



Advancing Global Healthcare

The Intel World Ahead Program



Connecting People to Improved Healthcare

Every nation faces the challenge of delivering high-quality, affordable healthcare. But nowhere is the need greater than in developing regions, where poor health and poverty often go hand in hand, chronic disease is growing, resources are more limited, healthcare workers are scarce, and a trip to the doctor can mean difficult and expensive travel.

There is an incredible opportunity to change the trajectory of health and healthcare in low- and middle-income countries. Digital technologies provide exciting opportunities to alleviate these problems – to expand access to care while making the most of limited resources. At Intel, we believe in the power of tomorrow. But we also believe that building a better tomorrow requires action today – and so we work with governments and healthcare leaders around the world to demonstrate the possibilities and reduce barriers to better care.

Added Value from Digital Infrastructure

Intel's healthcare activities in developing nations grow out of comprehensive efforts to extend the benefits of technology to the next billion people. The Intel World Ahead Program accelerates access to relevant technologies and broadband infrastructure with 200 programs in more than 70 nations.

Through World Ahead, we work with governments to maximize the value of their technology investments by using digital infrastructure to address policy goals (such as improving healthcare) which can realize both social and economic benefits.

Focusing on practical solutions, we collaborate with technology companies, banks, telecommunication operators, service providers, health authorities, universities, the development community, and other contributors. We involve local and regional vendors to promote job growth while developing sustainable frameworks for long-term change.

We draw on the experience of our Digital Health Group, which collaborates with hospitals, standards organizations, academic and research centers, and health services organizations globally to advance healthcare's quality, cost, and accessibility.

Medical Education and PC Adoption: Training More Workers, Advancing Their Skills, Providing Better Tools

Many developing nations face acute shortages of physicians, nurses, midwives, pharmacists, and other health workers. Even after health professionals are trained and on the job, geographic isolation may make it difficult to adopt new medical advances and keep healthcare professionals trained.

Intel collaborates on efforts that use digital technologies to improve medical education and make PC adoption by healthcare workers easier – all to keep health workers in touch with medical knowledge and increase their skills and comfort with technology. These programs can accelerate and enhance the training of new health workers. By enhancing job satisfaction, they may also help stem the unwanted migration of skilled workers to more developed nations.

“Decision makers across the world understand that improving healthcare delivery is critically important in both human and economic terms.”

– John Davies, Vice President, Intel World Ahead Program

India. Intel supports India's Digital Approach to Medical Education program, designed to improve and standardize education and train more physicians. The program delivers an undergraduate medical curriculum as high-quality digital content including videotaped lectures and 3-D interactive body structures. This approach frees up seats in schools and helps increase the total number of clinicians trained. Intel is helping medical campuses – 35 to date – deploy a wireless infrastructure for student access. Through reduced-cost PC purchase programs, over 18,000 students have acquired a laptop computer. Similar programs deploying ICT to train clinical students have launched in Pakistan, Vietnam and the Philippines.

Turkey. Intel helped Turkey's Ministry of Health architect a PC purchase program to increase technology skills for physicians, nurses, and other healthcare employees. More than 10,500 Ministry employees participated during the program's first eight months, acquiring a PC and using Intel's PC Basics self-guided training materials to develop skills and confidence that can accelerate adoption of electronic medical record solutions.

China. There are over five million healthcare workers plus medical students and professors across China that are benefiting from PC purchase programs in which Intel collaborated with local health authorities, the China Hospital Information Management Association, medical universities, Chinese and multinational PC manufacturers, and retailers. Program participants in Guangdong and Fujian provinces are increasing their productivity and enhancing their access to the latest medical content and research – shortening diagnosis times by up to 30 percent.

Mobile Health Workers: Faster Data, Increased Productivity

In many developing nations, the first contact with the healthcare system is a traveling health worker who delivers basic services and advice, and gathers epidemiological and basic census data. Typically, mobile workers record information on dozens of paper forms – a nightmare of inefficiency that results in inaccuracies, undermines productivity, and causes delays in allocating precious resources and responding to disease outbreaks.

Intel works to improve data gathering and streamline workflows for mobile health workers – including developing rugged PC designs suitable for mobile healthcare workers and rural clinics. Examples in Western Europe show that adoption of mobile health solutions by community and rural health workers have delivered an approximately 50 percent increase in productivity and improved the quality of care.¹

India. Mobile field health workers are the last mile in the delivery of public care to rural citizens. Health programs are often vertically focused, which results in a large overhead of data collection and duplication of effort by the mobile field worker. ICT could reduce this

"Giver of Health" Project Brings Healthcare to 800 Villages

In Nigeria, Intel led the development and deployment of the Mailafiya Project ("Giver of Health") to bring primary healthcare services to over 800 villages while meeting the challenge of a shortage of healthcare workers. Design and usability workshops with the Ministry of Health and Tribal Leaders led to a solution based on open source healthcare forms and Intel rugged PC designs. Six mobile teams comprised of a doctor, a nurse, a community health worker, and a lab technician have been deployed to the rural villages. The number of patients examined annually has increased 210 percent, while communicable disease detection rates have gone up 74 times. The Mailafiya Project is making progress towards the UN Millennium Goals of infant mortality, maternal health, and communicable diseases in Nigeria.

burden by up to 70 percent so health workers can spend more time on patient care. Local initiatives are at various stages from evaluation to piloting across India State governments, and focus on three vectors: data collection, analysis and feedback; digital content for training and assessment; and remote diagnosis.

"Intel is very committed to working closely with governments, private industry, and the development community to improve access to healthcare services in developing nations. Technology will play an essential role in delivering healthcare to all citizens in the 21st century."

– Mike Gann, Director, Global Healthcare, Intel Corporation

Romania. In a program designed to improve the quality of post-hospitalization, in-home healthcare for chronic disease patients, Intel worked with a local non-governmental organization (NGO), Panasonic, and Infoworld Software to develop a Mobile Clinical Assistant-based (MCA) solution for use by visiting nurses. Using the MCAs, 30 nurses now spend less time on documentation and more time with their patients. From the home, they can share patient data in real time with doctors and other clinicians in 18 hospitals, thus improving treatments and outcomes. Total costs are reduced through fewer repeat hospitalizations and emergency interventions.

Rural Clinics: Improving Efficiency and Care

In rural clinics, paper-based workflows take time away from short-handed medical staff and cause delays in billing and reporting. Clinicians are isolated from their peers, and patients must frequently travel to distant locations for treatment, causing social and economic hardship.

Intel collaborates on projects that enable rural clinics to increase operational efficiency, improve care, and provide low-cost virtual care in rural or remote regions.

Hunan, China. Approximately half of China's population lives in rural areas, and two thirds of citizens – over 800 million people – are covered by the New Rural Cooperative Medical System (NRCMS). Intel is working with the government and provincial health authorities to improve access and quality of care for rural populations through the NRCMS. Intel World Ahead, Hunan Health Authority and local companies worked together to equip village clinics with broadband connectivity, rugged yet lightweight mobile PCs, and software. Rural doctors can file reports and submit bills electronically, which allows health authorities to monitor trends in real time, allocate resources more effectively, and accelerate reimbursements. These rural clinic solutions allow rural doctors to get paid faster, share ideas with peers, and get second opinions from specialists located in urban centers.

Bida, Nigeria. This award-winning program enables workers and patients from the Federal Medical Center in Bida to consult with experts at the National Hospital in Nigeria's capital, Abuja. In the program's first year, the number of patients who had to travel to National Hospital to see a specialist dropped from 37 percent to 22 percent. Intel initiated the program with Nigeria's Ministry of Health and other agencies, and helped to train physicians, organize a method of information exchange, and establish incentives programs for participating workers.

Adiyaman, Turkey. Working jointly with the Turkish Family Doctors Association and the regional cellular service provider, Intel developed a low-cost telemedicine program to bring cost-effective healthcare to remote villages. Simple Intel-based notebooks, peripheral medical devices, electronic medical records, and DSL and cellular service are combined to connect hospital clinicians to local healthcare workers. The results are increased specialist involvement, faster diagnoses, and reduced travel for patients. The UN Development Program projects that the increase in remote diagnoses and consultations can save US\$39 million in the region through reduced patient transfers.²

Creating the World Ahead

Improving healthcare promotes human happiness and citizen satisfaction. Since ill health and poverty are tightly linked, better healthcare also expands economic opportunity and reduces income inequality.

What is your vision for healthcare in the world ahead? Talk to Intel and let's start now.

Contact your local Intel representative, and see the world ahead:

www.intel.com/worldahead.

¹ For examples, see Mobile Workings in Healthcare—Trial Findings White Paper, a paper sponsored by Intel and Dell and available at http://www.dell.com/downloads/emea/general/mobility_whitepaper_aug2007.pdf.

² A Report on Preparatory Assistance Study for "Telemedicine: Quality Health Service for Poor and Remote Populations," Project, Middle East Technical University Informatics Institute Department of Health Informatics, December 2008.

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