WHITE PAPER

for **Providers & Health IT**

Delivering More Meaningful Care with Patient-Generated Data

VALIDIC™

Industry's Leading **Digital Health Platform**

As healthcare continues to shift more toward accountable care, healthcare organizations are looking for ways to quickly and securely access patient data to deliver more meaningful population management, patient engagement, and disease state analytics.

It's all part of a data revolution occurring in this industry. The majority of hospitals and physician practices have implemented electronic medical record (EMR) solutions. At the same time, telehealth (or telemedicine) approaches have provided a means for physicians to remotely connect with and gather information from patients on a more frequent basis, even when those patients are not physically in their offices.

Patients with hypertension routinely monitor their blood pressure and provide those records during their doctor appointments, but if they are able to use a mobile app, telemedicine solution, or a connected blood pressure monitor to provide weekly or even daily electronic updates to their doctor, then physicians can make faster and more effective decisions about treatment. For patients that have been asked to follow a specific exercise regimen as part of their care, a wearable fitness tracker could not only help the patient ensure they are complying with the program, but could also send that data to the physician. The doctor could then track the fitness data to other patient information and potentially tweak the program or make suggestions for improvements.

The number of mobile health apps and devices like these that are available to consumers now surpasses 165,000, as developers incorporate innovative data collection features linked to sensors and wearables. In addition, one in 10 apps now has the capability to connect to a device or sensor, providing patient data on biofeedback and physiological function and greatly extending the accuracy and convenience of data collection. Nearly a quarter of the apps are now focused on disease and treatment management, while two-thirds target fitness and wellness. There are even devices like wearable blood pressure monitors that can provide the type of accurate, continuous information that was previously only available from equipment in a clinical or hospital setting.

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In addition, a company called Proteus is doing amazing things with ingestibles. A patient wears a patch on her stomach and ingests a pill, and when the pill is in her body it is activated and powered by the enzymes in her stomach. It communicates with the patch (that's on her skin) and tracks her dosage, the medication, and the time that it was taken. It knows what was in a patient's body and at what time. This type of technology could save the healthcare industry billions of dollars due to wasted and unused medication consumption.

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A System Incapable of Accepting or Analyzing Patient Data

Access to digital health data provides physicians, nurses, clinicians, and teams with deep and verifiable insights that really cannot be gained, or necessarily trusted, from manual-entry by a patient. Unfortunately, the healthcare system is not currently structured to accept or analyze patient-generated data from mobile health devices and apps like FitBit, Apple Watch and other health tracking apps. In fact, according to Pew Research, only one out of 10 patients that gather personal health data actually share it with their physician. The proliferation of consumer-facing apps and devices also has given rise to a dichotomy in how mHealth data is collected.

On one side stand platforms that gather consumer data for use by healthcare providers. On the other side are platforms that take data from mobile disease management solutions and devices such as blood glucose meters, inhalers, diagnostic devices, and activity monitors – not the consumer – and go to great lengths to ensure that such data is "medical grade." In other words, there's a difference between devices that enable users to visualize and transmit their readings while on-the-go to healthcare professionals who can rapidly access, monitor and manage health status, and those mobile health monitoring devices that health care service providers, like health systems or accountable care organizations can incorporate with complex care solutions.

No matter the side of the coin an organization's platform falls on, data has to be curated first – collected and organized into something a provider can trust and ultimately use. Some EMR companies tackle this issue by transferring consumer-entered data into a PHR or similar silo; the consumer then grants permission to the provider to parse that data and determine what can be pulled out and entered into the medical record. What's needed is a way to help clinicians monitor individual patients and groups of patients to spot adverse health trends before they become acute. Fortunately, there's a way to standardize and normalize this data so it can be used by healthcare providers, insurers, patients and other stakeholders to improve patient health, reduce costs, and provide population-level visibility to providers. Integrating patient-generated data into an EHR or patient portal allows providers to engage in broader healthcare endeavors like telemedicine, remote patient monitoring and incentivized wellness programs, so it makes sense for healthcare providers, as well as health IT vendors, that data integration is the next step.

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Challenges Standing in the Way of Full Adoption

While many healthcare providers agree that mobile health apps can reduce healthcare costs and improve patient outcomes, a few barriers to full adoption of this patient-generated data remain. Some providers say they don't want all that extra information coming into the medical record, for instance. They're worried about validity – is data entered by the patient reliable enough to be included in clinical decision?

Compatibility is another major challenge. Mobile apps, remotely monitored medical devices, wearable fitness trackers, and other data sources provide information in a variety of formats. For a healthcare provider to incorporate that information into their clinical systems without a central way to translate and integrate the data would require a monumental amount of programming muscle and ongoing support.

Healthcare providers do not have the time or resources to develop one-off integrations with the wide variety of mobile apps, medical devices, and wearable fitness/wellness monitors now available. What's needed is a single, third-party tool to pull that data from any source and then present in a way that is clinically useful and reduces the need for additional IT resources. An open, cloud-based platform that can connect providers with a wide assortment of patient-generated data can save time, IT resources, and ongoing support costs, while giving physicians a fast, efficient way to access and analyze this data.

Putting Actionable Data Into the Right Hands

To actually connect with these devices at the device level, it's often necessary to work direct with the manufacturer to get the proper SDK. In that sense, true interoperability has to happen at the data layer. Once the data is off the device, data can be standardized and normalized, using a method to create interoperability. The answer lies in tools that operate behind the scenes to allow customers to connect and deliver mobile health data into any app or web portal without the time and expense of building a new app from scratch. In response, companies like Validic, have stepped in to offer a new kind of technology platform for convenient, easy access to digital health data from best-in-class clinical and remote-monitoring devices, sensors, fitness equipment, wearables and patient wellness applications.

By connecting hospital systems, providers, payers, wellness companies, health information technology platforms and pharmaceutical companies to the continuously expanding list of digital health technologies, vendors like Validic enable healthcare companies to better accomplish their key strategic imperatives. It's a solution that has the potential to save healthcare organizations 90 percent or more per

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year when compared to the cost of building a comparable system, and associated costs from continuous technical maintenance of integrations.

Integration is just one part of the equation. Emerging applications and functionality from EMR providers and third-party ISVs will allow providers to aggregate and analyze patient data, along with chart information and, potentially, large geographic or demographic data sets. That will not only help providers monitor specific patient progress, but potentially spot trends in the larger population of patients that they serve. The goal: deliver quick and simple access to digital health data enabling clinicians to better manage and engage their populations, improve outcomes, and reduce costs.

Clinical and Consumer Devices: Sources of Patient Data

Sutter Health's innovations group at the Palo Alto Medical Foundation is using Validic's digital health platform to monitor patients remotely using activity trackers and data from blood pressure cuffs. This remote monitoring has become, in this way, the foundation for a new preventive model of care because the system uses a single application programming interface (API) to connect to the devices and then standardizes and normalizes the data.

MEDITECH, a leading EHR provider, is also using Validic's digital health platform to integrate data from clinical, fitness, and wellness data into patient records for its hospital clients. That integration will help hospitals gain a more complete understanding of patient health and habits. A device- and platform-agnostic solution lets hospitals create a solution that is open to accepting data from new types of devices and applications as they come to market.

The integration of remote data, collected in real time through home-based monitoring systems, devices or wearable sensors, into the EMR has long been a topic of discussion in mHealth circles. Critics have worried than an infusion of new data could make EMRs cumbersome and less likely to be implemented. Still, as more care is being delivered and managed outside the four walls of the hospital, healthcare companies really need verified digital health data to execute these programs successfully. Making clean, error-free mobile health data available for one's system means clinicians and healthcare leadership can focus on improving their core products and providing a better user experience.

Validic is the healthcare industry's leading cloud-based, digital health platform. Validic provides convenient and quick access to patient data from mobile health and in-home clinical devices, fitness wearables and wellness applications. By connecting its growing base of customers – that includes providers, pharmaceutical companies, payers, wellness companies and health IT vendors – to the continuously expanding list of digital health technologies, Validic enables healthcare companies to better coordinate care across their communities, improve their patient engagement strategies, and more efficiently manage their patient populations. Validic's innovative, scalable and FDA Class I MDDS technology delivers actionable, standardized and HIPAA-compliant health data from the best in-class digital health devices and applications. Validic was recognized for healthcare innovation by Gartner, and received Frost & Sullivan's Best Practices and Best Value in Healthcare Information Interoperability award and Top Ten Innovator Disrupting Healthcare award. Validic's leading global digital health ecosystem reaches over 160 million lives in 47 countries and continues to grow daily.

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