

2019 Healthcare That Works for All

This paper is one of a series describing what a decade of successful change in healthcare could look like in 2019. Each paper focuses on one aspect of healthcare. To see the other papers for a comprehensive view of systems change, go to http://www.altfutures.com/2019_Healthcare_That_Works_For_All.

Healthcare Infrastructure in 2019

Healthcare Infrastructure That Works for All

Fostering Healthcare Infrastructure for a Better Future Requires:

1. Open Source Standards for Medical Records
2. Effective Home & Virtual Based Care
3. Care Centers in Low Income & Minority Communities
4. Adequate Supply of Healthcare Workers

Where Are The Gaps In Our Healthcare Infrastructure?

The gap between our [values](#) as a nation and our healthcare infrastructure will become painfully obvious as the nation begins the process of healthcare reform under the aegis of the Obama administration. The nation faces shortages of hospitals, doctors and nurses in the communities that need them most while having surpluses in areas that provide little real health to the nation. Our nation's healthcare infrastructure requires profound change in order to match resources to the vision of quality, effective healthcare for all.

Hospitals and care centers are facing acute shortages of physicians and nurses. The United States is currently facing a shortage of 400,000 nurses and will face a shortfall of 55,100 physicians by 2020. Shortages are particularly acute for nurses, physician extenders, primary care physicians and general surgeons. These shortages will only increase as many doctors, who are themselves baby boomers, retire.

However, in these tough economic times, the United States cannot spend its way to better health. We spend 16.5% of our economy on healthcare (an estimated \$2.4 trillion in 2008) which equates to twice as much per capita as other industrialized nations. Yet we rank at the

bottom compared to our peers in terms of measures of quality and outcomes. The United States needs a human and physical infrastructure that maximizes population health for each healthcare dollar spent.

A comprehensive, interoperable national health information system can dramatically improve health and reduce costs. Electronic medical records (EMRs) have the potential of reducing medical errors, improving collaboration between healthcare providers and reducing the cost of healthcare. Personal health records (PHRs) can empower patients to improve their health through better prevention, management of disease and coordination of care. Linking PHRs and EMRs through a National Health Information Infrastructure will enable coordinated care [delivery system](#) vital to improving health. The fragmented nature of the healthcare industry, privacy concerns, and institutional inertia slow the adoption of these important information technologies, however.

Home and personal biomonitoring devices can relieve shortages of providers and care centers by allowing more care to take place in the home. Biomonitoring technologies are already available for home use which enables patients and physicians to track health indicators from sleep patterns to eating habits. Home tests are also available to gauge a wide range of biomarkers, from cholesterol to blood sugar. An interoperable health information system would allow this information to be collected remotely and fed into the patient's electronic medical record. Clinicians could then use this information to remotely track health status, send reminders to patients and change treatments. Healthcare researchers could also use data from a large sample of patients to perform post-market evaluations.

However, security and privacy safeguards will be required. Without good privacy and security safeguards many patients will not share their medical information. Providers will not adopt interoperable health information systems if they believe patients might litigate over leaked data from electronic medical records.

Forecast for Healthcare Infrastructure

By 2019, a National Health Information Infrastructure (NHII) connects the nation's EMRs and PHRs. This infrastructure runs on open source software standards which allow a high level of interoperability between different vendor systems. A patient's PHR is automatically updated with relevant health information after visiting a doctor. The doctor's EMR is updated automatically from biomonitors located in the home. Powerful knowledge technologies allow both providers and patients to review their data, identify trends and develop programs for

healthy living. Patients and doctors can instantly share this information with other members of the patient's Health Home (a collaborative team of health professionals).

The federal government takes a leading role in creating the NHII by setting standards for interoperability, altering payment systems to promote technology adoption and providing funding and training to providers. Federal and state governments increase spending to increase the number of hospitals and community health centers in underserved communities. The increase in healthcare spending focuses on prevention. A revised payment system shifts hospital resources from expensive, but ultimately futile end of life care, to acute care. The prevention focus alleviates overcrowding at emergency rooms, but drives demand for more primary care physicians and nurses.

Policy-makers increase funding for training in prevention and primary care. They start at the base of the pyramid with increased education in schools and communities on health eating and active living. Education incentives including grants and loan repayment options are used to encourage students to go into primary care, nursing and other areas. Incentives are provided for new physicians to work in underserved communities. Additional funding is spent on training physician extenders, such as nurse practitioners and physician assistants.

Pragmatic Steps To Achieve This Vision Of A Better Future

- A. Increase capacity of hospitals in low-income and minority communities
- B. Increase capacity in medical and nursing schools
- C. Work towards a National Information Infrastructure based on open source standards
- D. Provide education incentives for providers willing to enter key areas and serve in underserved communities

What Would Happen If We Fail To Change?

The health of our economy is suffering from the poor health of the U.S. healthcare system. The healthcare infrastructure must change to provide efficient, cost effective care. If we fail to change, our poor, rural and minority communities will continue to suffer from shortages in our healthcare system. Providers that are needed in order to provide efficient, effective prevention will remain in short supply, while costly specialists will proliferate. Care coordination will remain challenging if providers delay adoption of health information systems or adopt systems that aren't interoperable. An older population will demand more care and exacerbate existing shortages and tax care facilities at all levels.