ADB BRIEFS

KEY POINTS

- Obtaining universal health coverage (UHC) has been widely embraced in Asia and the Pacific. UHC is essential to inclusive growth, health security, and sustainable economic development. To achieve UHC, more resources have to be mobilized for the health sector, and they must be used more efficiently and effectively.
- Information and communication technology (ICT) innovations in health—or eHealth— are key enablers for achieving and measuring UHC. ICT solutions empower patients and communities to engage at all levels of the health system, and can be transformative through each stage of every country's health sector development.
- ICT solutions have the potential to reduce healthcare costs to families, improve equitable access to quality services, efficiently link health systems with social protection programs, and increase accountability and sustainability in health service delivery.
- Optimizing existing ICT infrastructure and making strategic new investments in eHealth solutions may accelerate UHC in terms of which people, what services and how much of the costs are to be covered.
- There are significant opportunities, particularly in low resource environments, for timely and innovative use of ICT, but solutions must be harnessed strategically to deliver cheaper and faster UHC in the right context at the right time.
- Applying lessons learned from experienced peers in the eHealth community of practice will help to rapidly implement solutions that work. The Asia eHealth Information Network (AeHIN) is proving to be a dynamic peer-to-peer assistance platform to successfully progress towards UHC with ICT.
- Measuring UHC with ICT-enabled monitoring systems can also enhance evidence based health policies and decision making with more reliable and sufficient data in formats and frequencies that ensure better health systems performance.

UNIVERSAL HEALTH COVERAGE BY DESIGN
ICT-enabled solutions are the future of equitable, quality health care and resilient health systems[1]

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Target Audiences

- Parliamentarians and executive branch decision makers
- Ministry of Finance and other relevant line-Ministry decision makers
- Health sector policy makers
- Ministry of Health department directors
- Health systems managers
- Health systems ICT implementers
- Health care researchers
- International development organizations

ADB

> **Universal health coverage (UHC):** Ensuring that all people can use the promotive, preventive, curative, rehabilitative, and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship.
>
> [1]   World Health Organization. http://www.who.int/health_financing/universal_coverage_definition/en/

ICT IS KEY TO ACHIEVING UNIVERSAL HEALTH COVERAGE IN ASIA AND THE PACIFIC

Asia and the Pacific continues to face complex public health challenges, including widening social and economic inequities, escalating health-care costs, vulnerability to health systems shocks due to natural disasters and pandemics, and a changing disease profile with rising incidence of noncommunicable diseases. Changing lifestyles, aging societies, urbanization and greater population mobility, together with the impact of climate change, make the public health challenges faced by the region ever more complex.

Recognizing that inclusive growth, sustainable economic development, and national and regional health security are important policy objectives that cannot be achieved without a healthy population, almost all countries in Asia and the Pacific, irrespective of their level of development, have embraced universal health coverage (UHC) as a pathway to greater national prosperity.

According to the World Health Organization's (WHO) definition (see Box) the three dimensions of UHC are (i) *providing quality health services* (ii) *to all those in need* (iii) *without undue financial hardship*. Most countries are constantly exploring different ways to mobilize additional resources and how to use these more efficiently to move toward UHC within a wider social protection framework. The health systems strengthening required in order to reduce waste of resources, maximize coverage, and provide better quality health care at a lower cost can most effectively be addressed with appropriate information and communication technology (ICT) investments (Table 1).

ICT IS A KEY ENABLER OF RESILIENT HEALTH SYSTEMS

When countries do not harness the benefits of ICT, inefficiencies proliferate and some of the most basic building blocks of UHC become extremely difficult to put in place, at both the individual and population level. An effective *e*Health strategy can ensure that the right solutions are deployed to eliminate inefficiencies (Table 2).

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Table 1   Using *e*Health Investments to Achieve UHC: Country Examples

Lao People's Democratic Republic	Mongolia	Philippines
Health Sector Reform Framework to 2025 *"Reach UHC by 2025"* *"A sector-wide/systematic approach to achieve a common goal—affordable, reliable, accessible health service to all Lao people"*	**Mongolian Constitution, 1992** *"The right to live in a safe and healthy environment and free access to primary health care"* **The Health Sector Strategic Master Plan: 2005–2015** *"Responsive and equitable, pro-poor, client-centered and quality services"*	**Universal Health Care Study Group, University of the Philippines** *"Provision to every Filipino of the highest possible quality of health care that is accessible, efficient, equitably distributed, adequately funded, fairly financed, and appropriately used by an informed and empowered public"*
***e*Health investment** Health facilities rapidly and accurately report routine health information using the open-source, web-based District Health Information Software reporting system. This enables the government to address inequities for targeting maternal and child interventions to reduce mortality.	***e*Health investment** National information and communication technology (ICT) budgets coupled with new grants, loans, and development partner technical support adhere to the *e*Health architecture to ensure all ICT investments are harmonized and aligned with the national *e*Health strategy.	***e*Health investment** An *e*Health program management office now coordinates health, ICT, social protection, finance, and planning sectors enabled with staff trained to internationally recognized standards and fully functioning IT governance practice with enforceable key performance indicators.

UHC = universal health coverage.

Source: Authors.

Table 2   Addressing Health System Inefficiencies with Information and Communication Technology

Health Systems Domains	Inefficiencies	eHealth Solutions
Health workforce	**Inequitable** distribution	Human resources for health information system
	Inappropriate or **costly** staff mix	Use of geographic information systems for targeting services
Essential medicines	**Irrational** use of drugs	Logistics management information system
	Counterfeit drugs	Counterfeit drug detection systems
Healthcare service delivery	**Inappropriate** hospital admissions	Web-based access to shared electronic health records
	Over-use of procedures, investigations, and equipment	Clinical decision support tools
Health system leakages	**Corruption**	Hospital and insurance digital payments Financial management information systems
	Fraud	Radio-frequency identification-based supply chain and logistics
Patient monitoring and community health	Drug **nonadherence**	Shared electronic health records
	Underserved populations	Telemedicine
	Missed appointments	Mobile health applications, including mobile phone-based reminder systems, integrated patient ID registries, rapid reporting forms and referrals
Disease surveillance and population health	**Delayed** and **unreliable** data for decision making	Rapid case detection and communications applications Health issues monitoring dashboards

Source: Authors.

Which country-specific ICT solutions are needed relates to the country's broader goals and objectives laid out under existing health sector policies, strategies or plans, as well as the specific national disease burden patterns and health priorities. In Indonesia, for example, there is insufficient reliable data on disease incidences, population demographics and future trends. Required budget estimates for the country's new social health protection fund are restricted to guesswork. Similarly in Myanmar, without knowledge of the population size and distribution, as well as the current availability of services, it is difficult to plan and develop a new health system with UHC. In the Lao People's Democratic Republic (Lao PDR), effectively addressing priorities such as women's and children's health cannot be achieved without complete, timely, reliable district-level data. In India, improving urban health, as mandated in the National Urban Health Mission, is impossible without collaboration with the private sector, which requires data on private sector health service providers.

The crucial role of ICT in achieving equitable access to affordable, quality health care is also apparent at the individual level. In the Philippines, without community enrollment, adequate ICT infrastructure, and common nomenclature of diseases it would have been impossible to increase PhilHealth insurance coverage to 90% and minimize delays in claim reimbursements. The lack of unique identifier codes for individuals and a unified database in Cambodia makes it difficult to ensure that those in need of free services are being reached, while the geographical challenges of providing specialized services to patients in mountainous and remote villages in Nepal cannot be overcome without access to the Internet and reliable power for telemedicine.

By contrast, Bangladesh's Ministry of Health and Family Welfare has invested in both hardware and human capital to revolutionize its health information system (HIS) and promote a culture of information use throughout the health system. With more than

7,000 health facilities now reporting routine data, linked through a National Data Warehouse, datasets from both the public and private sectors, across different directorates and from diverse vertical programs that were once fragmented and silo-ed are now interoperable. Individual records enable health care workers to track pregnant women and children; the administrative burden on health care workers has been dramatically reduced; and more routine information is available to health policy makers.

Similarly in Thailand, the country's three separate health care schemes covering the general population, and public and private sector employees are connected and managed through a unified ICT system. When a patient accesses health care services in any health care facility nationwide, medical staff can automatically access data on the patient's profile, medical history, and insurance type via a microchip embedded in his or her identity card. This supports health care providers in better decision making for treatment, reinforces quality and safety in care and enables hospitals to provide an effective, efficient, and equitable service.

Such examples of good practice are good case studies for other countries to explore what they need to make ICT investments in health care successful and sustainable. The iCTen! were developed to summarize the principles for advancing eHealth for UHC.

THE *iCTen!*

At a recent conference hosted by ADB, *Measuring and Achieving Universal Health Coverage with ICT in Asia Pacific: Making a business case for strategic ICT Investments for quality health care for all,* almost 300 participants from 25 countries including more than 100 government officials from multiple sectors (health, finance, planning, statistics, ICT), development partners and experts shared experiences and reviewed the current evidence on the cost-benefit and impact of various ICT-enabled health services and information systems. In conclusion, they formulated the *iCTen!,* a series of common priority next steps for countries to use ICT to enhance their efforts to reach UHC.

1. Know your baseline
Without ICT gap analysis it is impossible to know what policy and strategic changes need to be made; what are the priority entry points where ICT can help; what systems, hardware and software are needed; and where capacity needs to be built. Benchmarking the current situation against regional experience is also helpful, and proper planning tools available need to be implemented systematically.

2. Get everyone on board and bring your best team
Political will and commitment is vital, e.g., through the establishment of an inter-ministerial committee on UHC to advocate for ICT investments in health. A technical task force can develop the ICT for UHC framework; agencies such as the Asian Development Bank (ADB) and WHO can supply guidance and expertise, while regional networks such as the Asia eHealth

Information Network (AeHIN) can help identify peers from overseas with valuable experience to share.

3. Adapt, adopt, or develop tools
Rather than reinventing the wheel by, e.g., developing new software or creating a mobile app when a solution already exists, it is better to identify tools available in the market, including technology based on open source software that allow for adaptation. For costlier solutions, joining forces with other agencies can yield economies of scale. Developing customized software and applications should be a last resort.

4. Commit to UHC, commit to integrated ICT systems
This requires an ICT framework based on the principles of interoperability, with data sharing under agreed standards so systems and solutions can be interoperable.

5. Invest in unique ID systems and link CRVS to UHC
Civil registration and vital statistics (CRVS) systems, whereby all live births result in the allocation and use of an individual unique identifier that remains with a person their whole life, and mortality data that includes the cause of death, are essential data for monitoring the health of the population. Without a functioning CRVS system there can be no certainty as to the extent of health coverage. A unique ID system can be implemented in phases, but must be designed at the outset for future scalability.

6. Build institutional readiness and a skilled workforce
Commitment at the highest level is vital for UHC with ICT, but capacity development is a process that must occur at all levels. Joint learning networks and communities of practice are essential to share knowledge both nationally and with peers overseas.

### 7. Keep data safe and secure
It can be a delicate balance between data sharing and individual privacy, but the two can both be comfortably accommodated as long as there is a sound policy for data security, privacy, and confidentiality in place. Systems can be set up in such a way that keeps private health information private and ensures data centers are adequately protected so only those that need access to any person's health record have it.

8. Plan for sustainable financing mechanisms from the start
ICT pilot projects in isolation are not helpful. Investing now in ICT with a rollout and scale-up plan from the start can enable a health care system to reap ongoing efficiency improvements. Reallocating existing funds or raising new revenue sources, e.g., through sin taxes can support the increased initial costs, and there is also scope for public–private partnerships with the technology sector.

9. Get concrete: have an implementation plan with quick successes
To get started, first it is necessary to articulate the value on investment—including the direct costs and benefits but also costs that might be avoided or benefits that can be monetized, e.g., burden reduction and task-shifting. It is practicable to scale

Figure 1 Mongolia's UHC monitoring dashboard
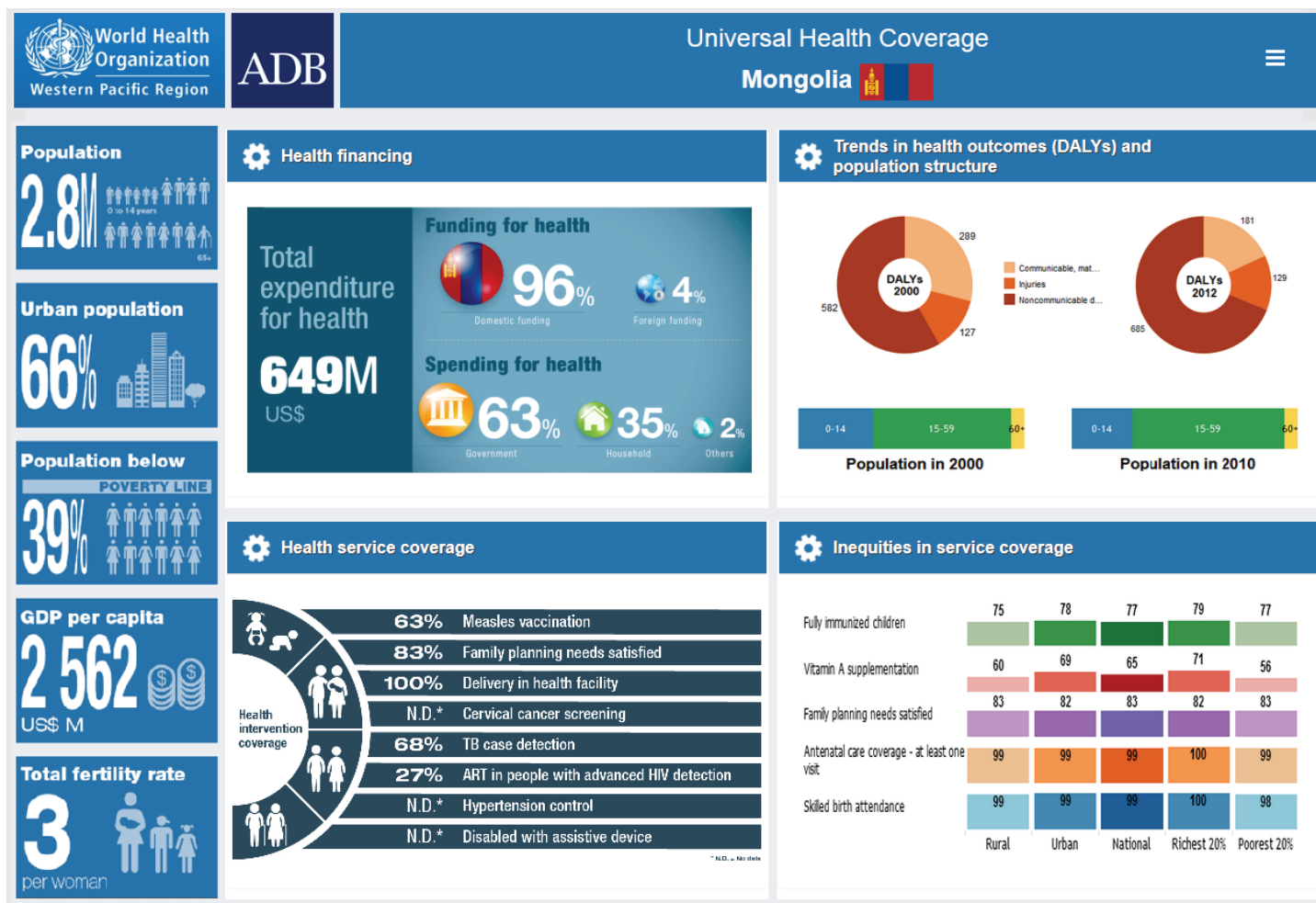
Sources: WHO WPRO and ADB.

and maintain what has already be proven to work. Targets and a timeline help maintain momentum.

10. Define success and measure progress based on M&E criteria
Existing data can often be used to define measures of success. The process of monitoring and evaluation should be determined at the outset, and should be an ongoing process in order to tilt towards expected outcomes and impacts, learning the lessons quickly from what is not successful. Benchmarks should reflect the operational and end-user benefits.

ICT IS KEY TO MONITORING PROGRESS TOWARDS UHC

Access to complete and timely collection and reporting of reliable data dramatically improves evidence-based decision-making and even in limited-resource settings. Dashboards that draw this

monitoring and evaluation data together in one place enable health policy makers to visualize and communicate progress towards UHC more effectively. Using a monitoring dashboard approach can be an effective way to understand the data in terms of population (who is to be covered), providers and points of service (which services are covered), and payers and policy makers (what proportion of the cost is to be covered).

Four Asian countries representing different stages of progress towards UHC are already developing UHC monitoring dashboards: Bangladesh, Cambodia, the Lao PDR, and the Philippines. A regional UHC monitoring dashboard function has been added to the Health Information and Intelligence Platform (HIIP) (http://hiip.wpro.who.int), developed by the WHO Regional Office for the Western Pacific in partnership with ADB (see Mongolia example, Figure 1). It is already aligning with the post-2015 Sustainable Development Goals for health-related targets and indicators.

The Role of ADB, WHO, and Other Development Partners in Supporting Universal Health Coverage with Information and Communication Technology

For the Asian Development Bank (ADB), the World Health Organization (WHO), and other development partners, supporting countries to attain universal health coverage (UHC) is a cornerstone of their broader agenda in the health sector. ADB's Operational Plan for Health 2015–2020 recognizes that reforming and strengthening health systems to move toward UHC is high priority for many governments. It also acknowledges that meeting these aspirations will require innovative and integrated policies and interventions with information and communication technology (ICT)-enhanced solutions. In support of this, ADB's eHealth investments need to be targeted at supporting UHC.

At the same time, WHO's global and regional UHC action agenda emphasize the importance of country context and priorities to address healthcare quality, efficiency, equity, accountability, and resiliency. Realizing faster, cheaper, better UHC with ICT where it will effectively strengthen health systems performance is especially important given that the majority of countries are currently in the process of addressing their 2016–2020 National Health Policies, Strategies and Plans.

Both ADB and WHO play a key role in financial and technical collaboration and assistance across development partners that unite to support the work of AeHIN. As such they contribute to the organization's unique peer-to-peer support to countries. AeHIN and a united and growing collaborative of development partners stand ready to work together with addressing national health priorities and the SDGs in the post-2015 development era, implementing the iCTen! recommendations, collaborating with private sector ICT providers and ultimately achieving and measuring UHC with ICT.

Source: Authors.

TO ACHIEVE AND MEASURE UHC, COUNTRIES MUST INVEST IN ICT

If countries fail to fully harness the benefits of eHealth, poor-quality and fragmented data, analysis, and utilization will sabotage the smooth flow of information across different systems. Countries first need to develop an integrated eHealth strategy and capacity building program at the national level that is firmly integrated with broader national health policies, strategies and plans and then ensure coordinated roll-out to the subnational level.

Public–private collaboration is key to ensuring sustainable funding for ICT investments, and policy makers and ICT solution implementers also have much to learn from other countries' experience. Peer-to-peer support is vital for sharing knowledge on implementation, particularly in identifying and adopting what works well in terms of standards, techniques, and solutions. AeHIN serves as a collaborative community of eHealth and HIS professionals in South Asia and Southeast Asia and is effectively facilitating peer-to-peer support. AeHIN was initially established with the support of WHO to respond to developing countries' need to rapidly advance eHealth for improving health system performance. It is now active in more than 25 countries in the region with over 600 members and support from 21 development partners.

Since it was established in 2011, AeHIN has been accelerating leadership, supporting policy and standards, increasing knowledge exchange, and implementing capacity building practices. It has become the primary platform mechanism for knowledge exchange and for cost-effectively addressing the human resources and capacity building issues that ICT investments entail.

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