



**Testimony of Christopher R. Burrow, M.D.
Before the
Subcommittee on Health and Technology
Small Business Committee
U.S. House of Representatives**

**Hearing on
“Mobile Medical App Entrepreneurs: Changing the Face of Health Care”
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Chairman Collins, Ranking Member Hahn, and distinguished subcommittee members, thank you for the opportunity to appear before you today to discuss mobile medical applications and their impact on the U.S. health care system. My name is Dr. Christopher Burrow, and I am the Executive Vice President for Medical Affairs at Humetrix, a small, woman-owned business in Del Mar, California. Prior to my current role at Humetrix, I was an executive and founder, respectively, of two California start up biotechnology companies that developed new cardiovascular disease diagnostic tests. As a physician-scientist, I have two decades of experience both as an attending physician in Nephrology/Internal Medicine and as a molecular biologist. Humetrix’s CEO, Founder and President is Dr. Bettina Experton, a former California Public Health Officer who conducted groundbreaking health services research on the impact of managed care on the frail elderly in the Medicare and Medicaid programs. Humetrix is a member of the App Developers Alliance, an industry association dedicated to meeting the needs of developers as creators, innovators and entrepreneurs, and we appear here today on their behalf.

Leveraging Patient-Facing Technology to Improve Health Care

Founded in 1998, Humetrix has been a pioneer in the development of mobile technology. At Humetrix, we believe that tools and mechanisms that enable increased engagement by patients and their caregivers have the potential to transform the delivery of health care. Indeed, over the last fifteen

years, we have developed numerous mobile applications that enable consumers to engage with the world around them in new and innovative ways.

Despite the significant progress in electronic health record (EHR) adoption made as a result of the Health Information Technology Economic and Clinical (HITECH) Act (included as part of the American Recovery and Reinvestment Act (ARRA) of 2009), essential health information is not readily accessible by patients in today's provider-centric health care system. In 2011, only 31 percent of physicians were capable of exchanging a patient's health information with another provider.¹ Given that the average Medicare beneficiary sees seven providers a year, the odds that all of a given Medicare patient's providers are able to exchange records could be as low as 2 in 10,000. A typical physician treating a Medicare patient must coordinate care with an average of 229 physicians in 117 practices.²

The gaps and limitations of provider-based health information exchange solutions – through which one EHR system connects to another EHR system, either directly or using supporting tools and technical infrastructure – present a particularly critical challenge for the Medicare population because these patients often transition between care settings and may see multiple providers to address their chronic care needs. Recent data shows that one in three Medicare patients are discharged from a hospital to a long-term or post-acute care setting.³ In many cases, little to no information follows the patient to their new care setting, as the vast majority of these facilities do not use EHRs and have no means of electronic exchange, EHR-based or otherwise.

¹ Federal Register, Volume 78, Number 45 (March 7, 2013), pages 14793-14797
<http://www.gpo.gov/fdsys/pkg/FR-2013-03-07/html/2013-05266.htm>

² Pham HH et al. 2009 Primary care physicians' link to other physicians through Medicare Patients Annals of Internal Medicine 150: 236-242 and Pham HH et al. 2007 *Care patterns in Medicare and their implication for pay for performance* NEJM 356: 1130-1139

³ Federal Register, Volume 78, Number 45 (March 7, 2013), pages 14793-14797
<http://www.gpo.gov/fdsys/pkg/FR-2013-03-07/html/2013-05266.htm>

A lack of appropriate information at the point of care may also negatively impact health care outcomes and increase health care costs. Experts estimate that, in any given year, a lack of accurate, comprehensive information about a patient's health status and treatment results in the needless duplication of laboratory tests, imaging studies and avoidable medical errors. In its September 2012 report, *Best Care at Lower Cost: The Path to Continuously Learning Health Care in America*, the Institute of Medicine (IOM) recommended equipping patients with tools that deliver "reliable clinical knowledge" so that they are able to fully participate in their own care, stating:

"Health providers should place a higher premium on fully involving patients in their own health care to the extent that patients choose. Clinicians should employ high-quality, reliable tools and skills for sharing decision making with patients, tailored to clinical needs, patient goals, social circumstances, and the degree of control that patients prefer . . . CMS and other payers should promote and measure patient-centered care through payment models, contracting policies, and public reporting programs. And digital technology developers and health product innovators should develop tools to assist individuals in managing their health and health care."⁴

My testimony today will demonstrate how Humetrix is using a federal initiative called "Blue Button" to realize the IOM's vision of consumer-centric care. By enabling patients to access to their own health information at the point of care with an easy-to-use mobile application, Humetrix's solution is free many of the challenges encountered by current provide-centric, system-to-system health information exchange initiatives. We believe that leveraging consumer-driven mobile technology at a large scale could transform health care by serving as a powerful care coordination tool and improving patient safety.

iBlueButton as a Case Study

The Federal Blue Button initiative was launched by President Obama in 2010. The idea was simple: give patients access to their own health information using an easy-to-identify symbol that could be adopted and used by any organization holding valuable patient data – a blue button. The initiative

⁴ Institute of Medicine, *Best Care at Lower Cost The Path to Continuously Learning Health Care in America* (September 6, 2012); Mark Smith et al., editors. National Academies Press.

saw results quickly. Just three months after its launch at the Department of Veterans Affairs (VA), more than 60,000 veterans had already used it to download their personal health information. Today, more than 100 million Americans have access to Blue Button data through the VA, the Department of Defense (DoD), the Centers for Medicare & Medicaid Services (CMS), or a private health plan.

Humetrix recognized the transformative potential of Blue Button data early on and saw an opportunity to build on Federal initiatives by leveraging the extraordinary power of mobile devices, particularly smart phones and tablets. Current data shows that 61 percent of American mobile phone users, or 139 million individuals, have a smart phone.⁵ Increases in smartphone usage for health care management have been seen in all demographic and ethnic groups, including the 55+ age bracket.⁶

As greater numbers of consumers become increasingly comfortable using their mobile devices to securely conduct sensitive transactions (e.g., online banking and other e-commerce transactions), health care will need to adapt to meet consumer expectations. Humetrix believes that the most efficient, cost-effective mechanism of health information exchange relies on mobile technology to ensure that patients and their providers are able to securely access their medical records whenever and wherever they need to. As such, we have created the iBlueButton iOS and Android apps to provide patients and caregivers with easy, reliable and secure access to their health record, as maintained by both private and public payers.

Humetrix began its development of the smart phone iBlueButton app series in Spring 2011; we have been continuously upgrading our apps since that time to provide ever increasing utility to our end users. In June 2012, Humetrix entered the Investing in Innovation (i2) “Blue Button Mash Up Challenge” sponsored by the U.S. Department of Health and Human Services’ Office of the National Coordinator for Health Information Technology (ONC). The goal of this challenge was to inspire developers to create an

⁵ Available here: <http://www.nielsen.com/us/en/newswire/2013/mobile-majority--u-s--smartphone-ownership-tops-60-.html>

⁶ Available here: <http://www.pewinternet.org/Reports/2012/Mobile-Health.aspx>

easy-to-use, patient-friendly application that combined Blue Button personal health record data with other data sources designed to improve care, improve health and reduce costs.

After a rigorous peer-review process by a panel of patients, vendors, and developers, ONC announced that Humetrix was the winner of the i2 Blue Button Mash Up Challenge. Humetrix's iBlueButton application transforms the beneficiary-level claims data currently produced by CMS into a secure, user friendly, longitudinal health record that can be accessed on a mobile device and exchanged by patients and providers at the point of care.

Because CMS makes up to three years of claims information available to each of its beneficiaries, the Medicare Blue Button record is often unwieldy and of limited utility to a patient or their physician; for even simple cases, the record can easily reach dozens or even hundreds of pages in length for a single patient.

However, once a record has been generated, iBlueButton transforms the hard-to-understand list of coded claims in the Medicare Blue Button record into a patient friendly, 3-year longitudinal clinical record. This comprehensive health record can be viewed directly on a smart phone or tablet, and contains a patient's key health information such as problem and medication lists, as well as a detailed history of all the patient's health care encounters, including inpatient admissions, outpatient visits, imaging services, labs, and procedures. Medicare beneficiaries can review their information, annotate their records with additional details, and look up information about medications and potential adverse reactions or medical problems using MedlinePlus, an online reference resource maintained by the National Library of Medicine. Medical records are stored on the smart phone using state of the art encryption, and cannot be accessed by others in the event that the smart phone is lost or stolen.

In addition, the iBlueButton app also enables the patient, or their caregiver, to securely transfer the Blue Button record to a physician's tablet running the companion iBlueButton *Professional* app. Using the iBlueButton *Professional* app, the provider is able to view the patient's records, as well as any

annotations made by the patient about their medications, potential side effects they may be experiencing, and their medical conditions.

The iBlueButton app is currently available to consumers directly from the iTunes or Google Play stores, providing millions of fee-for-service Medicare beneficiaries and/or their caregivers the ability to have mobile, secure, immediate access to critical medical information.

Realizing the Potential to Change the Face of Health Care.

Humetrix believes that existing mobile infrastructure and increasingly ubiquitous mobile consumer devices must be leveraged to provide patients and their caregivers access to essential health information at the point of care. Indeed, tremendous benefits could result from strategies that enable better exchange of health information in the health care system using the Blue Button record. Providers could use the record to identify previous misdiagnoses and medications prescribed in error, as well as other misinformation. They may also use the comprehensive information contained in the record to eliminate unnecessary tests and prevent adverse drug reactions, which result today when a new prescription interferes with an unknown existing medication. Patients may even use the Blue Button record to detect fraudulent or erroneous claims, and break down existing language or health literacy barriers.

The real-world impact of this technology was highlighted by Christine Bechtel, former Vice President at the National Partnership for Women & Families, during her March 20, 2013 testimony before the House Energy and Commerce Committee's Health Subcommittee. She relayed a story told by a woman who experienced the true value of Blue Button, and iBlueButton in particular, when caring for her father, a Medicare beneficiary:

“The hospital had an old record showing he had a diagnosis that required him to take Coumadin, which is a blood thinner. And because I had the [Blue Button] data in my hands, I could show them that he was no longer on that medication, and that truly was instrumental in saving his life. Within hours of his discharge he fell and suffered severe head and arm lacerations that

would have been life threatening had he been on Coumadin and would have resulted in a readmission within just five hours of discharge.”⁷

To ensure that these benefits are realized on a large-scale by patients and caregivers across the country, policies and regulations should be structured to support continued innovation in mobile health technology. Many organizations, including the App Developers Alliance, have established principles and policy recommendations for the fair regulation of mobile medical apps. These principles may be informative as policymakers continue to consider how to support mobile access to health information as a key component of improving the safety and cost-effectiveness of health care.

Furthermore, additional work must be done to educate consumers and providers alike about the value of consumer-driven health information exchange using the Blue Button record. Although significant progress has been made in certain patient populations, including veterans, intensive outreach and education efforts are needed by Federal and private payers alike to ensure that their beneficiaries have access to and understand how to use technologies like iBlueButton. Likewise, large-scale provider outreach is needed to train providers on the value of using these technologies at the point of care and to provide them with the information needed to educate their patients on the use of mobile apps for management of their own health and health care.

In closing, I would like to thank Chairman Collins, Ranking Member Hahn, and all of the members of the subcommittee for the invitation to testify today about this important topic. I look forward to answering your questions.

⁷ Available here: <http://www.nationalpartnership.org/site/News2?page=NewsArticle&id=38627>