



Statement of the College of Healthcare Information Management Executives

Senate Committee on Commerce, Science and Transportation
Subcommittee on Health

Hearing on "Winning the Race to 5G and the Next Era of Technology Innovation in the United States"

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The College of Healthcare Information Management Executives (CHIME) welcomes the opportunity to submit a statement for the record for the February 6, 2019, hearing entitled, "Winning the Race to 5G and the Next Era of Technology Innovation in the United States." We appreciate the Committee's leadership and continued interest in ensuring the digital infrastructure is in place to facilitate innovation across the American economy.

CHIME is a professional organization that represents more than 2,800 Chief Information Officers (CIOs) and other senior healthcare IT leaders. CHIME enables its members and business partners to collaborate, exchange ideas, develop professionally and advocate the effective use of information management to improve the health and care in the communities they serve.

CHIME members are responsible for the selection and implementation of clinical and business systems that are facilitating healthcare transformation through technology. Our members represent some of the earliest and most prolific adopters of electronic health records (EHRs) and other health IT resources for clinicians and patients. Our mission is, "To advance and serve healthcare leaders and the industry improving health and care globally through the utilization of knowledge and technology."

Technology adoption and robust data sharing are vital to enhancing the quality of care and efficiency of the nation's healthcare system. The healthcare system has evolved from a siloed, paper-based system to an interconnected, digital system that provides clinicians with vast quantities of data to make informed decisions. Connected medical devices enable patients to track their conditions or proactively pursue healthier lifestyles. Technologies now allow patients to see clinicians from home or allow clinicians to optimize their time by using telemedicine to monitor patients off-site in real-time. These and many more technologies exist to transform the provision of healthcare and improve outcomes, but they will need a fast, reliable infrastructure to be effective and to be embraced by patients and clinicians.

The migration to the fifth generation of high-speed wireless networks, or 5G, will allow technologies to truly revolutionize healthcare. Removing today's bandwidth limitations brings endless possibilities for the proliferation of telehealth and remote monitoring; the unleashing of augmented or artificial intelligence (AI) and big data; and, the optimization of healthcare operations. Untethering patients from the capabilities a traditional network will alter patient engagement and mitigate existing access challenges. Faster speeds combined with cloud-based storage will enable advanced digital networks capable of generating and leveraging large quantities of data in ways previously unimaginable. Care can be delivered virtually, anywhere at any time to anyone. There's no question

that the infusion of 5G into healthcare will enhance access to care, while decreasing costs and improving efficiency.

Telehealth and Remote Monitoring

Clinician shortages and hospital closures have left millions of Americans with the need to travel great distances for care. Seniors and low-income Americans may lack the transportation necessary to see their clinicians face-to-face whether in rural or urban settings. Limited broadband proliferation to remote communities combined with policy barriers has limited the current adoption of telehealth. However, the ultra-low latency and high-speed capability of the 5G networks will not just remove existing access barriers but can unlock the ability for the world's best doctors and specialist to diagnose and treat patients in remote and underserved areas. Simply, 5G will connect patients with healthcare providers in ways not possible today. From video visits to connected IoT sensors to innovative applications, 5G will redefine every aspect of healthcare, from patient monitoring, to remote diagnostics, to prescription monitoring and more.

Telehealth brings value to the entire delivery system. Increasingly, our members are leveraging telehealth and remote monitoring services in a variety of ways to meet patient needs. For instance, disease monitoring services can be a less expensive, more efficient and more convenient for patients with chronic conditions to stay connected with their care team. Telehealth services can also help minimize the risk of a readmission or bring video consultations to emergency departments. While telehealth and remote monitoring capabilities are being used today with existing networks and devices, 5G will facilitate expanded monitoring and provide real-time analytics that can improve health outcomes. Faster speeds will allow clinicians during a telehealth video conference to download diagnostic images in a matter of seconds. Remote surgical procedures may become a reality with the reduction in latency. The notion of a traditional care setting, if desired by the patient, will be fundamentally altered.

Interoperability and Security Standards

Given the complexity of the ever-growing number of interconnected devices, it is important to guarantee security and interoperability standards are established and adopted. This has been a challenge in the electronic health record (EHR) arena. As we migrate to 5G, we should be mindful of past mistakes to ensure we have data sharing networks to store and exchange trusted health information that are robust and flexible to accommodate innovative technologies.

Current cybersecurity threats put providers and patients at risk. Traditional risks encountered in the healthcare ecosystem today will remain, meanwhile as 5G utilization grows the industry must seek to develop a broader understanding of additional risks that may arise as the internet of medical things (IoMT) skyrockets. As the nation moves to 5G, we need to add more advanced encryption and privacy protection, especially as mobile environments multiply, and larger quantities of sensitive data are transmitted across the care continuum. Further, some of the very technologies that 5G will enable may be leveraged to fortify cybersecurity in the healthcare setting.

Devices must connect to networks and the cloud in ways that are interoperable and secure for providers and patients will be able to capitalize on the benefits of digital innovation for wellness and healthcare. Significant advancement in medical treatment will only be possible if interoperability and security are addressed as priorities from the outset.

Augmented/Artificial Intelligence and Big Data

The ability to leverage big data and machine learning will enable healthcare insights and diagnoses for critical decision making in real time – but only if the infrastructure exists. In the journey toward personalized medicine, vast quantities of data, including genetic information, will factor into care planning, especially for those with chronic conditions. Clinicians will need access to genetic information, social determinants of health and health histories to develop an individualized care

plan. With the emergence of sensors and devices, additional data will contribute to clinical decision making, and with the emergence of 5G, this can happen in real time.

With 5G, robust data analytics enterprises will allow clinicians to assess data in real time about the effectiveness of treatments while making other valuable observations that can determine patient outcomes. The potential to assemble data to be used in new and innovative ways will be possible with the widespread adoption of 5G.

Optimizing Healthcare Operations

While 5G will transform the healthcare provider-patient relationship to transcend the four walls of a hospital or office, similarly, the revolution of data speeds from the adoption of 5G will fundamentally alter care delivery within a healthcare institution. Health systems have matured, with more devices and applications putting increased demands on the network infrastructure. The 5G network will facilitate efforts to modernize and optimize healthcare by supporting those existing technologies as well as emerging technologies in imaging, diagnostics, data analytics, treatment and more. As reimbursement policies push healthcare providers toward a patient-focused, outcomes-driven model, these technologies, enabled by the adoption of 5G, will be imperative.

Unprecedented operational excellence, cost reduction and improved care opportunities will be possible with 5G by connecting physical assets, systems and processes while nurturing the clinician-patient relationship in unprecedented ways. Hospitals and healthcare service providers will be able to drive their operational cost down through automation and with productivity gains. Productivity gain examples include “untethering” expensive medical diagnostic equipment like x-ray and MRI imaging machines to make them mobile in the hospital environment.

The ultra-high network bandwidth of 5G networks will allow for near real-time care in emergency situations. Digitizing images to instantly provide lab results in digital formats will not only increase overall efficiency but also reduce human errors and enable quick decision making. Emergency vehicles and equipment onboard will be efficiently connected with 5G. Connected ambulances will enable doctors to remotely provide real-time guidance to first responders while simultaneously benefiting from receiving real-time diagnostics and high-quality video streams of patients in transit to emergency rooms. Connected care will reduce fatalities and arm healthcare providers to be well prepared to deal with incoming patients in emergency situations.

The faster the nation adopts 5G as the standard for communication across the economy, especially in healthcare, the sooner the nation will reap the benefits of improved patient outcomes and cost reduction.