Are You taking costs out of the system or adding them?

Healthcare as an industry has never stood still and now, it appears to be undergoing a sea change in technologies, systems and the delivery of therapies in many segments, as new advancements in medicine make their way to the front line of therapy.

Along with the drugs, a host of innovative new medical devices are in many cases redefining health maintenance—bringing continual, remote monitoring as well as life-saving measures to patients and keeping them connected to professional networks—things considered impossible in only the recent past.

The Proliferation of Biotech Devices
Wireless, wearable biosensor-embedded undergarments can now telemeter critical data such as heart rate to health professionals from chronically ill patients in remote locations.

Today's pacemaker technology is contained within a one-inch wireless titanium device that can be programmed to meet a patient's specific needs, depending upon the rate of exertion.

Automated, wearable insulin pumps now help patients achieve better control of their blood glucose levels without individual insulin injections, allowing them to balance the demands of diabetes with those of everyday life.

Because of advences like these, medical devices, formerly second-string behind drugs in their impact, are now moving to the front line of therapy
Preventative medicine and treatments are no longer the sole domain of pharma, but of anyone with the vision and means to deliver efficacy by way of technology—and with it, improved patient outcomes.

And, as might be expected, with greater medical advances have historically come rising costs: When something better has come along in healthcare, it has tended to add cost to the healthcare system.

Where are we headed with costs?
Growth in health spending is expected to accelerate at an average 5.7 percent for 2017 through 2019, as a result of gradual increases in economy-wide and medical-specific prices. Overall, the health share of GDP is expected to rise to 20.1 percent by 2025. Notwithstanding the fact that many factors contribute to cost increases, the continued climb in spending will, at some point, become unsustainable.

New trends in healthcare spending
However, in recent years, companies working together in creative partnerships indicate a move toward reducing costs—a direct solution to the problem. Pharma, diagnostics firms and insurors willing to share risk when the expectations of performance are high, offer agreements—referred to as value-added contracts, pay-for-performance contracts or Value-based Pricing.

In 2016, Cigna entered into value-based contracts with both Amgen and Sanofi/ Regeneron for new specialty drugs known as PCSK9 inhibitors. The contracts

essentially modify the cost of revolutionary new cholesterol-lowering drugs Repatha and Praluent, based on how well patients respond to the medications. Financial terms are directly linked to improved customer health.

That same year, 1.3-million-member Harvard Pilgrim Health Care entered into a contract with Amgen for Repatha, which during clinical trials, achieved results far beyond those of current statin drugs. The contract stipulates that if patients achieve results similar to those reported in Repatha's trials, the new drug will be paid for on a lower level. In addition, if usage surpasses a specific predetermined level, the result will be a discount on the cost.

Two other Harvard Pilgrim agreements involve Amgen's rheumatoid arthritis medicine Enbrel and Eli Lilly & Company's osteoporosis medicine Forteo. In addition to cutting spending, the measures are aimed at giving patients access to costly treatments. (Enbrel costs close to $45,000 per patient per year, and Forteo costs about $29,000 a year.)

A contract between Express Scripts and AstraZeneca involves Iressa, the lung cancer drug. Payment is only made for patients who receive a third prescription refill, which serves as a surrogate measure of adherence, and presumably, efficacy.

Not everyone is on board

Insurors are applauding pharma companies for implementing a shared risk contract by paying them at the base for drugs like Repatha what they would otherwise be paid for statin drugs. Outcomes are greatly improved and so are the financials—and, as medical devices move further toward the front lines, the shared risk model should become the norm with them as well.

The real issue and what is being done about it

One reason that healthcare costs have continued to rise is that when a new therapy or device is evaluated by doctors and other health professionals, they often want that device or therapy. And, historically, new has nearly always meant more expensive. This eventuality tends to add cost to the system.

However, two paradigms are shifting:

One, Connected care now allows that many medical devices can automatically do the work ascribed formerly to health professionals. If a patient needed his/her heart checked, an office visit was required. Now, wearable devices with continuous monitoring allow the patient to remain remote. Critical heart data is sent wirelessly from the device to a system where doctors can read and act on it. Accurate, continuous, automatic monitoring frees up doctors and health professionals to see other patients and handle perhaps more pressing health challenges.

As a result, many emergencies are precluded. Monitoring allows a doctor to determine if a patient is progressing, remaining the same or moving towards a threatening stage of an illness. Patients and doctors are often able to mitigate threats with prevention rather

than an emergency visit, freeing up hospital operational costs, time and doctor resources.

The other shifting paradigm is Reimbursement. Slowly, the old fee-for-service model is being replaced by bundling or Value-added contract. For decades, fee-for-service was the standard: Individual therapies, treatments and services were reimbursed on a per-service performed basis. If a patient had bedsores, the hospital was reimbursed for treatment for bedsores for that patient. If a patient was required to make additional visits for therapies, the doctor and hospital would be paid per each visit and service.

This is changing.

How Connected Medical Devices can take costs out of the system
Medical devices have been shown to impact patient outcomes for the better, and in many cases, better than drugs.

Mention the necessity for collecting data
Using data to make decisions
Using data as part of a value-added situation
Continuing to help heal patients and keep them either out of the hospital or shorten stays and additional visits
Freeing up medical staff resources

Connected care medical device company Propeller Health, in collaboration with Novartis, has made dealing with asthma and COPD easier for patients, while delivering facilitated, effective therapies using an app and sensor attached to a readily-available inhaler. Patients are connected to family and healthcare providers at crucial times and learn more about their respiratory triggers. In addition, they become part of a large community of asthma and COPD sufferers and, along with physicians, helps them build effective treatment therapies together.

Connected systems are *key* to discovering how to take costs out of the system and reversing the trend toward being cost-additive. A practical way to begin might look like this:

As medical device companies commence their shared risk/value-based contracts, they begin collecting two sets of data. One set involves the technological aspects of the device, its connectivity and the protocols to be considered for its use.

Two, cost data is obtained which will impact every aspect of development, clearance, production, use and treatment.

One way of gathering that data is by connecting the medical devices to their respective systems and, through the delivery of monitoring and/or therapies, gaining feedback—then combining the available data from all of the combined systems in the network.

All collected data will then need to be measured and correlated with data from other therapies and protocols. From this compilation and its attendant analyses come evidence. Next comes the demonstrating of use cases from the measurements and

analyses. This is one of the components that Orthogonal performs.

Once the data has been obtained and examined, other facts may be correlated with all extant data. With companion software and connective protocols, the systems can be networked together to form a unified system that provides all the data, correlated information, measurements, analyses and evidences needed to then ask the question: “Can this system actually be used to change or modulate a therapy once the other data is in—and change outcomes based on the data gathered, the correlations made, and the measurements performed?”

Whenever a device company can perform these operations in diagnostics, monitoring or therapies wherein they are substituting a more effective therapy for a less-effective one, and where they can show the improvements derived from the therapies, then it will become normative for medical device firms to take costs out of the healthcare system.

First and foremost, whether it is by pharma or by medical device, at the outset of every new project, this question should be asked of the firm seeking to develop it—how can I provide the same high level of service, and do it for less cost?

Emphasis should be placed upon better outcomes without being cost additive—and on better outcomes for *less*. These tenets are at the heart of taking cost out of the system.

Armed with news and facts in our companion article, *Medical Devices on the front line of therapy,* as well as points made in this one—if you are looking at medical devices at the front line of therapy, there exist many cases allowing you to do things which are *not* cost-additive. Utilizing the existing technology, you can improve real-world, measurable outcomes and take cost out of the system.