Trially

Why Clinical Trial Recruitment Is the Most Valuable Starting Point for AI



Most clinical trials don't fail because of weak science. They fail because the right patients aren't found and enrolled in time. On average, 80% of studies don't meet their enrollment target. Failure to reach enrolment goals on time can result in lost revenue in the amount of millions per day of delay. Yikes.

As protocols get more complex, the problem gets even messier. Case in point: a 2023 study found eligibility criteria content in cancer studies increased a whopping 95% from 2008 to 2018. Every extra criteria point narrows the pool, making it harder to spot the right patients.

Most sites are still using manual processes to recruit patients. All that manual chart review and cold calling candidates eats up hundreds of hours. According to Deloitte, patient recruitment is the biggest cost driver of clinical trials, accounting for 32% of overall costs.

Meanwhile, the clock is ticking. Every missed match delays evidence and scientific progress. There's a human cost as patients miss trial opportunities because they don't know they exist. And there's a financial loss, as sites miss revenue because qualified candidates remain invisible to the naked eye.

Challenges

Finding patients

Coordinators juggle EHRs, schedules, and leads, but surface-level matches are often mirages. Exclusion criteria lurk in deep clinical notes, while actual eligibility indicators play hide-and-seek. It's the ultimate scavenger hunt, and the patient records are currently winning.

Contacting patients

You forked over big bucks to bring them all in. Now you have a database full of past ad leads, screen fails, and participants from closed studies. This could also be a potential gold mine. But a recruiter can only dial through so many in a day, so the bulk of the list sits untouched.

All of this happens while sponsors watch budgets climb as timelines stretch, and have to pull studies that fail to recruit fast enough.

And yet, the right patients may be available, interested, and eligible. They're just not being found or contacted.

That's exactly why patient recruitment is the best first use case for using AI in clinical trials. AI recruitment tools can reduce repetitive workloads tied to chart review, candidate matching, prescreening, engagement, and follow-up—so research teams can spend more time on the work that requires their expertise.

> "Every missed match delays evidence and progress."

Why modern protocols make recruitment harder

Manual chart review is a linear process trying to keep up with modern protocols. Spoiler: it can't. Staff often don't have the bandwidth to dig deep enough into charts to find the elusive patient who meets complex protocol criteria. In NCI-affiliated trials, failure to enroll patients rose from 11.8% to 29.4% as eligibility criteria became more complex.

The more complex the protocol, the more likely teams are to spend time on patients who may look like a plausible match but don't actually qualify. This is often because EHR reports identify only coarse matches based on structural data—like diagnoses, ages, or medications—which is often outdated and less detail-rich than physician notes (which live in unstructured data).

How screen fails weigh down study progress

A Tufts CSDD analysis of 76 global Phase II–III trials found an average screen-failure rate of 36.3% across studies completed from 2016–2019. Screen fails waste staff time, frustrate patients, and weaken sponsor confidence. As sites get desperate to find patients for a study, they may widen their search criteria for leads. But this often creates a negative feedback loop: more leads >> more ineligible candidates >> higher screen failure rate, increasing frustration.

> “Manual chart review is a linear process that can’t keep up with modern protocols.”

Why recruitment is a safe and rewarding way to introduce Clinical AI

Before bringing AI tools into clinical trials, each tool needs to be assessed against strict criteria to ensure that it’s safe, compliant, and appropriate for the intended workflow. This is especially important given concerns around PHI protection, patient engagement, and IRB expectations.

Recruitment is a controlled use case—with a human in the lead.

Recruitment is the most valuable use case to deploy LLMs in clinical research. Many CRCs are doing admin work that does not bring them joy. This is exactly the kind of work where AI excels: automating unfulfilling, data-rich tasks and freeing up CRCs for more meaningful work.

AI tools can support clearly defined workflow tasks such as:

→ Identifying potential matches

→ Surfacing relevant evidence

→ Stack-ranking candidates

→ Engaging and following up with candidates

Human experts can remain in the lead for review, consent, clinical judgment, and enrollment decisions, while AI handles the initial heavy lifting of reading protocol criteria, searching clinical data, flagging likely candidates, and prescreening them.

That approach fits with the FDA’s draft guidance, which stresses the need to evaluate AI within a defined context of use and apply a risk-based credibility framework. It also aligns with FDA/EMA’s Guiding Principles of Good AI Practice in Drug Development that emphasize human-centric design, a risk-based approach, clear context of use, data governance, performance assessment, and lifecycle management.

Recruitment delivers tangible ROI

Patient recruitment is a strong early AI use case because outcomes are easy to measure.

Clinical operations teams can easily track to what extent AI:

→ Reduces chart review time

→ Accelerates eligibility assessment

→ Decreases screen failures

→ Improves match quality

→ Converts more patients to booked calls

→ Contributes to participant enrollment

For example, in a 2025 randomized clinical trial published in JAMA, AI-assisted prescreening produced faster eligibility determination than manual screening and resulted in 35 enrollments compared with 19 in the manual group.

In a user study reported in Nature Communications, TrialGPT reduced screening time by 42.6% and outperformed the best competing models by 43.8% in ranking and excluding trials.

Additionally, a recent Cleveland Clinic study confirms that AI-assisted patient matching is helping to close the diversity gap. Researchers used AI to screen patients for a rare cardiac trial and found 30 eligible people in a week compared to just 14 through routine care. But the most striking finding was that of the 30 patients AI identified, 11 were Black. Traditional recruitment tactics found only one. Crazy, right? When you stop relying on traditional recruitment methods (like who knows the right doctors), it can yield some pretty transformative results.

How patient recruitment fits the criteria for AI tools in clinical trials

The question to ask	Why it's important	How patient recruitment AI tools fit the criteria
Is there a clear context of use?	There needs to be clear boundaries of where the AI will be used, what task(s) it supports, and what output it produces.	Patient recruitment tools have a clear role: they help identify, rank, prescreen, and engage potential participants.
Is there sufficient human oversight?	AI should never replace clinical judgment in eligibility review, consent, or enrollment decisions.	Clinical and research staff remain responsible for reviewing matches, confirming eligibility, obtaining consent, and making enrollment decisions.
Can it be documented and audited?	Teams need a clear record of how the tool was used, what criteria were evaluated, and what evidence informed each output.	Recruitment tools create measurable outputs that can be documented and audited, including evaluated protocol criteria, chart evidence, patient prioritization, outreach activity, and booking outcomes.
Are there privacy controls?	Recruitment tools handle PHI, so data protection must be built into the workflow from the start.	The system can use protected instances, encryption, access controls, and restrictions that prevent patient data from being used for external model training.
Can performance be monitored?	AI should be assessed over time to confirm that it is improving recruitment quality, efficiency, and patient flow.	Performance is easier to monitor than in many other AI use cases because teams can track outcomes (e.g., chart review time, screen-fail rate, matching accuracy, booked calls, and enrollment lift).

AI tools in clinical trials need



Context of use



Human oversight



Documentation



Auditability



Privacy controls



Performance monitoring



What holds back AI adoption in clinical trials?

AI adoption in clinical trials is often dragged down by worries about regulatory oversight, data integrity, and trust.

Stakeholders are often understandably concerned about how protected health information will be handled, whether the technology can produce unreliable or "hallucinated" outputs, and whether sponsors, compliance teams, and IRBs will accept AI-supported workflows.

There are also operational and human concerns. Sites may worry that AI will disrupt established workflows, create extra review steps, or change how coordinators interact with patients.

The bottom line is this: clinical trial leaders want AI that genuinely improves operational efficiency without adding risk. That's exactly why we believe that when introducing AI tools in clinical trial workflows, it's best to avoid using them for autonomous clinical decisions that carry higher risk and ambiguity.

That's why it's wise to begin with supervised operational workflows where the scope is clear, the risks can be managed, and both quality and ROI can be measured directly. Patient recruitment is a perfect use case for AI tools within clinical trials.

DYK? Trially patient engagement agents do not enroll patients. But they are proven to help multiply patient enrollment.

The task fits the technology

AI is a good fit for patient recruitment because it can:

→ Read dense protocols and convert inclusion/exclusion criteria into usable screening logic.

→ Search structured and unstructured clinical data faster - and more accurately- than humans.

→ Rank candidates and explain why a patient appears eligible or ineligible.

→ Pre-screen dormant patients in population to understand interest in research

→ Use highly targeted ads to identify the right candidates

→ Schedule appointments based on live calendar sync

→ Use voice, text and email agents to reach out to patients at the point of interest

How AI solves the recruitment bottleneck

Step 1. Match more eligible patients faster

The manual way: In the traditional patient recruitment model, coordinators often review upcoming clinic schedules and read charts to identify who might be eligible for a study. Yikes. This "buckshot" approach can surface possible candidates based on ICD-10 codes, but it relies on limited time, visible data, and broad indicators. It also leads to poor-fit patients and higher screen-fail rates.

How AI can help

AI changes the starting point. Instead of asking coordinators to manually comb through every chart like it's 2009, AI can evaluate patients against protocol criteria using both structured and unstructured clinical data sources. A good AI patient recruitment tool can evaluate patients against protocol criteria across any clinical data source (e.g., EHR, CTMS, CRM, or any list).

AI tools can identify eligible candidates by analyzing both structured and unstructured data, including:

- → Physician Notes (free text)
- → PDFs
- → Histories
- → Referrals
- → Labs
- → Medications
- → Conditions
- → Scanned documents
- → Prior visit records

An AI patient recruitment tool can then produce prioritized candidate lists, so CRCs can start by assessing the patients most likely to qualify. This matters because much of the evidence needed to assess eligibility does not live in a neat, tidy, structured field. Of course it doesn't.

For example, a diagnosis code or medication list may only tell part of the story. A make-or-break detail may be buried in an old note, a referral, a lab result, or a scanned document that a coordinator may not have time to hunt down manually.

Surfacing hard-to-find patients

In one recent example of a site using Trially Match to recruit patients, AI surfaced a cardiovascular candidate by reading notes from a decade ago that a CRC said they likely would not have reviewed manually. At another site, Trially Match identified possible matches by inferring likely EGFR eligibility from referral context, even when the direct lab result was not available in the EHR.

> "They literally take the protocol and drag it into there, and then AI does the work to get the matches... the ease of it, at least from my team's aspect, they certainly like it... after like a couple months, then it's like, wow, it's hashtag#lifechanging... it saves a lot of time."

Director of Clinical Trials at Top AMC

In one Trially study, we were matching patients to a trial with a deceptively simple inclusion criterion: worsening dyspnea AND one sign of fluid overload, like edema. Sounds straightforward.

But the answer wasn't sitting neatly in a structured field—it was buried 4,627 words deep in a physician's note: ONE mention of clinically relevant edema. That one detail helped determine whether the patient matched. And this wasn't a one-off. In fact, all 37 matched patients had the key inclusion criteria hidden in unstructured notes.

Ranking the highest probability candidates

Coordinators can review AI-ranked, highest-probability candidates instead of starting from scratch. That gives research teams a faster, more focused way to move from protocol to patient, while keeping human review at the center of the enrollment process. Teams can then start with the patients most likely to qualify instead of manually combing through every chart.

What to know about Trially Match

Trially Match is a HIPAA-compliant AI matching technology that helps clinical trial teams unlock medical data and identify qualified patients faster. It plugs into the systems sites already use—including EMRs, CTMSs, CRMs, and uploaded PDFs—so teams can search across structured and unstructured data without rebuilding their recruitment workflow. Trially Match turns AI into a decision-support layer instead of an opaque black box.

95% matching accuracy	**91%** less prescreening time	**73%** fewer screen fails	**2–6x** enrollment lift
5.7 M patients on platform	**1.4B** clinical data points	**16+** live EHR connections	**154+** protocols

> "The implementation of Trially has dramatically reduced the workload for site coordinators. Manual chart review hours have decreased over 90% from 36 hours to just 2.5 hours per month."

VP Development at NextStage Clinical Research

Step 2. Engage qualified candidates before it's too late

The manual way: Digital recruitment can generate meaningful patient interest. But interest doesn't equal enrollment.

In CISCRP's 2025 Perceptions & Insights Study, about 1 in 4 clinical research participants learned about their study online. A 2026 digital recruitment study also showed how quickly campaigns can create volume, generating 4,829 clicks across seven channels and outperforming clinical-trial ad benchmarks. But that interest can fade fast.

In the traditional patient engagement model, interested candidates find out about a study through ads, referrals, EHR lists, or clinic conversations. They then wait for a coordinator to follow up by phone or email. The result is a leaky recruitment funnel where patient intent fades, and qualified candidates may never reach a screening conversation.

In other words, the patient raised their hand. The system just took too long to wave back.

How one site outpaced major AMCs with 6x enrollment in just 4 months

Alleviant had a problem. They were running a randomized, double-blinded, sham-controlled study evaluating the ALV1 system in patients with HFpEF. But after 18 months, they had only enrolled a single patient. Facing complex enrollment criteria and a looming deadline, they used Trially AI Match to secure six qualified enrollments in only four months.

By bringing Trially AI Match into their patient recruitment process, the team outpaced major academic medical centers, boosted revenue, and reached historically underrepresented populations.

The average B2B response time is 42 hours. Only 0.1% of leads get contacted within 5 minutes. Yet we see an 8x conversion drop after >5 minutes of delay. And, we know 78% of buyers go with the first company to respond.

How AI can help: Rapid, personalized outreach converts a passive lead into a real screening opportunity. AI-assisted engagement can help teams respond quickly, prescreen candidates earlier, and move screened candidates towards the next step before their interest cools.

AI-driven outreach can mirror responsible human workflows by:

- → Using IRB-approved scripts (where appropriate)
- → Maintaining rigorous audit trails
- → Documenting outreach activity
- → Keeping the interaction clinically consistent and patient-safe.

By using agentic support for prescreening and scheduling, sites can reduce the time coordinators spend chasing low-fit candidates and increase the likelihood that qualified, interested patients are booked for the next step. Instead of asking CRCs to manually work every lead from the top of the funnel, AI can help filter, qualify, and schedule candidates earlier. That protects coordinator capacity while improving the patient experience.

Converting Dormant Patients into a Trial-Ready Population

CNS Healthcare needed to reactivate a dormant patient population for future research opportunities. The team engaged Trially Connect to help reach, engage, and convert patients in a compliant, measurable way.

Trially configured Margo around CNS Healthcare's operational needs, including local caller ID, regional phone numbers, call attempt logic, time-based outreach rules, call flow detection, spam management, site-specific scheduling, and HIPAA/IRB requirements. Margo was set up to make multiple attempts per candidate, rotate outreach across different time windows, and adapt to each location's business hours and time zone.

The results showed strong movement across the funnel: a 37% call pickup rate, 24% of candidates interested in research, and 10% of called candidates scheduled to speak with a physician. For CNS Healthcare, Trially Connect turned a dormant patient population into an active recruitment channel while reducing the site team's follow-up burden.

What to know about Trially Connect, AKA "Margo"

Trially Connect is an IRB-approved clinical research agent named Margo who engages, prescreens, and converts candidates into booked appointments.

Margo reaches out within 5 minutes to convert qualified candidates who come from EHR, Ads, Lists, CRM, or CTMS. Margo can engage candidates to build a trial-ready population or prescreen them directly against your protocol criteria. It offers bilingual English and Spanish capability and has an adjustable tone based on different patient populations, regions, therapeutic areas, and company practices

It can support text, email, and voice outreach depending on the nature of the engagement.

For more established patient populations, lower-friction outreach such as text or email may feel more appropriate and less intrusive to the patient

For high-intent ad leads, immediate voice, chat, or text outreach is often more effective because the patient has already indicated interest.

Spam calls are peaking right now, and people naturally assumed it would hurt Margo's performance, but it hasn't. Margo recently called 16,449 patients. Only 9% picked up—but the patients who did pick up actually engaged:

- → **542 were interested in the trial**
- → **471 were sent a booking link to meet with the physician**
- → **That means 87% of interested candidates moved forward**

Step 3. Improve site economics

The manual way

Traditional recruitment can turn highly trained research teams into very expensive list scrubbers. Coordinators spend hours reviewing charts, calling low-fit candidates, chasing leads that go nowhere, and managing screen failures.

When enrollment drags on, sites can miss targets, lose sponsor confidence, or even see studies shut down before they have a chance to perform. That means lost revenue, wasted startup effort, and another round of “we need to improve feasibility” conversations.

How AI can help

Recruitment AI has direct ROI. When you can handle more patients with the same staff and keep coordinators from burning out on terrible systems, **the ROI is up to 10x.**

Improve profit margin (revenue up, costs down)

Every enrolled patient supports cash flow, and every study that hits its enrollment targets strengthens the site’s sponsor relationships. Trially-supported workflows have shown that a single CRC + Trially can outpace much larger manual teams. This is exactly the kind of operational math sites and sponsors pay attention to. Less manual drag, more qualified candidates, and faster enrollment.

Optimize site budget

When sites can show that recruitment AI improves enrollment performance, sponsors may be willing to fund the tool directly as part of the study budget. That creates a strong upside for sites: they get the efficiency gains, the enrollment lift, and the operational benefits without necessarily carrying the full cost themselves.
Not a bad deal.

Reduce employee churn

CRCs do not leave the industry because they dislike patients. They leave because broken systems make the work harder than it needs to be. When AI takes on repetitive chart review, candidate triage, and early prescreening support, coordinators can spend more time on patient conversations, consent, relationship-building, and study execution.

Trially’s impact is immediately visible in the workflow by:

- → **Chart review time saved**
- → **Screen failures reduced**
- → **Patients enrolled**
- → **Revenue captured**

How CTR Turned Feasibility Into a Revenue Engine

ClinTrial Research had the patient population. What they needed was a faster way to prove it. CTR wanted real patient counts, tied to real protocol criteria, across a population of roughly 1 million patients. With Trially AI Feasibility running across six core sites, the team could query EMR data in seconds and walk into sponsor conversations with numbers, not guesses.

That changed the economics fast. CTR used Trially to support 30 sponsor bids with exact patient counts, helping win approximately $4M in awarded study revenue. They also reduced screen failure rates by 50%, brought most studies to roughly 20% screen failure or less, and spent $0 on external advertising by relying on EMR data and provider referrals.

In other words: no more “guess and check” feasibility, fewer wasted screens, no ad spend, and a stronger case for why sponsors should say yes.

“Trially ROI is a no-brainer! They plugged into our site’s EHR and instantly identified high-quality patient matches. It not only saved us a ton of time on chart reviews, but reduced screen failures and became our #1 recruitment source at the site.”

VP of Development at a Clinical Site Network



The benefits of AI in patient recruitment are too big to ignore

Sticking with traditional recruitment methods is a risk. When teams rely on manual methods, qualified patients can remain undiscovered while studies run out of time.

Meanwhile, AI recruitment tools give sites and sponsors a faster way to find the right patients. Its outcomes can be measured directly through time saved, reduced screen failures, booked calls, and enrolled patients. Most importantly, AI can accelerate the work teams are already doing—without requiring clinical teams to hand over judgment or enrollment decisions.

Ready to multiply enrollment?
Book a call now.