AI SITE TWINS

The next evolution in clinical trial site selection, feasibility, and activation

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INTRODUCTION

The clinical research community stands at an inflection point where artificial intelligence is not just augmenting traditional processes, it's fundamentally reimagining them.

For years the majority of the discussion has been focused on AI's potential to accelerate drug development lifecycle by making the process faster, more accurate, and more personalized.

Digital twins are a key part of this movement, acting as virtual models that can simulate a wide range of scenarios and simulate patient populations.

By creating virtual replicas of patients, diseases, and even entire clinical environments, digital twins are providing powerful predictive capabilities that enhance efficiency, reduce costs, and improve patient outcomes.

Now a new frontier in digital twin technology is emerging that promises to transform one of the most critical and challenging aspects of clinical research: site selection and feasibility processes.

Enter **AI Site Twins.** Sophisticated virtual replicas of clinical research sites that represent the next evolutionary leap beyond traditional digital twin technology, offering unprecedented insights into clinical research sites worldwide.

THE PITFALLS OF TRADITIONAL SITE SELECTION & FEASIBILITY PROCESSES

Clinical trial site selection and feasibility timelines can make or break the success of a study success before it even begins.

The average cost to open an investigator site is estimated at $50,000 – a price point compounding quickly when onboarding multiple sites. When you consider around 11% of sites fail to even accrue one participant on a given study, the stakes couldn't be higher.

Traditional approaches to site selection and feasibility are outdated, inefficient and expensive. Relying on stale datasets, historical averages, manual feasibility surveys, and anecdotal evidence often leads to costly delays, missed enrollment targets, and unforeseen operational hurdles. Each underperforming site isn't just a setback; it's a drain on your budget and a drag on your critical timelines.

$50,000

Average cost to activate a single clinical research site on a Phase III study.

80%

Percentage of trials that fail to meet enrollment timelines.

1 in 3

Phase III studies that are terminated due to poor enrollment.

37%

Percentage of research sites that do not meet enrollment goals.

11%

Percentage of research sites that fail to enroll a single patient.

A SYSTEM UNDER STRAIN

The path to finding the right clinical research sites is fraught with inefficiency. Expensive, manual processes result in critical failure points that delay trials, inflate budgets, and ultimately hinder medical progress.

MANUAL, RESOURCE INTENSIVE PROCESSES

Significant time and resources are dedicated to researching, evaluating, sending, tracking, reminding, and collating responses from countless sites. This creates significant delays in study startup timelines and increases operational costs.

STATIC, STALE & SCATTERED DATA DEPENDENCIES

Stakeholders struggle with scattered, incomplete, or outdated information about potential sites. Data may exist across multiple databases, CROs, and internal systems without proper integration, making comprehensive site assessment difficult.

NO REAL-TIME VISIBILITY INTO PATIENT POPULATION

Sites often overestimate their patient recruitment capabilities due to outdated patient databases or lack of real-time access to eligible patient populations, leading to enrollment challenges and study delays.

BLIND SPOTS & DECISIONS MADE IN THE DARK

Decisions based on historical performance may miss current capacity constraints or result in selecting sites that are already over-committed with competing trials, leading to a high rate of zero enrollers.

GEOGRAPHIC & THERAPEUTIC AREA LIMITATIONS

Traditional networks may have gaps in certain geographic regions or therapeutic specialties, limiting access to diverse patient populations and specialized expertise.

REGULATORY & COMPLIANCE COMPLEXITY

Navigating varying regulatory requirements, IRB processes, and compliance standards across different sites and regions adds complexity and potential delays to site activation.

SITE SELECTION TIME TRAP: WHERE WEEKS TURN INTO MONTHS

The manual nature of traditional site selection and feasibility creates cascading delays throughout the clinical trial timeline.

01

ASSESS PROTOCOL NEEDS

Broad assessment of the research program, study protocol, and potential regions to ensure scientific and logistical viability.

02

DEVELOP INITIAL SITE LIST

Using various databases, site networks, and investigator registries in addition to consulting with recommendations from consultants and SME's to create a list of potential sites.

03

DISTRIBUTE AND COLLECT COMPLETED CDA

Before a potential site can review the full study protocol, they first need to sign a Confidential Disclosure Agreement (CDA) or Non-Disclosure Agreement (NDA).

04

ISSUE PRE-SELECTION SURVEY AND FEASIBILITY ASSESSMENTS

The approved feasibility questionnaire is distributed to selected sites in addition to a full protocol or protocol synopsis.

05

COLLECT RESPONSES

Resources are dedicated to following up with sites on a regular basis to ensure submission of feasibility questionnaire. Manually collating and evaluating responses.

06

REVIEW AND EVALUATE FEASIBILITY

Rigorous evaluation of shortlisted sites, followed by arduous budget and contract negotiations.

07

FINAL QUALIFICATION AND ACTIVATION OF SITES

On-site visits (SQV) to verify capabilities and final training (SIV) to prepare the site team for enrollment.

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BEYOND TRADITIONAL DIGITAL TWINS: THE AI ADVANTAGE

Digital twins are virtual replicas of physical objects, processes, or systems that are designed to mirror their physical counterparts.

They have served industries well as static or semi-dynamic virtual representations of physical assets, systems, or processes.

While digital twin technology utilizes machine learning algorithms to process the large quantities of sensor data and identify data patterns, their capabilities are fundamentally limited by their reactive nature and dependence on predefined parameters.

AI Site Twins transcend the limitations of typical digital twin technology by incorporating advanced artificial intelligence that analyzes millions of data points to give you a complete, unbiased view of a site's true potential.

INGEST DIVERSE & PREVIOUSLY UNMINEABLE DATA

They can synthesize and analyze multiple data types, from structured databases to unstructured text, images, and even handwritten documents.

LEARN & ADAPT CONTINUOUSLY

Unlike static digital replicas, AI Site Twins evolve in real-time, incorporating new data streams and learning from patterns to improve their predictive accuracy.

MAKE AUTONOMOUS RECOMMENDATIONS

AI Site Twins can independently identify opportunities, flag risks, and suggest optimal strategies without human intervention.

GENERATE PREDICTIVE INSIGHTS

Rather than simply mirroring current states, they anticipate future scenarios and outcomes based on complex variable interactions.

AI SITE TWINS: A PARADIGM SHIFT

Imagine having access to a comprehensive, data derived replica of every clinical research site around the globe.

AI Site Twins represent more than a technological advancement—they embody a fundamental shift toward data-driven, predictive clinical research operations. By creating comprehensive virtual replicas of the global clinical research ecosystem, we're enabling sponsors and CROs to make more informed decisions, reduce trial risks, and ultimately bring life-changing therapies to patients faster.

This technology extends beyond individual trials to provide strategic intelligence for portfolio planning, therapeutic area expansion, and long-term site relationship management. As these AI Site Twins continuously learn and evolve, they become increasingly sophisticated in their ability to predict success, identify opportunities, and optimize clinical research operations at every level.

In an industry where the difference between success and failure can mean years of additional development time and millions in additional costs, AI Site Twins aren't just the next step in digital twin evolution—they're the key to unlocking more efficient, more predictable, and ultimately more successful clinical trials.

ANATOMY OF AN AI SITE TWIN

HISTORICAL SITE PERFORMANCE
Actual vs projected enrollment, previous enrollment timelines, patient retention rates

THERAPEUTIC AREA EXPERTISE
Historical experience and success in relevant indications, phases and treatments

INVESTIGATOR EXPERTISE
Previous trial experience, publications and grants, presentation history and research interest areas

STAFFING & CERTIFICATION
Current and projected staffing availability, capabilities, training level, and certification status

FACILITIES & EQUIPMENT
Facilities, equipment, technology infrastructure and proximity to specialized services

PATIENT POPULATION
Demographics of patient database, disease prevalence, eligibility criteria, diversity benchmarks, and lab data

REGULATORY LANDSCAPE
Country specific and regional regulatory requirements, approval timelines

REGULATORY HISTORY
Timelines and results of regulatory submissions, inspection and audit outcomes

PUBLIC HEALTH DATA
Local and regional epidemiology, socioeconomic indicators, healthcare infrastructure, and geospatial data

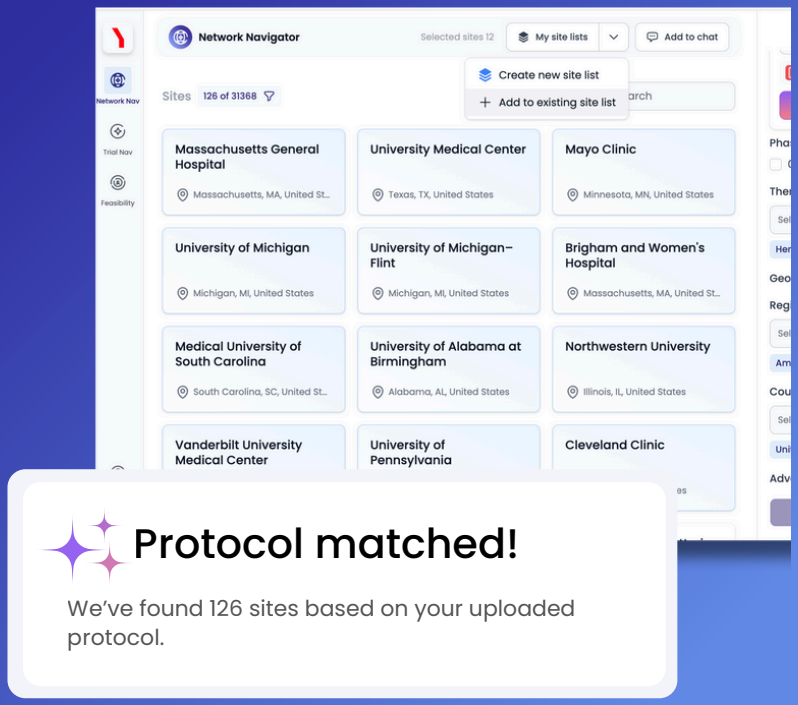
COMPETITIVE LANDSCAPE
Analysis of ongoing and planned trials, projected enrollment competition, and market saturation indicators.

AI SITE TWIN APPLICATIONS

INTELLIGENT SITE SELECTION

AI Site Twins eliminate the guesswork from site selection by providing sponsors with dynamic, predictive models of site performance.

Instead of relying on outdated, disparate databases, static questionnaires and subjective experiences, sponsors and CROs can access real-time intelligence and ranking of sites that fits their protocol.



FIND THE RIGHT SITES FASTER

Precision AI matching ensures optimal alignment between your protocol requirements and site capabilities, drastically shortening the site identification and qualification phases.

GET TO MARKET SOONER

By compressing traditional 6-12 month site identification and selection timelines into weeks, you can advance your programs to market faster, translating saved time into millions of dollars in extended market exclusivity

ELIMINATE COSTLY ENROLLMENT DELAYS

Stop wasting valuable resources on sites that won't deliver. By precisely forecasting site workload, staff capacity and potential bottlenecks, you can more accurately budgets for monitoring, site support, and investigational product more efficiently.

REDUCE AMENDMENTS & RESCUES

Proactive identification of feasibility challenges or patient population mismatches means fewer costly protocol amendments and a dramatic reduction in the need for expensive "rescue" efforts to boost lagging enrollment.

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AI SITE TWIN APPLICATIONS

PREDICTIVE FEASIBILITY

Traditional feasibility processes often overestimate site capabilities and underestimate competitive pressures.

AI Site Twins can streamline every aspect of the feasibility process. By using the data from each AI Site Twin, sponsors and CROs can fully automate the distribution, tracking, and collection of feasibility questionnaires, significantly reducing administrative overhead. This will allow your clinical operations teams to focus on higher-value activities, like site relationship management and protocol optimization.

LIGHTNING FAST QUESTIONNAIRE CREATION

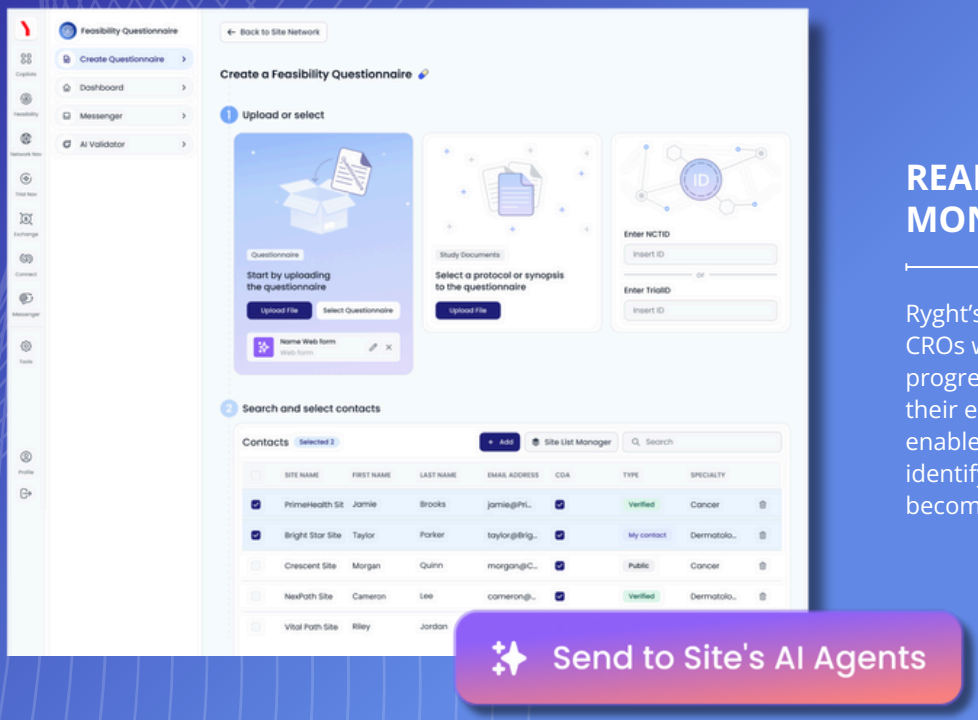
The platform's AI can analyze existing PDF questionnaires and automatically convert them into interactive web forms in seconds. This eliminates the need for manual form creation and allows sponsors to quickly adapt questionnaires for different studies while maintaining consistency and completeness.

INTELLIGENT PRE-POPULATION

Rather than sending blank questionnaires to sites, pre-populate your questionnaire forms with known information from each site's AI Site Twin. This will dramatically reduces the burden on research sites, as they only need to review, confirm, and update information rather than starting from scratch.

REAL-TIME PROGRESS MONITORING

Ryght's platform provides sponsors and CROs with real-time dashboards showing the progress of feasibility assessments across their entire site network. This visibility enables faster decision-making and helps identify potential bottlenecks before they become major delays.



DISCOVER THE DIFFERENCE AI SITE TWINS CAN MAKE

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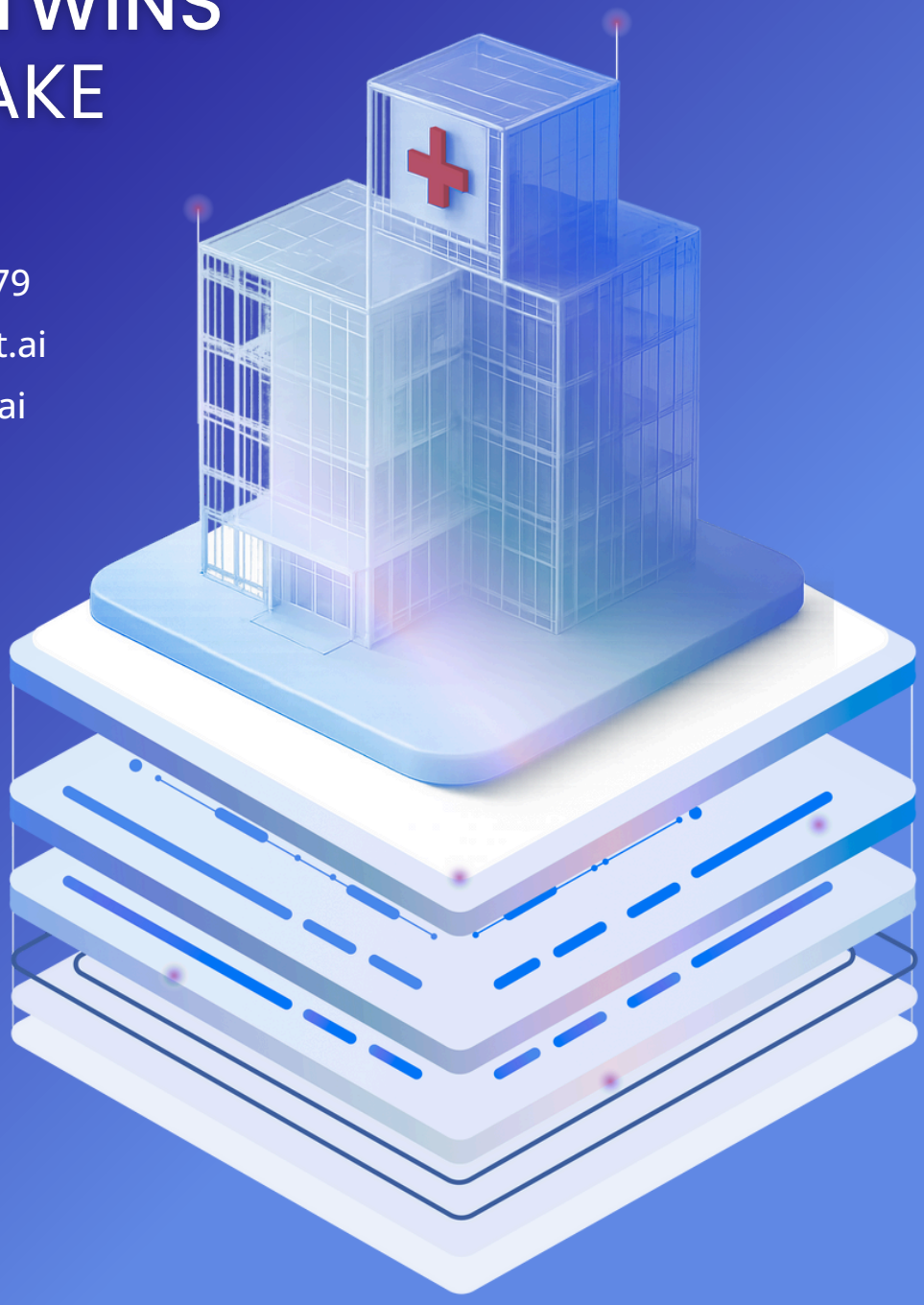

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