benefits for SASS and SSO under the umbrella of social security, while the Ministry of Health (MoH) manages CBHI and HEF which only provide health insurance. While SASS and SSO cover the formally employed members of society, CBHI covers those who are self-employed, work in the informal sector, or reside in rural areas. The HEF is funded by external donors and can be compared to a "welfare program" for the poor, as it targets families living below the poverty line, and does not require membership or service fees.[13]

SASS and SSO funding sources are fairly simple – the government MoLSW funds and membership fees automatically deducted from employee salaries. On the other hand, CBHI and HEF are funded in major part by international donor agencies. The MoH provides general support and supervision, while district management committees administer and implement CBHI and sub-contracted third parties manage HEF implementation. The implementation and management processes are especially complex for HEF where the four major donor agencies (Luxembourg Development, Asian Development Bank, Red Cross, and World Bank) manage majority of the implementation, all in different ways.

In 2009, the government started working with WHO and other development agencies to develop a ministerial National Decree to combine the four social health protection schemes into one agency of universal coverage. This Decree has been submitted and has received approval from the national government.[13]

Table 1: Overview of the four Lao PDR health insurance schemes to be merged under the National Decree

	SASS	SSO	CBHI	HEF
Membership	Mandatory		Voluntary	Certified by donor agency
Target population	Civil Servants +dependents	Public and private employees+ dependents	Self-employed & informal population	Families identified as below the poverty line by donor agencies
Member Contribution	- 9.5% of salary (2.2% to health insurance)	8% of salary	Monthly payment depending on family size, urban & rural residence	none, required
Benefit package	Out-patient & In-patient Services (excluding elective surgery, traffic accidents)			Out-patient & In-patient services, including travel and food costs
Payment Method	-Capitation payments to hospitals -District and provincial hospital negotiate a contract to split capitation payments from central office		Capitation	-Capitation and/or -Fixed fee and/or - Fee for service *depends on donor agency
Ministerial auth.	MoLSW		MoH	MoH, Dept. of Budget and Planning and International donor agencies

Despite a national HIS being established in 1983, health system data in Lao PDR is scattered, with very little information collected.[13] The WHO Country Cooperation Strategy for Lao PDR 2012-2015 describes that many of the WHO suggested key metrics for monitoring the national health status were either reported under an unreliable reporting system (e.g. vital statistics on births and deaths) or not reported at all (e.g. data on mental health, diabetes, and cardiovascular disease). Additionally, most of the staff at local, district and provincial levels who carry the majority of the burden of collecting and reporting data lack the capacity and proper training to do so. Thus, the existing staff members are not allocated adequate time or skills to improve the current system, while additional human and resource capacity is needed for effective analysis and use of data. Critical issues in the health sector remain overlooked, as comprehensive data collection is not fully enforced or regulated. The shortage and unequal distribution of available human and technical resources are compounded by lack of incentives and thus motivation among the staff. [13]

The four schemes cover 12.5% of the total population.[13] Only 10-15% of SSO employers are currently enrolled, there is no enforcement of employer compliance with the Social Security Law. Employers and employees perceive government services as having poor quality relative to private health services. SASS members also complain of poor quality services, mainly due to delays between MoH and Ministry of Finance in transferring funding to providers. Only 12% of the target population is enrolled in villages where CBHI is available. High drop-out rates and late contribution payments contribute to fluctuating deficits.[13]

On the whole, the population prefers to pay more and out-of-pocket for services at central or private hospitals, outside of their covered benefits. They perceive district or provincial hospital services as lower quality with more hassle and wait and even opt to obtain services abroad in neighboring countries such as Thailand. Thus, government hospitals are underutilized and a significant portion of out-patient services are privately delivered.[26] Table 2 that shows current coverage of the target population delineates minimal coverage of those who are eligible. Clearly, considerable efforts must be made to meet the target of 50-60% population coverage by 2012 and universal coverage by 2020.[13] In order to achieve set targets, a reliable and sustainable HMIS must be developed to maintain successful implementation of universal coverage and effective delivery of services to the population.

Table 2. Current status of health insurance schemes (Adapted from WHO 2009[13])

	SASS	SSO	CBHI	HEFs	All schemes
Implementation date	2006	2002	2002	2004	2002-2006
Estimated number of persons in the target population	399,672	386,988	~ 3 million	~ 1.6 million	~ 6 million
Coverage (average 2008)	92,780	86,690	72,000	125,000	376,470
Coverage as % of targeted population	23.2%	22.4%	2.4%	7.8%	6.3%

Political Context of the National Merger

In 2009, the Prime Minister issued a request for the MoH and MoLSW to take steps toward the merger of all social protection systems. The Minister of Health has called for a more integrated approach, particularly for more efficient service delivery methods, improved methods of healthcare financing and unified and simplified health information system.[32] The merger combined with the implementation of an effective HMIS that simplifies and unifies the Lao PDR HIS will pave the way for the Lao PDR Government's Health Strategy to the Year 2020 and its four objectives: full health care service coverage and health care service equity; development of integrated health care services; demand-based health care services; and self-reliant health services.[32] Through integration and streamlining of the HMIS processes, the national HIS will be strengthened with increased availability and reliability of its data. Reliable and readily available information will then provide the foundation for evidence based policy making, program implementation, and scale-up efforts in regards to the national strategies and objectives.[6,11,12]

In light of the national merger, a step towards HMIS development will provide a fundamental framework that links the payers and providers across the insurance schemes.[11,19] An appropriate HMIS will enable providers to deliver care in a timely and efficient manner and facilitate ease of obtaining services for the patients. It will also streamline the order of operations and transfer of funding from the funding body to different levels of administration. For Lao PDR, an effective HMIS has considerable potential to save costs, efficiently utilize resources and energy, increase the number and quality of services provided, increase the number of patients seeking care, and finally, improve the system overall.

In Lao PDR, there is currently a lack of reference and research for HMIS and how the related business processes, and information exchange will be coalesced with the National Merger. The available National policies, operational guidelines, academic research and NGO publications that address the anticipated merger are focused around options and possibilities for health financing, expanding coverage, risk pooling and purchasing. However, there is a lack of research and discussion around the importance of HMIS in regards to the merger.

RESEARCH OBJECTIVES

Thus, the objectives for this thesis research were:

(1) To investigate and map the current business processes, work flows and information flows for the four health insurance schemes of Lao PDR; and,

(2) To provide a comprehensive reference frame and analyses of the current HMIS-relevant business processes, work flows and information flows in order to help identify next possible steps toward integration and inter-operability under a HMIS well-suited for Lao PDR.

METHODS

Qualitative Approach

On the whole, this research study was conceived with a qualitative focus. Since little research had been conducted regarding to HMIS in the Lao PDR context, this research was also an exploratory study. Accordingly, the qualitative approach provided for maximum data collection on this emerging topic, especially during interviews, where personal perspectives and opinions could be included.[43, 44]

Case Study Method

Within the qualitative approach, case study methods have been rediscovered in health services research due to the contemporary needs of developments in managed care systems. The case study method has been found to be particularly useful for complex systems that link multiple systems[33] – in this research, that includes the information flows and business processes that link the schemes' operations. Specifically, the case study method allows for detailed fieldwork by a single investigator;[33, 35, 36] a thorough examination of policy documents and interview data related to policy and decision making;[33, 36] and useful frameworks for deriving lessons from multiple case studies. [38, 39] Accordingly, this research design consists of an initial literature review of national policy documents, academic articles and NGO publications relevant to the topic, then recording the data from the literature review within a designated matrix. This matrix then provides the starting point for capturing the data collected on the ground through interviews and site visits. The combined data collected from desk research and fieldwork presented through the matrices offers a useful framework for simultaneous analyses across the schemes.

Since time and travel constraints allowed for limited number of days for field work, it was not feasible to sample a significant number of cases or to apply sampling/eligibility criteria. Thus, case studies were the optimal method to fully utilize the data collected, as generalizations or common themes could be determined based on the HMIS concept and not from principles of sampling.[43] Here, case studies can be defined as interviews and site visit observations of the health facilities.

Case Survey Design

The case survey design takes the model of case studies one step further by enabling aggregate reviews of individual case studies.[42] While experimental designs aim to "control" the context, case survey designs attempt to represent the entire spectrum of the problem or topic being studied through limited coverage of the context.[33] Additionally, the researcher has the freedom to survey different case studies without excluding them based on a set criteria.[42] For the Lao PDR context, time and travel constraints limited the coverage of cases to the Vientiane capital district and limited the capacity to apply a sampling or eligibility criteria.

The case survey method is applicable when the study consists of a heterogeneous collection of case studies.[42] Difficulty in generalizing from case studies has been recognized as a major shortcoming of this method, however, the focus on design as the driving definition of case studies addresses this shortcoming.[33] The basic techniques of the case survey method require for the researcher to answer the same set of questions for each case study[42] This has been shown to be an efficient methodology that allows for the research design to aggregate the characteristics and components of each case, but not necessarily the conclusions.[42]

Accordingly, this research utilized the Collaborative Requirements Development Methodology design (CRDM) as the driving definition of data collection and analysis. The uniform set of questions for case surveys and interviews were also generated using CRDM guidelines.

Collaborative Requirements Development Methodology Design

Collaborative Requirements Development Methodology Design (CRDM) is a useful technique to understand current operations, analyze business processes and rethink systems performance to identify a way to increase effectiveness and efficiency. CRDM was started as an initiative by the Robert Wood Johnson Foundation to help state and local public health agencies better respond to health threats by improving their use of information systems.[14]

It is supported by the Public Health Informatics Institute and recommended and used by the Joint Learning Network, whose vision is dedicated to "health financing reforms designed to move low and middle-income countries toward universal health coverage."[30] Deemed most appropriate to use by WHO WPRO technical staff, it was employed in this study to determine and document HIS user requirements.[14]

By bridging global health perspectives with the discipline of software and systems engineering, the CRDM descriptions, models and figures address the need to establish infrastructure and reusable tools for a systematic way to build global HIS.[14] The CRDM is also open to modification and encourages health professionals to customize or adapt to country-specific needs. This allowed for tailoring the CRDM to the Lao PDR context as the essential framework of the research design. In addition, the CRDM was chosen because of demonstrated efficacy in achieving the objective of generating user requirements and system components that are easy to understand and adopt for stakeholders and managers.[14] The CRDM enables greater clarity and accuracy for communication between the wide range of stakeholders through the use of non-technical language and easy to present matrix.

CRDM has been designated as the replication logic, or essential "logic model" of case study design and analysis.[41] The CRDM matrix serves as a common operational framework for data collection by clearly defining the topic and formulating survey questions ahead of time. [33] Distinctively, the CRDM provides the outline of all the possible components of a comprehensive HMIS necessary in the context of universal coverage – as is the current situation in Lao PDR.

Furthermore, CRDM matrices also provide an effective presentation of data collected. For qualitative research, a typical channel of communicating the results is an extended, written up form of field notes, which can be difficult to analyze across the entire spectrum of the topic at hand.[45] Moreover, it is difficult to simultaneously examine the multiple variables involved in HMIS processes.[45] Thus, the CRDM matrices provide an excellent method to display the information and data collected across the four insurance schemes in an ordered and categorized way that is easy to analyze than a text narration of the insurance schemes.

The CRDM Business Process Matrix can be further examined in Appendix A.

Thus, with the designated research design and preliminary research and literature review, the second phase of the research was field visit to Vientiane, Lao PDR, for interviews and site visits. National government staff of the SASS, SSO, CBHI and HEF Central Processing Offices were interviewed. Managerial staff at central and district hospitals within the Vientiane capital area were also interviewed in addition to collection of observations at respective health facilities.

From 10 August to 19 August 2011, the researcher visited the SSO, SASS, CBHI, HEF central offices in addition to the Sisattanak District Hospital, Setthatirath Central Hospital, accompanied by Mr. Noukorn Thalangsy of the WHO Lao PDR Country Office, for guidance and translation. List of personnel interviewed are listed in the Appendix B – Site Visit Report.

RESULTS

Results are divided into three parts:

1) Analysis of (a) differences and (b) similarities across the schemes from the information gathered during the field visit.
2) Analysis of the flow and order of HMIS processes and operations between the central, provincial and district levels.
3) Observations and information gathered through the site visits and interviews at health facilities and Central Processing Offices (CPO) – which can be more or less generalized to how the other district and central health facilities are carrying out their HMIS operations.[i] These are included in the appendices.

Part 1.A: Differences among schemes

Payment and reimbursement mechanisms:

The mechanisms by which hospitals and health facilities are compensated for their services differ depending on the insurance scheme. Depending on the scheme, hospitals receive capitation payments based on a contract or number of eligible and registered members, fee for service or fixed amount as negotiated in a contract, or upon filing claims.

Data Management

The data "home" where most of the data is collected, stored and distributed varies among the administrative levels. SASS and SSO CPOs house the comprehensive data of its members and disseminate eligibility information to central and provincial hospitals. Central and provincial hospitals then report their operational and financial information in addition to ATD data to the respective insurance CPOs. For CBHI and HEF, the district health facilities act as the data "home", housing the member contribution and eligibility data. CBHI maintains their own ATD database through paper forms (see Appendix C), while HEF only reports the type and number of services provided. The CBHI account managers and district committees, and HEF district implementers only report general funding related information to the CPO or donor agencies.

Data management responsibilities are assigned to varying levels, where SASS and SSO manage and store their data at the central level, with the hospital or district staff simply reporting the necessary information, while CBHI and HEF hold most of their data and manage the member information at the district level with the provincial and central offices supervising basic data.

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[i] It should be noted that the following data and information are sourced directly from the interviews conducted with staff at respective site visits. All the opinions, forecasts, and assessments are from the interviewed personnel and not my own. The following results have been condensed down to focus on HMIS related processes. Detailed descriptions and observations organized by CPO or health facility are included in Appendix B: Site Visit Report. The CRDM matrices of HMIS processes are outlined in the Appendix A - CRDM matrices.
some font is in bold to differentiate between the data gathered through literature review and data collected during the field visit. The bold print indicates field visit data.

Gatekeeping Hospital:

The gatekeeping hospital can be defined as the primary point of care where members register to receive services without referrals or filing claims. The gatekeeping hospital is designated as so by member selection among the eligible hospitals where their insurance scheme is accepted. In the case where of emergencies or additional services, members must first obtain referrals from their gatekeeping hospitals to receive services free-of-charge under their insurance scheme. The gatekeeping hospital or the members' insurance CPO processes the claims in such cases.

With SSO, members select a hospital at the central or provincial level as the gatekeeping hospital, and claims reimbursement is transferred between hospitals or deducted from the monthly CPO funds to hospitals. With SASS, CBHI, HEF members select a hospital at the district level. The district gatekeeping hospital transfers the contracted portion of the overall capitation payment received from the CPO to the provincial hospital to cover for referrals. The central and provincial hospitals function as sub-contracted hospitals providing referral services, with minimal involvement in administering health insurance and data management, while the district hospital coordinates the majority of health services, referrals, claims processing, fund and data management.

Other details for consideration in addition to HMIS processes:

Patient identification:

Patient identification differs according to the insurance scheme. A SASS member will present a plastic card with an ID number, barcode and in some cases, a photo. SSO also issues a plastic card, but without a barcode, while a CBHI and HEF member will present a family name book or be issued a temporary paper card listing the eligible family names. The number of digits assigned to the member identification also differ. The number of digits range from 8, 9, 10, or 12 in the ID code depending on the scheme.

Computer database and update schedule:

While SASS and SSO intake the same registration and member information, SASS uses Microsoft Access, while the SSO uses Open Source. CBHI and HEF have a less developed data management system than SASS and SSO. CBHI CPO uses Microsoft Access but due to lack of capacity and training, the account managers usually maintain handwritten logbooks, and health facilities also input their data into Excel spreadsheets and paper forms. HEF uses basic excel spreadsheets in addition to handwritten logbooks.

The CPOs, central, provincial and district health facilities update their database and member information at different points in time (weekly, bi-weekly, monthly, beginning and end of the month) and more or less frequently than others. This mainly depends on the resources available to the schemes or hospitals. SASS and SSO update their data more frequently with Internet connection than CBHI and HEF, who depend on mail and fax machines to transfer data. As SASS and SSO have frequent updates and faster transmission of data through internet connection, their members enjoy a shorter waiting period to be eligible for benefits, while CBHI and HEF members have to wait almost 2 months, and even longer for high cost services.

Part 1.B: Similarities among schemes

On the whole, the patient information intake and delivery of services at Sisattanak District Hospital and Setthatirath Central Office were very similar. At both hospitals, the service delivery process was observed to be fragmented and confusing for patients. Staff at both hospitals identified the stamp of eligibility as the major cause of fragmentation in the delivery of services. Service delivery can be generally described as follows:

1. Patient registration – queue card, take vitals
2. Eligibility check with reception or account manager – receive eligibility stamp if contributions are up-to-date
3. Consultation – treatment, prescription, order for diagnostics
4. Receive eligibility stamp to receive the services free of charge
5. Pick up prescribed medications, receive ordered diagnostic tests if necessary
6. Cashier calculates cost
7. Reception - receive stamp for free services
8. Receive referral if necessary – pick up from hospital a day or two later

Quality Assurance:

All four schemes did not have a quality assurance system – there exists only basic periodical audits by MoH or MoLSW or general internal monitoring within the CPO

SSO and SASS:

There are some key similarities to be noted between SSO and SASS, since both are under MoLSW and health benefits are provided under the umbrella of social security benefits. Both have a separate unit at the CPO dedicated to overseeing health insurance benefits. SSO and SASS both intake the same information for member registration, and maintain two databases – 1) general member information for overall social security benefits and 2) Admissions-Transfer-Discharge (ATD) database which consists of detailed information and data on service provision, health insurance benefits and eligibility status

Human resources:

There is a lack of human resources, and/or the proper training for technical expertise and general hospital administration. Additionally, the lack of incentives for staff to carry out their tasks most efficiently or more frequently is common across the schemes. For example, the CBHI account manager is unable to maintain the most up-to-date member contribution information since the village collector does not have the incentive to travel and deposit the contributions more than once a month. Recently, the CBHI account managers' duties have become overwhelming, as they strive to maintain CBHI implementation and membership data, while also managing hospital ATD data. It was stated by the CBHI CPO that the hospitals should employ their own staff to organize CBHI members' data, so that account managers can be relocated to government offices to focus on CBHI management. Similarly, the HEF lacks incentives for its

staff to maintain frequent database updates that are necessary for efficient implementation. At the hospital or health facilities, there is a lack of training and systems knowledge among the staff, who simply report the necessary numbers and information, without proper knowledge of why the information is necessary or how it is utilized at a higher level. Supervisors at the hospitals pointed out that majority of staff are not fully aware of the comprehensive functions of the database or the need to improve the overall HIS.

Additionally, there is a lack of collaboration and communication amongst the CPOs and with health facilities. Scheduled meetings to discuss the merger between CPOs have been postponed indefinitely and meetings only take place incidentally and for pressing, urgent matters. Also, the hospital staff commented that the service delivery process can be difficult, confusing and at times overwhelming for patients, especially for those from rural areas.

Discrepancies between official guidelines and actual practice:

Discrepancies in policy documents research and what actually happens on the ground are common. Policy documents and operational guidelines are well outlined and detailed, but not explicitly followed in reality, especially for CBHI and HEF which are in nascent stages. Minor discrepancies also exist within SASS and SSO operations. It was said from the central hospital side that there is no auditing of finances, since the CPO of SSO and SASS can check the current status of fund management at any time, via online connection. For this reason, the central hospital does not have a regular reporting system. However, the CPO stated that data exchanges are conducted bi-weekly or first and last of the month. All four schemes did not have an external or regular auditing system, contrary to what their guidelines mandate.

Personal Interview Perspectives:

Personnel at both hospitals agreed that the service delivery processes are in need of streamlining as the current operations require multiple unnecessary steps for patients. However, they are unable to find ways to improve service delivery due to the demands of maintaining daily operations. Personnel at both SSO and SASS stated that in one or two years, a merge of SASS and SSO operations can be expected. Personnel across all four schemes expressed that it would be best to keep member eligibility data in separate databases during and after the national merger.

Part 2: Analysis of the flow of HMIS processes

The vertical flow of HMIS processes can be grouped into 4 management categories: Member, Provider, Plan and Fund management. [15] The following is the detailed categorization of the HMIS processes relevant to the Lao PDR context. Figure 1 also depicts the interconnection between the four categories of management, and the captions provide a summary of the vertical flows of processes.

Member management consists of information and data "home" responsibilities. The flow of processes indicate the government hospital or insurance CPO that acts as the information "home" and collects and stores the member registration data then transfers only the basic administrative data and/or member eligibility information to higher management/government body.

The caption in Figure 1 follows this form:

information "home" → hospital or agency receiving member information and data updates

Provider management consists of gatekeeping hospital duties that approve and process claims reimburments for services sought in other hospitals, for advanced treatment or emergencies. The flow of processes show which hospital files the claim, and to whom. Usually, the member selected hospital issues a referral for the patient to seek services elsewhere, in the case of advanced treatment. The hospital providing additional or emergency services files a claim or sends the bill to the requesting or member selected hospital, who then sends the combined claims to the CPO at the end of the month. Such arrangements operate based on a negotiated contract that is renewed on a yearly or 6-month basis, or as often as necessary, depending on the scheme and hospital.

The caption in Figure 1 follows this form:

non-member selected hospital where services are sought → gatekeeping hospital that issues referral or receives claim/bill → supervising body that deducts appropriate amount from next month's capitation

Fund management consists of general fund management responsibilities, such as contribution collection, premium amount determination, accounting and distributing the lump capitation payment from the CPO or donor agencies. This also falls under the duties of the gatekeeping hospital, who deducts the appropriate amount for administrative fees, then divides and transfers the funds according to contracts established between hospitals. The flow of processes indicates the gatekeeping hospital that transfers appropriate funds and conducts majority of accounting, and the caption in

The camption in Figure 1 follows this form:

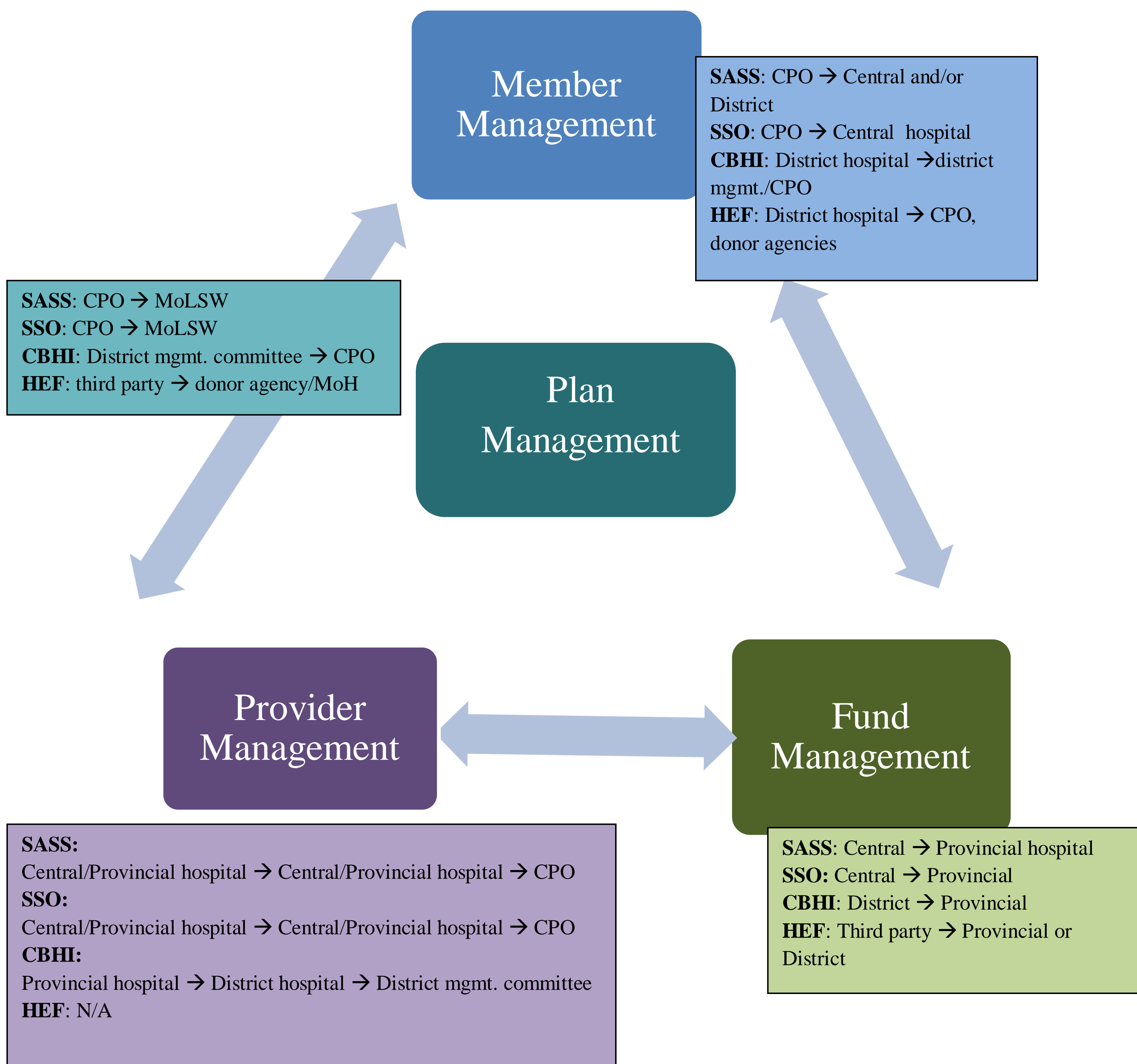
gatekeeping/accounting hospital → fund receiving hospital

Plan management refers to members' benefit management and general administration of health insurance benefits.

The caption in Figure 1 follows this form:

information "home" (or immediate supervising body for CBHI and HEF) → the government authority or funding agency

Figure 1: Flow of HMIS processes between insurance CPO, Central, Provincial and District management levels



DISCUSSION

On the whole, the current Lao PDR HIS is operating in a piecemeal and individual manner. The current HIS lacks cohesion, overwhelmed with the varying management operations, administrative requirements and donor obligations at all levels of management. The results from the Vientiane field visit show that the business processes and information flows are fragmented and complicated.

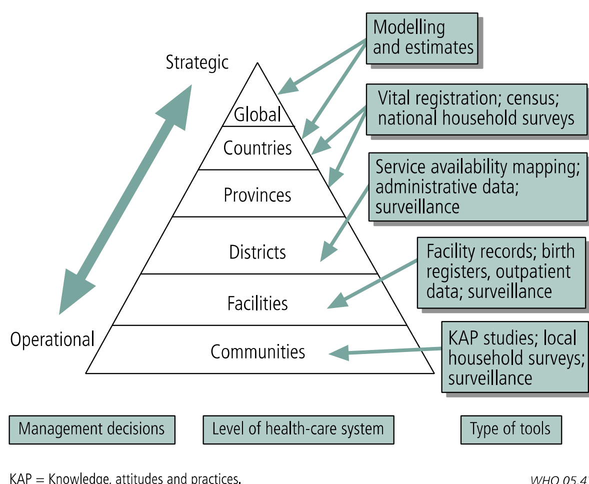
The varied set of HMIS processes and the lack of HIS awareness, donor/funding coordination and human resources can be identified as the major causal factors for the lack of an adequate HMIS system. As it stands, the HMIS processes are carried out in different organizational methods. The issue of the varied methods is compounded by the fact that the schemes still continue to conduct their processes in an individualistic manner. There is little initiative from the CPOs to stay aware and collaborate with other agency's operations as long as their own schemes are operating per usual. Additionally, the schemes have yet to realize how they fit into the bigger picture of the entire health system and examine ways they can coordinate to improve HIS efficiency. As delineated in the results, the national HIS and HMIS processes have shown to be fragmented and unresponsive to needs outside of the narrow lens of individual practices. And, since the hospital staff are already overburdened with the different CPO's reporting requirements in addition to general hospital management duties, they lack the capacity and resources to re-examine their operations and identify room for improvement. International donors have also contributed to the problem, having prioritized urgent needs for data over in-country capacity-building.[27]

Research has identified three major underlying issues that must be addressed for efficient and effective HMIS in Lao PDR – 1) lack of HIS awareness and collaboration, 2) need for coordination of international donor agencies and respective data requirements, and 3) need for capacity building to properly support and execute HMIS processes. These must be addressed across the central, provincial and district levels of management and among the insurance CPOs.

Lack of HIS awareness

The Lao PDR hospital staff are required to report vast quantities of data to higher levels but rarely receive any feedback, and therefore unaware of the purposes of the data they collect. It must be recognized that data requirements and needs are different at district, provincial and central levels of management, as Figure 2 illustrates.[27] At the level of individuals and communities, information is needed for effective clinical management and for assessing the quality and extent of service delivery.[27] At the district or province level, health information enables policy-makers and managers to strategize for effective, comprehensive functioning of the health system.[27] At higher levels, health information is needed for strategic policy-making and resource allocation. The staff, managers, and stakeholders at all levels of the health system should be informed and re-oriented around the HIS and relevant data requirements for management decisions needed at different levels. On the whole, although the data requirements for patient care, systems management and policy-making are different they must be linked through effective and efficient communication and feedback.[1, 11,27]

Figure 2. Data needs and sources at different levels of the health care system
(Adapted from WHO[27])



International donors

Additionally, there is evidence that significant financial resources are being directed towards the development of HIS in developing countries, yet data needs still remain unmet.[27] This could be due to the fragmented, duplicative and uncoordinated manner of distributing funding.[27] This highlights what is clearly evident in Lao PDR today, especially in regards to the HEF. Four major international donors operate and implement HEF in different areas of Laos, without collaboration or coordination amongst each other. In-country staff, especially the HEF third party implementers, seem to perceive data collection mainly as an externally driven process, designed to meet donor needs and of little relevance to country needs.[47]

However, the current climate of international development assistance offers an opportunity to address this. Aid effectiveness in health is improving through strong coordination efforts with several technical working groups and joint programs collaborating to achieve alignment and harmonization. As a result, collaboration among relevant agencies is showing better health outcomes. Dialogue and consultation between the Lao PDR government and international stakeholders has led to the drafting of several important policy and strategic documents.[13] This will be advantageous in addressing the inconsistencies that exist between operating plans and actual implementation and harmonizing operation plans to avoid repetitive use of resources.

Specifically, such communication and collaboration will be most beneficial for the HEF scheme. Until recently, the possibility of harmonizing HEF donor strategic plans had never been discussed. Two meetings have been convened by the Lao PDR government, MoH, and donor agencies. Currently, the technical working group and development partners are discussing a policy of harmonized operations. Such a policy must recognize the complexities of operations that exist among third party HEF implementation and the range of international NGOs that play a major funding role in the health sector.[13] The policy of harmonized operations should aim to clearly define responsibilities among the donors and local staff, and also look toward collaboration and integration to prevent unnecessary overlap.

Capacity Building and Human Resources

The issues of inadequate capacity and human resources in Lao PDR are similar to those observed in other developing countries. Within the health sector itself, the need to build capacity for health information is often overlooked.[27] The need for statistical expertise and data generation and analysis skills are rarely mentioned in the analyses of human resource requirements.[28] Providers lack the time and resources to divert their attention from patient care.[27] Additionally, the additional staff in charge of data collection are overwhelmed with their current duties to take the time to find ways to coordinate or streamline current processes.

These health sector reforms, such as the merging of the four schemes, must be accompanied by appropriate capacities in human resources, tools, and expertise, which currently are neither in place nor sufficiently developed in Lao PDR, as observed and also expressed by staff at hospitals and CPOs. The little capacity that exists, which is mostly technical hardware due to a lack of adequate human expertise for the current needs in Lao PDR, is largely concentrated at the central level at the CPOs.[13] Capacity building must be a priority, especially at the provincial and district level for sustainable reforms to take place.[12] To corroborate, the U.K Department for International Development (DFID) identified the tendency for information systems to be rigidly designed because they are approached as isolated entities and the integration of HIS only as a technical issue.[12] However, simply integrating the technical components is not the priority. Human resources and capacity must be properly cultivated to sustain the technical developments of the HIS.[12]

The DFID points out that a comprehensive approach that addresses the needs and political interests of “key actors” including the MoH, donors and system developers in addition to cultivating local participation will improve the chances of a sustainable HMIS.[12] Such an approach should be utilized to address the major priorities for Lao PDR today. By actively engaging key actors and all stakeholders across the management level, HMIS human capacity

and resources can be strengthened with increased awareness and participation. This will allow for increased awareness and appropriate reporting for the different data requirements at different management levels and facilitate effective policy making and strategic arrangements among in-country stakeholders and international agencies.

Public health decision-making is critically dependent on the timely availability, analysis and dissemination of sound data, which is made possible by effective and reliable HIS.[6,11,12] The word "system" points to an inter-connected, organized process. [27] Thus, solutions improving HIS must be comprehensive. Funding and technical support alone are not sufficient solutions unless accompanied by sustained support to country HIS development from in-country and international stakeholders at all levels of the health system. [27,47] For an effective transformation of the HIS to take place, adaptation of work practices, invention, reorientation, and organizational change will be required at all levels.[22]

Country Case Studies

The following country case studies are global experiences of improving and integrating health information systems. They can be taken as helpful lessons for Lao PDR towards improving the HIS and implementing HMIS in Lao PDR. The Tanzania case study exemplifies the HMIS issues that exist in Lao PDR and developing countries today. It highlights the need to look further than the technical integration issues that exist on the surface and emphasizes the priorities of addressing deeper root causes such as increased capacity and stakeholder participation. Secondly, the United States case study is an example of a country further ahead in HMIS development that presents a possible option for future steps toward integration in Lao PDR.

Tanzania[6]

Tanzania's HIS covers all health programs and health care services, and requires all health facilities, regardless of ownership, to use the system and report to the district health authority. The overall goal of the system is to optimize the performance of health services at all levels of management through the timely provision of necessary information needed by the health managers to monitor, evaluate and plan their activities.[16, 17]

A cross sectional descriptive study was conducted in 11 heath facilities in Kilombero to examine concerns about the poor quality of data and inadequate integration of the HMIS, despite attempts to bridge the existing gaps in the in health sector.[6] A semi-structured questionnaire was used to interview health workers on their knowledge, attitude, practice and factors for change on HMIS.[6] The study found that HIS incompleteness and poor use of health data collected at a health facility can be attributed to poor knowledge on HMIS.[6] Inadequate financial, human and technological resource capacity; lack of user-friendly systems; lack of coordination and evaluation, and inadequate policies to manage the sustainability of the system were common.[18, 19]

The findings portray a similar problem to that of Lao PDR, as Tanzanians also carry out "business as usual", a static mindset among the key actors and staff.[20] These are important factors for the Lao PDR government to consider in order steer current operations away from "business

as usual" and thus avoid entrenching the current system into further inadequate capacity and lack of coordination as observed in Tanzania. The causal factors identified that contribute to a weak HMIS and inadequate integration of processes emphasize that HMIS strengthening is not simply a technical issue. Lao PDR should look to improving the efficacy and sustainability of HMIS by engaging the political "key actors" as well as local staff and stakeholders.[6] Commitment, dedication and accountability across all levels will be crucial towards influencing a forceful positive change towards HMIS.

United States[21]

Eighteen health departments in the U.S were interviewed in an exploratory research study to gather information on their current activities related to integrating child health information systems.[21] Results highlight possible options for integration of HISs systems, and also delineate common internal and external challenges and strengths that health departments faced through the integration progress. This study provides a glimpse into some options Lao PDR can consider and the possible benefits and implications that may arise.

Possible options for the design of an integrated system consist of the development of a single database, a middleware solution, or a combination of these two approaches. A single database requires programs to choose a new integrated system as their primary database in order to consolidate multiple data sources into one large database. Middleware solutions provide real-time, cross-platform connectivity to enable individual systems to remain distinct.[21]

Respondents shared their reasons for selecting a single database approach versus a middleware solution or a combination. The single database approach primarily tackles the need to reduce the number of the disparate databases, implementing data standardization and avoiding the complexity of using middleware to process or translate data from different sources. On the other hand, middleware solution allows individual programs to maintain their own respective databases that cater to their needs. A combination of approaches allows for programs to maintain their individual database because it may have been implemented long before integration, or serves the individual needs of the programs in addition to the middleware platform.[21]

Of the health departments, 6 used middleware, 5 single large databases, and 7 used the combination approach. On the whole, there is no particular method of integration that was preferred or considered best. Leading strengths or challenges influencing the integration can be categorized as organizational commitment or constraints, external political environment, financial resources, and information systems issues. Respondents identified certain factors as both strengths and challenges. For example, organizational commitment can be leadership support crucial for the integration efforts but existing organizational policies or lack of procedures could hinder the actual integration. Within the political setting, strong support for integration may exist, but government officials could focus on specific issues, rather than the whole picture. Of the mentioned strengths and challenges, Lao PDR is experiencing similar issues in organizational constraints, including lack of procedures for integration, programmatic barriers, and shifting priorities.[21]

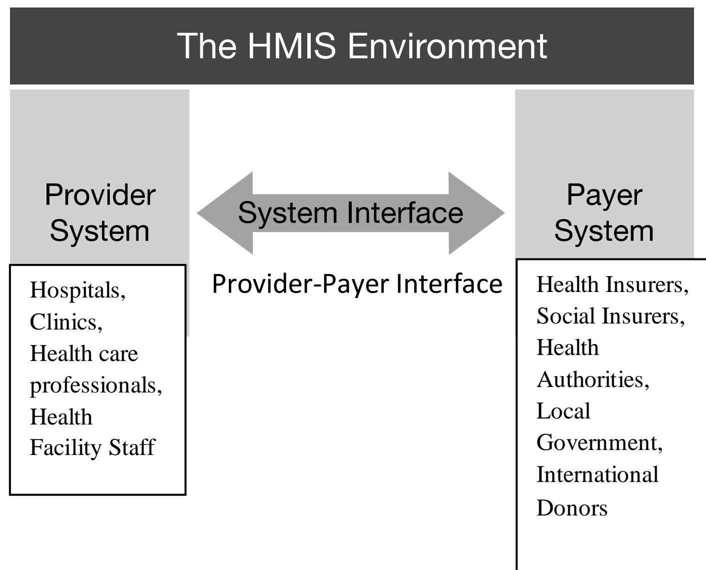
Additionally, concerns about transmission of electronic health information and confidentiality and security needs were associated with the Health Insurance Portability and Accountability Act (HIPAA). Budget crises were anticipated to potentially inhibit the sustainability of the integration activities.[21] With increased connectivity and HMIS integration of the insurance schemes, Lao PDR should aim to maintain confidentiality and security similar to those outlined in the HIPAA. throughout the integration process. Continued funding in addition to technical support should be ensured from the Lao PDR government and international donors.

Recommendations

On the whole, an efficient HMIS consists of three elements of activity – provider system, payer system, and a communication interface between the systems.[11,15,27] Largely, Lao PDR lacks the payer-provider interface that effectively and efficiently links the two sides of the health system. This "link" must effectively and efficiently provide a communication channel between the payer and provider system functionalities – namely, through the sharing of patient eligibility and rosters, transmission of claims, transmission of payments.[11]

Figure 3 shows how the three elements of the provider system, payer system, and system interface form the HMIS Environment. The coordination and integration of the three elements are crucial to the long term success of HMIS.[11]

Figure 3. The HMIS Environment (Adapted from World Bank, USAID[11])

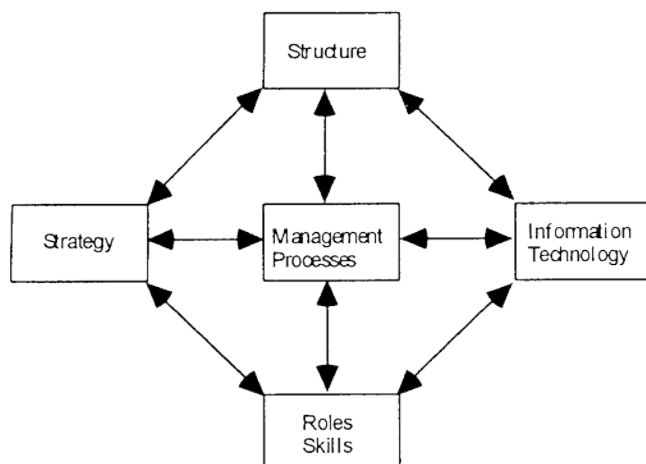


The integration of health information technology especially in divisionalized organizations such as the Lao PDR health system requires a more sophisticated approach that considers the complexities of current system.[22] Too often, the behavioral aspects of organizations are not taken into account.[12] The Southon et al. study and analysis highlights the significance of the organizational configuration and its role in managing the development and transfer of HIS practices, specifically organizational strategy, structure, management processes, roles and skills.[23] In practice, the success of information technology (IT) transfer has been operationalized through two management methods: IT strategic planning and IT strategic alignment.[23] The first method, *IT strategic planning*, uses planning processes to ensure that IT plans match business strategic plans and priorities.[25] The second approach of *strategic alignment* aims to strengthen the tie between IT performance and business needs.[23] Alignment is a more powerful approach, as it strives to (re)configure the organization in order to align IT processes and the organization's business strategy, structure, and management. While strategic planning is only loosely connected to performance, strategic alignment focuses on the consistency of management and IT direction and priorities at all levels and between all levels.[22]

When planning the details of the plan for HMIS implementation, the concept of strategic alignment will ensure effective implementation and transition toward a sustainable HMIS. The principle of strategic alignment states that health IT should be managed in a way that mirrors the management and structure of the organization.[22] The lack of fit between strategy and structure can cause confusion among roles and responsibility.[22] Thus, HMIS strategies should be presented in a manner clear to the organizational members so that they are readily able to address needs as they arise, with a long term goals towards achieving sustainability.[24]

A national HIS must be capable of supporting a wide range of health system needs from day-to-day management, long-term planning, and policy development.[1] Clearly outlining how the HMIS processes reflect the needs of the health system will enable key actors and stakeholders to become more accountable for effectively carrying out their responsibilities within the system. Externally, the organization's strategy must be appropriate to its environment and internally, health IT must fit the organizational components including business strategy, organizational structure, management processes, and roles and skills. Figure 4 shows a model that includes both internal and external elements of IT organizational framework that can be applicable for sustained high performance of HIS.

Figure 4. IT-organizational fit framework (MITO90s; adapted from Scott Morton[29]).



All in all, the development and implementation of a HMIS is vital at all levels of the Lao PDR health system, from national to community levels.[6,12] It is particularly important in the current landscape, with the National Merger of the insurance schemes. Effective integration of HMIS processes, as well as increased awareness, capacity, and participation from National policy makers, local management staff, and international donor agencies will contribute to the Lao PDR vision towards developing "a unified HIS to provide timely, high quality, evidence-based information for policy formulation, decision making, program implementation, monitoring and evaluation for all national and international health stakeholders by 2015."[48]

Limitations

This case study does not intend to be an exhaustive review of either the technology evaluation or management literature. It is also not a complete analysis of the health informatics aspects of the current systems. The scope of this thesis focuses solely on outpatient services and related HMIS processes, and does not examine the details of in-patient services.

Additionally, a majority of the data was gathered through translation, especially during interviews. Some of the information presented may not be entirely accurate, as data collection depended heavily on translation, and miscommunication may have been possible.

REFERENCES

1.Stansfield et al., The case for a national health information system architecture: a missing link to guiding national development and implementation. *The Case for Health Information System Architecture ver. 1.4*

2 World Health Organization Regional Office for the Western Pacific. *Guidelines for the development of Health Management Information Systems*. Manila, Philippines. World Health Organization, 1993.

3 World Health Organization Regional Office for the Western Pacific. (2000). *A selection of important health indicators.* Manila, Philippines. World Health Organization.

4. World Health Organization Regional Office for the Western Pacific (2004). Developing Health Management Information Systems: A practical guide for developing countries. Manila, Philippines: World Health Organization.

5. Mullner RM, Chung K.(2006). Current issues in health care informatics. *J Med Sys 30(1), 1-2.*

6. Nyamtema AS. (2010). Bridging the gaps in the health management information system in the context of a changing health sector. *BMC Medical Informatics & Decision Making, 10(36).*

7. Shay S, Monteiro E, Aanestad M. (2007). Towards a political perspective of integration in IS research: The case of health information system in India. *Proceedings of the 9th International Conference on Social Implication of Computers in Developing Countries.* Sao Paulo, Brazil.

8. The Health Metrics Network Framework 2nd Edition, January 2008
http://www.who.int/healthmetrics/en/

9. Braa J, Humberto M. (2007). Building collaborative networks in Africa on health information systems and open source software development. *Experience from the HISP/BEANISH network.*

10. English M, Lanata CF, Ngugi I, and Smith P. (2006). The District Hospital. *Disease Control Priorities in Developing Countries (2nd Edition).* New York: Oxford University Press, 1211-1228

11. Streveler DJ, Sherlock SM. Health management information systems: linking purchasers and providers. *Designing and Implementing Health Care Provider Payment Systems How-To Manuals.* World Bank, United States Agency for International Development.

12. Carlson C. Eldis health key issues: health management information systems. *DFID Health Resource Centre.*

13. World Health Organization (2011). WHO country cooperation strategy for the Lao People's Democratic Republic 2012-2015. Manila, Philippines.

14. PATH (2010). Common requirements for logistics management information systems. Seattle, WA: PATH.

15. Lubinski D, Rietberg A, Buchanan N. (2010). Creating a road map for national health insurance information systems. Joint Learning Network.

16. Health Research for Action: Review of the Health Management Information System HMIS/MTUHA. 2000, 136.

17. Ministry of Health of the United Republic of Tanzania. (1993). Health Management Information System: Implementation plan 1992-1996. Dar esSalaam: Ministry of Health.

18. Kimaro HC, Nhampossa JS. (2005). Analyzing the problem of unsustainable health information systems in less-developed economies: case studies from Tanzania and Mozambique. Department of Informatics, Norway: University of Oslo, 11, 273-298.

19. East Africa Policy Forum. (2005). Health Management Information Systems (2005). Forum Report. Dar es Salaam 2005.

20. Charlesworth K, Cook P, Crozier G. (2003). Leading change in the public sector: making the difference. London: Chartered Management Institute.

21. Fehrenbach NS, Kelly JCR, Vu C. (2004). Integration of child health information systems: current state and local health department efforts. *J Public Health Management Practic*, S30-S35.

22. Southon et al., (1997). Information technology in complex health services: organization impediments to successful technology transfer and diffusion. *Journal of the American Informatics Association,* 4(2), 112-124.

23. Henderson JC, Venkatraman N. (1992). Strategic alignment: a model for organizational transformation through information technology. In Kochan T, Useem M (eds): Transforming Organizations. New York: Oxford University Press.

24. Miles RE, Snow CC. (1984). Fit, failure and the hall of fame. *California Management Review,*26, 10–28.

25. Ward J, Griffiths P, Whitmore P. (1990). Strategic Planning for Information Systems. Chichester: John Wiley.

26. World Bank, IMF and ADB (2007). *Lao PDR Public Expenditure Review, Integrated Fiduciary Assessment*.

27. Abou Zahr C, Boerma T. (2005). Health information systems: the foundations of public health. *Bulletin of the World Health Organization: the International Journal of Public Health,* 83, 578-583.

28. World Health Organization (2004). High-level forum on the Health Millennium Development Goals, Geneva, Geneva: WHO. Obtained from http://www.who.int/dg/lee/speeches/2004/mdgforum_geneva/en/

29. Morton SM. (1988). Strategy formulation methodologies and IT. In: Earl MJ (ed); Information Management: the Strategic Dimension. 1988; Oxford: Clarendon Press, 54–67.

30. Joint Learning Network website: http://jointlearningnetwork.org

31.

32. Thome JM, Pholsena S. Lao People's Democratic Republic: health financing reform and challenges in expanding the current social protection schemes. *Promoting Sustainable Strategies to Improve Access to Health Care in the Asian and Pacific Region.*

33. Yin RK. (1999). Enhancing the quality of case studies in health services research. *HSR: Health Services Research, 34(5)Part II. 1209-1224.*

34.

35. Nelkin, D. (1973). Methadone Maintenance: A Technological Fix. NewYork: George Braziller

36. Redman, E. (1973). The Dance ofLegislation. NewYork: Simon &Schuster.

37. Neustadt, R E., and H. Fineberg. (1983). The Epidemic That Never Was: Policy-Making and the Swine RuAffair. NewYork: Vintage Books.

38. U.S. Office ofTechnology Assessment. (1979-1981). Case studies of medical technologies. Washington, DC: OTA.

39. Yin, R. K., & Yates, D. (1975). Street-level governments: assessing decentralization and urban services. Lexington, MA: D. C. Health.

40. Yin, R. (1994). Case study research: design and methods. Thousand Oaks, CA: Sage Publications.

41. Wholey, J. (1979). Evaluation: Performance and Promise. Washington, DC: The Urban Institute.

42. Yin, R.K., & Heald, K.A. (1975). Using the case survey method to analyze policy studies. *Administrative Science Quarterly, 20(3),* 371-381.

43. Creswell, J.W. (2002). Qulitative, quantitative and mixed methods approaches. Sage Publications, Inc. (2nd Edition) .

44. Morse, JM. (1991). Approaches to qualitative-quantitative methodological triangulation. *Nursing Research, 40(2), 120-123.*

45. Miles MB, Huberman AM. (1994). Qualitative Data Analysis: An Expanded Sourcebook (2nd Edition). Sage Publications

46. Ministry of Health, Lao People's Democratic Republic. National Health Information System Strategic Plan 2009-2015.

47. World Health Organization. The world health report 2000 – Health systems: improving performance. Geneva: WHO; 2000.

Collaborative Requirements Development Methods Matrices

Lao PDR Social Health Insurance: HMIS Processes

Adapted from Joint Learning Network

Social Health Insurance System in Lao PDR: general overview

	SASS	SSO	CBHI	HEF
Membership	Mandatory		Voluntary	Certified by donor agency
Target population	Civil Servants +dependents	Public and private employees+ dependents	Self-employed & informal population	Families identified as below the poverty line by donor agencies
Member Contribution	- 9.5% of salary - (2.2% to health insurance)	8% of salary	Monthly payment depending on family size, urban & rural residence	none, required
Benefit package	Out-patient & In-patient Services (excluding elective surgery, traffic accidents)			Out-patient & In-patient services, including travel and food costs
Payment Method	-Capitation payments to hospitals -District and provincial hospital negotiate a contract to split capitation payments from central office		Capitation	-Capitation and/or -Fixed fee and/or - Fee for service *depends on donor agency
Ministerial auth.	MoLSW		MoH	MoH, Dept. of Budget and Planning and International donor agencies

	Process Group	Process	Objective	Input	Output	Notes
SASS	Member Management	Enroll member into insurance scheme	Verify identity and ensure all eligible are enrolled to access benefit plan services	Appointed personnel from each department of government coordinates registration of employees with: •Registration form •Family book	•Temporary ID card •Permanent card (in Vientiane province)	Insured chooses a district/ gatekeeping hospital to obtain services or obtain referral for services unavailable at district/ gatekeeping hospital
SSO				•Representative from enterprise is responsible for registering the employees and providing SSO office with completed registration form, ID card, and family book of each employee	SSO ID card with ID number that is linked to two databases (general and ATD) SSO sends updated member list to the respective hospital	
CBHI				To enroll, potential member must provide: ●Family book, or official paper from village chief ●ID card if available	Members select a hospital as the designated point of care/gatekeeping hospital (must inform their selected gatekeeping hospital if services are sought elsewhere)	
HEF				Those listed in the list of poor households (eligibility requirements are different depending on donor agency)	HEF funded by ADB and Lao Government use family book for identification HEF funded by WB and LuxDev issue member cards	

	Process Group	Process	Objective	Input	Output	Notes
SASS	Member Management	Eligibility inquiry by provider and insured	Provide accurate and timely indication of whether member is eligible for to be covered under the health insurance scheme.	SASS member must present temporary or permanent identification card SASS Central Office updates list of members and interchanges information with health facilities at the end of every month	**Will receive stamp of eligibility to receive services free of charge once hospital verifies eligibility**	
SSO				SSO member must present the SSO membership card, ID card and family book to be identified as SSO patient.		
CBHI				Member presents stamp on membership card as proof of payment for monthly contribution **Village collector records names of those who pay their contribution** **Member receives stamp of eligibility once account manager verifies contribution payments are up to date**		
HEF				HEF member must present family book or attestation from chief of village to certify HEF beneficiary status	Cross check family book or attestation of the Chief of village with list of beneficiaries available at facility	**ADB and Lao Government HEF schemes use family books for identification; WB and LuxDev issue member cards**

	Process Group	Process	Objective	Input	Output	Notes
SASS	Member Management	Confirmation of payment and member eligibility	Appropriate qualification waiting period to ensure timely payment of contributions Allow for risk pooling	**1 month – Vientiane province** **3 months – provinces outside of Vientiane province**	**Members can receive services after appropriate qualification/waiting period and update of database and pending update of database**	
SSO				**1 month – eligible for basic services** **2 months – birth, accidents** **3 months – all medical services, family members are now eligible**	**Will receive stamp of eligibility to receive services free of charge once hospital verifies eligibility**	
CBHI				**●1 month – OPD** **●3 months – IPD & emergency surgery** **●6 months – elective surgery, obstetrics, all other services**	Families are able to qualify for OPD care the first day of the second month (waiting period) and first day of the fourth month for IPD care	**If a family registers mid-month, must wait until the end of next full month to be eligible**
HEF						

	Process Group	Process	Objective	Input	Output	Notes
SASS	Provider Management	Register/contract health facilities to provide services for insured	Establish legal and financial agreements with health facilities	**All public hospitals in Laos are contracted with SASS.**	**Individual hospitals negotiate their respective percentage of capitation payments in a contract with hospitals at different levels**	There are no standard hospital service fees - capitation payment contracts are negotiated as frequently as deemed necessary by hospitals
SSO				**Yearly contract after assessment of member satisfaction, finances, database analysis and site visits**	**After agreed contract, SSO office provides health facilities with necessary equipment**	
CBHI				**District hospital will negotiate a contract with provincial or central hospitals for appropriate percentage of CBHI contribution payments to be transferred**	**CBHI contracted district hospital establishes annual agreements with provincial or central hospitals to be sub-contracted hospitals that will provide referral services**	
HEF						

	Process Group	Process	Objective	Input	Output	Notes
SASS	Fund Management	Setting of contribution rate	Calculate capitation rate, with a community risk-rating method	Automatic deduction of 8% from salary of civil servants	**must make sure to register for SAS health insurance to receive services already paid for**	
SSO				**Automatic deduction of 9.5% from employee salary**	Medical care benefits are offered free of charge directly hospital	
CBHI				expected expenses by the hospitals on the insured group, willingness and ability to pay	**Contribution rate is separated into 2 categories: urban and rural, and increases with # in household**	
HEF				N/A memebers do not pay out-of-pocket to be insured under HEF **Lao Government or donor agencies distribute funds.**	**HEF members receive services free of charge**	

	Process Group	Process	Objective	Input	Output	Notes
SASS	Fund Management	Contribution payment collection	Timely, accurate collection of money due from members	**Automatic deduction from salary**	**Contribute towards insurance funding** **Eligible for benefits** **List of insured members is updated accordingly**	
SSO						
CBHI				**Village collector visits participating villages, families living in villages not covered by CBHI or without funds at time of collection can pay directly to account manager at hospital or with district CBHI management committee**	Village collector transfers contribution payments from villages account manager **List of insured members is updated accordingly**	
HEF				N/A members do not pay out-of-pocket to be insured under HEF **Lao Government or donor agencies distribute funds.**	**Funds are distributed to government employees or third party HEF implementers for distribution to health facilities**	**Fund distribution plans are different depending on donor agency**

	Process Group	Process	Objective	Input	Output	Notes
SASS	Provider Management	Claims Processing	Timely and accurate processing of claims to determine validity of claim and amount to be paid to provider/beneficiary, then transfer of appropriate funds	Member selected hospital transfers funds to the non-member selected or non-contracted hospital that provided services	Separate capitation payment for emergency, deliveries, and dental services with ceiling	Transfer of funds to appropriate hospital only when used in the case of emergency or referral, otherwise patient must pay out of pocket
SSO				Beneficiary must claim the benefit by him/herself Submit relevant claim form to SSO within 3 months.	If information presented by claimant meets with those in the SSO database and all prerequisites are fulfilled, SSO claims officer will calculate amount of benefit according to the applicable regulation	
CBHI				CBHI committee processes claims District hospital processes claim and payment	Funds are distributed to respective hospital bank accounts	
HEF				N/A members do not pay out-of-pocket to be insured under HEF Lao Government or donor agencies distribute funds.	Funds are distributed to government employees or third party HEF implementers for distribution to health facilities	Fund distribution plans are different depending on donor agency

	Process Group	Process	Objective	Input	Output	Notes
SASS	Plan Management	Emergency Services Reimbursement	Efficient processing of emergency services sought by beneficiary at contracted and/or non-contracted health facilities	Individual can file a claim at the SASS office if patient pays fee for service Can receive services at any hospital but must inform SASS office or member selected hospital within 3 days	Contracted/ member-selected hospital will pay the same listed fee for the services sought elsewhere	Member can pay Fee for service, then claim reimbursement
SSO				Must inform SSO office within 3 days if patient seeks services at non-designated hospital	SSO will facilitate emergency claims with hospital District hospital will make claim with provincial hospital to be reimbursed; patient does not pay	
CBHI				Insured member must report to the hospital they are affiliated to, through the Management Committee within 48 **(72)** hours of using emergency medical services	Hospital contracted by CBHI will reimburse medical costs made in the hospital other than the contract hospital if situation is	Member can pay first, then claim or contact account manager, who will negotiate treatment, and hospital will bill appropriate contracted hospital
HEF				Check the conformity and obtain approval of the chairperson of the HEF district management committee or after an urgent report	Payment of approved claims or capitation reimbursement is paid in the correct amount to the correct provider.	In case of emergencies, HEF member can use services at all state health facilities, - must inform the district HEF unit within 48 hours so that unit can cross-check

	Process Group	Process	Objective	Input	Output	Notes
SASS	Fund Management	Payment to providers	Pay approved health care expenses of contracted health facilities and non-contracted health facilities	Based on number of members registered and database update on member registration	Central hospital transfers appropriate amount based on number of registered members	Funds (capitation payments) transferred to hospital bank account Capitation amounts depend on negotiated contracts between individual hospitals
SSO				SSO pays hospital capitation payments to the contracted hospital according to number of patients that have chosen that hospital for their treatment.	SSO pays directly to main contracted hospital (there are subcontracted hospitals)	
CBHI				Capitation amount of all contributions minus the administrative costs (**10% of contribution payments**) of the scheme paid to the contracted hospital as prepayment	For this capitation payment, hospital agrees to provide all health services to insured members as well as eligible medication	In the case of referrals, expenses for such services are already included as part of the capitation funds agreed upon in negotiated contract.
HEF				OPD - capitation IPD – fee for service Capitation payments every three months, paid in advance Fixed fee payments claimed by hospital every three months	Lao Government and donor organizations will transfer funds to third party implementers to distribute.	Claims reimbursements are not received /processed monthly due to low incentive

	Process Group	Process	Objective	Input	Output	Notes
SASS	Fund Management	Accounting	Timely and accurate processing of claims and transfer of payments to appropriate party	SASS general database and Central Office has specific staff dedicated to accounting responsibilities.		
SSO				SSO general database and Central Office has specific staff dedicated to accounting responsibilities.		
CBHI				Account manager will perform daily collection of all the contributions from collectors, deposit in CBHI bank account at least once a week, calculates the capitation sum to the hospital and other expenses of the scheme	Account manager can make payments after written order from the Management Committee at district level District office will provide one of its finance staff to monitor CBHI account manager	Account manager must not be member of the hospital staff District and referral hospital have responsibility of managing their own capitation funds.
HEF				Copies and receipts of HEF Cash follow up book (record 01) Monthly replenishment plan (form 03) All of the above to be provided by the HEF management unit of the health facility	Defend replenishment plan during every quarterly meeting of the HEF management committee	ADB and WB employ Swiss/Lao RC to distribute and account for funds Gov HEF employs account managers in each district LuxDevemploys Lao government staff and provincial health office

	Process Group	Process	Objective	Input	Output	Notes
SASS	Plan Management	Reporting	Promotion of scheme to be supervised on a regular basis Provide accurate and regular reports to administrative committee	Monthly reports to Ministry of Labor and Social Welfare Update database every three months in all the provinces with eligilbility, membership information	Networks between hospitals and central office are connected via internet and can supervise information in real time (ex. Setthatirath Hospital)	
SSO				**Both general membership database and ATD database are updated twice a week**	IT at SSO central office transmits updated information to hospital by internet twice a week Monthly report to SSO director Quarterly report to SSO medical board Yearly report to executive board of SSO	Contribution information is only available at the SSO central office
CBHI				**CBHI meets with central management committee every 3 months to discuss finances, membership data**	Discussion of issues/ challenges, deadline setting, appointing responsible persons for solving the issues Production of quarterly plans	
HEF				.		

	Process Group	Process	Objective	Input	Output	Notes
SASS	Provider Management	Provider quality assurance	Ensure that provider has delivered the necessary and satisfactory quality of contracted services			
SSO						
CBHI				Quality checks during supervision site visits. Random checks to the site when complaint is received. Patient can write a complaint report to the committee chair	CBHI office questions abnormal expenditures or data input Occasional patient surveys are conducted	CBHI office recognizes the need to improve current process of quality assurance Currently, there is no formal, established method of quality assurance
HEF				Policies towards outstanding good performers, Sanctions against violators	Those with outstanding good performance in the implementation of the HEF decree will receive felicitation or other appropriate remunerations. Individual or organization violating the HEF and related rules will be warned, educated, applied disciplines, fined, asked to pay for damages according to the civil laws or punished with penal codes according to the Laws of the country.	Decree does not specify who will carry out such performance evaluations (external or government agency?) or which standards will rate performance **These findings are stated in the HEF Decree, not witnessed during site visits.**

Key findings: Site Visit

- Different computers to manage the member information and ATD related data for each individual scheme
  - Fragmented delivery of service

Setthatirat Central Hospital

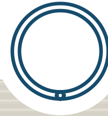
CBHI SASS SSO

MCH hospital

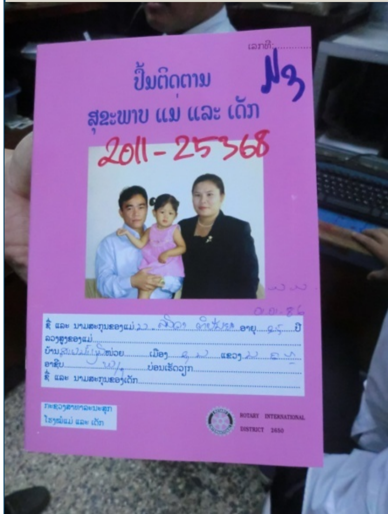
Sitthatanak District Hospital

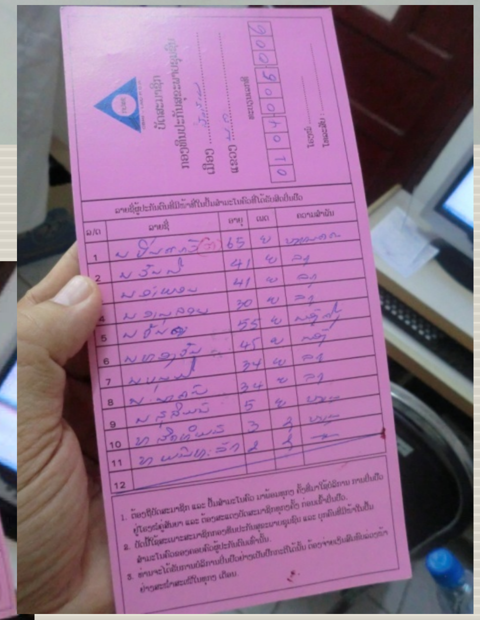
CBHI SASS

Key findings: Site Visit



Different methods of patient identification, eligibility inquiry/approval





APPENDIX B:
Site Visit Reports – Mapping current business processes, work and information flows of SASS, SSO, CBHI and HEF health insurance schemes of Lao PDR

August 10-19, 2011

Ava Grace Lim
WHO Western Pacific Regional Office
Health Information, Evidence and Research Team

SITES:

SSO Central Office
SASS Central Office
CBHI Central Office – Ministry of Health (MOH)
HEF Central Office – Ministry of Health (MOH)

Sisattanak District Hospital
Setthatirath Central Hospital

Social Security Organization (SSO)

Site Visit Report: *Social Security Organization Central Processing Office*
Point of contact: *Mr. Padeumphone Sonthany, Deputy Director of SSO;*
Dr Veomany, technical staff of SSO

General Site Information

In one or two years, SSO will merge with SASS. Database merge will depend on the leanings of the new policy and decree.
Contribution information is only available at the SSO CPO.
Central Office has a specific unit dedicated solely to health insurance management.

Information Management

Currently, SSO maintains two databases: general SSO member database (eligibility) and ATD (health services, benefits, payment status). Both databases are updated twice a week and information is exchanged between the hospital and SSO Office twice a week. The ATD database and pertinent equipment is provided by the SSO to hospitals.

Although SOS intakes the same information for member registration, and maintains two databases (general and ATD) as SASS, SOS uses different data software than SASS (Open Source vs. Microsoft Access).

Health Insurance

9.5% of employee salary → 2.2% allotted to health insurance
85,000 kip per beneficiary paid to hospitals
Covers: 1,500,000 kip per high cost services (e.g. brain surgery)
50% of high cost diagnostics, medical equipment (e.g CT scan, wheelchair)
5% of costs related to chronic disease
[above services are in addition to the 85,000 kip/member paid to hospitals]

Comments and Notes

The SSO Deputy Director was very enthusiastic about the pending merger, stating that SSO will follow SASS lead in whatever initiatives. Did not offer any other perspectives on the merger in regards to the technical details, such as who will take lead, what can be merged/kept separate, what individual priorities need to be addressed, etc.

State Authority Social Security (SASS)

Site Visit Report: *State Authority Social Security Central Processing Office*
Point of Contact: *Dr. Vaxay Souvannamethy, Deputy Director of SASS;*
Dr. Bouahom, Head of Health Insurance Division of SASS

General Site Information:
SASS was established in 2008 when they separated from the Social Security. All districts and provinces are contracted with the SAS health insurance. Health facilities receive capitation payments for services provided (Decree 178). Prior to 2005 Social Security Reform, payment was through fee-for-service with ceiling (Decree 70). Capitation payments are negotiated between individual district and provincial hospitals on a contractual basis.
SASS Office has a specific unit solely dedicated to health insurance management.

Health Insurance
8% of employee salary

Information Management
All provinces have their own SASS branch office, with database update conducted every three months (eligibility, current/new members, newborns – since SASS covers the entire family vs. individual SSO coverage). Information is exchanged with Central Office at the end of every month. Although SASS intakes the same information for member registration, and maintains two databases (general and ATD), such as SSO, SASS uses different data software than SSO (Open Source vs. Microsoft Access).

Hospitals can utilize the new data received on the 1st day of each month
Every month: 20th – 22nd data from province sent to Central Office
25th data from Central Office distributed to provinces
[the waiting/qualification period for members revolves around this schedule]

Fund Management
Payment to hospitals depends on negotiated contracts between different levels of hospitals.

- If 100% of contributions go to the provincial hospital, then district hospital will file claims for services provided.
- If a patient registered at a provincial hospital receives services at central hospital, provincial hospital will pay central hospital.
- If a patient goes to a different contracted hospital, patient must notify their registered hospital or SASS Office within 3 days. Registered hospital will transfer payment or SASS will facilitate claim between hospitals or reimburse hospital themselves – patient does not have to pay out of pocket

Comments and Notes
The SASS personnel interviewed stated that in the first stages of the merger, health information can be coalesced but member eligibility database should be kept separate.

Personnel did not express any concerns with their current management of the scheme. Did not offer any input on who should/will take lead point in the SSO and SASS merger or what the next steps should be.

Community Based Health Insurance (CBHI)

Site Visit Report: *Community Based Health Insurance Central Processing Office*
Point of Contact:
Dr. Bouaphat Phonvisay, Chief of Health Insurance Division, Ministry of Health;
Mr. Alexis Bigeard, Dept. of Planning and Finance, Ministry of Health;
Khambong Thepbandith, IT expert

General Site Information
The CBHI scheme is under the Vientiane Capital Department of Budget and Planning (DBP), which falls under the supervision of MoH.

CBHI does not have an ATD equivalent database for its members. The CBHI office has met with SSO and SASS personnel to discuss the technical and health information related issues (computer systems, ATD, databases) of the future merger. Another meeting with SASS scheduled last month was postponed.
Health facilities' contract for capitation payments is negotiated based on past data. There are no additional, individual reimbursements for referrals or additional services.

Provincial hospitals do not have a list of CBHI members or account managers, since district hospitals are the gatekeeping hospitals for CBHI members. However, there are CBHI units at provincial levels in urban areas, and provincial hospitals can operate as main or sub-contracted health facilities.

Since, CBHI gatekeeping hospital is at the district level, CBHI patients must bring a referral letter to receive services free of charge at central hospitals, otherwise pay out of pocket with no reimbursement. If in the case of an emergency, the funds for services provided come out of the capitation payments agreed upon in the CBHI contract with the hospital. These funds are already negotiated and transferred through bank accounts, so there is no need to file a claim.

CBHI scheme has tried to relocate the CBHI account manager outside the hospital and to the district government offices. This was in efforts to separate tasks and focus account managers' duties to CBHI implementation and contribution collection, rather than data management at the hospital. This has been established in some areas and has provided for account managers to dedicate their time toward effectively carrying out their duties of contribution collection and follow up. Additionally, it provides for closer proximity between account managers and CBHI District Committee for oversight. Although this has proven efficacious, the problem is with the lack of hardware (computers) necessary to relocate account managers to government offices, as health facilities also need a computer for keep track of CBHI eligibility. Since the account manager works for the district CBHI management, and not the hospital, it is viewed that the hospitals should employ their own CBHI coordinator.

Information Management
The CBHI equivalent of ATD reporting is very similar to that of SSO and SASS, but CBHI reporting is manually filled out by hospital staff into a logbook, since the computer at health facilities is provided for the account manager to perform eligibility checks. CBHI has not yet implemented ATD reporting – separate logbooks record

Information Management
OPD/emergency and IPD services on a monthly basis. It has been decided to implement ATD reporting system; design of database has yet to be determined (may follow SASS design).

Most health facilities use excel to report ATD related data. IPD reports include everything related to services provided, OPD reports include only number of patients and cost.

There are two computers in two different locations, as outlined by the CBHI regulations: with the CBHI Management Committee and the health facility. However, the computers are not connected via internet connection. Staff must update patient registration either by faxing the print-out of member lists or mailing a CD-Rom of computer files.

The membership database is updated monthly, since contributions are collected monthly. There is low incentive to update membership data, or to travel to transfer funds from village to account manager any more often than what is now. Thus, if an individual registers at mid-month, eligibility is not in effect until the end of next full month.
[e.g. An individual registers mid-August, but the CBHI account for August is already closed by that time, so individual pays for month of September, member list is updated at the end of September, eligibility takes effect starting October.]

Fund Management
Every month, District CBHI Committee Chairman signs and approves payment; funds are distributed to health facilities through bank accounts.

Money flow: village collector → account manager → bank

CBHI staff comments on the future merger:
Membership data will be difficult to merge since CBHI membership is irregular since it covers the informal population.

Comments and Notes
Personnel interviewed stated that they would recommend separate databases for membership and eligibility for each respective scheme, but stored in one computer – would prefer to be under the IT guidance of SASS.

Site Visit Report: CBHI CPO Office continued…

Comments and Notes

Recently approved CBHI reform (Aug 2011) proposes the following in Vientiane's current CBHI current pilot to address:

- high costs and yearly (instead of monthly) contribution collection
- two categories of member premiums – depending on whether member selects central or district hospital as their gatekeeping hospital (higher premium for central gatekeeping hospital)
- fixed capitation and additional capitation payments to hospitals for chronic disease and high cost services → move toward SASS and SSO operational guidelines
- provider payment mechanism → collect contributions and consolidate funds at the provincial, not district level

Health Equity Fund (HEF)

Site Visit Report: Health Equity Fund Central Processing Office
Point of Contact: Dr. Maitry Senchanthixay, Head of HEF, Ministry of Health

General Site Information:
HEF receives funding from either the following donors:

1. Lao PDR National Government MoH
2. Asian Development Bank (ADB) – 3 provinces
3. World Bank (WB) – 5 districts
4. Luxembourg Agency for Development Cooperation (LuxDev) – Vientiane Province
5. Swiss Red Cross (RC) – 2 Northern districts, 1 Southern province

Every donor must report to Dr. Maytry's HEF Office.

Operational guidelines and policy are different to each respective donor – some use government criteria to define target population, some use their own criteria and methodology (site visits). The donor agencies employ third parties to distribute funds and implement HEF. The Central HEF office transfer funds to provincial health office who distributes payment in the appropriate amount to health facilities.

Until recently, the possibility of harmonizing donor strategic plans was never discussed. Two meetings have been convened by the MOH and various departments of the government and donors. Currently, the technical working group and development parties are discussing the draft of harmonized operations, written by HEF with input from donors. The draft will be passed onto the technical working group that is to be reorganized every three months as a task force on this specific topic.

However, some donors must follow the standing Memorandum of Understanding with the MOH that lasts five years. The policy of harmonized operations must recognize the implications with the existing third parties who are in charge of HEF implementation.

Health Insurance
- Health centers, district and provincial hospitals – fixed fee paid by number of cases (health center is subcontracted with district hospital)
- Central hospital – no contract, fee for service

ADB, WB and Swiss RC operate from village to central level, while LuxDev operates from village to provincial level.

Information Management
HEF members do not have ID numbers. ADB and Government funded HEF schemes use family books for identification; WB and LuxDev issue member cards. Each hospital has an OPD/IPD logbook. Database is in its initial stages and very simple. The districts that receive Government funds for HEF have not yet started a database – no budget.

Information Management
The list of qualifying members/population is not at the HEF office – HEF office only houses health expenditures, utilization and funding on excel files.
Swiss RC holds ADB and WB records, LuxDev holds their own.

Fund Management
The funding is passed onto third parties for distribution and implementation as follows:

- Flow of funds: Lao Government → account manager in each district
  - Mechanism: capitation payment for IPD and fixed fee for OPD services.

Request for funds: Health facility → district account manager → district secretariat → district committee → provincial committee → central committee
Details: Hospital and health facilities report to account manager at each district and submit reports for funds.
Account manager audits report and works with district secretariat and submits to district committee, then provincial committee then central committee.

- Flow of funds: Asian Development Bank (ADB) → Swiss Red Cross/Lao Red Cross → health facility
  - Mechanism: capitation transferred to health facility in advance for one year, fixed fee claimed every three months.

Notes: An expert is employed to calculate capitation amounts to be transferred to health facilities. ADB is also the HEF implementer at district level. Lao RC works in the field and at the health facilities, reports to Swiss RC.
Request for funds: Health facility → Lao RC or district ADB →provincial ADB → central ADB
Details: Health facility submits report to Lao RC or district ADB and requests for audit. Report is then submitted to provincial ADB, who submits to central ADB who will disburse funds. ADB is less costly than WB since they implement HEF themselves,

- Flow of funds: WB → Swiss RC/Lao RC →health facility
  - Mechanism: fixed fees every 3 months

Details: Swiss RC and WB calculate different rates of fixed fees at district and provincial levels. No capitation payments.
Request for funds: Health facility → Lao RC → provincial HEF office → Swiss RC.
Details: Health facility reports to Lao RC who audits the report and submits to provincial HEF office who submits to Swiss RC.

- Flow of funds: LuxDev → government staff → provincial health office
  - Mechanism: fee for service

Request for funds: Health facility → provincial health office
Details: Health facility submits report to provincial health office
Previously had third party audit and implement HEF. No more auditing due to budget cut this year.

Payment Mechanism and System

The following applies to all donors:

- Capitation – every three months, paid in advance
- Fixed fee – after hospital report and audit, initial first-time advance lump sum payment to cover three months in, then facility must claim with respective donor agency every three months.

Claims reimbursements are every three months and not monthly, due to low incentive and "too much work"

HEF Office has tried to change all payment mechanism to capitation system as it requires better financial management by the hospital and prevents false reporting and "ghost patients". However, change has been difficult to implement as hospitals are not in favour of the capitation system.

Comments and Notes

Dr. Maytry's comments:

Much of the donor funds are lost through the shuffle of administration and transfers. "For example, only $200,000 of the $500,000 donor funds reaches the health facility. The rest are deducted for "expert salary".

Pooling funds is necessary for universal coverage – must merge health services and all health expenditures under a single insurance where the funds will go directly and be pooled together.

Sisattanak District Hospital

Site Visit Report: *Sisattanak District Hospital*
Point of Contact: *Dr Bouakeo, Deputy Director;*
Mr Thanousone CBHI Account manager

General Site Information
Gatekeeping hospital of CBHI and SASS health insurance members (SSO only accepted at central hospitals).
Patients are responsible for their own medical records. Hospital uses three different computers for different schemes: CBHI, SASS, non-insured. A CBHI account manager is employed on-site at the hospital, while hospital staff handle SASS members. The CBHI scheme is under the Vientiane Capital Department of Budget and Planning (DBP).

Currently, medical records are color-coded for SAS and CBHI and dependents. Soon, they will use one color, one format for all patient records.

Every two years, hospitals in the entire country are audited. Additionally, auditing from the MOH for the CBHI Unit is conducted three times a year (covers services, finances, village collector log). Sisattanak District Hospital has regular visits from the MOH Department of Quality Assurance to ensure quality between the insured and non-insured. The SAS Central Office conducts an audit every six months of both health services, expenditures, and general finances.

Health Insurance
CBHI: Contributions are collected by village collector or directly paid to account manager at the hospital if only few families are participating from the community, or members are unable to pay village collector at the time of collection. If member has not paid for two months or more, they must pay upfront the entire amount owed before they can receive services.

10% of the total contribution is deducted for administration costs, the remaining amount is split and transferred to referral hospital (40%) and utilized at district hospital (60%).

Contribution is calculated based on family size, and collected on a monthly basis.

Information Management
3 different computers containing the database for SAS, CBHI and non-insured patients. Both SAS and CBHI computers use Microsoft Access, but require different information for registration.

Hospital staff are not fully aware of the comprehensive functions of the database or the need for adequate health information system, they simply input the data as trained/directed by higher administration office.

CBHI does not have an ATD equivalent database for its members. The computer at Sisattanak only contains CBHI membership information.

Service Delivery

1. patient intake – queue card, take vitals
2. reception, account manager – pay contribution if overdue, receive eligibility stamp (two different windows for CBHI and SAS)
3. doctor consultation
4. diagnostic tests if ordered by doctor
5. eligibility stamp
6. pharmacy if prescription needs to be filled
7. cashier calculates cost
8. reception - receive stamp for free services
9. pharmacy – pick up medication
10. receive referral if necessary – pick up from hospital a day or two later

*all 10 steps are conducted at different locations within the hospital

Comments and Notes

What can be done to improve service delivery?

- Reception should be in charge of both eligibility checks and information database.
- Service delivery should be: vitals, doctor consultation, pharmacy, tests → no eligibility stamps

There are preliminary discussions to receive additional funds from the Vientiane health office of Department of Budget and Planning (DBP) for excess costs associated with second referrals.

Setthatirath Central Hospital

Site Visit Report: *Setthatirath Central Hospital*
Point of Contact: *Dr. Viengnaphole*

General Site Information
First referral hospital from Sisatthanak District Hospital – accepts SSO, SASS and CBHI health insurance.
In 2005, Setthatirath Central Hospital expanded service delivery to three additional districts, and before 2002, general services were paid by patients out-of-pocket. The CBHI Vientiane capital city reform that pertains to the three central hospitals (Setthatirath, Mahosot and Friendship Hospital) will distribute nine surrounding districts so that each central hospital will bear referrals from three district hospitals.

Health Insurance
CBHI patients must bring a referral letter to receive services free of charge, otherwise pay out of pocket with no reimbursement. If it is an emergency case, the funds for services provided comes out of the capitation payments agreed upon in the CBHI contract. These funds are already negotiated and transferred through bank accounts, so there is no need to file a claim.

SSO/SASS patients are not required to present referral letters – eligibility depends on member selection of Setthatirath Hospital as their primary point of care. If certain treatment is not available at their selected hospital, the hospital that refers patient to Setthatirath Hospital must bear the costs of services provided by Setthatirath Hospital.

In such a case, the hospital providing referral services will send bill and receipt to requesting hospital. Requesting hospital checks for accuracy, consolidates at the end of the month to forward to the SSO or SASS central office. The central office will then deduct that amount from the next capitation payment due to the requesting hospital.

The SASS capitation contract allots 40% of capitation payments for the Setthatirath Central Hospital.

Information Management
The Setthatirath Hospital only houses SASS and SSO databases. Data is entered into the SASS and SSO ATD databases that is linked via internet to the central office.

CBHI data is entered into an excel format provided by the CBHI Unit then faxed over to the CBHI from the provincial level.

Setthatirath Hospital does not report directly to MOH or Ministry of Welfare, but simply passes on the information onto the next level of management. The hospital staff are trained in information management for all three schemes. There is no CBHI account manager at Setthatirath Hospital (account managers are only at district, gatekeeping hospitals)

Fund Management

There is no auditing of finances, since SAS and SSO central office can check the current status of fund management at any time, since they are linked via internet. For this reason, the hospital also does not have a regular reporting system. Monthly reports are only written for the hospital director, who cross checks the figures with the data from SSO and SASS office.

Most of the capitation payments received is spent on medication, services, and medical equipment – spending is tracked by the finance office of the hospital.

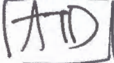
Service Delivery

1. Patient registration at window outside the hospital
2. Eligibility check inside – receive stamp
3. Doctor consultation – treatment, prescription, order for diagnostics
4. Receive stamp to receive the services free of charge
5. Pick up prescribed meds if necessary
6. Receive ordered diagnostic tests if necessary

*All 6 steps are conducted in different locations within the hospital

Comments and Notes

The Deputy Chief did mention that it was difficult to work under two government ministries, but avoided going into details – would prefer to work under the prime minister who has direct channel of communication with the provincial and district level governments.



ATD

district hospital

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ກອງທຶນປະກັນສຸຂະພາບຊຸມຊົນ (2) ... ເລກທີ: __________/ກປສຊ.ສສນ

ບົດລາຍງານ ATD ກ່ຽວກັບການປິ່ນປົວຄົນເຈັບໃນຂະແໜງກວດເຂດນອກ ແລະ ນອນໂຮງໝໍ

ຢູ່ໂຮງໝໍເມືອງ ແລະ ໂຮງໝໍສົ່ງຕໍ່, ປະຈຳເດືອນ:.....11...., ປີ: 2010......

ຊື່ໂຮງໝໍເມືອງ:...................... ຈຳພອນ

		ຈ.ນ ຄົນເຈັບ
ກວດເຂດນອກ	ກວດທົ່ວໄປ & ກວດຊ່ຽວຊານ General consultation + specialty	346
	ກວດສຸກເສີນ Emergency	21
	ແມ່ ແລະ ເດັກ MCH	11
	ແຂ້ວ dental care	6
	ອື່ນໆ others	-
	ລວມຄົນເຈັບກອງທຶນ ປສຊ total CBHI	384
	ລວມຄົນເຈັບທົ່ວໄປ ແລະ ຄົນເຈັບ ປສຊ total non insured + insured	708
	ເປີເຊັນຄົນເຈັບ ປສຊ ຕໍ່ຄົນເຈັບກວດເຂດນອກທັງໝົດ	54,237
ນອນໂຮງໝໍ	ຄົນເຈັບ ປສຊ ທີ່ອອກ ໂຮງໝໍ IPD discharged	44
	ຄົນເຈັບທົ່ວໄປ ແລະ ຄົນເຈັບ ປສຊ ທີ່ອອກໂຮງໝໍ	228
	ເປີເຊັນຄົນເຈັບ ປສຊ ຕໍ່ຄົນເຈັບນອນໂຮງໝໍທັງໝົດ	19,298
	ຈຳນວນວັນນອນທັງໝົດຂອງຄົນເຈັບ ປສຊ ທີ່ອອກໂຮງໝໍ	124
	ຈຳນວນວັນນອນທັງໝົດຂອງຄົນເຈັບທົ່ວໄປ + ຄົນເຈັບ ປສຊ ທີ່ອອກໂຮງໝໍ IPD days of non insured + insured	639
	ເປີເຊັນວັນນອນຂອງຄົນເຈັບ ປສຊ ຕໍ່ວັນທັງໝົດຂອງຄົນເຈັບນອນ	19,405

- ຈຳນວນຕຽງ: 30. ຕຽງ (total beds)
- ອັດຕາການນຳໃຊ້ຕຽງຄົນເຈັບ ປສຊ: ____ % (IPD days)
- ອັດຕາການນຳໃຊ້ຕຽງຂອງ ຄົນເຈັບທົ່ວໄປ + ປສຊ: 38,8 % (non insured + insured)

- ຈຳນວນຄົນເຈັບ ປສຊ ທີ່ສົ່ງຕໍ່ຈາກໂຮງໝໍເມືອງ ໄປໂຮງໝໍສົ່ງຕໍ່ ຫຼື ໂຮງໝໍອື່ນໆ: 3. ຄົນ → No patients referred

ຊື່ໂຮງໝໍສົ່ງຕໍ່:....................... ແຂວງ

ກວດເຂດອອກ	ຈຳນວນຄົນເຈັບ ປສຊ ທີ່ກວດເຂດນອກ		ຄົນ
ນອນໂຮງໝໍ	ຈຳນວນຄົນເຈັບນອນ(ປສຊ)ທີ່ອອກໂຮງໝໍ		ຄົນ
	ຈ.ນ ວັນນອນຂອງຄົນເຈັບ(ປສຊ)ທີ່ ອອກໂຮງໝໍ		ວັນ

<u>ຄົນເຈັບກອງທຶນ ປສຊ ທີ່ເກີດລູກຢູ່ໂຮງໝໍເມືອງ ແລະ ໂຮງໝໍສົ່ງຕໍ່:</u>

- ຈຳນວນຄົນເຈັບ ປສຊ ທີ່ເກີດລູກຢູ່ໂຮງໝໍເມືອງ ____ ຄົນ
- ຈຳນວນຄົນເຈັບທົ່ວໄປ + ຄົນເຈັບ ປສຊ ທີ່ເກີດລູກ ຢູ່ໂຮງໝໍເມືອງ ____ ຄົນ
- ຈຳນວນຄົນເຈັບ ປສຊ ທີ່ເກີດລູກຢູ່ໂຮງໝໍສົ່ງຕໍ່ ____ ຄົນ

ຟອມ ປສຊ304-ຣໝ4.1

ບົດລາຍງານ ATD ກ່ຽວກັບຂັ້ນຕອນການປິ່ນປົວ ແລະ ຄ່າໃຊ້ຈ່າຍ

ຢູ່ໂຮງໝໍເມືອງ ແລະ ໂຮງໝໍສົ່ງຕໍ່, ປະຈຳເດືອນ:....11..., ປີ: 2010......

ຊື່ໂຮງໝໍເມືອ ຈຳພອນ

Charged fee

ວິເຄາະ: ຈຳນວນລາຍການກວດ: Lab — ຄ່າໃຊ້ຈ່າຍທີ່ບໍ່ໄດ້ຄິດຄ່າສຳລັບຄົນເຈັບ ປສຊ

- ຈ.ນ ລາຍການກວດຂອງຄົນເຈັບ ປສຊ:	99	ລາຍການ	1.467.000	ກີບ
- ຈ.ນ ລາຍການກວດຂອງຄົນເຈັບທີ່ບໍ່ມີປະກັນສຸຂະພາບ		ລາຍການ		
- % ລາຍການກວດຂອງຄົນເຈັບ ປສຊ/ຄົນເຈັບທີ່ບໍ່ມີປະກັນສຸຂະພາບ				
ສ່ອງໄຟຟ້າ: ຈຳນວນຄົນເຈັບ: X-ray				
- ຈ.ນ ຄົນເຈັບ ປສຊ:	9	ຄົນ	270.000	ກີບ
- ຈ.ນ ຄົນເຈັບທີ່ບໍ່ມີປະກັນສຸຂະພາບ:		ຄົນ		
- ເປີເຊັນຄົນເຈັບ ປສຊ ຕໍ່ຄົນເຈັບທີ່ບໍ່ມີປະກັນສຸຂະພາບ				
ການແທກຄື້ນຫົວໃຈ: ຈຳນວນຄົນເຈັບ: ECG				
- ຈ.ນ ຄົນເຈັບ ປສຊ:	1	ຄົນ	15.000	ກີບ
- ຈ.ນ ຄົນເຈັບທີ່ບໍ່ມີປະກັນສຸຂະພາບ:	14	ຄົນ		
- ເປີເຊັນຄົນເຈັບ ປສຊ ຕໍ່ຄົນເຈັບທີ່ບໍ່ມີປະກັນສຸຂະພາບ	7,142			
ສ່ອງເອໂກ: ຈຳນວນຄົນເຈັບ: Echo				
- ຈ.ນ ຄົນເຈັບ ປສຊ:	66	ຄົນ	1.650.000	ກີບ
- ຈ.ນ ຄົນເຈັບທີ່ບໍ່ມີປະກັນສຸຂະພາບ:	139	ຄົນ		
- ເປີເຊັນຄົນເຈັບ ປສຊ ຕໍ່ຄົນເຈັບທີ່ບໍ່ມີປະກັນສຸຂະພາບ	47,482			
ມູນຄ່າຢາ ແລະ ເຄື່ອງມືອຸປະກອນ ທີ່ບໍ່ໄດ້ເສຍຄ່າ			12.516.500	ກີບ
ຄ່າໃຊ້ຈ່າຍທາງດ້ານບໍລິຫານ ທີ່ບໍ່ໄດ້ເສຍຄ່າ(ປື້ມກວດພະຍາດ,ຄ່າທຳນຽມ, ຫ້ອງ..)			1.975.000	ກີບ
ຄ່າໃຊ້ຈ່າຍສຳລັບການປິ່ນປົວ ທີ່ບໍ່ໄດ້ເສຍຄ່າ(ປົວແຂ້ວ,ບຳບັດ,ແມ່ແລະເດັກ,ໃບຢັ້ງຢືນ)			1.272.000	ກີບ
ລວມມູນຄ່າການໃຊ້ຈ່າຍຂອງສະມາຊິກ ປສຊ ທີ່ບໍ່ໄດ້ເສຍຄ່າ			19.165.500	ກີບ

total Charged fee

ຊື່ໂຮງໝໍສົ່ງຕໍ່:................. ແຂວງ

ການບໍລິການ: — ຄ່າໃຊ້ຈ່າຍທີ່ບໍ່ໄດ້ຄິດຄ່າສຳລັບຄົນເຈັບ ປສຊ

- ກວດວິເຄາະ: ຈຳນວນລາຍການກວດ:		ລາຍການ		ກີບ
- ສ່ອງໄຟຟ້າ: ຈຳນວນຄົນເຈັບ ປສຊ:		ຄົນ		ກີບ
- ແທກຄື້ນຫົວໃຈ: ຈຳນວນຄົນເຈັບ ປສຊ:		ຄົນ		ກີບ
- ສ່ອງເອໂກ: ຈຳນວນຄົນເຈັບ ປສຊ:		ຄົນ		ກີບ
ມູນຄ່າຢາ ແລະ ເຄື່ອງມືອຸປະກອນ ທີ່ບໍ່ໄດ້ເສຍຄ່າ				ກີບ
ຄ່າໃຊ້ຈ່າຍທາງດ້ານບໍລິຫານ ທີ່ບໍ່ໄດ້ເສຍຄ່າ(ປື້ມກວດພະຍາດ,ຄ່າທຳນຽມ, ຫ້ອງ..)				ກີບ
ຄ່າໃຊ້ຈ່າຍສຳລັບການປິ່ນປົວ ທີ່ບໍ່ໄດ້ເສຍຄ່າ(ປົວແຂ້ວ,ບຳບັດ,ແມ່ແລະເດັກ,ໃບຢັ້ງຢືນ)				ກີບ
ລວມມູນຄ່າການໃຊ້ຈ່າຍຂອງສະມາຊິກ ປສຊ ທີ່ບໍ່ໄດ້ເສຍຄ່າ				ກີບ

Champone

patients for main contracted district hospital

ສະຫຼຸບເງິນກອງທຶນປະກັນສຸຂະພາບຄົນເຈັບນອນໂຮງໝໍ

ປະຈຳເດືອນ 11 / 2010

list of IPD patients in district hospital

ຊື່-ນາມສະກຸນຄ/	ອາຍຸ	ບ້ານຢູ່	ເລກບັດ	ມະຕິພະຍາດ	ປະຫວັດ	ECG	ເອໂກ	ລັງສີ	ວິເຄາະ	ຄອດ,ຮີມ	ອັກຊີ	ລົດ	ພື້ນຟູຊີ	ວິຊາການ	ຫ້ອງນອນ	ຄ່າຢາ	ຈ/ນເງິນລວມ	ວັນເຂົ້າ	ວັນອອກ	ລວມມື້ນອນ
. ປາວິນາ	7 ດ	ທົ່ວນ້ຳລ້າງ	036002	ອ/ສ ປອດ	5,000										18,000	74,500	97,500	19.10.10	21.10.10	3
ນ. ວິໄລພອນ	27	ກ/ກ ທົ່ງ	00770	ອ/ສ ຄໍ	5,000				12,000						24,000	106,500	147,500	20.10.10	24.10.10	4
ທ. ດຳ	3	ກ/ກ ທົ່ງ	01046	ອ/ສ ປອດ	5,000										24,000	122,000	151,000	"	24.10.10	4
ນ. ບຸນເທົ່ງ	46	ກ/ກ ດົງ	050010	ຍົກມົດລູກ	5,000						18,000		50,000	50,000	70,000	818,000	1,011,000	22.10.10	3	4
ນ. ສຸ	35	ດອນແຍງ	011013	ເມື່ອຍ+ວິນ	5,000				22,000		220,000	400,000			24,000	278,500	949,500	"	26.10.10	4
ນ. ແດງ	27	ກ/ກ ເໜືອ	003000	ລຸລູກ	5,000				15,000	10,000					10,000	134,000	174,000	"	23.10.10	1
ນ. ພອງ	22	ເລົ່າໜາດ	020029	ເກີດລູກ	5,000				15,000	10,000					10,000	206,000	246,000	23.10.10	1	3
ທ. ຈ້ຽນ	11	ບາກ	026020	ຂາດເລືອດ	5,000				21,000						24,000	79,500	129,500	24.10.10	28.10.10	4
ທ. ໂກອັດ	2	ເລົ່າໜາດ	020001	ອ/ສ ປອດ	5,000										24,000	110,500	139,500	"	28.10.10	4
ນ. ເມສາ	7	ດົງໜອງຂຸ່ນ	463	ທ້ອງບິດ	5,000										24,000	164,500	193,500	25.10.10	29.10.10	4
ນ. ທິດສຸດາ	4	ໂນນວິໄລວັນ	008019	ອາມີດານ	5,000				12,000						120,000	84,500	221,500	26.10.10	29.10.10	3
ທ. ອະນຸພາບ	2	ໂນນວິໄລວັນ	008019	ອ/ສ ຮູຄໍ	5,000				12,000						0	80,000	97,000	"	"	
ນ. ກອງມີ	73	ກ/ກ ກາງ	002025	ຖອກທ້ອງ	5,000										12,000	54,000	71,000	"	28.10.10	2
ນ. ເຂັ້ມ	21	ທວດໃຕ້	552	ເກີດລູກ	5,000					10,000					10,000	151,000	176,000	27.10.10	1	5
ທ. ຊາຍບອຍ	2	ດົງຄຳໝື່ນ	517	ຄໍແດງ	5,000				-12,000						24,000	123,500	164,500	28.10.10	1.11.10	4
ທ. ຫຽນ	80	ຕາແຫຼວ	120009	ຖອກທ້ອງ	5,000				17,000						18,000	121,500	161,500	"	31.10.10	3
ນ. ມີ	19	ດົງໜອງຂຸ່ນ	050021	ເກີດລູກ	5,000				15,000	10,000					10,000	179,000	219,000	"	29.10.10	1
ທ. ບິກ	4	ດົງໜອງຂຸ່ນ	10144	ອ/ສ ປອດ	5,000										18,000	97,000	120,000	29.10.10	1.11.10	3
ນ. ວຽງນາລີ	43	ກ/ກ ດົງ	050011	ເມື່ອຍ+ວິນ	5,000										0	44,500	49,500	"	0	0
ນ. ພອນປະເສີດ	31	ກ/ກ ເໜືອ	050023	ອ/ສ ກະເພາະ	5,000										12,000	82,500	99,500	"	31.10.10	2
ນ. ສີດາ	24	ທວດໃຕ້	004041	ເກີດລູກ	5,000				15,000	10,000					10,000	196,500	236,500	31.10.10	1.11.10	1
ນ. ສຸກັນ	38	ດອນແດງ	037015	ອ/ສ ປອດ	5,000				12,000						30,000	210,500	257,500	1.11.10	6.11.10	5
ທ. ວິລະພົນ	1	ດົງໜອງຂຸ່ນ	00461	ອ/ສ ປອດ	5,000										24,000	107,000	136,000	"	5.11.10	4
ທ. ວົງພະຈັນ	4	ກ/ກ ເໜືອ	050024	ອ/ສ ປອດ	5,000										0	122,000	127,000	2.11.10	0	0
ທ. ວັນສຸກສັນ	1,6	ດົງຄຳໝື່ນ	007041	ອາມີດານ	5,000				12,000		15,000				18,000	102,500	152,500	"	4.11.10	3
ຍາພໍ່ທີ	88	ໂນນວິໄລວັນ	001119	ອ/ສ ປອດ	5,000				12,000						0	188,000	205,000	4.11.10	ຄ່າຫ້ອງຈ່າຍເອງ	
ນ. ຄຳຮັ່ງ	56	ນິກກິກ	014008	ອ/ສ ຖົງບີ	5,000		25,000		12,000						24,000	135,000	201,000	"	8.11.10	4
ທ. ນິກ	72	ກ/ກ ທົ່ງ	004039	ໄຂ້ຫຼັງຊຸດໂຊ.	5,000		25,000		42,000		195,000				24,000	312,500	603,500	6.11.10	10.11.10	4
ນ. ນິດນາໄຊ	27	ກ/ກ ເໜືອ	050024	ລຸລູກ	5,000		25,000		15,000	10,000					10,000	127,500	192,500	8.11.10	9.11.10	1
ນ. ພູໄຊ	8	ໜອງທົ່ງ	033008	ອ/ສ ປອດ	5,000										18,000	106,500	129,500	"	11.11.10	3
ນ. ແສງດາວັນ	26	ກ/ກ ທົ່ງ	121146	ອ/ສ ປົກມົດລູ	5,000		25,000		15,000						18,000	110,500	173,500	"	11.11.10	3
ທ. ດົບ	1	ດົງໜອງຂຸ່ນ	005010	ອ/ສປອດ	5,000										18,000	94,000	117,000	10.11.10	13.11.10	3

Referral hospital
monthly report

ສາທາລະນະລັດ ປະຊາທິປະໄຕ ປະຊາຊົນລາວ

ສັນຕິພາບ ເອກກະລາດ ປະຊາທິປະໄຕ ເອກກະພາບ ວັດທະນາຖາວອນ

ໂຮງໝໍແຂວງ

ສັງລວມສາມະຊິກປະກັນສຸຂະພາບຊຸມຊົນ

ເຂົ້າມານອນປິ່ນປົວປະຈຳເດືອນ 11/2010 ເມືອງຈຳພອນ

1.ສະຖິຕິ

ເນື້ອໃນ	ຈຳນວນຄົນເຈັບ (patients)	ຈຳນວນວັນນອນ (days)	ມູນຄ່າທັງໝົດ (total amount charged)
ຈຳນວນຄົນເຈັບນອນໂຮງໝໍ	2 IPD		5,559,000
ຈຳນວນຄົນເຈັບກວດເຂດນອກ	3 OPD		139,000
ຈຳນວນວັນນອນໂຮງໝໍທັງໝົດ (IPD days)		27	270,000
ຈຳນວນກວດວິເຄາະ (Lab)	2		291,000

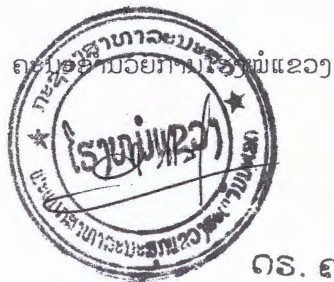
(26)

2.ລາຍຊື່ຄົນເຈັບ

ລ/ດ	ເລກລະຫັດ	ວັນທີເຂົ້າ	ວັນທີອອກ	ຊື່	ອາຍຸ	ທີ່ຢູ່	ພະຍາດ	ໃບພ/ບ	ຫ້ອງນອນ	Labo	Echo	ECG	RX	ຢາຫ້ອງປາດ	ຢານອກໂມງ	ຢາໃນໂມງ	ລວມ
1	00807cp	OPD 4/11/10		ນ.ເກດມະນີ	45	ດົງຄຳໝື່ນ	ຄໍໜຽງ									47,000	47,
2	008020	OPD 27/11/10		ນ.ຍຸງຄອນ	35	ດົງໜອງຂຸ້ນ	ໜື້ອໄຂ່ຫຼັງ	7,000								45,000	52,
3	03044cp	OPD 12/11/11		ນ.ອຳມະລາ	25	ແກ້ງກອກທົ່ງ	ຄໍໜຽງ									47,000	47
4	04002cp	23/11/2010	03/12/2010	ນ.ລີກິດ	48	ແກ້ງກອກທົ່ງ	ປາດໜື້ອຖົງບີ	7,000	120,000	149,000	20,000	20,000	35,000	2,100,000	321,000	382,000	3,154
5	08020cp	18/10/2010	03/11/2010	ນ.ຜຸຍ	25	ໂນນວິໄລ	ປາດໜື້ອຖົງບີ	7,000	150,000	142,000	20,000	20,000		2,170,000		450,000	2,959
	ລວມທັງໝົດ							21,000	270,000	291,000	40,000	40,000	35,000	4,270,000	321,000	971,000	6,259

ສະຫວັນນະເຂດ . ວັນທີ 08 ທັນວາ 20

ຄະນະອຳນວຍການໂຮງໝໍແຂວງ



ຜູ້ສະຫຼຸບ

CBHI.xls

ດຣ. ຄຳແກ້ວ ມີວາປະດິດ