

FORRESTER®

Engage Trusted Interoperability Platforms And Partners To Unlock True Innovation



Table Of Contents

- 3 [Executive Summary](#)
- 4 [Key Findings](#)
- 5 [The State Of Healthcare Remains Fragmented](#)
- 9 [Healthcare Leaders Struggle To Operationalize Interoperability Opportunities To Achieve Maximum Advantage](#)
- 11 [Partners Fuel Adoption And Drive Interoperability Transformation](#)
- 16 [Key Recommendations](#)
- 18 [Appendix](#)

Project Team:

Mandy Polacek,
Senior Market Impact Consultant

Emily Stutzman,
Associate Market Impact Consultant

Contributing Research:

Forrester's Digital Healthcare
research group

ABOUT FORRESTER CONSULTING

Forrester provides independent and objective research-based consulting to help leaders deliver key transformation outcomes. Fueled by our customer-obsessed research, Forrester's seasoned consultants partner with leaders to execute on their priorities using a unique engagement model that tailors to diverse needs and ensures lasting impact. For more information, visit forrester.com/consulting.

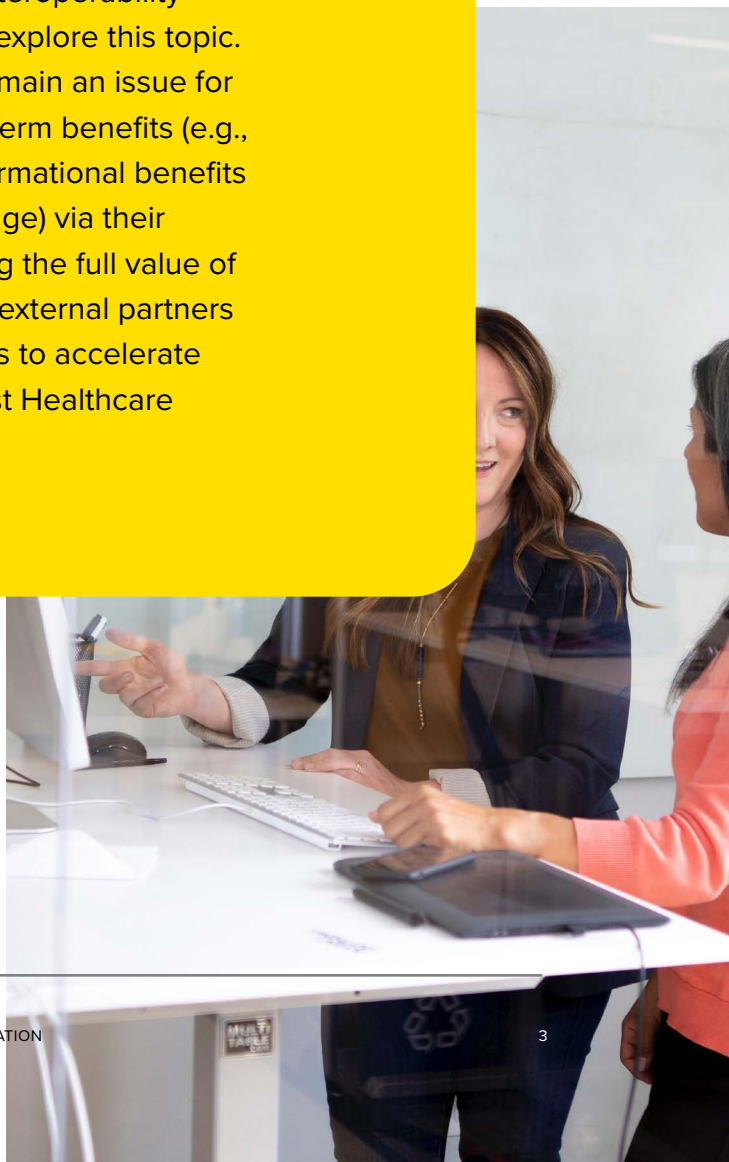
© Forrester Research, Inc. All rights reserved. Unauthorized reproduction is strictly prohibited. Information is based on best available resources. Opinions reflect judgment at the time and are subject to change. Forrester®, Technographics®, Forrester Wave, and Total Economic Impact are trademarks of Forrester Research, Inc. All other trademarks are the property of their respective companies. For additional information, go to forrester.com. [E-53863]



Executive Summary

Healthcare has undergone an unprecedented amount of change the past few years. While the COVID-19 pandemic introduced more stress on healthcare workers' well-being and providers' bottom lines, it also forced a much-needed acceleration in digital transformation. This has led to benefits like improved virtual care capabilities, automated scheduling, and virtual assistants. It has also shone a spotlight on how truly fragmented the state of healthcare remains today and the burden it places on providers, their support staff, and their patients. The continued rollout of interoperability regulations seeks to address some known challenges with healthcare interoperability, but many providers struggle to scale their interoperability efforts due to incomplete strategies and a lack of internal expertise and modern tools.

Smile Digital Health commissioned Forrester Consulting to evaluate US healthcare providers' progress in improving interoperability. Forrester conducted an online survey with 145 senior-level interoperability leaders at US healthcare provider organizations to explore this topic. We found that while disjointed data and systems remain an issue for providers today, many have already realized short-term benefits (e.g., improved efficiencies) and expect to realize transformational benefits (e.g., increased innovation and competitive advantage) via their interoperability improvement efforts. Key to realizing the full value of interoperability is filling existing gaps with the right external partners to formalize strategies and roadmaps, and platforms to accelerate adoption of open interoperability standards like Fast Healthcare Interoperability Resources (FHIR).



Key Findings

Providers are making headway on regulation compliance and standards adoption to improve the Quintuple Aim. Providers report high regulatory compliance and high adoption of open interoperability standards. From adopting these standards, 50% have already seen improved healthcare outcomes and 47% have seen improved efficiencies.

Complexity and urgency require providers to partner with an expert. Healthcare is one of the most complex industries when it comes to how it shares data due to the sheer number of electronic health record (EHR) systems, medical devices/ equipment, and legacy platforms used across facilities. As 46% of respondents report their companies lack a comprehensive interoperability strategy and the resources to adopt standards at scale, providers must engage trusted partners to remove barriers to accessing the data they need when they need it.

The data and insights that interoperability liberates will fuel providers' innovation capabilities. This includes risk stratification (i.e., determining which patients are most at-risk of developing costly conditions), improved patient scheduling, and care delivery innovations that improve the patient experience (PX).

Providers using FHIR platforms today are ahead of the curve. Those with FHIR platforms implemented are scaling their interoperability efforts faster and experiencing more overall benefits, putting them farther ahead in the race towards a connected care future.

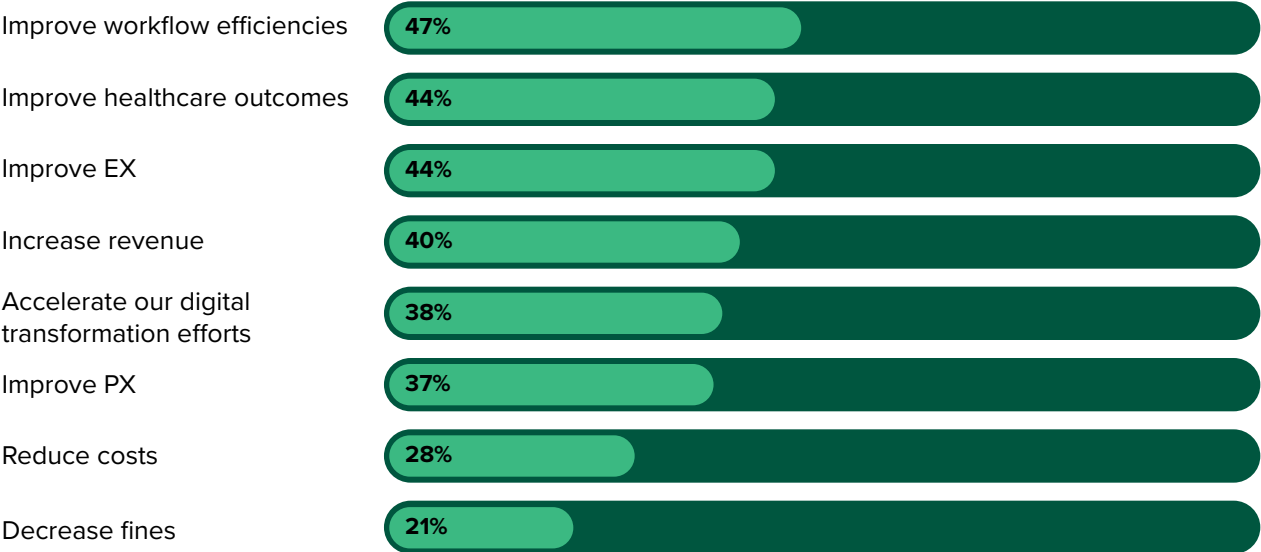
The State Of Healthcare Remains Fragmented

While the pandemic forced unprecedented digital transformation in the healthcare industry, the patient journey still has a lot to be desired. A lack of coordinated care leads to care that's fragmented and poorly planned, resulting in potential medication errors, avoidable hospitalizations, and frustrated patients and healthcare workers. In surveying 145 interoperability leaders at US provider organizations, we found that:

- **Providers are prioritizing improved care and operations.** For the sake of their business and the people they serve, providers are focused on improving efficiencies, healthcare outcomes, and employee experience (EX) (see Figure 1).
- **Providers report high degrees of interoperability compliance.** Ninety-seven percent of respondents reported a high degree of confidence in their organizations' compliance with interoperability regulations.

Figure 1

Top Provider Priorities



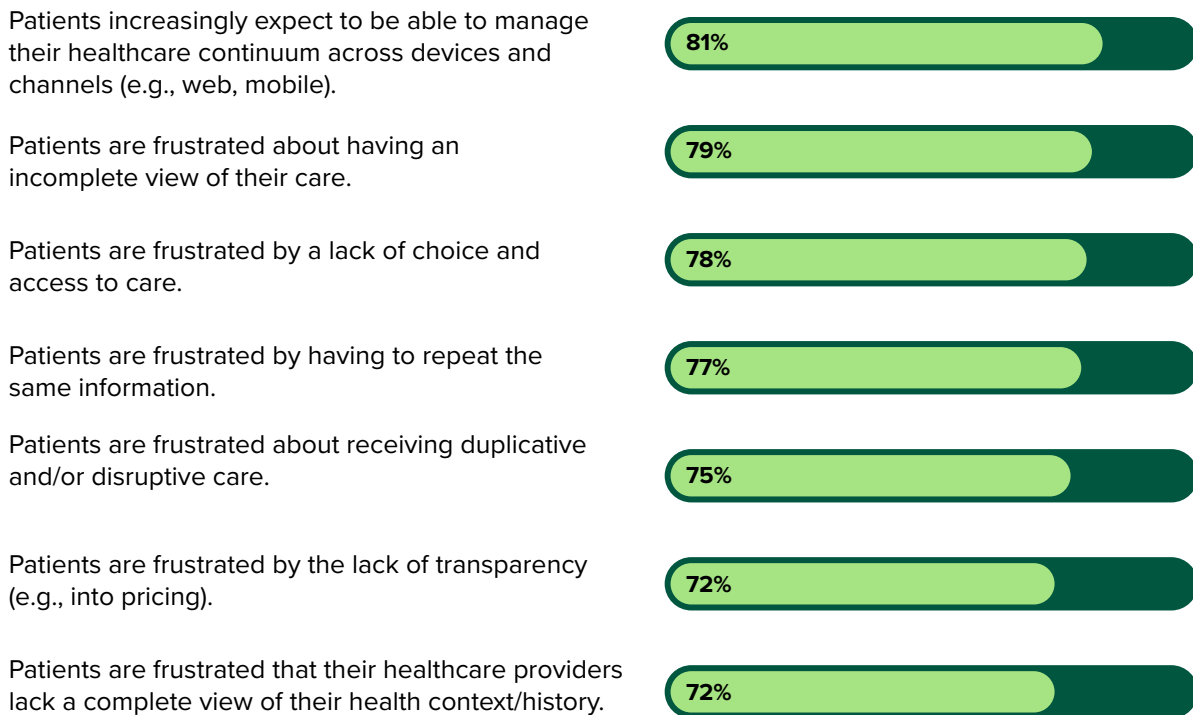
Base: 145 US director-level or higher decision-makers with responsibility for purchasing of healthcare IT systems at healthcare providers
Note: Showing top 3 ranked
Source: A commissioned study conducted by Forrester Consulting on behalf of Smile CDR, September 2022

- Patient and provider burden remain high.** While improved care outcomes and efficiencies are their top priorities and providers report high regulation compliance levels, the current state of healthcare is still fragmented and inefficient. For example, while 81% of providers report that patients expect to easily manage their healthcare continuum across devices and channels, 79% say patients are frustrated by an incomplete view of their care (see Figure 2). Care is also still duplicative. Respondents report that patients are frustrated by having to repeat the same information across multiple encounters (77%) and believe they are receiving duplicative and/or disruptive care (75%) (e.g., prescription of a contraindicated medication resulting in an adverse drug reaction, a duplicate medical record missing a patient allergy or containing a missing or incorrect blood type resulting in unnecessary blood work, etc.).

Figure 2

Top Patient Expectations And Frustrations

● Agree/Strongly agree



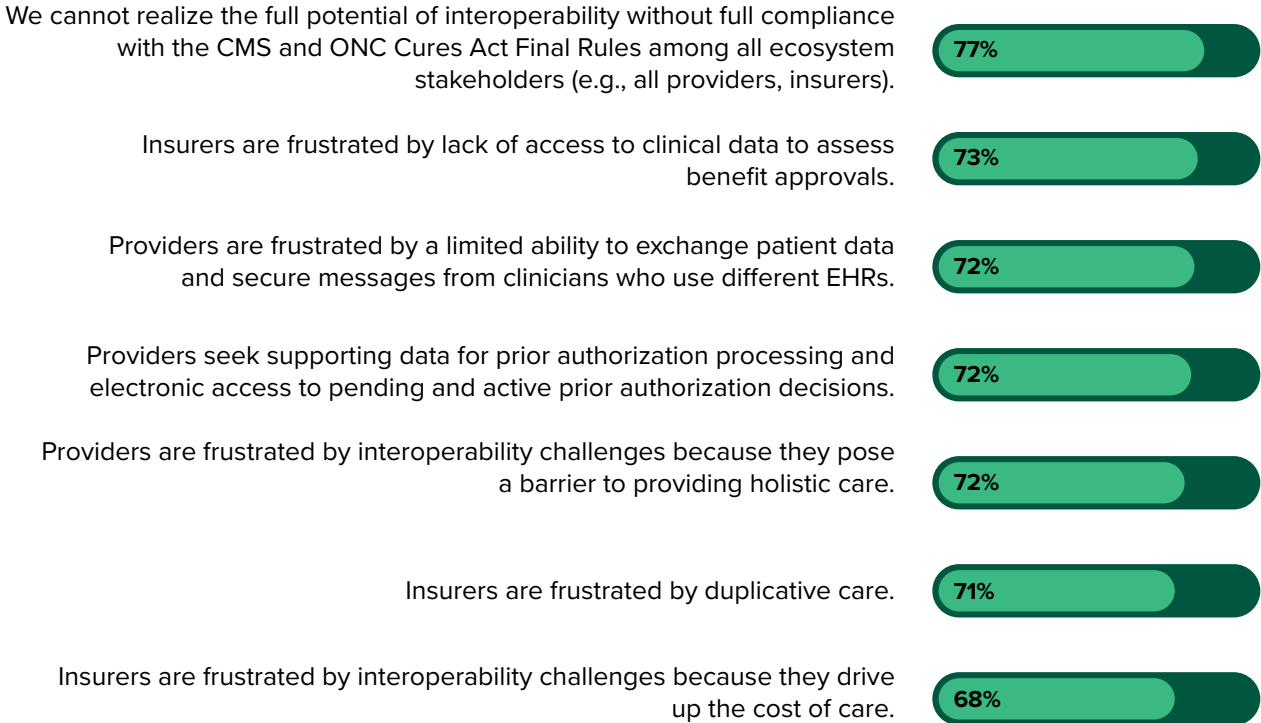
Base: 145 US director-level or higher decision-makers with responsibility for purchasing of healthcare IT systems at healthcare providers
 Source: A commissioned study conducted by Forrester Consulting on behalf of Smile CDR, September 2022

Insurers are also frustrated by duplicative care (71%), along with increased costs resulting from a lack of interoperability (68%). Challenges in exchanging patient data, which are caused by a lack of data interoperability (72%) and overall limits their ability to provide holistic care (72%), also burden providers (see Figure 3).

Figure 3

Top Provider And Insurer Expectations And Frustrations

● Agree/Strongly agree

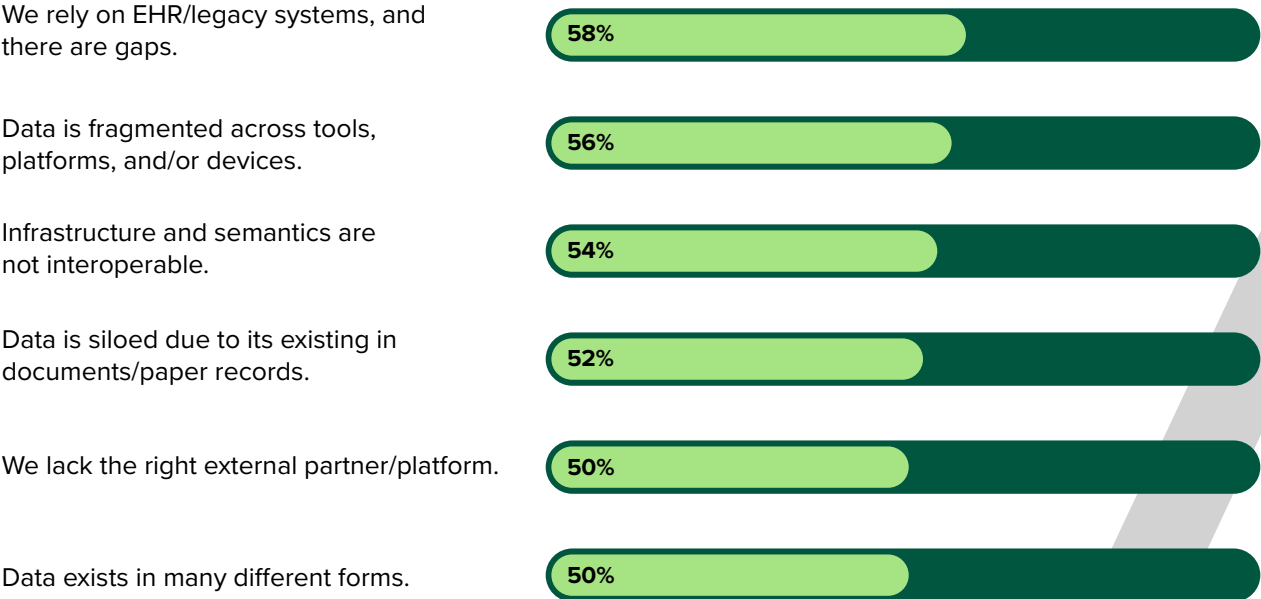


Base: 145 US director-level or higher decision-makers with responsibility for purchasing of healthcare IT systems at healthcare providers
Source: A commissioned study conducted by Forrester Consulting on behalf of Smile CDR, September 2022

- **A web of fragmented data and legacy systems is preventing many providers from improving interoperability at scale.** For many providers, data is siloed (56%) and exists in many different forms (including paper/nondigital formats [52%]). Their biggest challenge is their reliance on inflexible legacy systems (58%) (see Figure 4).

Figure 4

Systems- And Process-Related Interoperability Challenges



Base: 145 US director-level or higher decision-makers with responsibility for purchasing of healthcare IT systems at healthcare providers
Source: A commissioned study conducted by Forrester Consulting on behalf of Smile CDR, September 2022

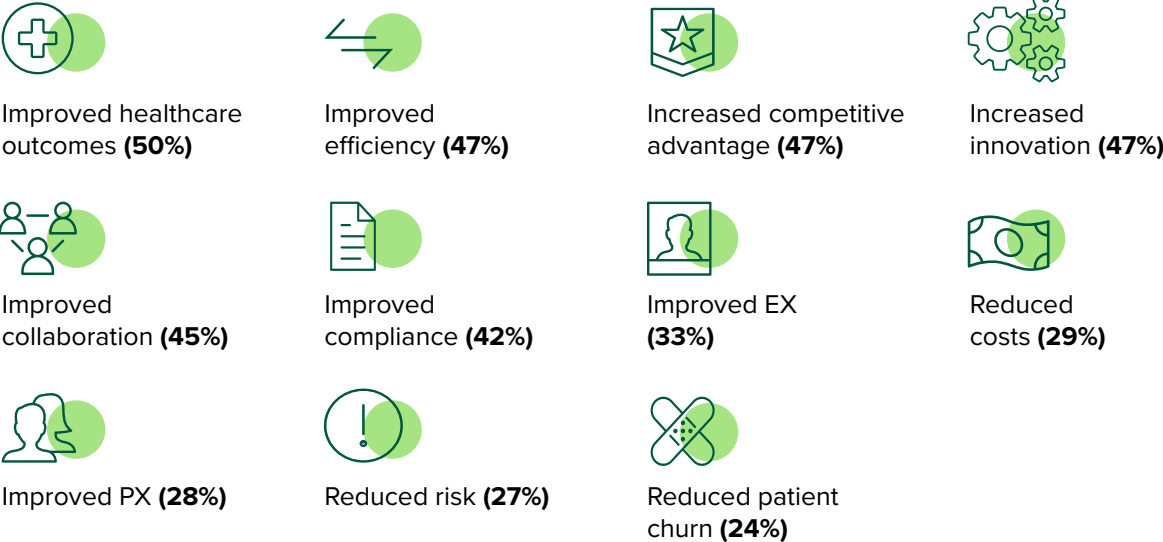
Healthcare Leaders Struggle To Operationalize Interoperability Opportunities To Achieve Maximum Advantage

The good news? Many providers have already seen improvements in efficiencies and care at this stage of their interoperability journeys. Where many struggle today is in operationalizing (e.g., lacking robust strategies, internal expertise, etc.) to take full advantage of the many opportunities interoperability can unearth. Providers can differentiate by moving faster and not letting legislation determine the pace of their digital transformations. In this study, we found that:

- **Providers who have adopted interoperability standards have already seen benefits.** Fifty-four percent of providers have already adopted interoperability standards. Respondents report their organizations have already seen benefits in the form of improved healthcare outcomes (50%), efficiencies (47%), and competitive advantage (47%) (see Figure 5).

Figure 5

“What benefits has your organization already seen from adopting interoperability standards?”



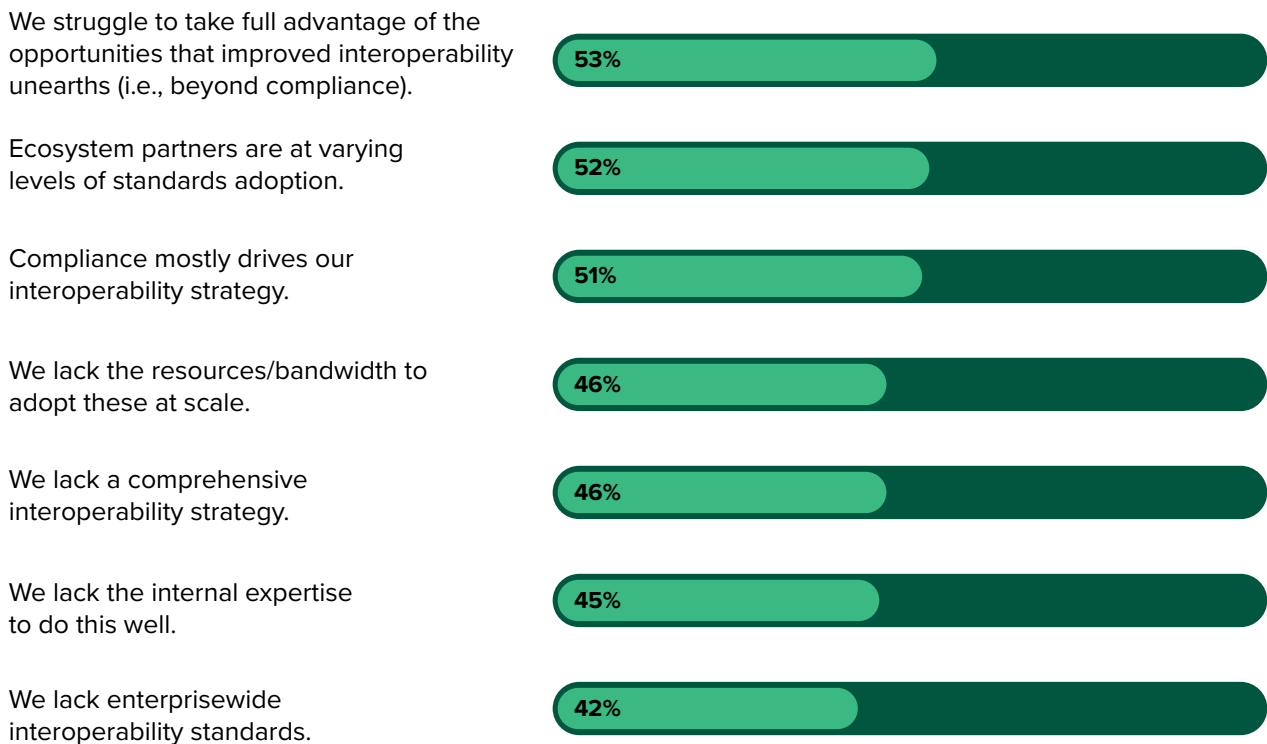
Base: 78 US director-level or higher decision-makers with responsibility for purchasing of healthcare IT systems at healthcare providers that have adopted interoperability standards

Source: A commissioned study conducted by Forrester Consulting on behalf of Smile CDR, September 2022

- Respondents are limited in their ability to realize the full value of interoperability.** In addition to fragmented data and systems, respondents struggle to take full advantage of the opportunities that improved interoperability unlocks (53%). Forty-six percent lack a comprehensive interoperability strategy and the resources to adopt standards at scale. Forty-five percent say they lack internal expertise. Interoperability also becomes very challenging to scale outside an organization with 52% of respondents reporting challenges with ecosystem partners at varying levels of standards adoption (see Figure 6).

Figure 6

“Which of the following interoperability challenges does your organization face today?”



Base: 145 US director-level or higher decision-makers with responsibility for purchasing of healthcare IT systems at healthcare providers
 Source: A commissioned study conducted by Forrester Consulting on behalf of Smile CDR, September 2022

Partners Fuel Adoption And Drive Interoperability Transformation

The greater adoption of interoperability standards fuels the future of healthcare. To adopt these standards at speed and at scale requires providers to engage knowledgeable partners with expertise in technology, security, and healthcare. With the right partners in place, data can be seamlessly tracked throughout the healthcare journey, members can access all of their data, providers can make more informed treatment decisions, and plans can create more personalized benefits. In this study, we found that:

- **Providers recognize the need to create a networkwide interoperability strategy.** As interoperability is a foundational step to driving innovation, providers with ineffective or nonexistent interoperability strategies will become irrelevant. Sixty-eight percent of respondents in this study report that formalizing their interoperability strategy and roadmap is necessary to improving patient outcomes. Fifty-seven percent also say they need to be more proactive in their interoperability improvements (see Figure 7). Providers must find a way to develop interoperability strategies that optimize how EHRs, patient-facing applications, devices, and all other systems exchange, process, and interpret data. For the best patient outcomes, providers need the standardized technical and semantic frameworks that exchange pertinent data at the right time across internal and external entities. This will drive informed decisions, enhance provider performance, reduce clinician burnout, and ensure delivery of high-quality care.

Figure 7

“Which of the following must your company do to improve patient outcomes?”



Formalize our interoperability strategy and roadmap **(68%)**



Routinely collect PX feedback **(59%)**



Be proactive in our interoperability improvements **(57%)**



Instill a culture of transformation **(55%)**



Engage the right external partners **(51%)**

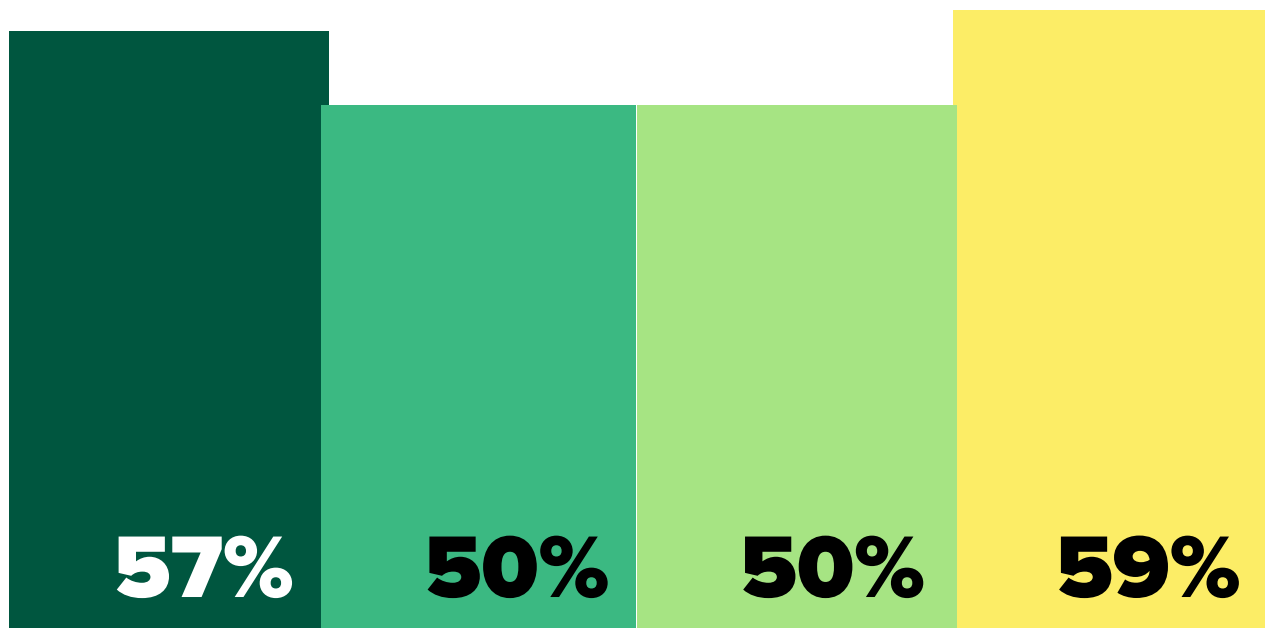
Base: 145 US director-level or higher decision-makers with responsibility for purchasing of healthcare IT systems at healthcare providers
Source: A commissioned study conducted by Forrester Consulting on behalf of Smile CDR, September 2022

- **External partners are crucial to bringing these strategies to life.** Providers realize they can't go at it alone. Seventy-seven percent agree that having the right external partners is crucial to improving organizationwide interoperability, and 77% also agree that as interoperability improves, they will rely on external partners to help them understand best practices. In terms of the mix of external resources, many providers plan to work with several partners. They plan to work with their existing EHR providers to implement updates (57%), engage external consultancies (50%), and adopt a FHIR-based IT solution (50%) (see Figure 8).

Figure 8

“How does your organization plan to address interoperability-related regulations in the future?”

- Working with existing EHR systems/providers to implement updates
- Engaging a FHIR-based IT solution (non-EHR)
- Engaging an external consultancy
- Hiring a FHIR health IT software engineer



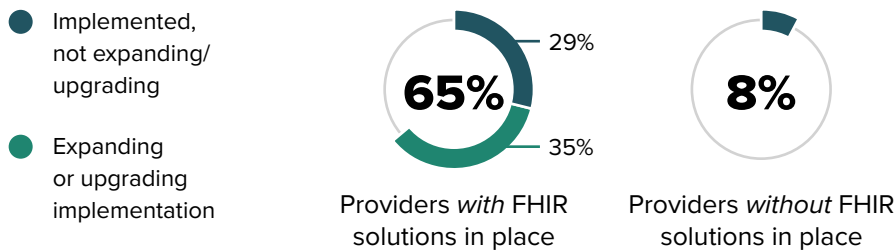
Base: 145 US director-level or higher decision-makers with responsibility for purchasing of healthcare IT systems at healthcare providers
 Source: A commissioned study conducted by Forrester Consulting on behalf of Smile CDR, September 2022

- FHIR solutions help providers evolve faster.** Sixty-five percent of providers that have a purpose-built FHIR solution in place have already adopted open interoperability standards, compared to only 8% of providers without dedicated FHIR solutions (i.e., these providers are relying only on EHR and other existing systems). Of those without dedicated FHIR solutions, 76% report that gaps with their existing systems are stifling progress. To complete the shift from reactive to proactive care requires a complete, accurate view of the patient, which hinges on data interoperability. Gaps in the record fail to account for certain preferences and medical histories that could result in missed opportunities to proactively engage the patient as well as missed diagnoses (e.g., missed vascular events, infections, and cancers account for about 75% of serious harms from diagnostic errors).¹

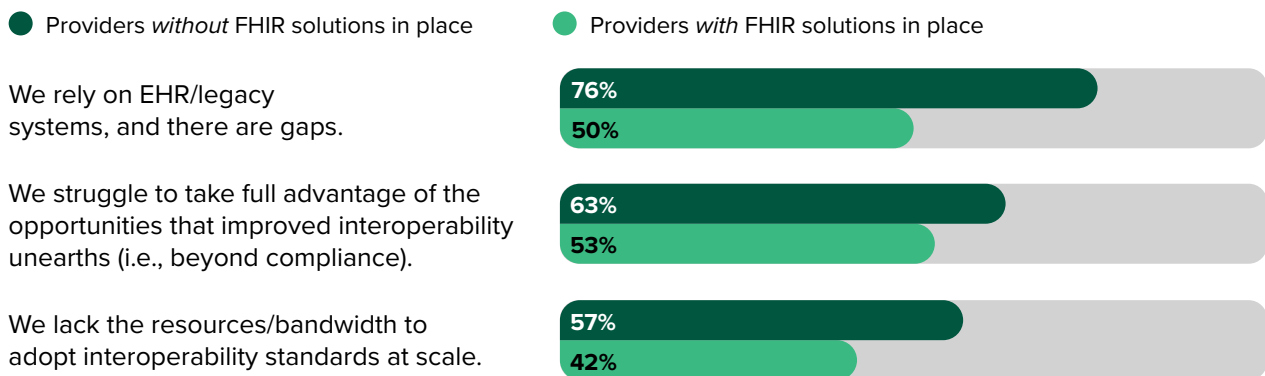
We also found that providers with FHIR solutions in place are scaling their transformation efforts more easily and quickly. They struggle less than their peers in scaling interoperability efforts, they are less bogged down by legacy systems, and they're realizing more benefits from their improvement efforts (see Figure 9).

Figure 9

Open Interoperability Standards Adoption



Firms Experience Gaps In EHR And Interoperability Challenges



Base: 145 US director-level or higher decision-makers with responsibility for purchasing of healthcare IT systems at healthcare providers

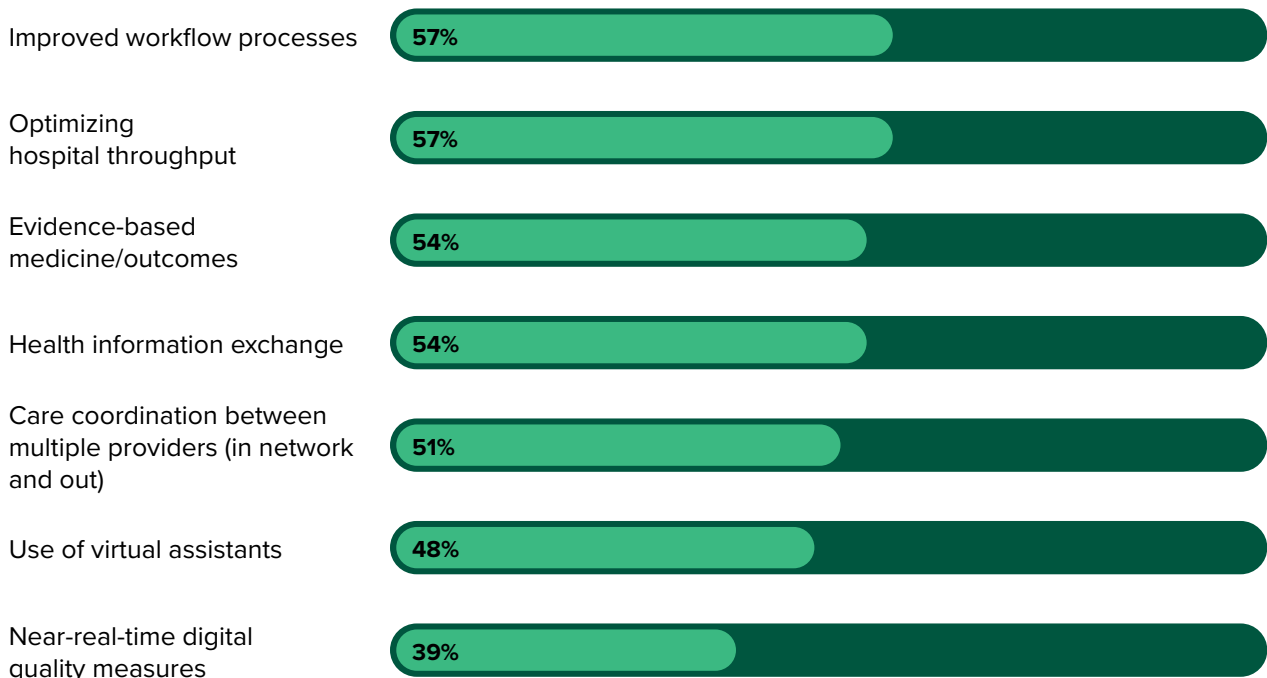
Note: Total percentages may not equal separate values due to rounding.

Source: A commissioned study conducted by Forrester Consulting on behalf of Smile CDR, September 2022

- Improved interoperability helps providers drive innovation to the benefit of the business and its support staff.** Providers realize that interoperability is a foundational step to driving innovation for their business and maintaining a competitive edge. Interoperable data that can be exchanged from provider to patient and across technology systems is the cornerstone for digital and process innovation. Hospitals benefit from improved workflows, more efficient operations, and better patient experiences. Fifty-seven percent of providers state that improved interoperability will enable/improve workflow processes and also optimize hospital throughput, making the hospital more efficient and effective. But the benefits do not stop at the business level. Improved interoperability trickles down to staff and patients. Providers state that improved interoperability enables/improves health information exchange (54%) and fifty-one percent say it will improve care coordination between multiple providers (see Figure 10).

Figure 10

Organizational Use Cases: Expected Benefits Of Improved Interoperability

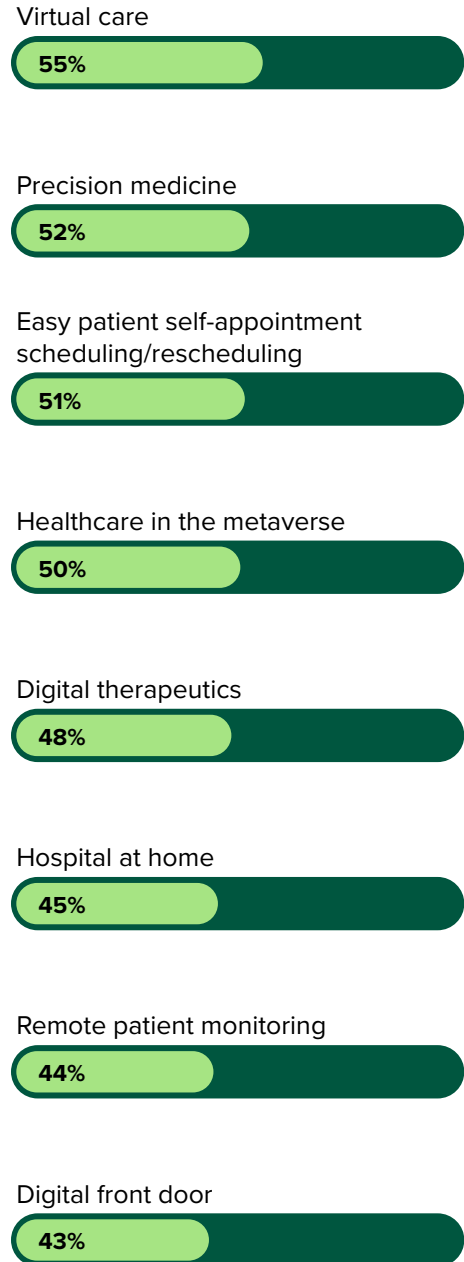


Base: 145 US director-level or higher decision-makers with responsibility for purchasing of healthcare IT systems at healthcare providers
 Source: A commissioned study conducted by Forrester Consulting on behalf of Smile CDR, September 2022

- Improved interoperability helps providers improve patient care.** Big data in healthcare is available in enormous volumes, it's accelerating at high speeds, and coming from an abundance of sources. And it comes in different forms (e.g., structured vs. unstructured data), making it difficult to analyze and generate insights to build a complete view of the patient. In the new, virtual-first paradigm, healthcare data analytics will become heavily reliant on data generated by the consumer beyond the brick and mortar. Interoperability is the foundation of patient care that enables health information exchange across the entire ecosystem to achieve the Quintuple Aim (i.e., reducing costs, improving the patient experience, employee experience, health outcomes, and health equity) and deter duplicative and disruptive care across the care continuum. While the Cures Act Final Rules initially faced resistance from EHR vendors, major players and providers now see the writing on the wall. Providers expect virtual care (55%), precision medicine (52%), and patient self-appointment scheduling/rescheduling (51%) to improve via improved interoperability. This signals a broader trend of interoperability's role in improving patient access to care, streamlining patient experience, and, ultimately, improving patient outcomes (see Figure 11).

Figure 11

**Patient Use Cases:
Expected Benefits Of
Improved Interoperability**



Base: 145 US director-level or higher decision-makers with responsibility for purchasing of healthcare IT systems at healthcare providers
 Source: A commissioned study conducted by Forrester Consulting on behalf of Smile CDR, September 2022

Key Recommendations

Providers who develop comprehensive, organizationwide interoperability strategies and engage experienced and well-vetted partners will improve their ability to innovate, reduce provider and patient burden, and, ultimately, improve care outcomes.

Forrester's in-depth survey of 145 respondents from US provider organizations yielded several important recommendations:

Adopt an HL7 FHIR Solution.

HL7 FHIR is the solution laid out by the CMS and ONC Cures Act Final Rules to require APIs for healthcare data interoperability. In addition to achieving compliance with federal laws and regulations, providers with a leading interoperability solution reap the benefits of end-to-end connectivity and seamless integration across a number of standalone EHRs and other systems. Providers are better equipped to monitor, track, analyze, and exchange protected health information (PHI), and make more informed clinical decisions at the bedside and across the care continuum.

Take steps to partner with an end-to-end interoperability solution.

Most providers have a foundational solution built on compliance. We recommend leveraging partners with deep interoperability expertise that can help build a robust strategy and the necessary infrastructure for transferred and exchanged data. This ensures seamless communication and measurable gains in the Quintuple Aim.

Partner with or invest in an interoperability company that champions compliance and demonstrates deep expertise.

It is important to have a company on your side that positions your organization to comply with all existing and upcoming patient access regulations. Ensure that your interoperability partner has the necessary depth of integrations and the voluntary certifications to prove they can safely handle patient data. Certifications include the American Institute of CPAs (AICPA) SOC 2, HITRUST,

and the Drummond Certification. The AICPA SOC 2 certification enables the management of patient data based on Trust Services Criteria (i.e., security, availability, processing integrity, confidentiality, and privacy). The HITRUST certification is a security framework allowing compliance with HIPAA standards in the creation, access, storage, and exchange of sensitive/regulated data. The Drummond Certification ensures that products are 2015 Edition Cures Health IT compliant, and meets payer/patient access FHIR API standards. Be sure to validate certifications and ask for client referrals to make informed decisions.

Secure a healthcare strategy that includes a plan to archive and migrate legacy data in a timely fashion to new EHR platforms and hospital operating systems.

Legacy data comes from numerous applications and varies in format, quality, and encryption complexity. Working with an interoperability partner modernizes data migration, a complex yet crucial step that every healthcare provider must take for accurate diagnosis and care management across every touchpoint.

Appendix A: Methodology

In this study, Forrester conducted an online survey of 145 interoperability strategy decision-makers at US-based healthcare provider organizations. All provider organizations owned a minimum of five healthcare facilities with some respondents representing organizations with 50 or more locations. Survey participants included senior-level decision-makers in IT, operations, medical, PX, and HR roles. The study began in June 2022 and was completed in September 2022.

Appendix B: Demographics

INDUSTRY	
Healthcare providers	100%

TOTAL LOCATIONS	
5 to 10	47%
11 to 20	35%
21 to 50	13%
51+	5%

GEOGRAPHY	
United States	100%

POSITION	
Director	28%
Vice president	49%
C-level executive	23%

DEPARTMENT	
Human resources/staffing	7%
IT	29%
Medical	14%
Operations	38%
Patient experience	12%

Appendix C: Supplemental Material

RELATED FORRESTER RESEARCH

“Best Practices For Healthcare In Cloud,” Forrester Research, Inc., May 24, 2022.

“‘Clear!’ How The CMS And ONC Cures Act Final Rules Will Resuscitate The Healthcare Industry,” Forrester Research, Inc., October 4, 2022.

“The Future Of Healthcare: Success In 2030 Hinges On Resilience And Agility In 10 Areas,” Forrester Research, Inc., December 21, 2021.

Appendix D: Endnotes

¹ David E. Newman-Toker, Zheyu Wang, Yuxin Zhu, Najlla Nassery, Ali S. Saber Tehrani, Adam C. Schaffer, Chihwen Winnie Yu-Moe, Gwendolyn D. Clemens, Mehdi Fanai, Dana Siegal, “Rate of diagnostic errors and serious misdiagnosis-related harms for major vascular events, infections, and cancers: toward a national incidence estimate using the ‘Big Three,’” *Diagnosis (Berl)*, May 14, 2020.



FORRESTER®