The World Health Report

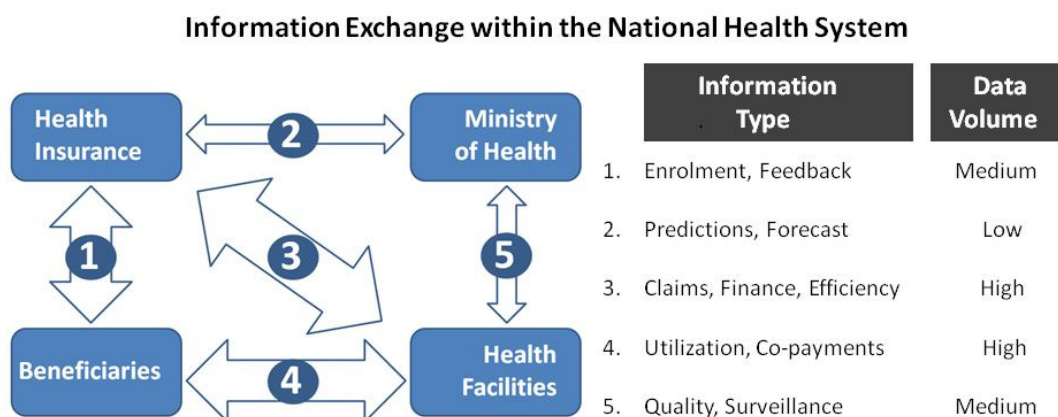# HEALTH SYSTEMS FINANCING
The path to universal coverage

Technical Brief Series - Brief No 10

THE ROLE OF INFORMATION SYSTEMS IN ACHIEVING UNIVERSAL HEALTH COVERAGE

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Access to healthcare service is basic human right. The 2010 World Health Report focuses on "Universal Health Coverage (UHC)" as an important enabler of that right. While informatics has been an important instrument to implement UHC in more advanced countries, developing countries have struggled with insufficient information for health financing management, meager technical capacity and a general misunderstanding of the role of informatics in modernizing their health finance environment.

NATIONAL HEALTH INFORMATION SYSTEMS

Information Exchange within the National Health System

Information Type	Data Volume
1. Enrolment, Feedback	Medium
2. Predictions, Forecast	Low
3. Claims, Finance, Efficiency	High
4. Utilization, Co-payments	High
5. Quality, Surveillance	Medium

Accurate and timely information is required for countries to know whether or not their UHC implementation has been successful. The goal of informatics is to increase access, quality and efficiency of health care services for everyone. The conceptual diagram above shows several important linkages in terms of information exchange between insurers, providers, beneficiaries, and the Ministry of health.

ENSURING UNIVERSAL ACCESS TO HEALTH CARE
Connecting clinical systems to public health systems not only provides important surveillance information; it also allows the health system to know if it is reaching the entire population.

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INCREASING QUALITY OF HEALTH CARE SERVICES

It is necessary for financial systems to connect to clinical systems not only to reimburse providers for the costs of care, but also to properly assess outcomes and the effectiveness of certain treatments. Sharing information between these systems can allow for a positive quality improvement feedback loop.

INCREASING EFFICIENCY AND REDUCING HEALTH CARE COSTS

Health Care costs are growing at an alarming rate in many countries. Unless we can contain those costs, many health financing schemes will not be sustainable. Unfortunately there is large waste due to unneeded interventions, duplication and clerical errors. Information systems can help up minimize those losses and monitor those costs more accurately.

Interoperability between clinical, financial and public health systems allows for the assessment of effectiveness and the monitoring of cost. Using public health data to forecast health care resources, clinical data to assess outcomes and financial data to track cost, provides the critical information infrastructure to the UHC.

While development of comprehensive, inter-operable health information systems in most countries are still in an infant stage, it is important that countries start the design process early, because the process can take 3 to 5 years from inception to implementation.

NHIS development should use a user requirement-led approach instead of only a data-led approach.

To avoid long delays, development of the information systems should be done as soon as the major policy decisions have been decided and simultaneously with the UHC implementation itself.

INFORMATICS COMPONENTS OF HIIS IN UHC

Health insurance information systems (HIIS) are important to facilitate the link between payers and provider. They must exchange data (membership, eligibility, claims, payments…) in order to facilitate the core business functions of the health financing scheme.

Here are the key components of the HIIS which are involved in supporting NHIS for UHC:
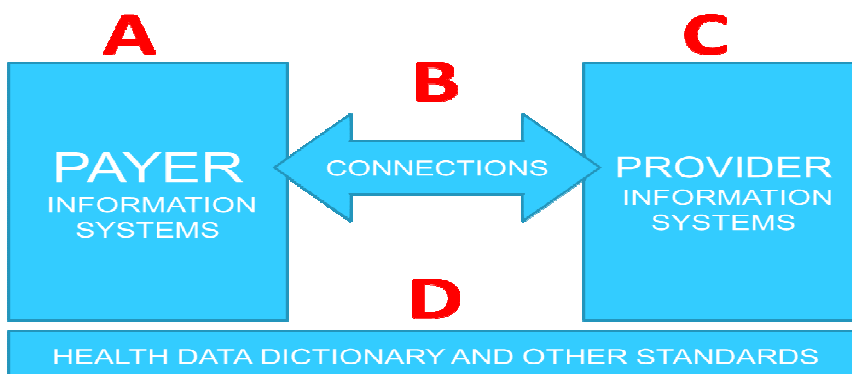
a. A PAYER INFORMATION SYSTEM whose core business processes include the enrollment and rostering of beneficiaries, the collection and management of premiums and other contributions, the receipt and processing of claims from providers and the production of payments and incentives to contracted providers.

b. A "BRIDGE" between the payer-side systems and the providers so that they can transact business electronically including eligibility checking, claims transmission and more (see reference 6).

c. Systems at the providers (Clinic Information Systems) which can "talk" to the payer-side systems.

d. Standards of interoperability, common coding systems to allow the systems to "talk to each other".

Implementing UHC and NHIS in a country does not have to be mutually exclusive. While UHC implementation may provide the political and financial impetus for implementing a NHIS, information from the NHIS assists with decision-making and assessment to improve accessibility, quality, and efficiency of the UHC.

> **Start design and development of the NHIS as soon as major policy decisions are complete.**

COUNTRY CASE STUDY – CLAIMS PROCESSING IN THE NETHERLANDS

In the Netherlands some 40,000 healthcare providers produce 100 million claims each year. Paper claims processing was a huge administrative burden for healthcare providers, health insurers, and patients. In 2002, KPMG estimated the yearly cost of the Dutch claims process at € 460 million. Automation was needed to reduce cost and errors, and to reduce claims-processing time. Interoperability between the healthcare providers and the 20 insurance companies (payers) was essential so standards and interfaces had to be designed to enable the 500 different claims software packages to "speak" the same language. To communicate seamlessly an internet-based national infrastructure was implemented. This included a secure claims routing hub and registries to uniquely identify healthcare providers, insurers, and patients. In 2010 the standards, interfaces, and national infrastructure are well established, and 90% of the claims are produced, exchanged, and processed electronically. This has resulted in huge savings for the Dutch healthcare system, estimated at between € 100-300 million annually.

KEY FIGURES OF HEALTH INSURANCE INFORMATION SYSTEM IN THE NETHERLANDS

- 100,000,000   claims per year
- 40,000   healthcare providers
- 500   claims software packages
- 20   health insurers (payers)

KEY SOLUTION CHARACTERISTICS

- 1   central claim-routing hub
- 1   common set of standards, message formats, interfaces
- 1   national registry to identify providers, insurers, and patients

A WAY FORWARD USING INFORMATICS TO ENABLE UHC

Many countries lack the framework for creating such systems and often the technical capacity needed to design and develop the needed information systems. Recently there has been discussion among development partners which could lead to the development of a framework using enterprise architecture as a rational starting point based on common requirements and goals. While requirements are highly dependent on

> **Support for HIIS development from government and external donors is important for implementing good financial systems that interface to clinical systems and share information to stakeholders.**

the political, financial and technical context of each country, the establishment of common requirement and standards might speed up the design and implementation process in developing countries and thus help move the world a step closer to realizing its dream of Universal Health Care for all.

FURTHER READING:

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3. Ingun, P, Thailand Health Information System: Landscape Analysis, 2010
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5. Streveler, DJ, "Chapter 5: Linking Payers and Providers", in Langenbrunner JC, et al, Designing and implementing health care provider payment systems: How-to manuals, The World Bank, 2009

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