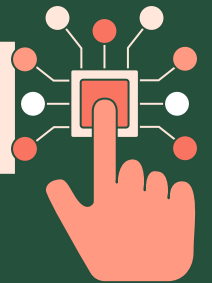




2025 State of Technology Enabled Clinical Trials



Gain insights from the clinical trial industry on technology adoption, integrating AI into site workflows, and how connectivity fosters collaboration among sites, sponsors and CROs.

Table of Contents



INTRODUCTION

03 Executive Summary

SECTION 1

08 The State of Tech Adoption in 2025

SECTION 2

13 AI and the Pursuit of Seamless Integration

SECTION 3

19 Connectivity Drives Site-Sponsor Collaboration

SECTION 4

25 Conclusion & Data

An aerial photograph of a two-lane asphalt road that curves through a dense, lush green forest. Several cars are visible on the road, including a white car, a red car, and a dark car. The text 'Where to next?' is overlaid in large white letters on the left side of the image.

Where to next?

EXECUTIVE SUMMARY

2025 will bring change, challenges and shifts to the clinical trial industry. As an industry so focused on the change-makers of the medical sciences world, understanding the priorities, challenges, and innovations shaping the field is essential for stakeholders to benchmark progress and strategize for the future.

Our annual State of Technology Enabled Clinical Trials report aims to provide a comprehensive perspective on the technology that enables the clinical trial industry to keep moving forward. We surveyed over 100 Sponsors, CROs, and Sites from 27 countries, capturing insights from professionals across the clinical research spectrum—including Clinical Research Coordinators, Directors of Innovation, Regulatory Analysts, and Clinical Research Associates (CRAs). Together, their responses offer a representative snapshot of the industry's current technology landscape, and provide insight on where it may be headed in the new year.

Essential Trends Shaping 2025

50% of sponsors regularly use AI

vs

15% of sites regularly use AI

1 Integration is Essential

Seamless technology integration is critical to site-sponsor collaboration. While **76% of sites** prefer to use their own platforms, **76%** rank sponsor willingness to integrate with their systems as the top technology expectation. Sponsors must prioritize interoperable tools that align with site workflows to enhance efficiency and foster stronger partnerships.

2 A Gap in AI Adoption

AI is revolutionizing clinical trials by advancing recruitment, trial design, and data analysis. However, a significant gap exists, with **50% of sponsors** using AI regularly compared to only **15% of sites**. Bridging this gap through AI tools tailored to site needs can drive better trial outcomes and operational efficiency.

3 Sponsors Value Connected Platforms

Lack of visibility into site workflows is a key obstacle for **58% of sponsors**. Connected platforms that provide real-time site access and insights and streamline operations are essential to improving collaboration and accelerating trial timelines.

Essential Trends Shaping 2025

2/3 of the industry uses an eISF

71% of sites use eISF solutions

69% of sponsors use eISF solutions

4 Compliance and Risk Mitigation Remain a Top Priority

Compliance remains the top priority for **82% of sites** and **76% of sponsors** when selecting new technology. Moreover, **73% of sponsors** agree that deploying site-facing technology improves compliance and reduces risks, underscoring the importance of regulatory adherence in technology decisions.

5 Document Automation: A Cornerstone for Future Growth

Regulatory compliance and document automation have become pivotal, with **71% of sites** and **69% of sponsors** now using Electronic Investigator Site File (eISF) solutions, up dramatically from 2021. The rise of automated document management is laying the groundwork for broader digital adoption, enabling future investments in advanced tools like eSource and AI-powered solutions. This trend highlights the industry's commitment to building a scalable and efficient foundation for trials.

A Call for Connection

2025 will be pivotal for clinical trials. Prioritizing compatible, site-centric technology will strengthen relationships, accelerate timelines, and position sponsors at the forefront of an increasingly digital industry. This report is organized into three distinct sections, each spotlighting a critical facet of how clinical trial technology is evolving in 2025.

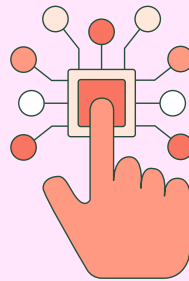
SECTION 1



The State of Tech Adoption in 2025

The State of Tech Adoption in 2025 provides a foundational look at current technology use and investments across sites, sponsors, and CROs.

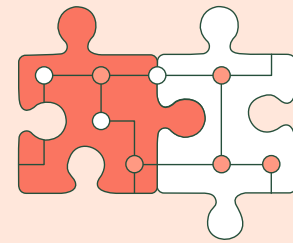
SECTION 2



AI and the Pursuit of Seamless Integration

AI and the Pursuit of Seamless Integration explores the growing impact of artificial intelligence and the importance of unified platforms for streamlined workflows.

SECTION 3



Connectivity Drives Site-Sponsor Collaboration

Connectivity Drives Site-Sponsor Collaboration examines how technology enables sites, sponsors and CROs to foster stronger partnerships and accelerate progress.

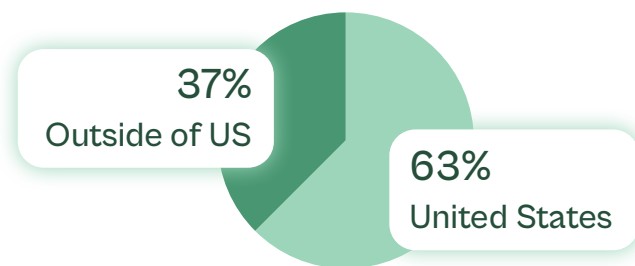
Survey Demographics

Survey respondents were made up of over **100 sites, sponsors and CROs** from 27 countries.

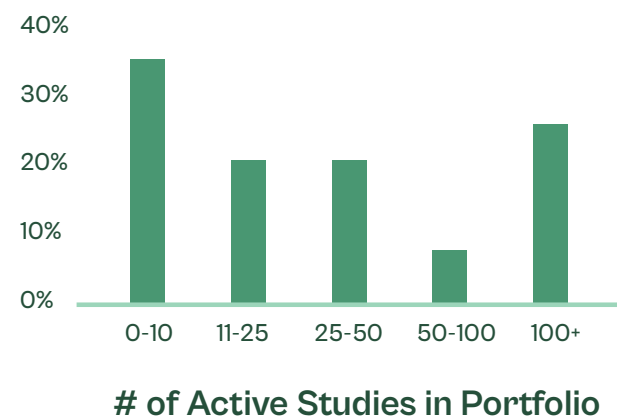
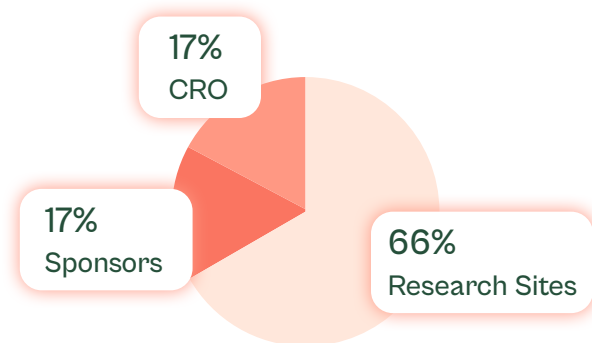
The respondents spanned the clinical research spectrum, ensuring representation of decision-makers and operational leaders. Insights were gathered from a diverse group of professionals including:

- Clinical Research Coordinators
- Directors of Innovation
- Regulatory Analysts
- Clinical Research Associates (CRAs)

Respondent Location



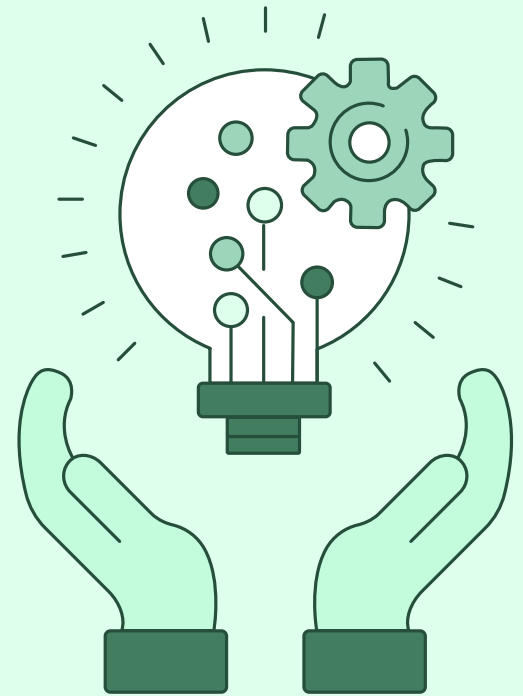
Industry Segment



SECTION 1

The State of Tech Adoption in 2025

A foundational look at current technology use and investments across sites, sponsors, and CROs.



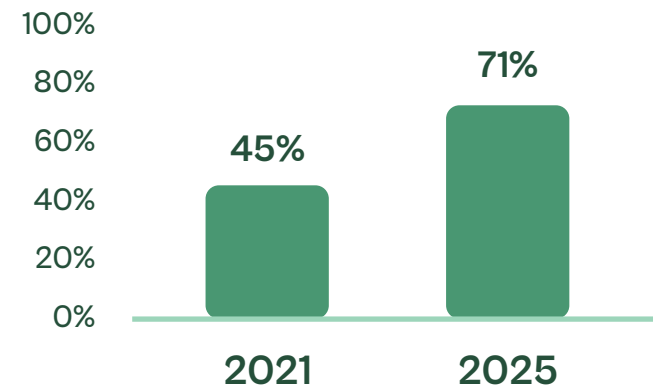
Regulatory Compliance & Document Automation Lead the Way

Regulatory compliance and document automation continue to dominate priorities for both sites and sponsors, driven by increasing adoption of digital solutions:

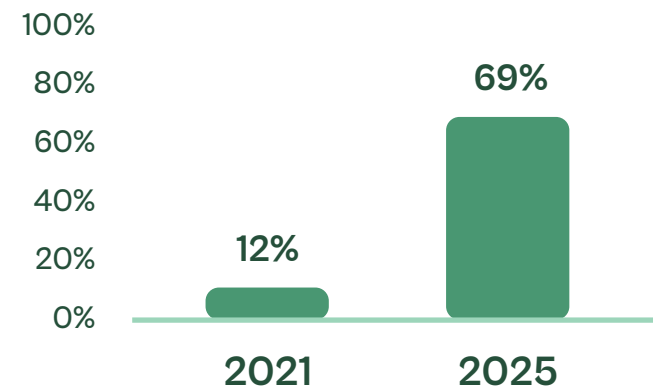
- **71% of sites** now use an eISF in their studies, a significant jump from **45% in 2021**.
- **69% of sponsors** deploy eISF solutions to sites, up dramatically from just **12% in 2021**.

This rapid growth underscores the industry's recognition of digital document management as a cornerstone of compliance and operational efficiency.

Sites Using eISF in Their Studies



Sponsors Deploying eISF to Sites



Expanding Adoption of Technology at Sites

As sites and sponsors digitize workflows, they are expanding automation beyond document management into other critical areas:

eConsent:

- **47% of sites** now use eConsent, up from **29% in 2021**. An additional **20%** plan to adopt eConsent in the next 12 months, signaling its growing importance for participant engagement and compliance.

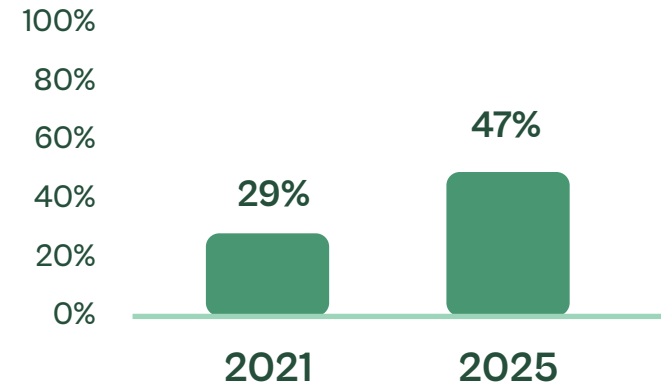
eSource:

- **58% of sites** use eSource on at least one study, a significant rise from **22% in 2021**. An additional **21% of sites** plan to invest in eSource, highlighting its role in streamlining data collection and accuracy.

Patient Engagement Solutions:

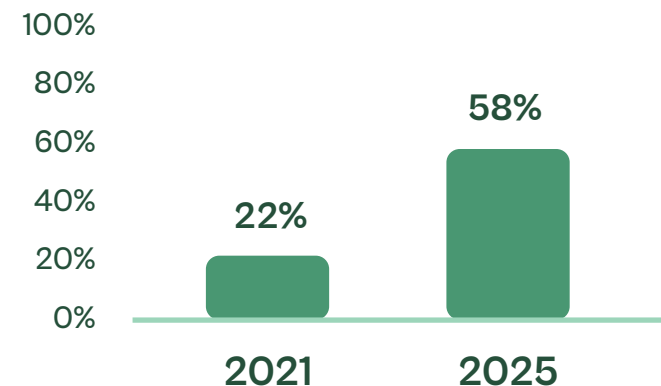
- **41% of sites** use tools for scheduling and screening, with **20%** planning to invest in these solutions within the next year. These technologies are helping sites overcome enrollment and communication challenges.

Sites Use of eConsent



20% of sites plan to adopt eConsent in the next 12 months

Sites Use of eSource



Sponsors Expand Technology Offerings to Sites

Sponsors are actively enhancing the breadth of tools provided to sites to improve connectivity and participant engagement:

eConsent:

- **57% of sponsors** provide eConsent tools to sites, up from **27% in 2021**. An additional **14% of sponsors** plan to invest in eConsent over the next 12 months, further accelerating adoption.

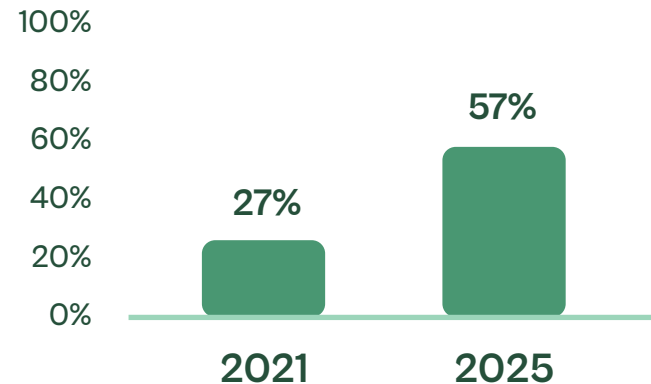
eSource:

- **65% of sponsors** provide eSource tools to sites, a dramatic increase from **21% in 2021**. Investment appears to be stabilizing, with only **4% of sponsors** planning further investments in the coming year.

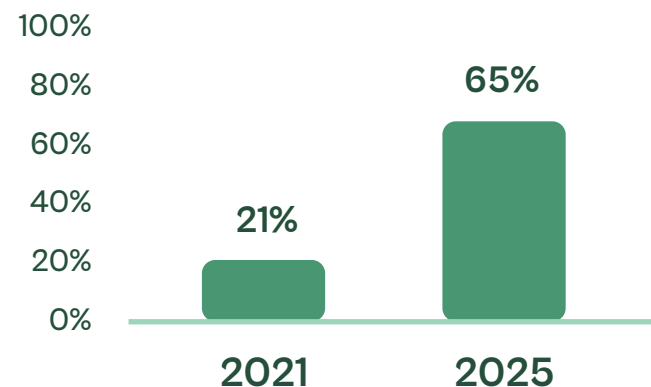
Patient Engagement Solutions:

- **67% of sponsors** offer scheduling and screening tools to sites, with **11%** planning additional investments within the next year.

Sponsors Providing eConsent to Sites



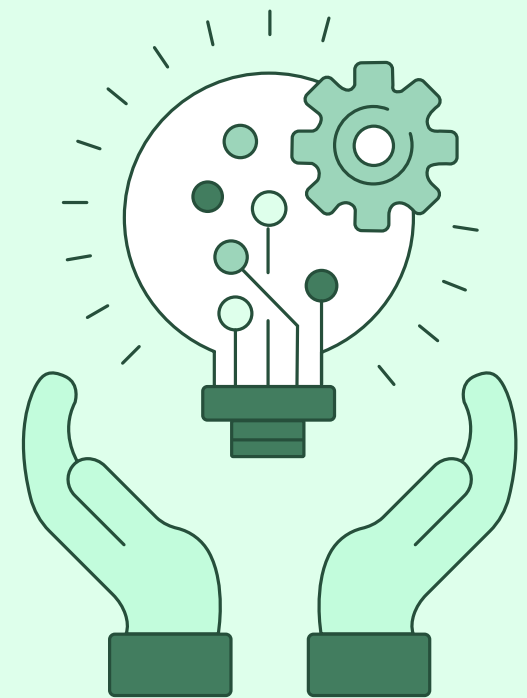
Sponsors Providing eSource to Sites



Key Takeaways:

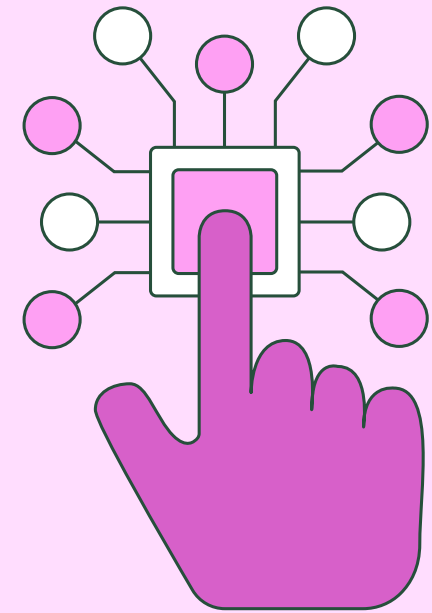
The State of Tech Adoption in 2025

- 1. Regulatory Compliance Drives Digital Adoption:** Regulatory compliance and document automation remain top priorities for sites and sponsors.
- 2. Technology Expansion in Site Workflows:** Sites increasingly adopt eConsent, eSource, and patient engagement tools to improve efficiency.
- 3. Sponsors Enhance Technology Offerings:** Sponsors are broadening their technology offerings to enhance site operations and connectivity.
- 4. Centralized Feasibility Tools Lag Behind:** Centralized feasibility tools show limited growth, needing better integration and scalability.



AI and the Pursuit of Seamless Integration

The growing impact of artificial intelligence and the importance of unified platforms for streamlined workflows.



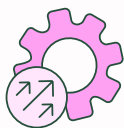
Accelerating AI Adoption in Clinical Trials

Applications of AI in Clinical Trials:



Participant Recruitment and Enrollment

AI-driven tools leverage extensive datasets, such as electronic health records (EHRs), to match eligible participants with unparalleled speed and precision, addressing persistent recruitment inefficiencies.



Trial Design Optimization

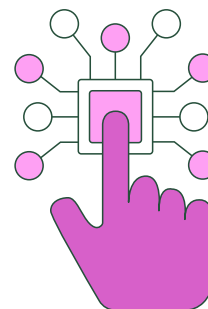
Machine learning analyzes large-scale datasets to refine trial protocols, evaluate site capacities, and predict patient availability, reducing development costs and enhancing trial efficiency.



Data Analysis and Monitoring

Real-time data analysis ensures higher accuracy and rapid identification of adverse events, contributing to more reliable trial outcomes.

49% of pharmaceutical and biotechnology companies now use AI and big data



Artificial intelligence (AI) is rapidly reshaping clinical trials, offering transformative capabilities across participant recruitment, trial design, and data analysis. **49% of pharmaceutical and biotechnology companies now use AI and big data in their programs, a 10% increase since 2019, signaling its growing impact on clinical research.**

The AI Utilization Gap

Despite its potential, **AI adoption remains uneven across the industry:**

| Sites | | Sponsors and CROs | |
|-------|--|-------------------|--|
| 17% | regularly use AI for data collection and abstraction | 50% | regularly use AI for data collection and abstraction |
| 28% | are testing its use in data analysis | 34% | use AI for data analysis |
| 30% | are experimenting with AI for patient engagement | 25% | apply it to patient engagement |

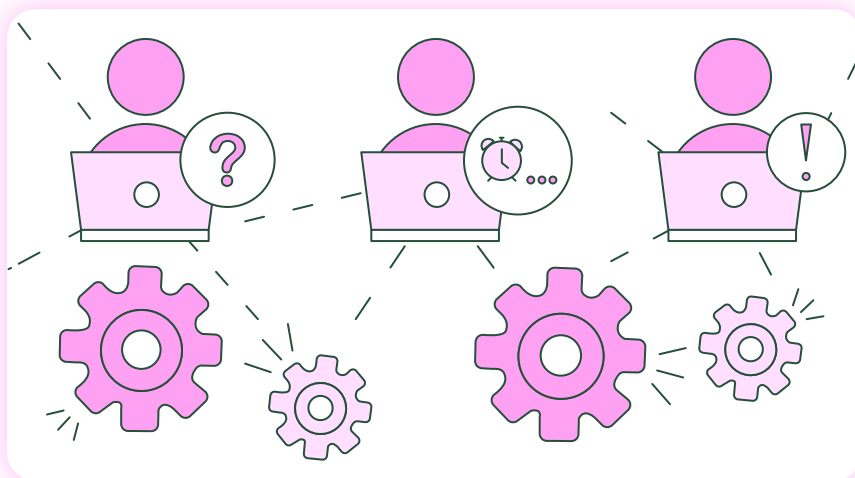
Bridging this gap is essential. Sponsors and CROs must prioritize deploying AI-powered tools that align with site workflows, supporting sites in their gradual adoption of this transformative technology.

Unified Technology Platforms: Simplifying Complexity

As the clinical trial industry grows—registered trials surged from **2,119 in 2000 to over 515,000 by November 2024**—the demand for efficient operations and coordination has never been higher. Nearly half (**48.65%**) of respondents manage portfolios with over 25 studies, often using multiple systems to handle their workload.

Key Challenges:

- **71% of sites** log into 1-5 platforms per study, creating inefficiencies and silos.
- **75% of sponsors** rely on a similar number of systems, but fragmented workflows complicate study coordination and data sharing.



49% of respondents manage portfolios with 25+ studies and consider unified platforms critical for trial execution

Unified technology platforms offer a solution:

- ✓ Provide a **single, centralized view of all sites**, regardless of tech maturity.
- ✓ **Streamline workflows, enhance collaboration, and mitigate risks** associated with siloed systems.
- ✓ For fast-evolving trials, **unified platforms are no longer optional**—they are essential for success.

AI and Unified Platforms: A Strategic Opportunity

The integration of AI and unified technology platforms presents a unique opportunity to transform clinical trials. By combining AI's predictive power with the streamlined workflows of centralized systems, sponsors and sites can address inefficiencies while fostering collaboration.

Opportunities:

- 1 Expand AI Applications**
Support sites in adopting AI for participant engagement and data analysis, bridging the utilization gap.
- 2 Invest in Unified Systems**
Consolidate platforms to reduce silos and inefficiencies, enabling seamless site-sponsor collaboration.
- 3 Align Tools with Workflows**
Ensure all technologies—AI-powered or otherwise—integrate into existing site systems to minimize disruptions.

By aligning AI initiatives with unified platforms, the clinical trial ecosystem can achieve faster timelines, improved outcomes, and enhanced collaboration between sponsors and sites.

49% of pharmaceutical companies use AI regularly

vs

17% of sites use AI regularly

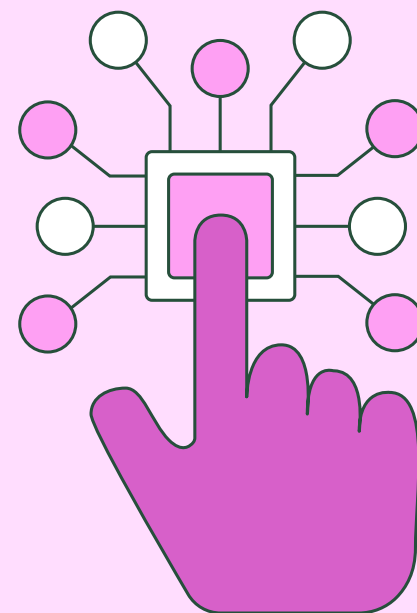
75% of sponsors log into 1-5 systems per study

30% of sites are experimenting with AI for patient engagement

Key Takeaways:

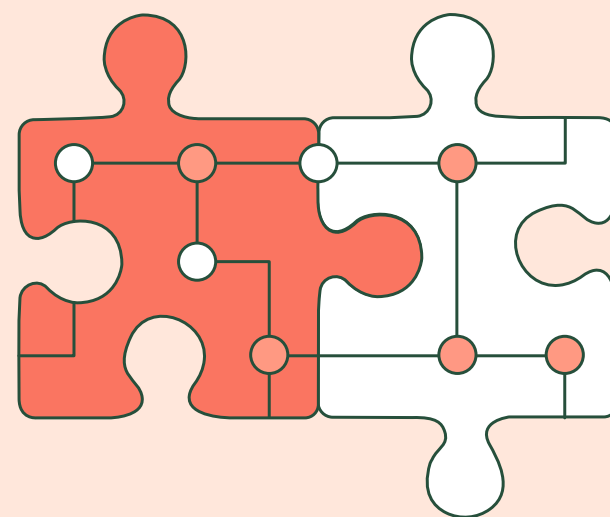
AI and the Pursuit of Seamless Integration

1. **AI Revolutionizes Clinical Trials:** AI enhances participant recruitment, trial design, and data analysis for greater efficiency.
2. **AI Adoption Remains Uneven:** Sites lag behind sponsors in adopting AI, highlighting a critical utilization gap.
3. **Unified Platforms Streamline Workflow:** Centralized systems reduce inefficiencies and improve collaboration across fragmented clinical operations.
4. **AI and Platforms Combine for Impact:** Integrating AI with unified platforms enables efficiency and fosters site-sponsor connectivity.



Connectivity Drives Site-Sponsor Collaboration

How technology enables sites, sponsors and CROs to foster stronger partnerships and accelerate progress.



Misaligned Priorities: Enrollment Challenges and Workforce Efficiency

In 2025, **participant enrollment and screening** remains a top priority for sites, with **33%** identifying these as critical challenges. Meanwhile, **42% of sponsors** prioritize increasing **workforce efficiency and capacity**, underscoring a significant disconnect. Sites are focused on tools and processes that directly improve their ability to enroll participants, but many resist sponsor-driven platforms that fail to address site-specific needs.

This misalignment is reflected in survey responses:

- **33% of sponsors** identify enrollment effectiveness and remote monitoring as top challenges.
- Only **17% of sites** prioritize accelerating study start-up, and just **5%** emphasize enrollment and screening improvement.

To bridge this gap, sponsors and CROs must invest in **participant-centric technologies**, such as **patient engagement platforms** and **screening tools**, that enhance site workflows while meeting broader sponsor goals.

SITES



SPONSORS



Only 17%

of sites prioritize accelerating study start-up.

Just 5%

emphasize enrollment and screening improvement.

While 33%

of sponsors identify enrollment effectiveness and remote monitoring as top challenges.

The Digital Shift: Where Sites Lag Behind Sponsors

A striking **74% of sites still use paper** for source data collection

This creates inefficiencies that hinder collaboration with sponsors and CROs.

Sponsors and CROs prioritize **efficiency and scalability**, with many moving away from paper.

38% of sites use eHR systems

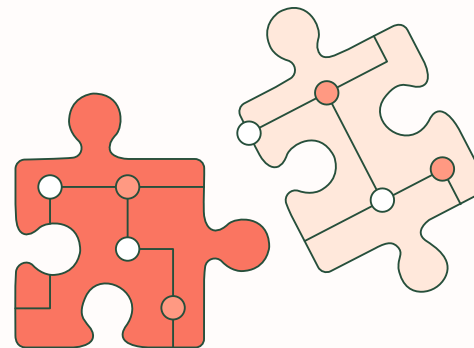
40% of sites rely on site-owned eSource platforms

To close this gap, sponsors should invest in **user-friendly eSource tools** that align with site workflows, helping reduce operational bottlenecks and accelerate trials.

Despite progress, **16% of sites** still rely on paper for shipments and mail, while no sponsors or CROs use these outdated methods.

57% of sites rely on email for document exchange

33% of sponsors rely on email for document exchange, who also use tools like Dropbox and Sharepoint



Challenges with New Technology Adoption

Integration and connectivity remain the biggest hurdles for **sponsors and CROs**.

58% report integration challenges with existing platforms.

58% are concerned with budget constraints.

50% face training and implementation issues



Similarly, sites express concerns about increasing compliance (**81%** rank this as extremely important) and enabling remote access (**66%** prioritize this factor). These shared priorities suggest a need for collaborative solutions that simplify workflows without exceeding budget limits.

Only 17% of sponsors provide dedicated portals

But 37% of sites use them when available

This gap highlights an opportunity for sponsors to deliver secure, purpose-built solutions that meet sites' needs, improve collaboration, and phase out inefficient legacy methods.

Alignment in Technology Adoption: Bridging the Site-Sponsor Divide

77% of sites prefer to use their own platforms

Sites demand technology that supports their workflows:

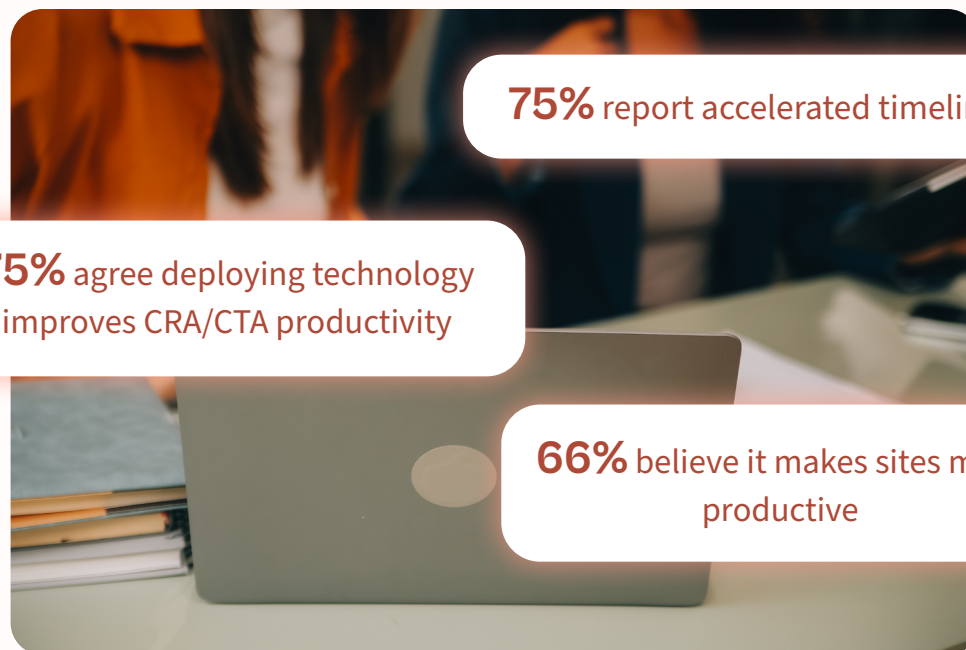
- **45% of sites** rank seamless integration with site-owned software as their top priority.
- **24% of sites** value sponsor-provided tools that enhance operations.

However, **77% of sites** prefer to use their own platforms, such as eRegulatory or eConsent systems, rather than sponsor-mandated solutions.

Sponsors need to meet sites halfway by deploying interoperable tools that integrate into site systems, addressing both site and sponsor needs.

Sponsors' Role in Technology Enablement

Sponsors and CROs recognize the productivity gains from site-facing technology.



75% report accelerated timelines

75% agree deploying technology improves CRA/CTA productivity

66% believe it makes sites more productive

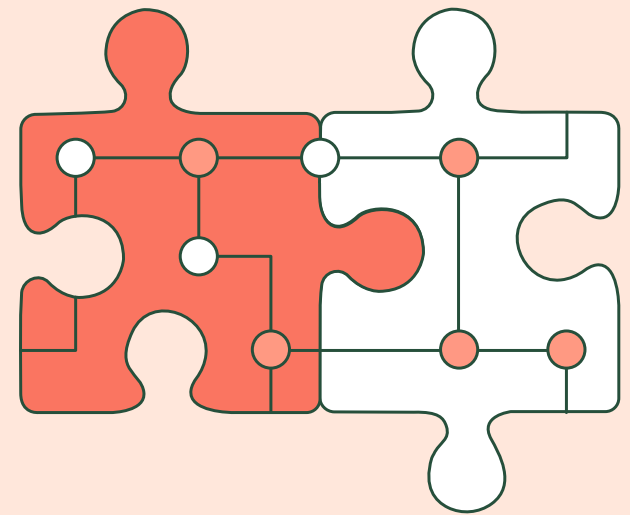
Sponsors providing flexible, purpose-built solutions can strengthen partnerships and create a more efficient trial ecosystem.

Key Takeaways:

Connectivity Drives Site-Sponsor Collaboration

1. **Invest in Participant-Centric Tools:** Sponsors must focus on enrollment and screening technologies that empower sites.
2. **Support Digital Adoption:** Solutions like eSource and eRegulatory systems help address inefficiencies while ensuring compliance.
3. **Foster Interoperability:** Tools that integrate seamlessly into existing site systems are critical to overcoming resistance.
4. **Prioritize Collaboration:** An “available but optional” technology strategy aligns goals, enhances productivity, and strengthens relationships.

By addressing these gaps and focusing on shared objectives, the clinical trial ecosystem can move toward greater efficiency, scalability, and success.





CONCLUSION

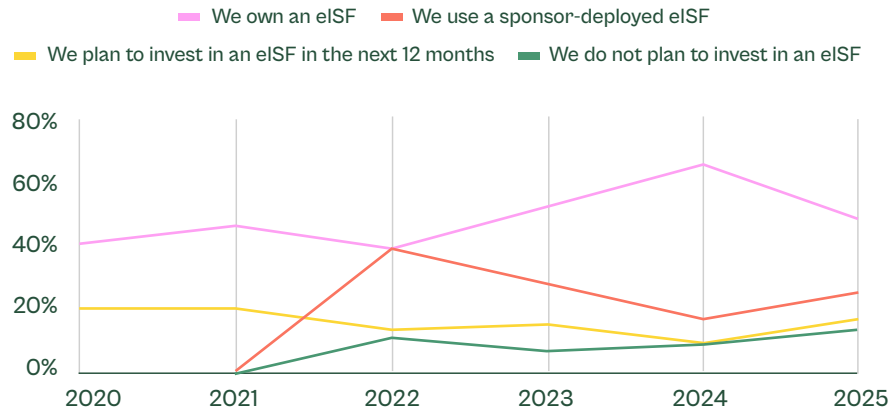
Advancing Collaboration in Clinical Trials

The 2025 State of Technology Enabled Clinical Trials report highlights a pivotal year for the industry, driven by advancements in AI, unified platforms, and participant-centric tools. While progress is evident, challenges remain in aligning site and sponsor priorities and closing gaps in technology adoption.

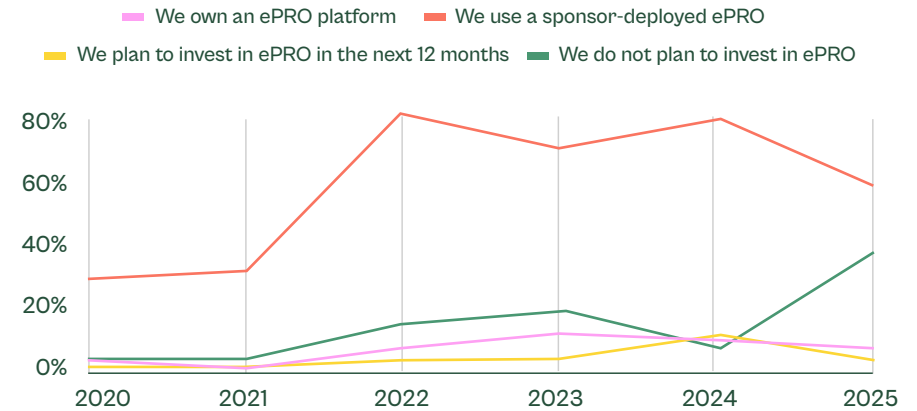
Key Insights:

- 1 Focus on Participant-Centric Solutions**
With **33% of sites** citing enrollment and screening as top challenges, sponsors must prioritize tools like eConsent and patient engagement platforms to enhance site workflows.
- 2 Bridge Gaps Through Interoperability**
Sponsors should deliver technologies that seamlessly integrate with site systems, meeting the **45% of sites** prioritizing interoperability and reducing resistance to adoption.
- 3 Accelerate Digital Transformation**
Address inefficiencies, such as the **74% of sites** still relying on paper for source data collection, with accessible eSource tools to streamline workflows and improve data integrity.
- 4 Leverage AI and Unified Platforms**
Sponsors and CROs can lead by expanding AI adoption (currently used by **50% of sponsors** but only **17% of sites**) and consolidating systems for greater efficiency and collaboration.

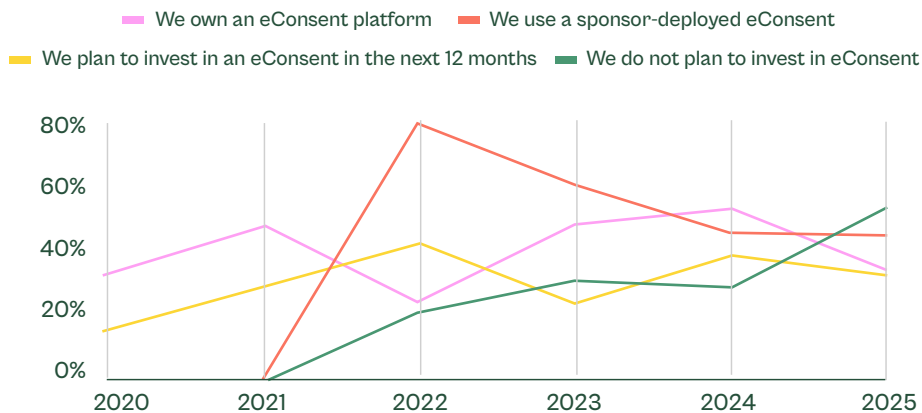
Data & Charts: Site Tech Adoption



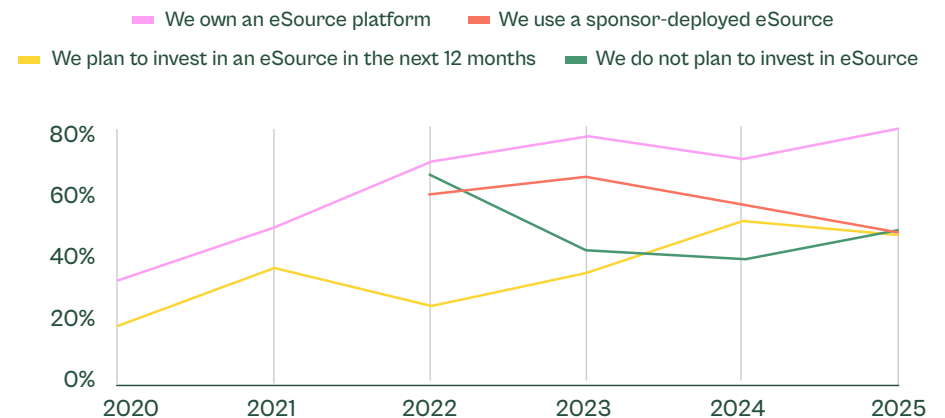
Site eISF Adoption



ePRO Site Adoption

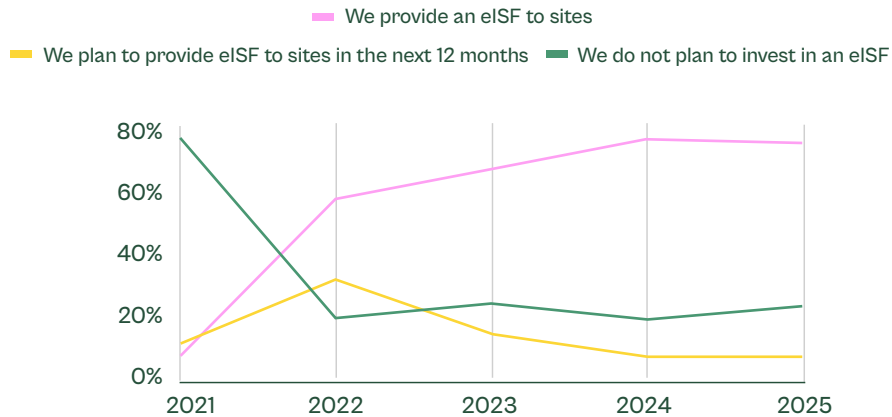


Site eConsent Adoption

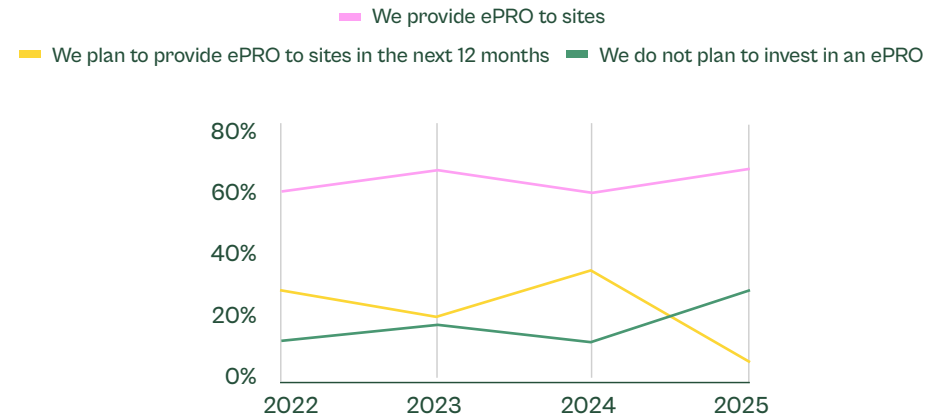


Site eSource Adoption

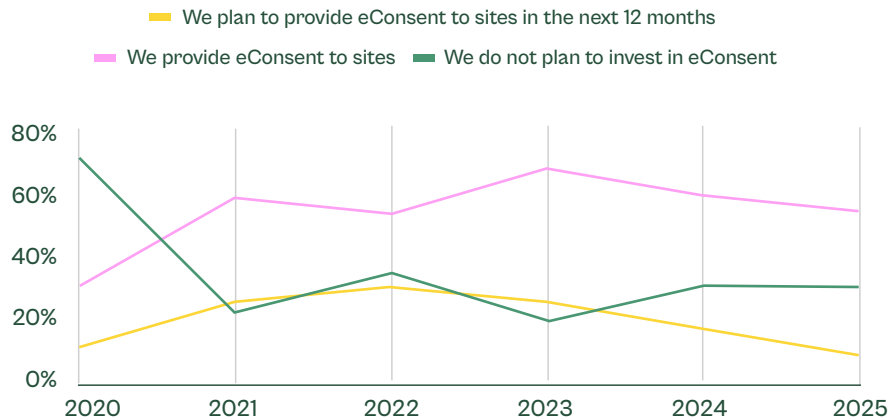
Data & Charts: Sponsor Tech Distribution



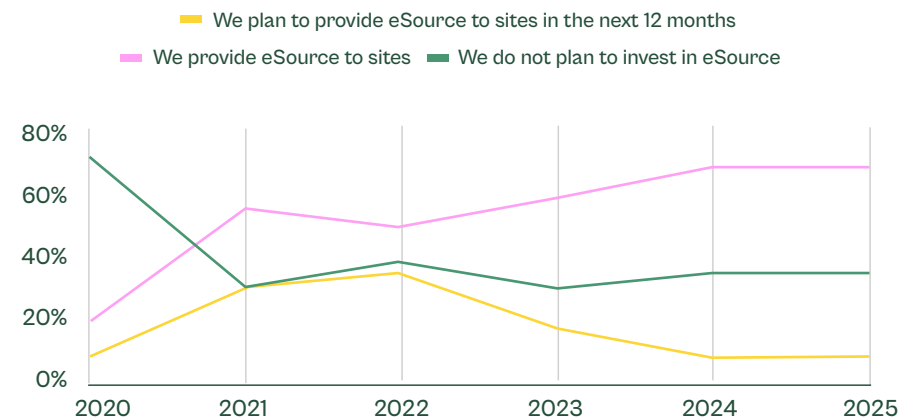
Sponsor eISF Distribution



Sponsor ePRO Distribution



Sponsor eConsent Distribution



Sponsor eSource Distribution



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