

# Future Trends in U.S. Medical Innovation: Technology and Partnerships Will Bring Expertise Closer to Home

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The U.S. has a longstanding reputation for advancing the science necessary to develop and sustain medical breakthroughs. Over many decades, substantial investments from the National Institutes of Health as well as charitable foundations have led American academic medical centers and health systems to become hubs of medical innovation, attracting patients from many countries who travel for advanced care. This, in turn, means the clinicians in these centers are able to gain greater experience more quickly, which is essential to standardizing care that can be more rapidly disseminated to providers worldwide.

While this 'destination medicine' model has worked well for many years, how might we expect it to evolve in the years to come? To help shed light on this question, the US Cooperative for International Patient Programs (USCIPP) monitors trends in technology, demography, political climate, and other socioeconomic factors and their potential implications for the future of healthcare. Comprising 66 of the leading hospitals and health systems in the United States, USCIPP taps into the wisdom of organizational leaders as well as quantitative analyses from a variety of objective sources in developing its perspectives. In this article, we take a closer look at five of these trends and what they may mean for U.S. providers in the years to come.

## Trend #1 – Healthcare needs will continue to expand

Average life expectancy has been rising globally for decades, a trend that is predicted to continue through at least 2030, at which point it will cross the 90-year mark worldwide. While people will live longer, health concerns and healthcare needs also tend to increase in older ages, so the need for healthcare is likely

to continue expanding disproportionately to overall population growth.

As average life expectancy increases, the ratio of working-age adults to retirement-age adults will continue to shrink. The ratio of healthcare professionals to retirement-age adults will also continue to decline, and health systems will need to find ways to evolve their care delivery models to address these greater needs with fewer people.

## Trend #2 - Demand for universal health insurance coverage will continue to grow

For many years, there has been a very strong global trend toward expanding health insurance coverage for all individuals across countries. Once citizens have access to care, pulling back from this access becomes quite unpopular and thus extremely rare. Expanding coverage is therefore a trend that seems unlikely to stall out any time soon, let alone reverse. Over time, improvements in access tend to create more sophisticated consumers who demand higher-quality, more convenient, and more easily accessible care. At the same time, healthcare spending is increasing at rates exceeding overall economic growth, a trend no payer will be able to sustain indefinitely.

## Trend #3 – Consumers' share of healthcare costs will also continue to grow

Long-term cost trends in healthcare are leading many countries to explore greater roles for commercial insurance. As both governments and commercial insurers grow increasingly concerned about rising costs, consumers will be asked to chip in a greater proportion of these costs directly. While this cost sharing may come first in the form of higher deductibles,

over time it will increasingly take the form of incentives for consumers to get their care from providers who can demonstrate they are delivering better outcomes at lower costs.

## Trend #4 - Medical innovation will accelerate – and costs along with it

The group of innovations collectively known as 'precision medicine' holds promise for rapid improvements in addressing many current medical challenges. However, all of these breakthroughs will come with new costs. Therapies for smaller number of patients are especially prone to higher costs because the research and development investments are spread across a smaller number of beneficiaries.

Taken together, these first four trends point to growing consumer demand and growing consumer costs – a combination that is unsustainable over time. This brings rise to our fifth and final trend:

## Trend #5: Technology will make healthcare more efficient – and bring it closer to the consumer

Several technology trends hold particular promise for expanding access to better care at lower cost. The most exciting involve analytic platforms collectively referred to as 'artificial intelligence,' or AI. While AI is not new, there are several important advances powering its renaissance, including much lower-cost computing and storage, the availability of much richer health-related data associated with sources such as electronic medical records and continuous monitoring devices, and our expanding ability to analyze data from whole populations of consumers. Efforts such as the recently announced 'All of Us' study from the U.S. National Institutes of Health speak volumes about what may be possible in the near future – and how

seriously these possibilities are being taken.

AI is also being combined with innovations from consumer services in ways that will expand the on-demand availability of medical expertise to people at the time of need. Recent years have seen the expansion of diagnostic devices such as EKGs at consumer-accessible prices that can be plugged into the mobile phones and other devices they often already own. When paired with clinical videoconferencing, many of the health concerns and questions that might have previously caused someone to make a doctor's appointment can now be managed in the moment. The increasing sophistication of telepresence technologies will also increase the availability of remote subspecialists to care providers.

### What do these trends mean for U.S. healthcare globally?

These future trends suggest both challenges and opportunities for U.S. care providers' relationships globally. One significant challenge is balancing the tradeoff between quality and costs. Providers will need to continue focusing on delivering high-quality care in an environment where the risks of escalating costs are ever greater. This challenge will be especially acute for academic medical centers and other providers of highly specialized and experimental care modalities – in other words, the very places international patients are most likely to pursue care for their most complex medical challenges. Pressure is likely to increase to standardize these emerging care approaches faster so that they are more quickly available from lower-acuity, lower-cost providers.

On the opportunities side, all of these pressures are likely to further accelerate the transition to technology-mediated care by U.S. health systems in the global landscape. Historically, these providers have primarily been destinations that patients needed to travel to in order to receive care and that clinicians needed to travel to in order to learn new approaches to treatment. In the future, the combination of necessity as well as technology-enabled platforms will mean that more of these services can be provided remotely, bringing both care and learning to the places they are needed. Signs of this transition are already appearing across the world. Recent examples from USCIPP organizations include:

- Since 2006, Cleveland Clinic has partnered with Mubadala Development Company to extend the Cleveland Clinic model of medicine to the UAE and develop a new, state-of-the-art



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hospital facility – Cleveland Clinic Abu Dhabi. Cleveland Clinic rolled out its new Cleveland Clinic Connected international program this year, which allows hospitals outside of the U.S. to benefit from collaboration and guidance from Cleveland Clinic in the areas of best practices and clinical guidelines for patient care, distance health and second opinions, clinical and executive education, and continuous quality improvement and advisory services related to clinical carepath implementation; clinical program development; Joint Commission International accreditation; patient-centric facility design; patient experience; and quality and patient safety.

- In 2016, Orchid Reproductive and Andrology Services in Dubai launched an affiliation with Northwestern Medicine, a recognized leader in fertility treatment, research, and education. Northwestern Medicine offers an array of comprehensive services, advanced technologies, and medical staff dedicated to excellent patient care and pioneering research into the causes and cures of disease. The affiliation allows Orchid's team of experts to cross-train and share knowledge with leaders in their field. Together with Northwestern Medicine, Orchid Fertility is setting a new standard for the highest-quality fertility care and outcomes across the UAE.

- In 2016, the American Hospital Dubai became the first hospital in the Middle East to join the Mayo Clinic Care Network, providing access to the physicians and expertise of Mayo Clinic for the betterment of patients in the UAE and surrounding regions. International members of the Mayo Clinic Care Network share Mayo Clinic's patient-centered culture and commitment to improving the delivery of healthcare. Potential members go through a thorough evaluation, including a review process that includes overview and site visits. In addition to American Hospital Dubai, other international members of the Mayo Clinic Care Network include International Medical Center in Saudi Arabia, Médica Sur in Mexico, Raffles Medical Group in Singapore, St. Luke's Medical Center in the Philippines, Sir Run Run Shaw Hospital in China, and, most recently, Myongji Hospital in South Korea.

- In 2018, UAE-based Capital Health signed a partnership with Shirley Ryan AbilityLab (formerly the Rehabilitation Institute of Chicago) to enable delivery of the Shirley Ryan AbilityLab's model of care at Capital Health's Specialized Rehabilitation Hospital (SRH) in Abu Dhabi for patients who are recovering from

debilitating conditions and injuries, such as traumatic brain and spinal cord injury, stroke, amputation, and cancer-related impairment. The hospital – the first of its kind in the region – was designed in response to the UAE’s Vision 2021 to achieve a world-class healthcare system and to ensure local patients have access to the very best treatment and care.

■ In 2018, Children’s Hospital of Philadelphia (CHOP) entered into a collaboration with Dubai-based Al Jalila Children’s to create a telemedicine-based neurology outreach program. CHOP also entered into an agreement with the UAE’s Ministry of Health and Prevention to provide a pediatric consultancy program in which CHOP specialists work in the UAE alongside local clinicians. Outside of the UAE, CHOP maintains numerous collaborative relationships with organizations throughout the greater MENA region and beyond.

■ Johns Hopkins Medicine International’s 19 global collaborations span five continents. These relationships have helped partners modernize care, introduced cutting-edge procedures, and assisted in running an entire health system – Johns Hopkins Aramco – in Saudi Arabia. Locally in the UAE, Johns Hopkins Medicine International has collaborations with Tawam Hospital and Al Rahba Hospital. Management agreements for Hopkins’ Emirati collaborations include services such as program development for education, training, human resources, clinical services, and capital equipment; facility planning; on-site medical education programs; administrative and clinical resident rotations; virtual tumor boards; nurse training in evidence-based practice; remote second opinion and patient referrals; and more.

■ UChicago Medicine has also been very active in exchanging knowledge with hospitals and health authorities in the Middle East. These exchanges are accomplished through frequent visits from UChicago Medicine’s experts to the region and hosting leaders, including the Saudi health minister, in Chicago. Several collaborations have resulted from these activities, including the establishment of one of the first outpatient stem cell transplant programs in the region at the Saudi National Guard Health Affairs; an MOU with one of the leading private medical centers in Saudi Arabia to enhance a number of clinical and operational areas; and a comprehensive assessment for a new cancer center in Jeddah, Saudi Arabia.

## USCIPP MEMBERS AS OF AUGUST 2018

- Ann & Robert H. Lurie Children’s Hospital of Chicago
- Atrium Health
- Baptist Health International
- Baylor St. Luke’s Medical Center
- Beverly Hills Cancer Center
- Boston Children’s Hospital
- Brigham Health, Dana-Farber/Brigham and Women’s Cancer Care
- Broward Health International
- Cancer Treatment Centers of America
- Cedars-Sinai Medical Center
- Children’s Hospital Colorado
- Children’s Hospital Los Angeles
- Children’s Hospital of Philadelphia
- Children’s Mercy Kansas City
- Children’s National Health System
- Cincinnati Children’s Hospital Medical Center
- City of Hope
- Cleveland Clinic
- Community Medical Centers – Central California
- Cook Children’s Health Care System
- Dignity Health International
- Duke Health
- Emory Healthcare
- Florida Hospital
- Henry Ford Health System
- Hospital for Special Surgery
- Houston Methodist
- Indiana University Health
- Johns Hopkins Medicine International
- Keck Medicine of the University of Southern California
- Kennedy Krieger Institute
- Massachusetts General Hospital
- Mayo Clinic
- MedStar Georgetown University Hospital
- Memorial Healthcare System
- Memorial Hermann–Texas Medical Center & TIRR Memorial Hermann
- Memorial Sloan Kettering Cancer Center
- Minnesota International Medicine\*
- Moffitt Cancer Center
- Mount Sinai Medical Center
- Nationwide Children’s Hospital
- Nemours Alfred I duPont Hospital for Children
- NewYork-Presbyterian
- Nicklaus Children’s Hospital
- Northwell Health
- Northwestern Medicine
- NYU Langone Health
- Ochsner Health System
- Penn Medicine
- Philadelphia International Medicine\*\*
- Princeton HealthCare System
- Rehabilitation Institute of Chicago (Shirley Ryan AbilityLab)
- Rush University Medical Center
- Scripps Health
- Seattle Children’s
- Sharp HealthCare
- Stanford Medicine
- Texas Children’s Hospital
- The Ohio State University Comprehensive Cancer Center – Arthur G. James Cancer Hospital and Richard J. Solove Research Institute
- UC San Diego Health
- UChicago Medicine
- UCLA Health
- UCSF Health
- University Health System (San Antonio)
- University of Colorado Health
- UPMC and Children’s Hospital of Pittsburgh of UPMC
- Yale International Medicine Program

*\* Representing Abbott Northwestern Hospital, Children’s Hospitals and Clinics of Minnesota, Gillette Children’s Specialty Healthcare, North Memorial Medical Center, Regions Hospital, Shriners Hospitals for Children – Twin Cities, University of Minnesota Masonic Children’s Hospital, University of Minnesota Medical Center, Hazelden Betty Ford Foundation*

*\*\* Representing Fox Chase Cancer Center, Temple University Hospital, Thomas Jefferson University Hospital, Wills Eye Hospital, Magee Rehabilitation Hospital, The Renfrew Center, Rothman Institute, Vincera Institute*

In addition to these institutional collaborations, a number of other USCIPP members – such as Children’s National Health System, Cincinnati Children’s, Dignity Health International, Houston Methodist, NewYork-Presbyterian, and Penn Medicine – are either actively cooperating with Emirati partners or have completed past collaborative projects in the UAE.

### Conclusion

American health systems have long strived

to lead by example in pursuing better care for all. The future trends described in this article suggest that cross-border exchange of knowledge and people will continue to catalyze U.S. institutions’ global collaborations in science, medicine, business, and technology. In the future, this will mean that expertise can be shared where it is needed via American providers’ ever-deepening relationships with clinicians, hospitals, and governments around the world. **AH**