Mobile Medical App Entrepreneurs: Changing the Face of Health Care

Testimony of:

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Chairman Collins and distinguished members of the Subcommittee, thank you for the invitation to participate in today's hearing. My name is Sabrina Casucci and I am a PhD Candidate in Industrial and Systems Engineering. As a PhD candidate my recent research has focused on modeling healthcare processes. As an entrepreneur, I seek to apply this theoretical learning to develop more effective healthcare delivery solutions. I am honored to represent a talented team of fellow graduate students from the University at Buffalo Department of Industrial and Systems Engineering.

Our team members are: Dapeng Cao, Theresa Guarrera, David LaVergne, Nicolette McGeorge, Judith Tiferes-Wang, and Yuan Zhou. Dr. Li Lin, a professor in the Department of Industrial and Systems Engineering at University at Buffalo, SUNY, is a valued mentor in on our ongoing development activities.

Our group of young entrepreneurs are translating our individual healthcare and technology related research into a mobile solution that will make hospital discharge planning a more effective and efficient process. Ultimately we seek to reduce readmission rates by facilitating communication among patients, their family, and clinicians, improving patient and family preparation for post hospital care and ensuring continuity of care with community based care providers.

I would like to briefly discuss the critical aspects of our work, including the fundamental problem of readmissions that we are trying to address, our mobile solution, and the difficulties that we will face on our development journey. The need for improved tools that fundamentally address the issues inherent in existing healthcare processes is great. Increased governmental

and industrial support for start-up organizations and health care researchers like us is needed, as is increased federal support of interoperability standards that enable communication between different Information Technology systems.

The discharge planning process is a critical step in acute patient care. However, the inherent complexity of existing processes and the lack of a standardized approach often result in undesirable outcomes for the health care system and the patient. As a result, nearly 1 in 5 Medicare patients are readmitted to a hospital within 30 days of their initial discharge. This negatively effects individual patient health and places a huge financial burden on the US healthcare system. Potentially avoidable readmissions of Medicare patients are estimated to cost more than 17 billion dollars annually. Despite recent efforts to reduce readmission rates and costs of care, annual readmission rates have remained relatively constant.

The effects of poorly executed care transitions on the patient and their family is equally important as studies have shown that more than 40% of high risk elderly patients have experienced one or more problems post discharge, including readmissions. Further, patients and their families often feel frustrated, confused, or otherwise unable to manage their care.

Our solution connects personal mobile devices with Health Information Technology to improve patient outcomes and reduce healthcare expenditures by redefining the patient discharge process. Our systemic approach provides personalized tools for patients, their family, and clinicians that enable informed decision making and improved continuity of care.

Solutions like ours can make a significant impact on healthcare in the US. Mobile

solutions can connect fragmented care processes and improve continuity of care, both contributors to improved patient outcomes and reduced care costs.

The idea for the Discharge Roadmap app was developed, in part, due to my own personal experiences. In the past few years my mother has served as an informal caregiver for several elderly relatives, most of who are older than 90 years of age. She has had to manage her own career and health needs as well as the complex needs of this generation. When three relatives were recently and simultaneously hospitalized she spent countless hours on the phone and missed several days of work to ensure their post discharge care needs were met. Navigating three different discharge processes was an arduous task and it was clear that better solutions should be possible.

The opportunity to develop a tool that addresses these difficulties came in November of 2012 when GE Healthcare launched the Health Quest competition. Teams were challenged to develop new mobile healthcare apps that would improve the hospital experience for patients and their families. The competition presented the catalyst needed to develop Discharge Roadmap, which we believe will fundamentally redefine the discharge planning process.

As a start-up organization we know there is a long and difficult journey ahead of us. However, there are many groups of talented and dedicated researchers and entrepreneurs throughout the US working to develop solutions to these complex healthcare problems. The opportunity to (i) positively affect healthcare in the US, (ii) reduce readmission rates, (iii) lower healthcare costs, and (iv) alleviate the anxiety and burden of discharge planning for patients and their families, compel us to overcome these challenges.

In order for technology-enabled solutions, such as Discharge Roadmap, to succeed, the solutions must be able to communicate with existing hospital information systems. However, the current lack of a unified data structure and communication protocols severely limits this communication ability. Improving interoperability will ensure that healthcare providers can choose a solution that best fits the needs of their patients, and not just the needs of their current health information technology systems.

As a start-up organization we are in the early stages of developing our mobile solution and are eager to continue the process. We believe our app will alleviate the burdens imposed on patients, their families, and clinicians in this critical process. We seek to make a meaningful contribution to reducing readmission rates by providing patients, their families, and hospital based clinicians with a clear communication channel and by improving continuity of care with community based care providers.