COVID-19 Data and Analytics: Survey Reveals Long- and Short-Term Healthcare Industry Impact

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Healthcare data and analytics has become inextricable from the COVID-19 response. From emergency department frontlines and hospital capacity planning to vaccine development and future emergency response, the industry has relied on COVID-19 data and analytics to understand the disease, keep populations safe, and eventually reopen communities.

Yet, according to a late 2020/early 2021 Health Catalyst survey of predominantly health system team members, most respondents weren't ready for the pandemic on the data and analytics front. Most report gaps in the data needed for COVID-19 response, and even more say they've had to change operations and processes to capture missing data.

The above lack of COVID-19 data and analytics preparedness contrasts starkly against the industry forecast that the global healthcare analytics market will be worth $70 billion by 2027. While healthcare escalated its data and analytics use during the acute phases of the pandemic, questions arise around these digital resources' role in the post-pandemic era. How has COVID-19 impacted organizational data and analytics? And are these developments short-term adaptations, or will they continue to shape care delivery and operations?

COVID-19 Data and Analytics: Healthcare Industry Impact

With survey questions covering COVID-19's impact on analytics, the majority of respondents report some increase in their analytics demand, including bridging gaps in data and changing capabilities needs. Having any analytics in place has allowed organizations to pivot and build what they need under pressure. These insights stand to shape the immediate future of healthcare data and analytics as pandemic-era patterns and practices carry over into a new industry landscape.

COVID-19 Has Significant Impacted the Need for Analytics

Survey feedback leaves little room for doubt whether the pandemic made an impression on healthcare analytics. Over 88 percent of respondents say COVID-19 has impacted their need for analytics, leaving only 12 percent reporting no change in analytics need.

Healthcare Leadership and Financial Roles Are Most Interested in COVID-19 Data and Analytics

Leadership and financial roles appear the most interested in pandemic-response data and analytics. Nearly 50 percent of respondents serve as a VP, SVP, or C-Suite. Although respondents operate in a variety of departments within their organizations, one-third work in finance. A vast majority, 92 percent, work in a healthcare system, while the remaining 8 percent work for a Federally Qualified Health Center (FQHC) or physician group or clinic. COVID-19 data and analytics concerns also appear to span revenue, as respondents represent a broad spectrum of profit levels.

Capacity and Resource Planning Are a Top Priority

At 63 percent, the majority of respondents say capacity and resource planning has been their biggest driver of pandemic-response analytics, with financial needs a close second at 59 percent. Less than one-third, 32 percent, of participants say COVID-19 impacted their need for population health data and analytics (Figure 1).

Figure 1: COVID-19 impact on the type of analytics needed.

Data and Analytics for COVID-19 Reporting Often Falls Short

More than half of respondents (nearly 60 percent) say they haven't captured the data they need for COVID-19 reporting (Figure 2).
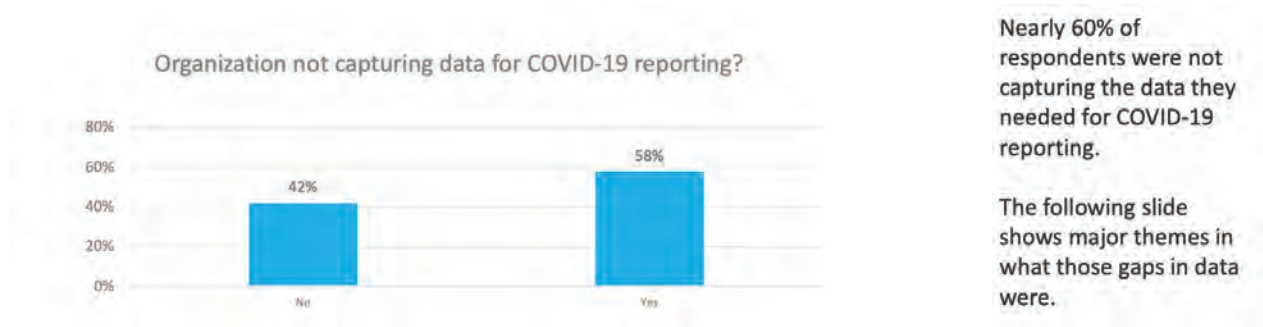

Nearly 60% of respondents were not capturing the data they needed for COVID-19 reporting.

The following slide shows major themes in what those gaps in data were.

Figure 2: The hospital chargemaster.

The most reported data and analytics gaps are the following:
• Data for government reporting, including test results, hospitalizations, and deaths.
• Missing data points due to insufficient systems integration to pull data points and slice and dice data and unreliable data.
• Data on bed, personal protective equipment (PPE), and supplies utilization.
• Predictive modeling or analytics for staffing and finance needs.

The Pandemic Has Driven Operational Process Changes

Of respondents who say they were not capturing the data they needed for COVID-19 reporting, an overwhelming 88 percent say they've had to change their operational processes to collect that data (Figure 3).

Over 88% of respondents said that COVID-19 impacted their need for analytics, while only 12% said it has not changed their need.

Figure 3: COVID-19 impact on the need for healthcare analytics.

Respondents' most significant operational changes include the following:
• Creating systems to get the COVID-19 data the government required.
• Developing processes to document COVID-19 patients due to EHR vendors not wanting to update their system.
• Having staff perform additional data entry.
• Pulling supplementary information, such as modifiers, denials, and telehealth tracking information.
• Requiring some departments to send reports, automating some reports, and accommodating manual data entry.
• Working with data analytics teams to create additional reports and partnering with vendors to supplement internal capacities.

The Pandemic Has Almost Universally Impacted Population Health Strategy for the Long Term

Ninety percent of respondents say COVID-19 has impacted their population health strategy. Among them, just over half are devoting additional resources to incorporate population health strategy into their decision making. Telehealth and virtual health have overwhelmingly made the most significant impact on pandemic-driven changes to population health strategy. And nearly 80 percent

of respondents plan to continue these population health shifts after the pandemic.

Financial Concerns Lead COVID-19 Priorities

An overwhelming majority (78 percent) say their organization's top priorities around COVID-19 are financial. A majority of respondents also name operational changes and frontline care as urgent areas.

Organizations Prioritize Patient Safety Monitoring Tools

Patient safety monitoring tools have been the top priority for COVID-19 response, with almost 56 percent of respondents ranking them as number one. Financial impact recovery tools follow closely at 52 percent, with capacity planning coming in third at 46 percent (Figure 4).
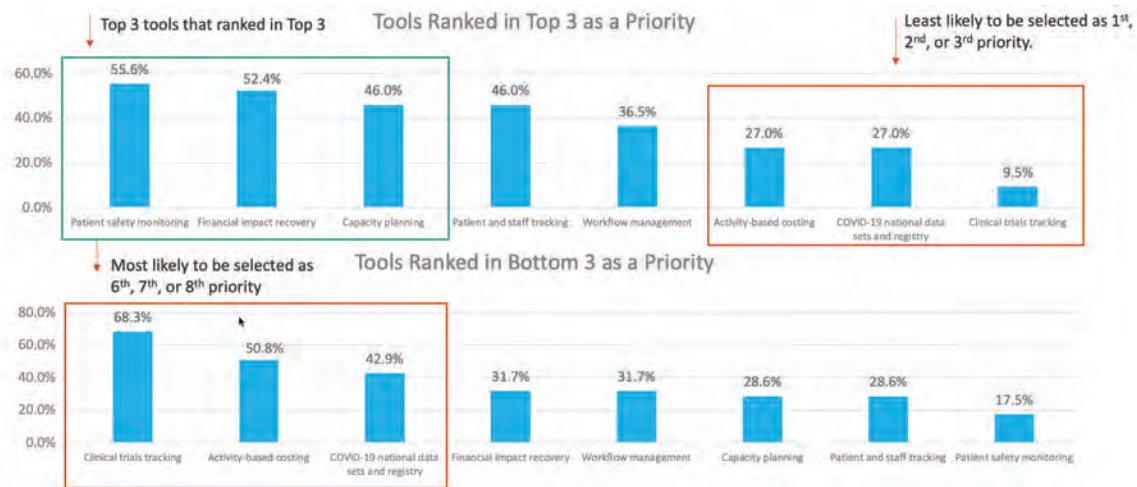

Figure 4: Priority tools for COVID-19 response.

Health and Safety Lead Personal and Professional Concerns

Respondents name health and safety as their top categories for personal and professional pandemic concerns, with financial and staffing matters following. Specific examples from each category include the following:

- Health
    - Staying healthy and not exposing others.
    - Social isolation.
    - Disrupted work and family routines.
    - Economic instability.
    - Impact on mental health.
    - Maintaining regular healthcare.
- Safety
    - Ensuring the safety of family and coworkers.
    - Patient safety.
    - Employee safety.
    - Ability to safely do the job.
- Finance
    - Financial stability of the hospital.
    - Lack of financial support from insurance companies (e.g., increased reimbursements and coverage).
    - The financial impact of a COVID-19 patient surge.
    - The increased financial burden of an ongoing pandemic.
- Staffing
    - Frontline staff engagement, fatigue, and burnout.
    - Maintaining adequate resources (including PPE, staff, hospital capacity, etc.)
    - Retaining engagement of our staff & providers and recovering financially.

The Post-Pandemic Era of Healthcare Data and Analytics

Was COVID-19 a wake-up call to prioritize healthcare analytics and merge them with other healthcare goals, now that the industry knows it can't save lives at scale without data and analytics? The need for pandemic-related data and analytics is here for the foreseeable future, with 78 percent of respondents citing financial data as top need and nearly 80 of respondents planning to maintain pandemic-driven population health shifts for the long term.

Only time will tell whether health systems will get their data and analytics houses in order now—before they need them again—or wait for another significant disruption to surface these weaknesses. But with most survey respondents recognizing gaps in their data and analytics and noting COVID-19-driven changes in the data and analytics landscape, the pandemic may likely catalyze a new, more robust era in healthcare technology and decision support.

About the Author

Tarah Neujahr Bryan, MAJMC, joined Health Catalyst in 2013 and has served as Editorial Director and Vice President of Marketing; she is currently the Chief Marketing Officer and a member of the Health Catalyst leadership team. She brings a breadth of marketing and communications experience to her current role. Prior to joining Health Catalyst, Tarah served as the Marketing Communications Director and Foundation Executive Director at a community hospital, managed at an advertising agency, was the Editor and Operations Manager at an archaeology firm, and provided triage assistance and patient admissions at a Level-II Trauma Center. She has a Master of Arts in Journalism and Mass Communications from the University of Nebraska and a Bachelor of Arts from Montana State University-Billings.

Tarah volunteers with Intermountain Therapy Animals and has done pro-bono communications work for American Cancer Society, Wings Cancer Foundation, and many other non-profit organizations.