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## From Volume to Value

By: Alan Shortall, Unilife Chairman & CEO

As healthcare markets continue to shift to a model based on value-based outcomes, Bluetooth-enabled smart medical technologies are being recognized for their potential to better manage patient data and optimize rates of therapy compliance. This article reviews the converging trends that are driving this market shift, and how patients, payers, prescribers and pharmaceutical companies are poised to benefit.

Recent coverage of how U.S. pharmacy benefit managers (PBMs) are aligning behind preferred drug manufacturers for the treatment for hepatitis C signals a revolution in healthcare. However those who assume this shift is being driven by a desire for the lowest prices are mistaken.

The traditional price-based healthcare model whereby the most drugs are sold to the largest patient populations at the lowest price is not just changing—it is being made redundant. Taking its place is a new model, based upon the generation of value-based outcomes. Price is becoming increasingly only one out of many criteria used in the selection of drugs and other healthcare products. Instead, the upfront cost of a product is being weighed against the social and economic returns it can generate—both now and in the future—compared to available competition. Under this new model, the victors will be those who can deliver true long-term value to patients, prescribers and payers.

For their part, patients are becoming more aware of their therapy choices. They are growing savvier regarding modern technology, and they now carry more influence than ever before over the brand of drug that is prescribed to them. In addition to clinical efficacy, patients want safe, simple and convenient therapies that can be taken whenever and wherever they are.

Prescribers, meanwhile, seek therapies that demonstrate the best rates of patient adherence. Half of all patients with a chronic disease are not compliant with their therapy regime, according to the World Health Organization. In the U.S. alone, non-adherence costs are estimated at up to \$300 billion per year. Prescribers are more likely to give preference to patient-centric products that are intuitive, reliable and that require less frequent dosing regimens.

Accordingly, payers are focused on reducing long-term healthcare costs by encouraging the use of therapies that are not only affordable, but that also save time and money. Financial incentives will be given to therapies that generate the most favorable data and shift the delivery of treatment from healthcare facilities to self-injection.

Market share will increasingly be captured by pharmaceutical companies that demonstrate why their particular therapeutic brand can generate better value-based outcomes compared to brand-name, biosimilar or generic competition. The best-value product will be the one that strikes the optimal balance between clinical efficacy, therapy compliance, patient preference and pricing.

But how will patients, prescribers and payers determine which healthcare products can generate the best return on investment? How will pharmaceutical companies build long-term relationships with patients? How will prescribers know that the therapy is being taken correctly by the patient? How will payers decide whether it is better to prescribe a trusted brand-name product with a proven record of performance instead of a biosimilar equivalent at a 20% discount?

The answer to all these questions is: data. The development of the systems that can reliably capture, securely disseminate and accurately process this data amongst relevant stakeholders will be one of the great healthcare battlegrounds in the coming decade.

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Pharmaceutical companies may lack the depth of capability, expertise and scale to succeed in this new data-driven world of healthcare on their own. Long-term partnerships between suppliers of drugs, devices and data will be required. The first sign of these collaborations is already evident in the development of wearable healthcare monitoring devices and apps by companies including Apple, Samsung and Google. The next stage in healthcare will be powered by a new generation of "smart" medical technologies that go beyond simply monitoring a patient's health. Instead, such devices will directly administer and record treatment.

These smart devices will not only contain and deliver the drug to the patient; they will also have integrated connectivity via Bluetooth, Wifi or 3G to provide a direct interface with other healthcare stakeholders via the use of data hubs and mobile apps. At the leading edge of this trend are wearable and hand-held electronic injection systems that can automatically sync to a patient's smartphone and then to the digital cloud. Such smart devices, which are intuitive and portable for patient use outside of healthcare facilities, have the potential to redefine the treatment of a range of chronic therapies where compliance rates remain sub-optimal.



These smart devices are able to remind or prompt the patient via a smart phone app that it is time to take an injection. While the device itself will control the administration of the dose, it can also connect with a smartphone app to provide the patient with status updates during the injection process. Videos, information and connections with customer support centers can help to minimize the risk of error. In some cases, the device or smartphone app may allow the patient to control the rate or speed of an injection to minimize pain or discomfort. Additionally, the device or smartphone can automatically send patient-protected data to relevant authorized stakeholders, such as prescribing doctors and/or insurers.

The integration of such modern, customer-centric features into devices that deliver injectable therapies can generate tremendous socio-economic outcomes to patients, prescribers and payers. This value of these healthcare benefits will be measurable in a multitude of ways, including drug administration, compliance, safety, accuracy of dosing and supply chain integrity.

Patients will be able to better follow their medication schedule. Together with their prescribing doctor, they will be able correlate fluctuations in their health to factors such as missed doses, dose concentration or dose frequency to help fine-tune their therapy regime. Payers will have the opportunity to compare therapy compliance and patient satisfaction between competing brands of therapy, and from there, incentivize prescribers to select the most effective product. Such outcomes can revolutionize the productivity of healthcare and enhance the overall quality of life for each patient.

With therapy compliance poised to be one of the great healthcare frontlines of the coming decade, the use of data-enabled delivery systems is becoming highly desirable for pharmaceutical companies with large portfolios of approved and pipeline therapies targeting chronic diseases. Moving forward, such technologies will become an integral part of healthcare, and a key resource for pharmaceutical companies to establish long-term patient relationships.

As a leading provider of smart injectable drug delivery systems, Unilife is working with a number of pharmaceutical and biotechnology companies who are seeking to differentiate their products and drive patient adherence. Unilife products with customization options such as Bluetooth connectivity include the LISA smart reusable auto-injector and the ReadyToGo platform of wearable injectors. Pharmaceutical companies seeking more information about how Unilife can create data-enabled delivery system technologies are encouraged to contact us via [www.unilife.com](http://www.unilife.com).



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