Looking Ahead to What Digital Transformation Will Do for Healthcare Value

Digital technology holds enormous promise for enabling Healthcare to achieve critical improvements, most importantly in terms of patient outcomes and overall costs — or, to put those two goals together, to advancing Healthcare value. To get a sense of how increased Healthcare value might emerge from current digital initiatives, we talked to four Healthcare-transformation leaders at Leidos. The company works with a range of Government and private-sector Healthcare systems to support progress toward digital transformation, among other efforts.

To be sure, most of the potential benefits from recent and current technology initiatives will emerge only over time, says Chief Medical Officer Donald Kosiak, M.D. But Dr. Kosiak argues that we don't necessarily have to look all that far down the road to see what technology could do to significantly boost Healthcare value. "If we store and visualize data the right ways, we can inject it into the busy clinician's workflow and the patient's Healthcare journey in order to achieve big improvements in efficiency," he says. Efficiency gains are a particularly effective path to value, he notes, because they simultaneously reduce cost and improve quality.

The Paradox of Current Healthcare Processes and Protocols

Virtually every Healthcare system in the country has a set of standard clinical and administrative processes and protocols for most patient procedures. These processes can involve various departments and systems, as well as a range of clinicians and other personnel. And yet at each point along that standard, mostly predictable pathway, says Dr. Kosiak, the system behaves no more efficiently than if each step were entirely unexpected.

When a patient shows up for a scheduled appointment in a hospital, for example, a set of manual actions have to be taken to register the patient's arrival, to notify the appropriate staff, to retrieve the patient's records, to document what takes place during the appointment, and to schedule the patient's next step. "It's as if the patient showed up by surprise," says Dr. Kosiak.

Most of these manual processes could be made more automatic. A system could send a text message to the patient three days before surgery, for example, asking if they had stopped taking their blood thinner. It could schedule an ambulation session four hours after surgery, and set up a series of physical therapy appointments for the patient. Instead of serving as a passive repository that merely documents expected events, the system could actively focus on exception monitoring — altering the pathway and alerting appropriate personnel, for example when the patient doesn't reply "yes" to the blood-thinner question, or when the patient doesn't get an ambulation session soon enough or misses a physical therapy session.

"This approach applies not just to clinical pathways, but also to the hospital supply chain and logistics," says Dr. Kosiak. "The system should be able to look ahead and see that there are 27 surgeries scheduled for next Thursday, but that only 15 beds will be available, and alert the systems and people who can fix the problem."

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Integrating Lifestyle and Environmental Factors

To a large extent it's what happens with patients outside the hospital's walls that shapes outcomes — and eventually Healthcare costs. The patient's lifestyle and environment are especially impactful in this regard.

To apply digital technology in ways that take these critical determinants of health into account, Leidos is helping to build vast population-health databases that promise to provide key insights into how Healthcare can integrate everything from genetics to housing to behavioral health in order to improve value.

"If you can tie all that together, you can adjust Healthcare policy to get the most bang for the buck," says Vice President Michael Lumpkin, who leads the Human Performance and Behavioral Health group.

One of these population-data efforts is taking place through the U.S. Military, which has been gathering genetic and in-depth ongoing health profiles of its more than one million active-duty personnel. The effort allows documenting detailed health-related changes over time, and looking for what factors may influence those changes.

"If we notice what makes a difference, we can use that information to try to avert problems, whether it involves changes in lifestyle, or the environment, or Healthcare interventions," says Kevin Kaiser, Vice President and Division Manager, Biobehavioral Research.

All of Us Are in This Together

A data-gathering project on the Civilian side has some of the same goals. The National Institutes of Health's All of Us Research Program is working on gathering de-identified health and personal data on at least one million volunteers,

who provide medical data and biological samples, respond to surveys and upload data from wearable fitness and health-monitoring devices.

Not only will this data provide insights into the interrelationship of behavior, environment and health, but it may enable new types of research methods that don't require the expensive and time-consuming process of recruiting clinical research participants at hospitals. Instead, approved researchers will be able to sift through the All of Us data to look at the health outcomes and profiles of certain types of patients who have experienced specific treatments and interventions.

"Answers to a lot of the research questions we have are probably right there in the data that is being gathered," says Angela Carrigan, who heads up life-sciences clinical research activities at Leidos, which is supporting the All of Us program.

A Future Vision of Healthcare Value

Ultimately, such population-health-data efforts might be integrated with Healthcare system digital-transformation initiatives, in order to create seamless systems that enable delivering care informed by the broadest and deepest possible view of what leads to the best outcomes at the lowest cost.

That's an ambitious approach to improving Healthcare value — but it's one that's increasingly within reach.

ABOUT
DR. DONALD KOSIAK, MD, MBA, FACEP, CPE

Dr. Kosiak serves as the Chief Medical Officer for Leidos and serves in the United States Army Reserve as an emergency physician. He attended medical school at the University of North Dakota and completed his emergency medicine residency at the Mayo Clinic in Rochester, Minnesota. In 2010, he completed his Masters of Business Administration from the University of Mary in Bismarck, North Dakota.

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Leidos is a science and technology solutions leader working to address some of the world's toughest challenges in the defense, intelligence, homeland security, civil, and Healthcare markets. The Company's 32,000 employees support vital missions for our Government and commercial customers. Leidos is headquartered in Reston, Virginia, and reported annual revenues of approximately $10.2 billion 2018.