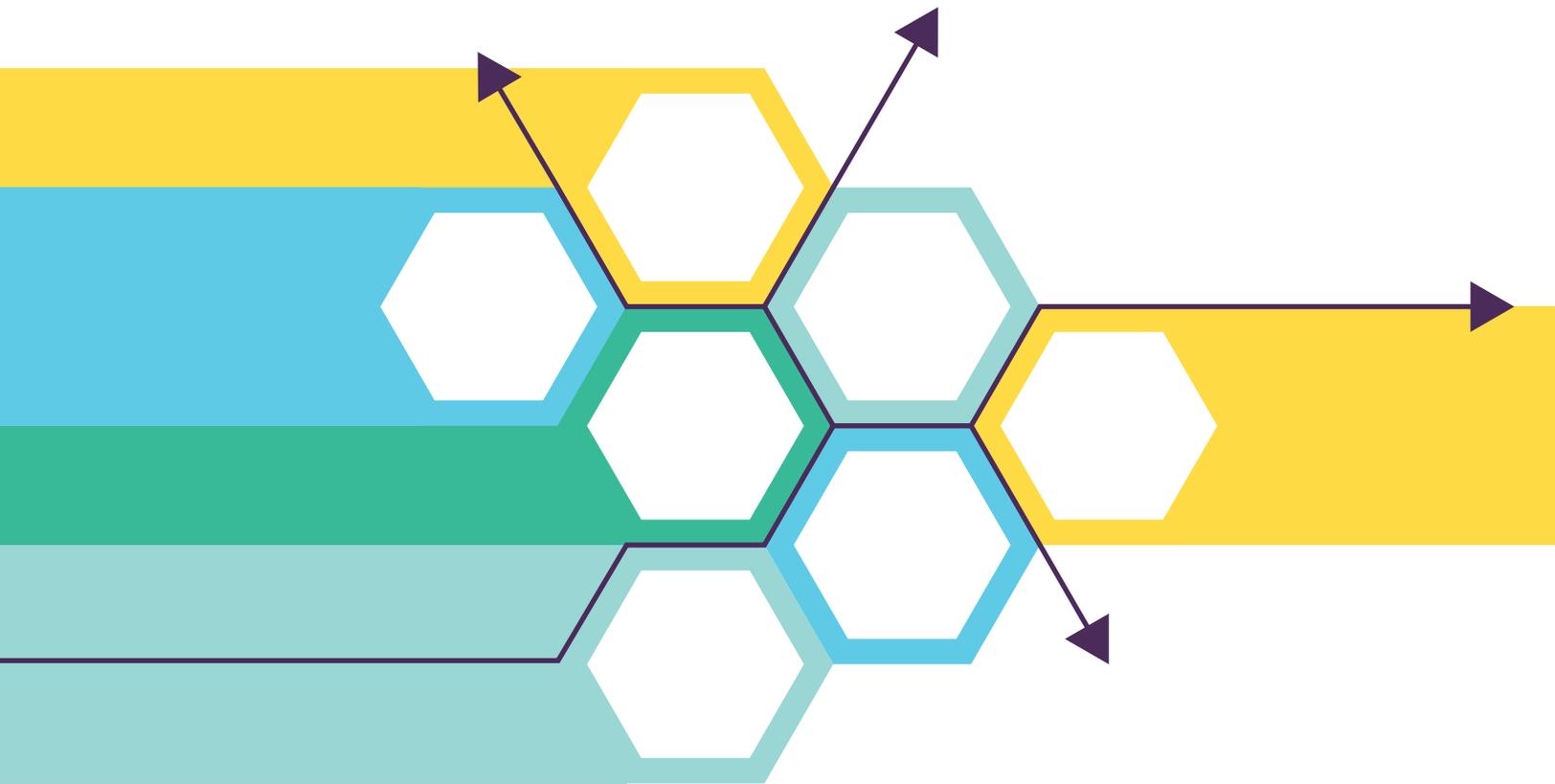


Care Redesign

What Data Can Really Do for Health Care

Amy Compton-Phillips, MD Executive Vice President and Chief Clinical Officer for Providence St. Joseph Health; NEJM Catalyst Lead Advisor for Care Redesign



Care Redesign: What Data Can Really Do for Health Care



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Insights Report · March 2017

Advisor Analysis

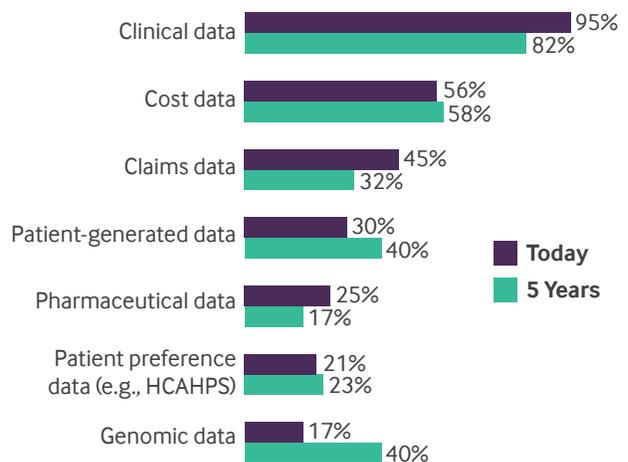
Over the past few years, physicians and provider leaders have been frustrated with the limitations of health care data. Much like the anticipation over EHRs in the early days, providers expected big data to solve all of health care’s problems. When it didn’t, disillusion set in.

In our newest NEJM Catalyst Insights Report on Care Redesign, we took a read on the effectiveness of health care data, both today and in five years. We found that the landscape is shifting from one of despair over the unfulfilled promises of big data to a more realistic vision of what sophisticated analytics can do to transform health care delivery.

Look at what our survey respondents who consist of health care executives, clinical leaders, and clinicians consider the most useful sources of health care data today and in five years. Today, clinical data (marked by 95% of respondents), cost data (56%), and claims data (56%) make up the top three most useful sources. In five years, however, respondents predict the usefulness of claims data will drop off, while clinical and cost data will be joined at the top of the list by patient-generated and genomic data (each scoring 40%). Combining information from devices, patient feedback, and patient biomarkers will be powerful and will catapult care forward in a way we can’t attain today.

Most Useful Sources of Health Care Data Today and in 5 Years

What do you consider the top three most useful sources of health care data today and in 5 years?



Base = 682 (Multiple responses)
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This rejiggering of the top useful sources of health care data tells us that people realize cost matters. What’s more, they expect that personalized medicine, powered by data, will reduce the costs of care while simultaneously improving patient outcomes. With patient-generated data and genomic data, we will be able to create true “n of 1” medicine with options specific to each patient’s needs, giving a boost to priorities such as care coordination and improved decision support.

Care Redesign: What Data Can Really Do for Health Care

Amy Compton-Phillips, MD

We already rely on data to personalize consumer experiences throughout our lives, rarely making a purchase without comparative shopping or reviewing suggestions sent to us by retailers based on big data. Health care can follow suit.

Big data relies on transparency, though pulling back the curtain on the inner workings of the practice of medicine. Fortunately, the push toward big data in health care coincides with a willingness by executives, physician leaders, and clinicians to support greater patient access to their own medical records (marked by 93% of respondents), fee/price information for comparison shopping (80%), and outcomes information listed by hospital (73%).

But the curtain closes somewhat when the discussion turns to outcomes information listed by doctor (63%). Clinicians are more negative on this point, with only 55% supporting outcomes information by doctor. There is real concern

that individualized outcomes information will result in “cherry-picking” dissuading physicians from treating the highest risk, most vulnerable members of society.

Before we in health care can reap the full benefits of big data, we have problems to solve, not the least of which is unleashing the functionality within EHR systems. A big stumbling block is lack of interoperability, which just over half of respondents (51%) say is weak in their organizations. The survey also finds room for improvement in ease of use and training for EHRs; each is labeled weak by a third of respondents. Both issues must be resolved for health care big data to flourish.

We have entered an exciting era where big data has potential to become a game changer for health care. Providers are poised to put data into the hands of consumers and payers to drive a value-oriented care delivery system that enlightens patients about their health and the path to affordable care.



Today, clinical data (95%), cost data (56%), and claims data (56%) make up the top three most useful sources of health care data.

Charts and Commentary

by NEJM Catalyst

We surveyed members of the [NEJM Catalyst Insights Council](#), comprising health care executives, clinical leaders, and clinicians about data in health care. The survey covers the most useful sources of health care data today and in five years, the effectiveness of organizations' use of data for patient care, the biggest opportunities for use of data in health care, the biggest barriers to better use of patient data, the effectiveness of organization's electronic health record (EHR) systems, the current state of big data in health care, and patient access to health care data. A total of 682 completed surveys are included in the analysis.

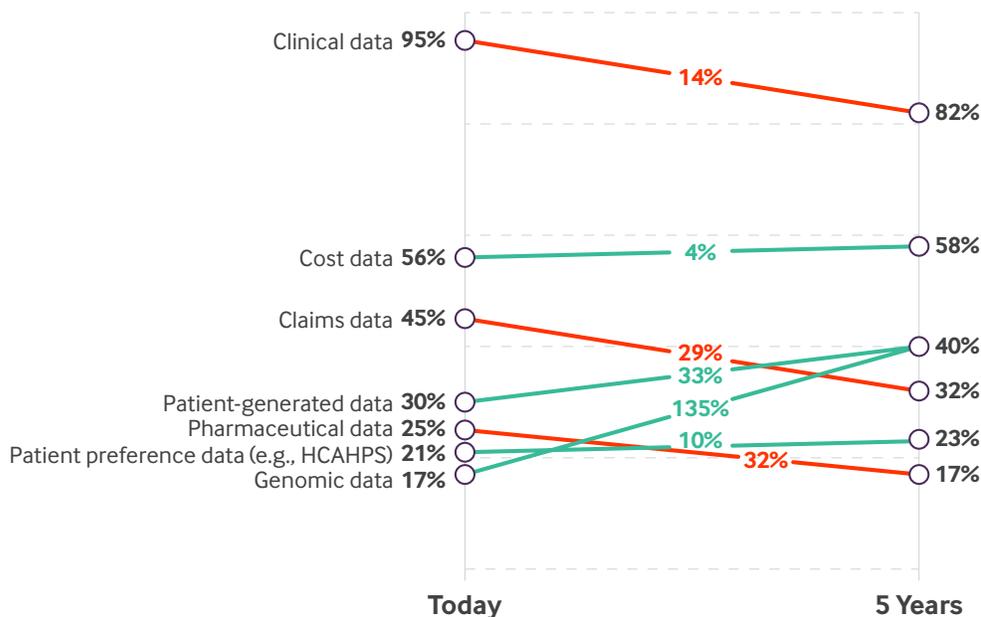
Survey respondents consider the top three most useful sources of health care data today to be clinical data (95%), cost data (56%), and claims data (45%). Forecasting five years ahead, clinical and claims data decline slightly in usefulness, but the value of cost data increases, which may indicate that people expect health care cost to matter over the coming years. Personalized medicine also is predicted to come to the fore in five years; respondents rate patient-generated data and genomic data as the third-most useful data sources. Genomic data climbs particularly sharply over the five years. As one respondent says, "By understanding the combination of individual specific data (genomics) with systems-level outcomes, we'll be able to more effectively determine care that positively impacts patients at a reasonable cost." Clinicians are more optimistic about the usefulness of patient-generated data today than executives are (34% versus 21%), but the situation is reversed looking five years out: 45% of executive respondents expect patient-generated data to become useful, versus 34% of clinician respondents.



Forecasting five years ahead, clinical and claims data decline slightly in usefulness, but the value of cost data increases, which may indicate that people expect health care cost to matter over the coming years.

Most Useful Sources of Health Care Data Today and in 5 Years

What do you consider the top three most useful sources of health care data today and in 5 years?



Clinical data — Cost data — Claims data — Patient-generated data



Base = 682 (Multiple responses)

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Fewer than 20% of survey respondents believe their organization’s use of data for direct patient care is “extremely effective” or “very effective.” Most believe their organizational effectiveness lies somewhere between either “effective” (36%) or “not very effective” (32%) leaving a tremendous amount of room for improvement. Another 8% call their organization’s use of data “not at all effective.” As the barriers uncovered in later survey results, such as interoperability and difficulty collecting data, are overcome, effectiveness ratings may improve.

Effectiveness of Organization’s Use of Data for Patient Care

How effective do you consider your organization's use of data for direct patient care?



More than half of Council members rate their organization’s use of data for direct patient care as effective, but only 19% rate it as extremely or very effective.

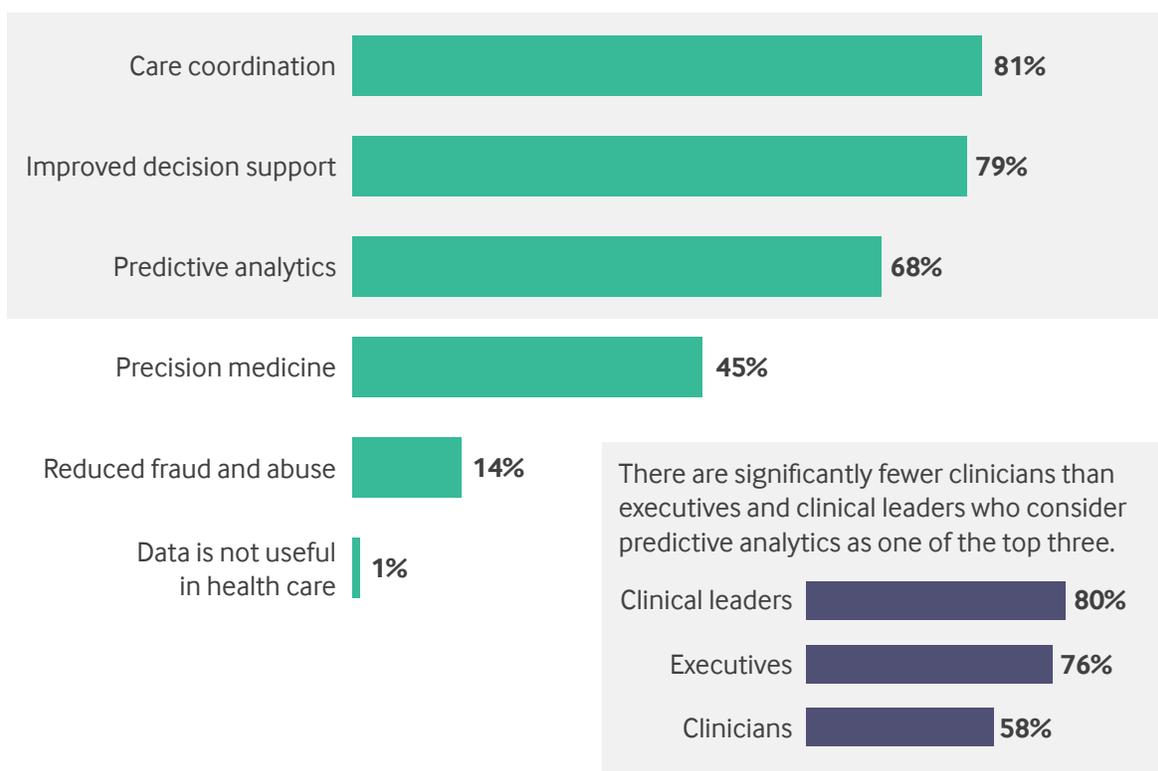
Base = 682
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Most believe their effectiveness lies somewhere between “effective” (36%) and “not very effective” (32%), leaving a tremendous amount of room for improvement.

There is no bigger opportunity for the use of data in health care than care coordination, according to 81% of Insights Council members answering this survey. As Nirav Shah, MD, MPH, Senior Vice President and Chief Operating Officer, Clinical Operations, for Kaiser Permanente’s Southern California region wrote in *NEJM Catalyst*, “Evidence shows that most health care strategies fail the top 1% of spenders — the high-cost, high-need super-utilizers.” Providers can see the impact of poor care coordination and consider it a very relevant and real problem when patients fall through the cracks. Therefore, they welcome the opportunity to “identify high-risk patient populations early,” as one respondent says. Another notes that improved decision support (listed by 79% of respondents) and predictive analytics (68%) will be particularly useful “with an aging population that carries co-morbidities and complex therapies.”

Biggest Opportunities for Use of Data in Health Care

What are the top three biggest opportunities for the use of data in health care?



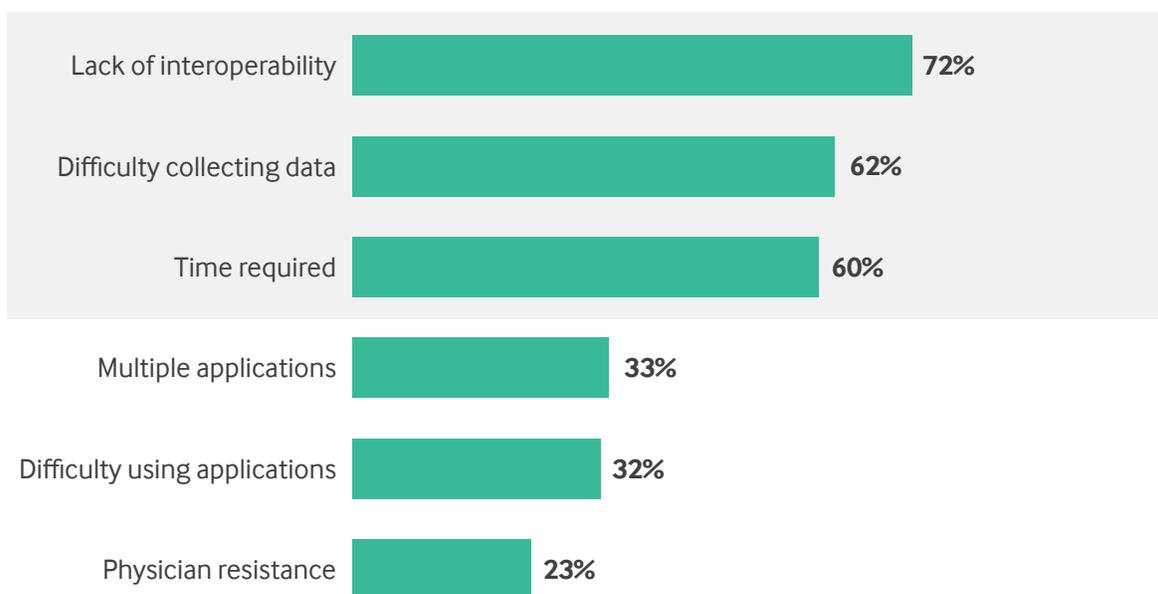
Base = 682 (Multiple responses)
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“*Evidence shows that most health care strategies fail the top 1% of spenders — the high-cost, high-need super-utilizers.”***”**

Lack of interoperability, listed by 72% of respondents, plagues better use of patient data. A higher percentage of executives answering the survey (79%) than clinicians (69%) believe interoperability to be one of the top three barriers to better use of patient data. Difficulty collecting data (62%) and its related barrier, time required (60%), also pose big challenges to doing more with data. The effort required to obtain critical inputs such as patient-generated data, feed it into EHR systems, and then be able to analyze it for actionable insights has been a significant hindrance to broader adoption. For patient data to become more impactful in health care, provider organizations will have to figure out how to efficiently obtain, integrate, and share information across disparate systems.

Biggest Barriers to Better Use of Patient Data

What are the top three biggest barriers to better use of patient data?



Base = 682 (Multiple responses)
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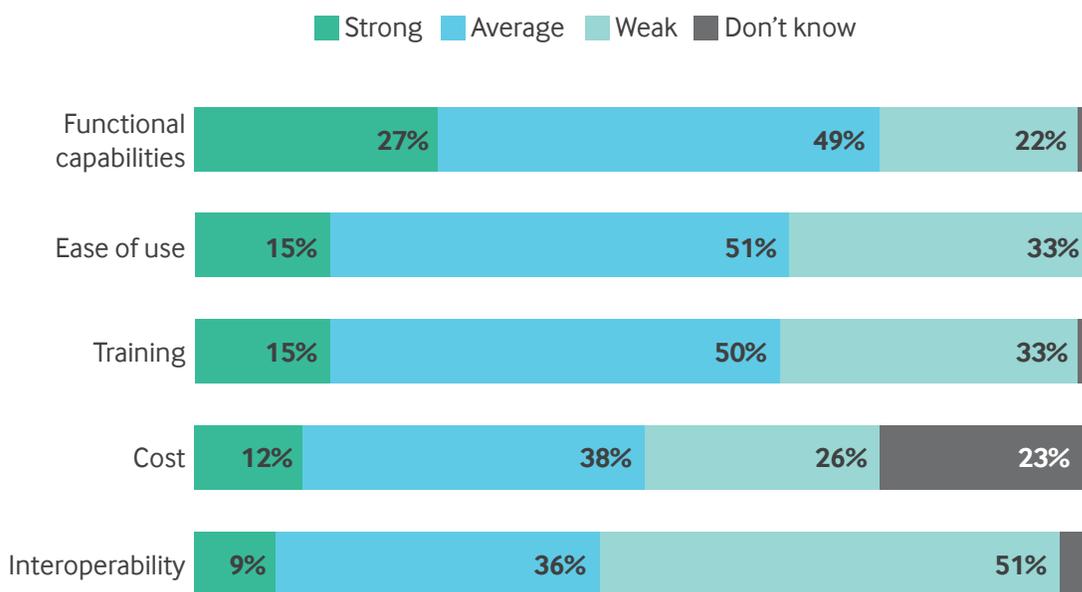


The effort required to obtain critical inputs such as patient-generated data, feed it into EHR systems, and then be able to analyze it for actionable insights has been a significant hindrance to broader adoption.

Perhaps more challenging than data are the electronic health record systems. There is no shortage of complaints by health care professionals about the limitations of their EHRs. Functional capabilities are not the issue, according to our survey; over three-quarters (76%) of respondents say their EHRs’ capabilities are strong or average. Instead, interoperability again pops up as the biggest problem, with just over half (51%) of respondents labeling their EHR systems’ interoperability as “weak.” The industry clearly has a directive from its users to address interoperability before data can take on a more useful and prominent role in transforming care delivery. Ease of use and training, which each were labeled “weak” by a third of survey respondents, also must be tackled.

Effectiveness of Organization’s EHR Systems

How do you rate the following aspects of your organization’s electronic health record (EHR) system?



Base = 612 (Among applicable)

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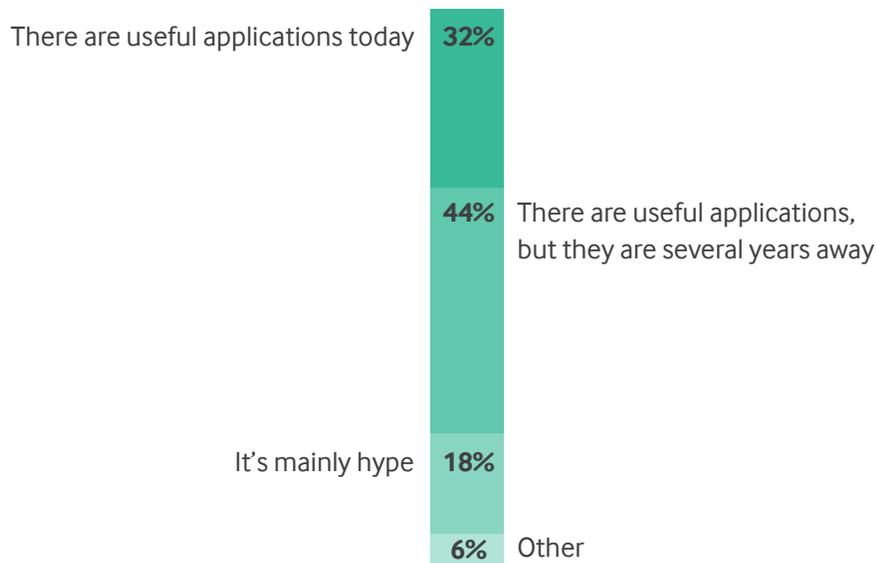


The industry clearly has a directive from its users to address interoperability before data can take on a more useful and prominent role in transforming care delivery.

A positive sign for the coming of age of big data in health care is that only 18% of Council members responding to this survey consider it to be mainly hype. A third say useful applications are already in place, with another 44% of respondents forecasting uses in the years ahead. Referring back to the earlier slide about the most useful data sources, patient-generated data and genomic data may be generating excitement over future uses that are not possible today. Clinicians, 21% of whom consider big data to be hype, have a slightly more jaundiced view of big data than do clinical leaders and executives (14% of each category call big data mainly hype).

Current State of Big Data in Health Care

Which of the following statements best describes the current state of big data in health care?



Base = 682

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Patient-generated data and genomic data may be generating excitement over future uses that are not possible today.

Transparency has been a controversial aspect of health care data. The survey results show that respondents are very open to data transparency when it comes to patients accessing their own medical records (93%) and fee/pricing information for comparison shopping (80%), but they become more protective when the conversation turns to outcomes listed by hospital (73%) and even more so for outcomes listed by doctor (63%). Yet Vivian S. Lee, MD, PhD, MBA, Senior Vice President for Health Sciences and Dean of the School of Medicine at University of Utah, and CEO of University of Utah Health Care, which is a pioneer in data transparency, notes, “The question is not whether there should be public disclosure of information on patient satisfaction, outcomes, and costs — it’s how and by whom it should be done.”

Patient Access to Health Care Data

What health care data do you believe patients should have direct access to?



Base = 682 (Multiple responses)

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”

The question is not whether there should be public disclosure of information on patient satisfaction, outcomes, and costs — it’s how and by whom it should be done.

Verbatim Comments from Survey Respondents

How will advanced information sciences, such as precision medicine, artificial intelligence, and machine learning, change the future delivery of health care?

“Big data will help research, but none of the above will help a physician alleviate morbidity or mortality.”

— *Clinician at a small nonprofit clinic in the Pacific West*

“It will advance care and allow for standardization in healthcare. However, it will pose new issues with health care that will require new models of research. It will also challenge the ethical delivery of care and set new precedence for new generations to build upon.”

— *Director of Service Line at a large nonprofit teaching hospital in the North East*

“Unsure, still need that human interaction as we are individual beings.”

— *Director of a small health plan/HMO/insurer in the South*

“Lessen the stress on physicians.”

— *Clinician at a large teaching hospital in the Midwest*

“It will make it appear more ‘scientific’ but I am not sure that it will have a large impact on health care outcomes for patients.”

— *Department Chief at a small nonprofit ancillary provider in the South*

“Hugely. The largest issues in health care today are 1) lack of interoperability and 2) lack of datasets large enough to produce valid analysis.”

— *Director of a large for-profit physician organization in the mid-Atlantic*

“I hope they begin to standardize the delivery of care. An algorithm based approach to diagnosis and treatment is best for most situations. There is far too much variability in both diagnosis and treatment. In total, physicians are not very good at what they do.”

— *Clinical Leader at a large for-profit community hospital in the South*

“Not meaningfully in the next 10 years.”

— *Executive at a large nonprofit health system in the South*

“All of these items will be able to leverage the thousands pieces of information into a useable validated mechanism to expand medical care on many levels, from ‘population health’ to ‘precision personal/ individual care.’ All facets of medical care delivery systems will potentially benefit.”

— *Chief of Service Line at a midsized teaching hospital in the Midwest*

“Reduce cost, fraud, waste, heart break.”

— *VP of a large for-profit health system in the West*

“Decrease physician role.”

— *Clinician at a midsized for-profit physician organization in the North East*

“A great deal, and very disruptive to the culture of health care delivery.”

— *Clinician at a midsized nonprofit health system in the Midwest*

Methodology

- The Care Redesign Health Care Data Survey was conducted by NEJM Catalyst, powered by the NEJM Catalyst Insights Council.
- The NEJM Catalyst Insights Council is a qualified group of U.S. Executives, clinical leaders, and clinicians at organizations directly involved in health care delivery, who bring a different perspective and set of experiences to the conversation about health care transformation. They are change agents who are both influential and knowledgeable.
- In January 2017, an online survey was sent to the NEJM Catalyst Insights Council.
- A total of 682 completed surveys are included in the analysis. The margin of error for a base of 682 is +/-3.8% at the 95% confidence interval.

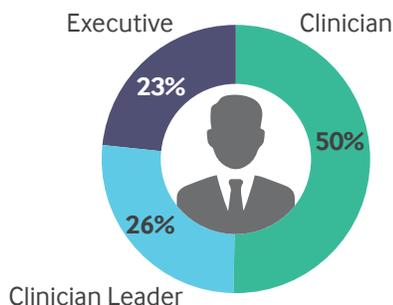
NEJM Catalyst Insights Council

We'd like to acknowledge the NEJM Catalyst Insights Council. Insights Council members participate in monthly surveys with specific topics on health care delivery. These results are published as NEJM Catalyst Insights Reports, such as this one, including summary findings, key takeaways from NEJM Catalyst leaders, expert analysis, and commentary.

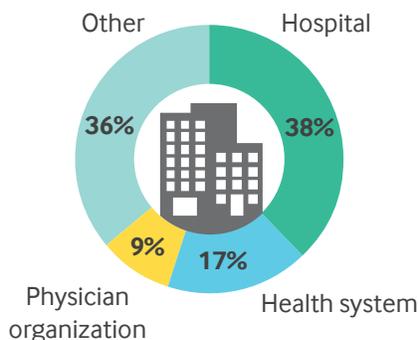
It is through the Insights Council's participation and commitment to the transformation of health care delivery that we are able to provide actionable data that can help move the industry forward in a positive direction. To join your peers in the conversation, visit [join.catalyst.nejm.org/insights-council](https://catalyst.nejm.org/insights-council).

Respondent Profile

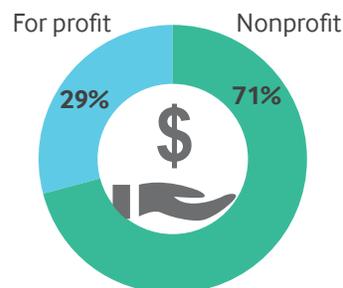
Audience Segment



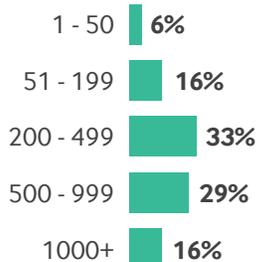
Organization Setting



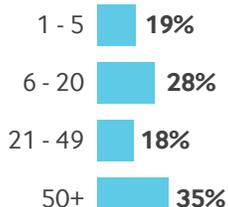
Type of Organization



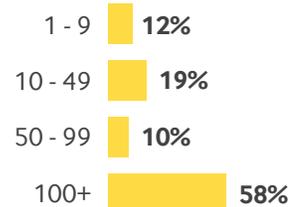
Number of beds
(Among 262 hospitals)



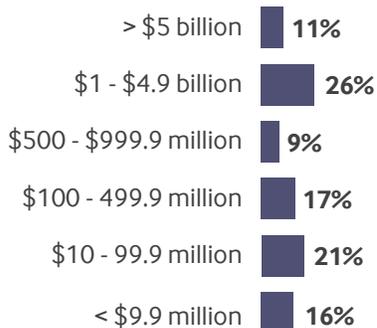
Number of Sites
(Among 114 health systems)



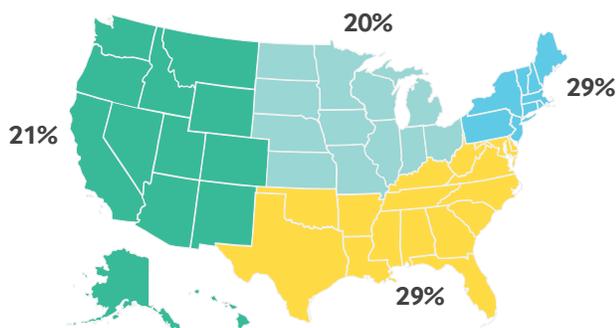
Number of Physicians
(Among 62 physician organizations)



Net Patient Revenue (Base 503)



Region (Base 682)



Base = 682

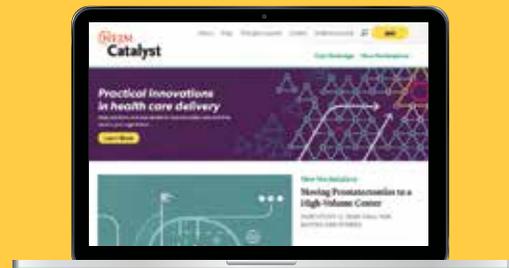
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