

BUSINESS TECHNOLOGY OFFICE

How big data is shaping US health care

Basel Kayyali, David Knott, and Steve Van Kuiken

Innovative apps powered by proprietary data can help target treatments and predict the course of illnesses.

To understand the potential of “big data,” look no further than the US health-care sector. Information silos between payers and providers are crumbling, enabling the powerful integration of digitized public historical and real-time data. We recently glimpsed the future when we integrated two unique data sets: a sample of software applications submitted to the federal government’s Health Data Initiative Forum in 2010 and 2011 and the roster of software applications with venture-capital backing of at least \$2 million in 2011 or 2012. About 40 percent of those data applications were aimed at direct health interventions or predictive capabilities. That’s a powerful new frontier for health-data applications, which historically focused more

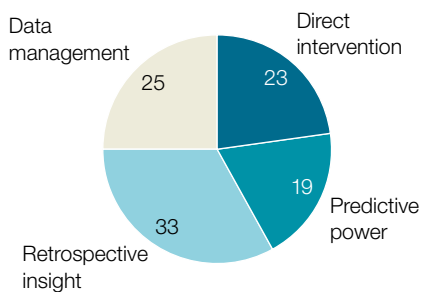
on data management and retrospective insights (exhibit).

If early successes are brought to scale, we estimate that big-data applications could eventually strip more than \$300 billion in costs from the nation’s health-care system and improve transparency to drive better patient outcomes. Such applications might help avoid costly readmissions, enhance the understanding of chronic diseases, and ensure that patients are treated in the care setting that best meets their needs. ○

Basel Kayyali is a principal in McKinsey’s New Jersey office, where **Steve Van Kuiken** is a director; **David Knott** is a director in the New York office.

Many innovative US health-care data applications move beyond retroactive reporting to interventions and predictive capabilities.

US health-care data apps from top innovators,¹ by type of data/analytic capability, 2010–12, %
100% = 132



The apps analyzed cut across all of the US health-care system's **data-related value at stake**, estimated at **>\$300 billion**.²

Many use proprietary data generated through technologies such as GPS-enabled devices and mobile apps that capture daily activity or patient-reported outcomes.

¹ Drawn from top 100 submissions to Health Data Initiative Forum, 2010–11, and health technology companies receiving \$2 million or more in venture-capital funding, 2011–12; excludes ideas that did not involve big data.

² See the McKinsey Global Institute report, *Big data: The next frontier for innovation, competition, and productivity*, May 2011, mckinsey.com.

Source: 2010–11 submissions to Health Data Initiative Forum; Rock Health; Standard & Poor's Capital IQ; McKinsey analysis