

Single Day Event

Driving Breakthroughs in Therapeutic Research:
An Agentic Approach to Precision and Progress

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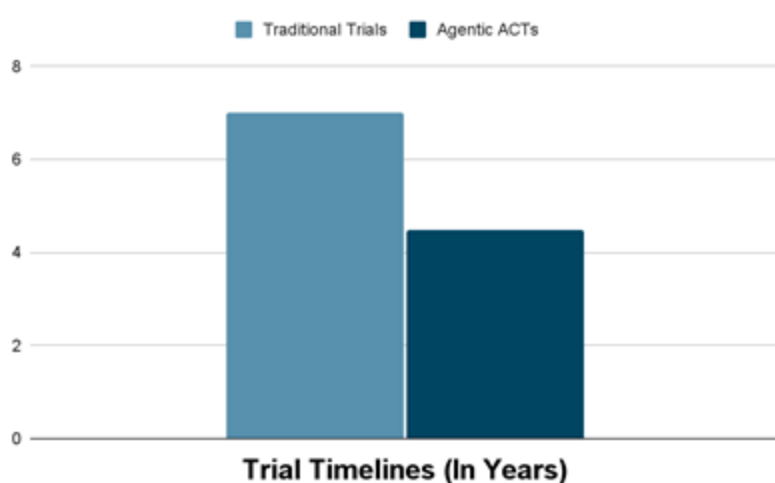
Agenda

- Agentic ACTs
- Past vs. Present of Clinical Trials
- Adaptive Clinical Trials (ACTs)
- Decoding the "Agentic" Approach
- Connecting the Dots





Agentic ACTs: Quantifiable Breakthroughs



Prominent display of 36% Reduction above the Agentic ACTs bar

A **36% reduction in trial duration** transforms patient experiences, reducing average clinical trial length from **7 years to just 4.5 years** with Agentic ACTs, akin to high-speed travel.

Reference/Source Note below the graph: "Data derived from meta-analysis of adaptive clinical trial outcomes reported in Clinical Trials Journal, 2023."



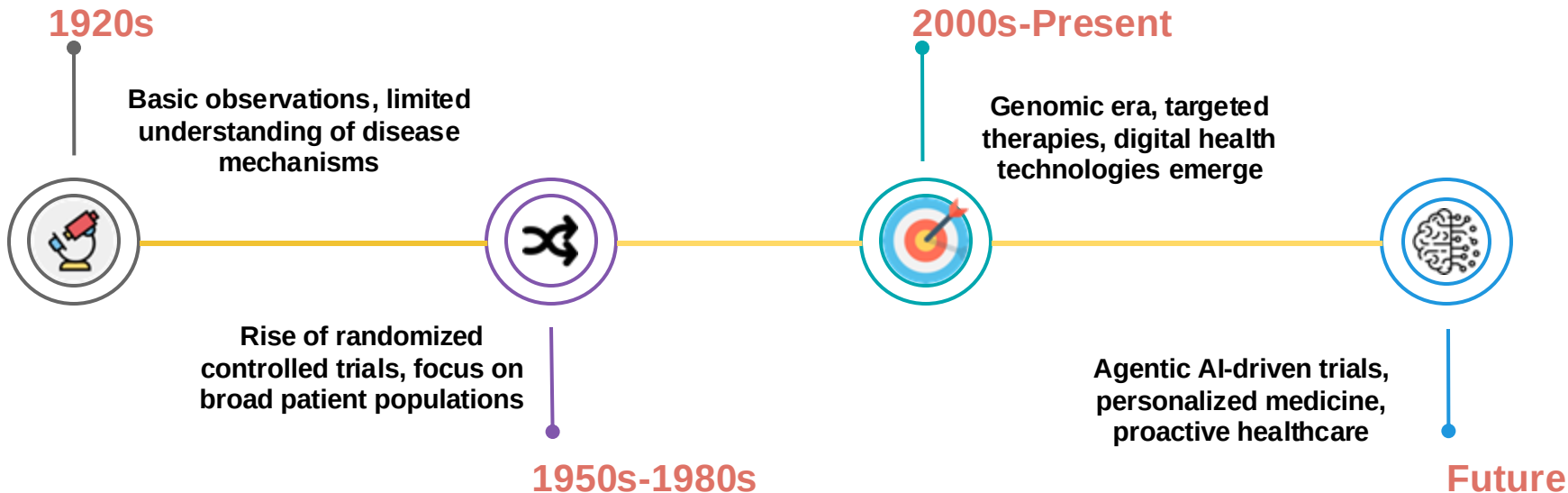
Prominent display of 28% Reduction above the Agentic ACTs bar

Agentic ACTs achieve **28% trial cost reduction**, lowering expenses from **\$250 million to \$180 million, saving \$70 million** per trial.

Reference/Source Note below the graph: "Cost analysis based on pharmaceutical industry reports and projections by Tufts Center for the Study of Drug Development, 2024."



Past vs. Present of Clinical Trials

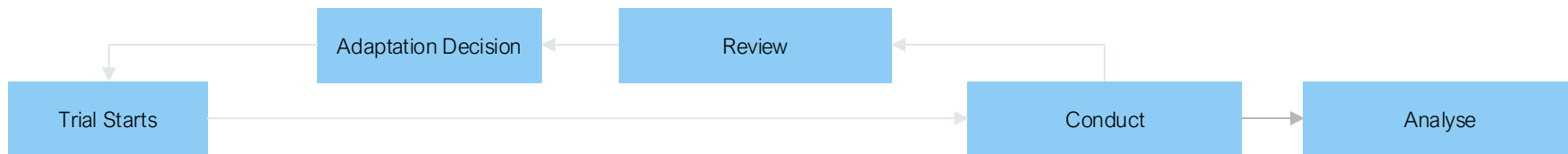




Adaptive Clinical Trials (ACTs)

The Playground for Agentic Innovation

“An adaptive design is defined as a clinical trial design that allows for prospectively planned modifications to one or more aspects of the design based on accumulating data from subjects in the trial.” (FDA 4 2018 Adaptive Designs for Clinical Trials Guidance Document)



Key Features of ACTs

- Built-in Flexibility
- Interim Data Analysis
- Adaptive Modifications
 - Sample Size Adjustment
 - Treatment Arm Modification
 - Patient Population Adjustment
- Faster Decision-Making



Why ACTs are perfect for Agentic Approach

- ACTs generate a **constant stream of data** – the fuel that Agentic AI thrives on
- Adaptations **require quick, informed choices** – Agentic systems are designed to assist humans in making these complex decisions rapidly
- ACTs aim to be **faster and more efficient** – Agentic approaches amplify these benefits, creating a powerful synergy



Decoding the "Agentic" Approach

Meet the "Agents of Change"



Traditional AI (The "Tool")

Like a hammer – incredibly powerful, but you have to swing it, give it precise instructions for every single step.

Reactive, follows instructions

Constant, detailed instructions needed

Limited, follows pre-set rules

Learns from data, but within parameters

VS

Nature

Human Input

Decision Making

Learning

Agentic AI (The "Partner")

Think of a highly skilled apprentice - understanding goals, working independently, learning, and suggesting smarter methods. This is Agentic AI!



★ Empowering Stakeholders

★ Intentional Actions

★ Impactful Outcomes

Proactive, independent, goal-directed

Less direct supervision, sets own course

Autonomous, can make complex decisions

Learns, adapts, and improves strategies



Meet the Agents

Key Players & Their Agentic Roles in ACTs

Agent 1: Researchers

The Protocol Pioneers & Data Navigators

- ★ Designing for Change
- ★ Data-Driven Guardians
- ★ Ethical Compass
- ★ Translators of Insight

Agent 2: Sponsors

The Resource Strategists & Innovation Catalysts

- ★ Strategic Investors
- ★ Tech Champions
- ★ Compliance Navigators
- ★ Outcome-Focused Drivers

Impact & Breakthroughs



Accelerated Timelines



Enhanced Efficiency



Optimized Collaboration



Outperforming Traditional Linear Processes



Increased Success in Precision Medicine



Faster Access to Life-Saving Treatments



Reduced Healthcare Costs



More Targeted & Effective Therapies



Future of AI in Clinical Research

Agent 1: Researchers

Clinical Question/
Therapeutic
Need

Design Adaptive Protocols:
Embed flexibility for data-
driven changes

Flexible &
Efficient Trial
Protocols

Patient
Population
Characteristics

**Monitor Interim Data with
Predictive Analytics:** Use AI to
identify trends

Real-time
Data Insights
&
Predictions

Ethical
Guidelines &
Patient
Welfare

Uphold Ethical Integrity:
Prioritize patient safety and
data privacy

Proactive
Ethical
Safeguards

Emerging Trial
Data

**Interpret Complex Data &
Guide Adaptations:** Translate
AI insights into action

Data-Driven
Adaptation
Recommendations

Agent 2: Sponsors

Trial Objectives
& Business
Goals

Strategic Resource Allocation:
Direct funding to support
adaptive designs

Optimized
Trial Budgets
& Resource
Use

Budget &
Resource
Constraints

**Support Technological
Innovations:** Invest in AI
platforms, data infra

Accelerated
Adoption of
New
Technologies

Technological
Innovation
Opportunities

Ensure Regulatory Compliance:
Navigate evolving regulatory
landscape

Streamlined
Regulatory
Pathways

Regulatory
Requirements &
Compliance

**Interpret Complex Data & Guide
Adaptations:** Translate AI
insights into action

Compliant &
Efficient Trial
Operations

Imagine a future where

Predictive
Algorithms at the
Forefront

Automated Decision-
Making Support

Seamless Data
Integration

Patient-Centric
Research



Predictive



Automated



Personalized



Data-Driven



Patient-Centric



Efficient



Connecting the Dots...Traditional vs. Revolution

The "Old Way"

- **Linear & Rigid:** Like a train on a fixed track – hard to change course
- **Slow Pace:** Years to develop treatments, long waits for patients
- **Data Silos:** Limited broader learning



The "New Way"

- **Emerging Therapeutic Technologies:** Gene therapies, personalized vaccines, AI-driven drug discovery – science fiction becoming reality!
- **Future Developments:** Innovation accelerating towards even more personalized and effective treatments
- **Impact on Clinical Data Analysis:** Data is richer, more complex, and more powerful than ever. We need smarter analysis!

Why should we be excited?



Faster Treatments



Personalized Medicine



Deeper Insights



Contributing to the
Future of Health



Key takeaways



Clinical research is evolving rapidly



The Agentic Approach is about empowerment and intentional action



Adaptive Clinical Trials are the present and the future



AI, especially Agentic AI, is our powerful partner



We are part of this revolution!

Thank You



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