Patient SOLUTIONS

▶ *As the industry continues to move to a digital and connected ecosystem, patient solutions will increasingly rely on big and small data to improve outcomes.*

Patient solutions can be as varied as the different stages of the disease "journey" that patients are experiencing: beginning with the first symptoms, continuing to diagnosis, then to treatment choice and optimization and eventually the improved life with disease. Additionally, all of those steps and stages are different from one disease to another one.

Some patient solutions are tools to help the patient remember to take his medicines, tools to help the patient track how he is feeling so that he can share an accurate report with his healthcare giver (physician, nurse, pharmacist, etc), or tools to help educate the community about a certain disease so that patients might understand their disease earlier. For example, UCB provides special or different packaging of its products for patients, or alternatives to picking up medicine at the pharmacy.

An illustrative example of a tool developed by UCB is its Parkinson's disease Well-Being Map. It is a simple and easy-to-use visual scale used to objectify and monitor both motor and non-motor symptoms by the patients. The map helps them to assess their health status, facilitate communication with their doctor, and make the most of limited time available during consultation.

Internet of Everything

With the rise of smart mobile devices and cloud computing, the Internet of Everything (IoE) has exploded — and now, in the healthcare space, according to Qualcomm Life, it is the Internet of Medical Things (IoMT) that is gaining traction.

mHealth apps, activity trackers such as FitBit, and connected medical devices such as weight scales or blood pressure monitors are creating a mainstream push for this connected movement. Yet the IoMT still differs from the Internet of Everything in that it affects patients' health, patients' longevity, and patients' quality of life as well as that of their families.

Like all patient-based tools and solutions there are a myriad of challenges surrounding the IoMT. As consumer-driven healthcare takes hold, the IoMT has to have a draw for

EXECUTIVE VIEWPOINTS

JENNIFER SIGAUD
Managing Director, US
Atlantis Healthcare

THE CHANGING MODEL

Patient centricity is becoming white noise in healthcare. Yet, through the lens of health psychology, the patient is truly at the center of the journey, with pharma and other stakeholders acting as guides. Leveraging proven frameworks, trained health psychology specialists design programs to help people understand how they are thinking about their illness and treatment. With such evidence-based approaches, patients are truly in the center of care, and can be empowered to better self-manage their illness for the long-term.

LAURA MOORE, ED.D.
Health Psychology Specialist
Atlantis Healthcare

MEASURING SUCCESS

Pharma often attempts to measure successful adherence by refill rates, yet people measure success by other factors. The reality is that success is a personalized metric. Health psychology frameworks tell us one-size-fits-all solutions don't work; similarly, boilerplate metrics won't work either. Two people with the same diagnosis and treatment can measure success differently. It may be how they feel, a change in a clinical measure, or reaching a health goal. Metrics should be identified at the program beginning, tailored to the individual.

TIM DAVIS
CEO and Founder
Exco InTouch

DRIVING PATIENT UPTAKE

Pharma must recognize the only constant in healthcare is patients, and only they can drive the growth of digital health solutions. Programs must be designed with patient needs at the core, aligning advances in technology into services that are simple to use, integrate into everyday lives, and provide clear, meaningful feedback on health outcomes. Only then will patients see the value of their services and subscribe to this new phase of healthcare delivery.

ROB PETERS
Senior VP, Strategy
MicroMass Communications Inc.

THE PATIENT JOURNEY AND IOE

The Internet of Everything (IoE) will yield a richer, more impactful two-way stream of data and information. It will transform the transactional patient journey model into a more effective, dynamic experience for all patients. By starting with a fundamental understanding of patient behavior and enhancing it with data about the patients' daily habits and activities related to their condition, pharma can deliver relevant information based on the patient. This will also yield information that may better predict how to address the patient's clinical and nonclinical needs.

PATIENT SOLUTIONS AND MARKETING

Patient support programs shouldn't be just a vehicle to address access and adherence challenges. For example, in cholesterol products, there is an opportunity to accelerate clinical outcomes by addressing patient beliefs and behaviors. Products can be studied in

consumers that is an instant and ongoing gratification. Qualcomm analysts relay that the reality is that health is often neglected; busy lives get in the way of wellness, prevention, and the opportunity for early diagnosis. The average consumer will invest more time setting up their smart device or TV than on a connected medical device. Additionally, all stakeholders are looking for net incremental value from the IoMT — providers and payers will challenge IoMT to improve outcomes and supplant existing healthcare encounters. For those that recognize and tackle these challenges head-on, the promise of the IoMT is immense.

In fact, according to Qualcomm Life, the healthcare Internet of Things is expected to reach $117 billion by 2020 and healthcare will be the highest segment for the IoT growth.

While still a fairly nascent category, Qualcomm Life defines the IoMT as a digital ecosystem of connected and diverse, medically

combination with an app. When patients are able to achieve better control with the app combination, pharma benefits by being able to charge a higher price or obtaining preferred formulary status compared with a medication that does not offer additional proof of better outcomes. Pharma should develop evidence-based behavior change solutions and study them as an arm of a clinical trial to generate more compelling data for registration or formulary consideration.

JOHANNA SKILLING
Executive VP, Director of Planning, US
Ogilvy CommonHealth Worldwide

THE IMPACT OF THE INTERNET OF EVERYTHING
My 84-year-old dad has a cool new pacemaker that will alert his cardiologist — 10 miles away — if his heart goes into arrhythmia. Score one for the convenience of the Internet of Things. But should we worry that there's one less opportunity for a conversation with the man taking care of my father's cardiovascular health?

related things that enable transferring, sharing, and using data over a network with a goal of optimizing care pathways and delivering the right care, at the right time, at the right location. The fabric of this ecosystem will integrate stakeholders and create a connected interdependent environment for exchanging services and knowledge. This integration and recent advances in natural human interfaces, wearable devices, sensors, and smart medical devices will allow machines to be an integral team member in the delivery of care to a consumer.

The IoMT has the potential to make "care anywhere" a reality by connecting and integrating a wide range of devices, wearables, sensors and implantables, which will generate an enormous amount of personalized small data. The IoMT pioneers are demonstrating how embedded analytics outside the traditional enterprise (a hospital) will be able to collect, cleanse, classify, and synthesize data to reveal big insights. These insights will enable providers and patients to see patterns and trends.

Analysts predict that "things" health-related will be connected — from people's DNA sequence to their electronic medical record to their FitBit data; healthcare will no longer be a linear journey, but care will become three-dimensional, delivered to patients in a personalized, convenient manner, anytime, anywhere. The IoMT will know a patient, and it will allow for cognitive learning of the IoMT through the small personalized data that are collected and analyzed near real time. This hyper-personalization will help make care more dynamic and treatments and therapies more specific and efficacious.

The positive impacts that the IoMT will have on patients, providers, and healthcare system globally are vast. Ultimately, the need for physical clinics or hospitals will be reduced. There will be less dependence on physician visits and consults as data can flag exceptions and recommend patient-activated or machine interventions. It will bring better care for seniors and people in remote areas with improved care access, and will address healthcare inequality by reducing costs associated with in-person visits, hospitalizations and medication errors.

In the end, the IoMT will allow patients to heal and age while at home, reduce the burden on the healthcare system and unlock the power of self-care where patients will be informed and engaged in their own care.

For the IoMT to become a reality, there will need to be a de-siloing of the industry, and companies will need to embrace a new business culture. The success of the IoMT will hinge on leaders and their companies embracing a cooperative, interdependent way of developing connected solutions. Companies will quickly realize that success in the new ecosystem depends on how well we can co-create value. **PV**

5 INNOVATIONS IN THE INTERNET OF MEDICAL THINGS

The newest developments in the Internet of Things show that health management is being increasingly conducted over the smartphone. The following projects show the diversity of the application possibilities. The examples emphasize what type of dynamics will drive the market forward. Experts expect that the market for wearable health devices will grow up to $50 billion in the next 10 years.

1. Propeller Health: An asthma inhaler with a built-in GPS-sensor, approved by the FDA
A tracking device, which is placed into an asthma inhaler, shall provide support and help reduce the cost for health systems and thus for patients. Every time Asthmapolis is used, time and location are being saved, the GPS-data recorded and imported into a personal profile. This way, people suffering from asthma can observe at which locations he/she gets asthma attacks most frequently and can avoid them. If the person suffering from asthma agrees to have his/her data published, he/she can possibly even help others, who suffer from the same disease.

2. Novartis, Google: Digital contact lenses for diabetics
So far, the only method to measure the levels of blood sugar has been to daily stab the patient in the finger, several times a day, and to then examine the values using drops of the blood. The contact lenses, jointly developed by Google and Novartis, should help diabetics to measure their levels of blood sugar through tear liquid and to transfer it to a glucose monitor or a smart device, e.g. a mobile phone.

3. MC10: 24/7 monitoring of the vital functions with BioStamps
The U.S. start-up MC 10 develops a new dimension of wearable computing. Among the first solution has been wearable electronics in the shape of an elastomer plaster, kind of a high-tech tattoo, which can measure a whole load of biometric data, such as muscle activity, heartbeat, or brainwaves. This could improve not only the medical treatment of sick people, but also the ability of parents to monitor the body temperature of their baby in real time, for example. In cooperation with Reebok came the first commercial application — the so called checklight protection cap with LED-based traffic light system, which indicates the danger of a head injury.

4. Vitality: Monitoring of medication
The WHO expects that about half of all therapeutic prescriptions do not get executed in the way prescribed by the doctor. Medication can be improved and made a lot easier with the use of apps, e.g. through calendar functions, reminders, or support in the re-ordering process. With its system GlowCabs, Vitality has been one of the pioneers in this area and has been present on the market since 2010. Those drug containers use light and sounds to signal the patient when the time to take the medicine has come. They also remind the patient automatically through a call. Moreover, every week a report is being sent to GlowCap customers, with information about how the respective patient has been taking his or her medication.
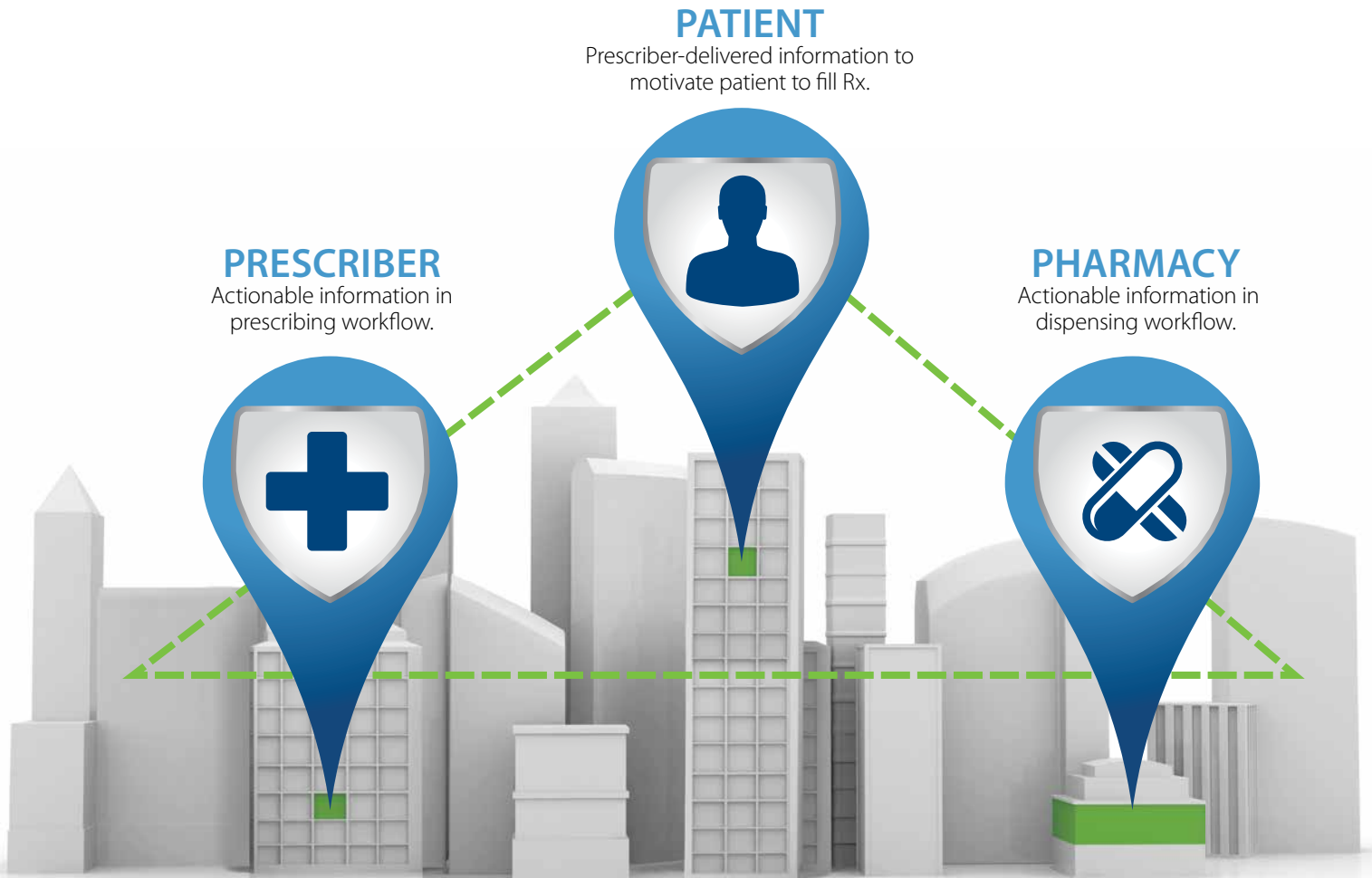
5. Microsoft, Healthcast: Connection of different systems for optimization of work flows in hospitals
The Henry Mayo Newhall hospital in Valencia, Ca., had been searching for a solution for how to help doctors spend more time with their patients. In cooperation with Microsoft the hospital implemented an intelligent system with a so called single-sign-on, which provides the doctors with an access to a wide range of data: from patient files to test results, prescriptions and a lot more. This was achieved by connecting 175 hospital devices, as well as the personal devices of the doctors, to the available computing offices and systems.

Source: i-q-i.net — Dr. Bachfischer Nikola

Location. Location. Location.

PATIENT
Prescriber-delivered information to
motivate patient to fill Rx.

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prescribing workflow.

PHARMACY
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