PicnicHealth

The Next Generation of Long-Term Follow-Up Studies: PicnicHealth's Tech-Enabled Approach

AUTHORS

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Background

The U.S. Food and Drug Administration (FDA) has established specific requirements and recommendations for long-term follow-up (LTFU) studies in certain therapeutic contexts, with particular emphasis on products that carry inherent risks for delayed adverse events. The FDA's 2020 guidance on gene therapy products mandates LTFU protocols for products with integration activity, genome editing capabilities, prolonged expression profiles, or potential for latency and reactivation, with recommended observation periods extending up to 15 years based on product-specific risk assessments. The FDA further stipulates that risk assessments should be treated as continuous processes, with sponsors required to reassess risks as new data accumulate and revise protocols accordingly, while ensuring that consent for long-term monitoring is obtained prior to trial initiation when LTFU is conducted as a separate protocol.[1]

Current methodologies for LTFU introduce substantial logistical and methodological challenges. Life sciences need better solutions to address participant retention over extended periods, evolving data collection methods, integration of follow-up data with initial trial datasets, and the management of attrition bias that can compromise the validity of long-term findings.[2,3]

PicnicHealth's next generation approach to LTFU studies leverages AI and other advanced technologies to address these persistent challenges. Overseen by an experienced principal investigator (PI) operating a virtual site, PicnicHealth minimizes the need to keep physical sites open for extended periods of time and provides an agile, regulatory-grade platform that meets the FDA's current and future evidence needs for cell and gene therapies.[4]

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The PicnicHealth Approach

Protocol Design

PicnicHealth employs a platform protocol design that consolidates LTFU for multiple pivotal trials into a single framework, enhancing operational efficiency. Patients from diverse feeder trials — whether closed or ongoing — can enroll under this master protocol, minimizing duplication of resources like informed consent forms (ICFs), electronic data capture (EDC) systems, and regulatory submissions.

Patient Consent & Enrollment

PicnicHealth trains trial site staff and ensures a seamless consent and onboarding process either via our 21 CFR Part 11-compliant site portal or via paper forms when needed. Where possible, PicnicHealth recommends obtaining consent and HIPAA authorization simultaneously with the pivotal trial's consent, allowing us to collect comprehensive EHR data for the LTFU study and maximize participant conversion rates from the pivotal trial. If sites have already begun enrolling participants in the pivotal trial, they can initiate the LTFU consent and HIPAA authorization process during a routine site visit at any point in the trial before the participant exits.

When a participant completes the pivotal trial, the LTFU trial seamlessly begins. PicnicHealth leverages our proprietary AI, PicnicAI, to identify and retrieve comprehensive EHR data including clinical notes from all sites of care. This universal EHR data provides the core data needed to follow patients after they complete the pivotal trial, without continued, dedicated site visits. As patients move or change providers, data collection continues. EHR data can be supplemented with additional primary data collection as needed, including laboratory testing and in-person assessments with local healthcare providers (HCPs).

After a pivotal trial site has transitioned all of its patients to the LTFU study, it may close. Minimizing the long-term need for brick-and-mortar sites leads to significant cost savings for sponsors over the lifetime of these extended studies and reduces the burden of continued in-person participation for patients.

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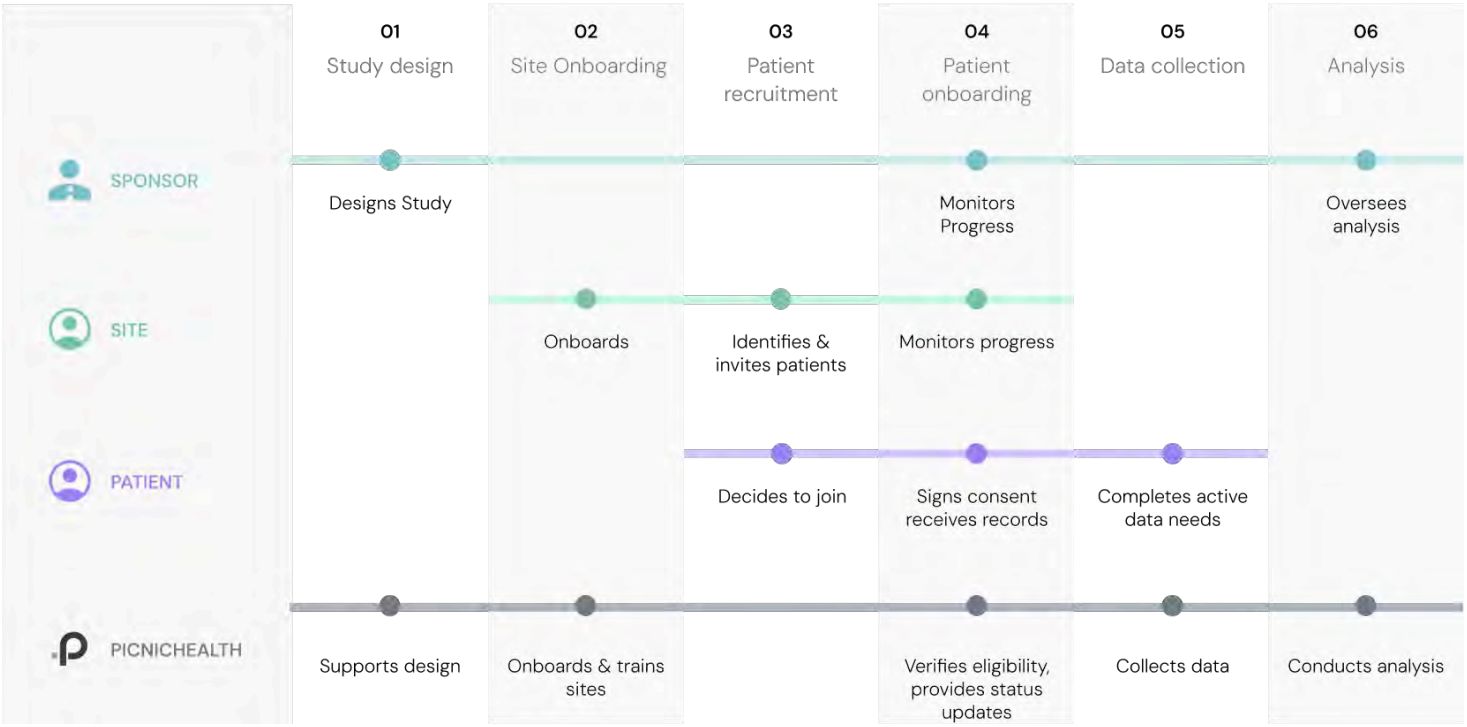
Figure 1: Tech-enabled LTFU study design leveraging PicnicHealth's approach

Figure 2: Roles and responsibilities in PicnicHealth's approach to LTFU



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The Picnic Virtual Site

Once the LTFU study begins, the central PicnicHealth PI assumes comprehensive oversight and utilizes a Virtual Site for direct patient engagement as needed to support study aims. They oversee protocol adherence, safety reporting and other regulatory compliance, and data integrity, while assigning site-level tasks via a formalized oversight plan that details staff training, delegation of responsibilities, and ongoing supervision. The PicnicHealth Virtual Site conducts virtual patient visits and can coordinate additional testing with local HCPs as needed.

AI-Powered Data Collection

Designed to aggregate and structure electronic health record (EHR) data from any U.S. care site, PicnicAI retrieves and abstracts data relevant to the study, addressing long-standing challenges in data fragmentation and accessibility. This method allows for comprehensive ascertainment of key events of interest, like secondary primary malignancies and mortality. Trained on more than 350 million annotations from more than 100,000 care sites, the model can interpret diverse medical documentation formats — including handwritten notes, scanned documents, and structured EHR outputs.[5]

This system constructs a comprehensive, longitudinal patient timeline that serves both clinical care and research needs, effectively creating a "Unified Patient Record." The Unified Patient Record serves as the source for most clinical data entered into relevant case report forms. This curated data source enables the automated detection of critical clinical events, such as adverse events, with 47% greater accuracy than competing medical models and can reconcile complex situations such as conflicting diagnoses.[5] Comprehensive access to EHR data also allows us to capture and report on relevant contextual information about these events. All key events identified by the models then undergo rigorous human confirmation to ensure accuracy. Regular audits ensure complete ascertainment.

PicnicHealth's patient-focused approach ensures data relevance and reliability by accessing data from many sources. This approach leverages:

1. **AI-driven, human-curated event capture and ascertainment:**

- PicnicAI passively retrieves comprehensive medical records from all relevant healthcare encounters across the U.S.
- AI-driven event detection identifies potential adverse events of special interest, which are then confirmed and curated by medically trained reviewers to ensure accuracy.

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2. **Patient surveys that solicit safety events:**

- Patients complete safety event surveys every six months for the first five years post-infusion, then annually thereafter, consistent with FDA guidance if the study term is more than 5 years.[1]
- Surveys elicit reports of serious adverse events of special interest which are submitted to sponsors within 24 hours of awareness.
- Medically trained curators confirm reported events against medical records as they are received and complete the safety CRF and any other pharmacovigilance forms.
- Patients have access to the PicnicHealth application, allowing them to self-report adverse events in real-time, enhancing engagement and providing timely data.

Coordinated Central Assessments

By leveraging our patient app, we collect additional participant information and coordinate with local HCPs as needed — for example, arranging for a central lab to perform additional vector integration testing on a biopsy specimen.

Many LTFU requirements, especially for cell or gene therapies, include regular assessments of vector persistence and immune-related markers as well as biopsy samples from any secondary malignancies identified.[1] Performing these procedures would not be expected during standard medical care for the patients, as minimizing patient burden is essential for optimal completeness.

PicnicHealth's approach allows for inclusion of peripheral blood testing conducted via mobile phlebotomy visits or at local laboratories, with samples sent directly to the sponsor's central lab for analysis. Lab results are transmitted from the central lab to PicnicHealth for integration into the study dataset. Mobile phlebotomy appointments are scheduled by patients through the PicnicHealth app, where patients can also complete safety-related surveys, access their medical records, and receive compensation for study participation. This centralized experience enhances patient experience and compliance.

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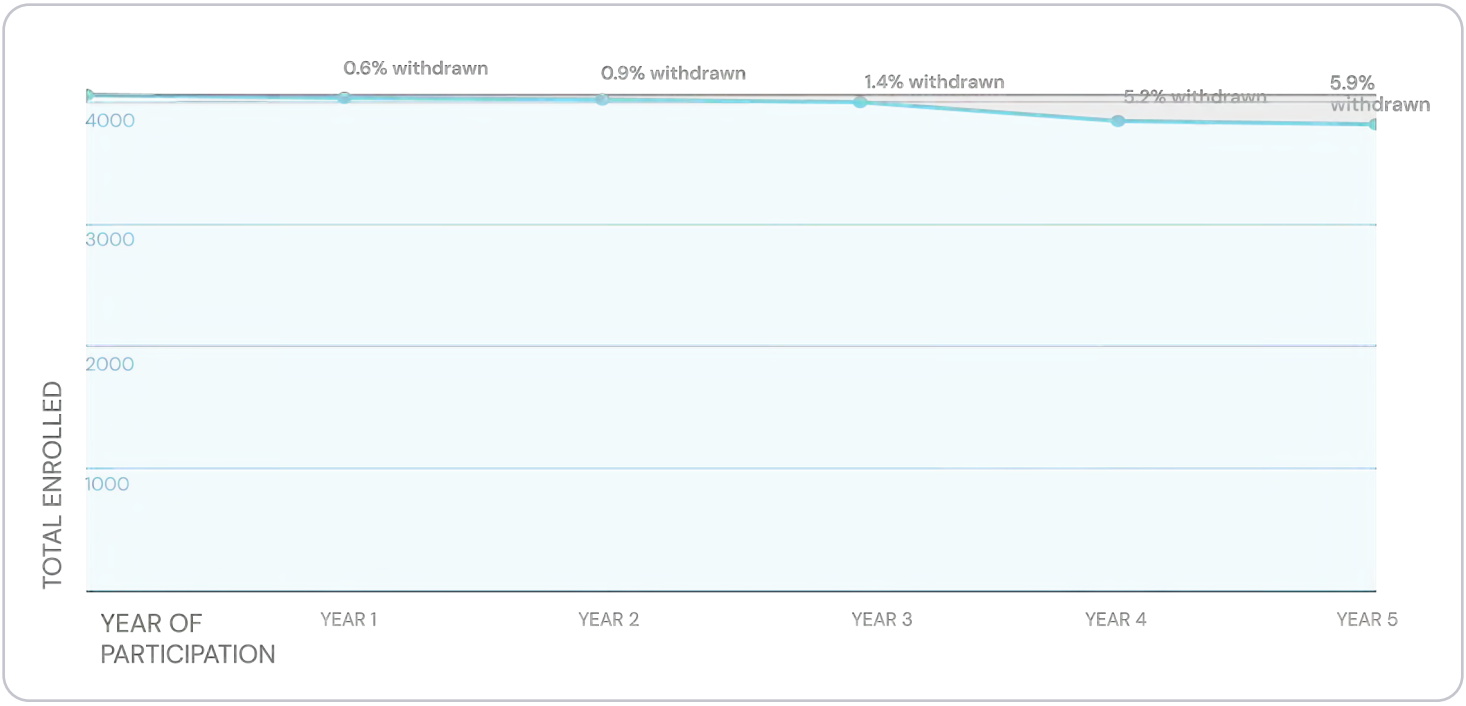
Patient Engagement & Retention

As patients transition into the PicnicHealth study, they gain access to a curated, user-friendly view of all of their medical records in the PicnicHealth app. An integrated AI assistant helps patients navigate their own care and complete study activities. Even as patients move from one site of care or provider to another, we continue to seamlessly capture their complete care journey, providing the foundational source data needed to ensure comprehensive and accurate capture of key study variables and events.

Using our app, patients complete study activities, including safety event surveys and, if desired, other patient-reported outcome instruments, providing real-world feedback in a low-burden, accessible manner. This approach enhances patient engagement and retention, mitigating the risk of loss to follow-up.

Figure 2: Retention of all patients who have been using the PicnicHealth platform for at least 5 years



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Conclusion

Traditional LTFU models face operational challenges including site burdens like staff turnover and resource constraints, patient attrition due to travel demands, fragmented data collection across closed sites, and difficulties merging longitudinal datasets from disparate sources.

PicnicHealth's AI-powered approach addresses these limitations by leveraging:

- Access to comprehensive EHR data including full text notes/reports and imaging through the Unified Patient Record
- Continuous data collection; as patients change systems or providers, collection continues
- Best-in-class AI with human-in-the-loop oversight
- A flexible platform built to adapt to tomorrow's research questions
- Virtual visits when needed to support specific aims
- Expert central PI oversight to maintain scientific rigor and regulatory compliance
- Full data traceability, source data review, and source data verification
- The PicnicHealth application to provide patient value, leading to better study engagement
- Reduced patient and site burden
- Reduced costs throughout the lifetime of the study

Learn more about how a technology-enabled approach drives success in long-term follow-up studies

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How PicnicHealth Fulfills FDA Requirements

FDA Requirements	PicnicHealth Solution
Capture delayed adverse events relevant to vector and gene therapy • Malignancies • Persistent infections • Unexpected illness and hospitalization	AI-driven event detection identifies potential adverse events of special interest which are then confirmed and curated by Virtual Site staff to ensure accuracy.
Perform assessment of causality including collection of tissue samples or blood samples	PicnicAI surfaces events of interest which are reviewed for causality by clinical reviewers. PicnicHealth's approach includes peripheral blood testing conducted via mobile phlebotomy visits, with samples sent directly to the sponsor's central lab for analysis. Mobile phlebotomy appointments are scheduled by patients through the PicnicHealth application.
Include outreach to other treating HCPs who are not investigators or sub-investigators	PicnicAI aggregates and structures health record data from any U.S. care site, streamlining complete data collection.
Test results for persistent vector sequences	We utilize a combination of retrieving and abstracting standard of care medical tests and mobile phlebotomy on the FDA's prescribed schedule, as necessary.
For years 5+, contact patient at minimum once per year (telephone or written questionnaire allowable) • Encourage patients to proactively report events	The app includes a mechanism for patients to proactively report events as well as yearly (or more frequent) outreach soliciting information on events of interest.
Scheduled physical evaluations once per year during the first five years	Scheduled remote assessments using the PicnicHealth app and, if necessary, centralized assessments using mobile phlebotomy.
Follow patients for 5-15 years depending on vector	Patient engagement in the app results in 98% year-over-year retention rates.

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