

Single Day Event

**Future-ready modern data analytics
team in clinical trials.**

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Agenda

What it takes to become a future-ready modern data analytics team in clinical trials

- DATA-DRIVEN DECISION-MAKING
- GIGO
- A MODERN-DATA ANALYTICS TEAM
- COMPONENTS OF THE ANALYTICS TEAM

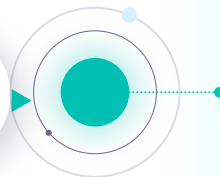
Agenda- Key Points

What it takes to become a future-ready modern data analytics (DA) team in a clinical trial

D3M
(Data Driven Decision Making)

GIGO
(GIGO philosophy)

Modern DA Team



- **Data science** for Rest of the world
- **Clinical Data Science-Reimagined**
- **Clinical data analytics** (What Chat-GPT says?)

Future-ready skills

- Design Thinking
- Agile in Analytics
- Advanced Analytics - Business case
- Soft skills for Analytics



Data-Driven Decision-Making and GIGO Philosophy

DATA-DRIVEN

- Central to clinical development
- Influences the trials
- Data-driven trial execution
- Virtual trials and Varied data sources

HAVING THE RIGHT DATA

- Quality of data
- AI/ML in Data capture and data cleaning
- Data Processing
- ML algorithms & NLP in CDRP

ATTRIBUTES OF DATA IN CLINICAL TRIALS

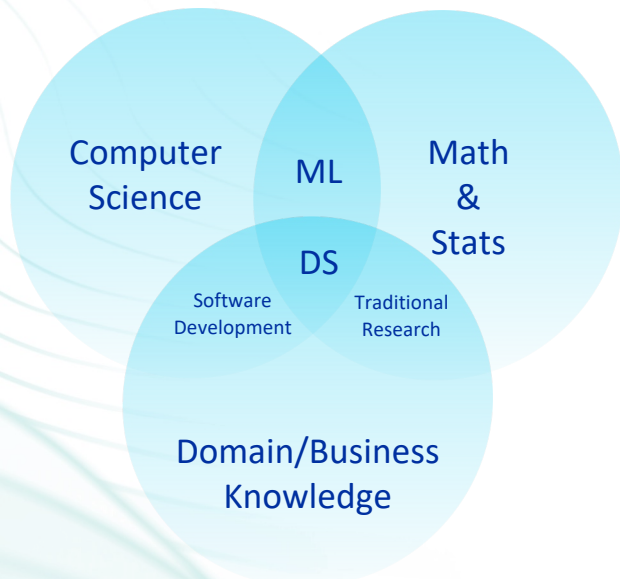




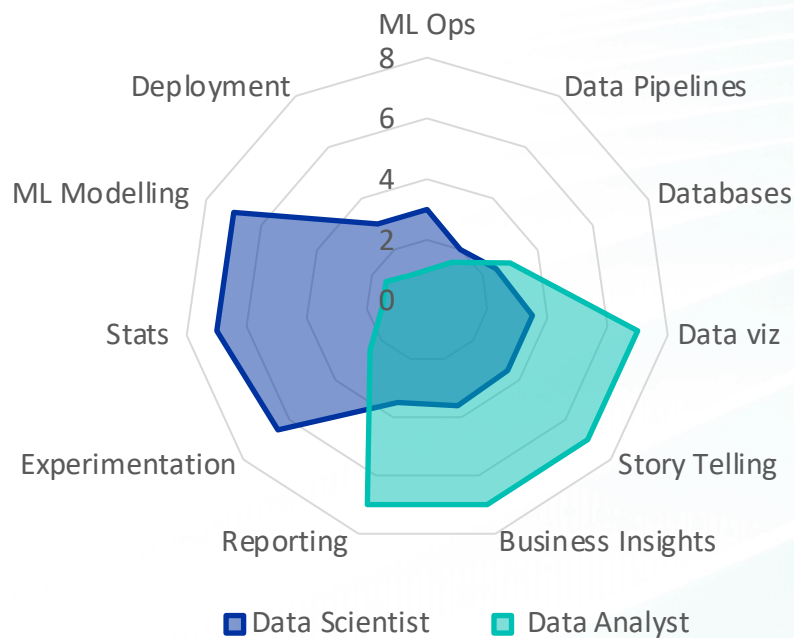
Data Science for the Rest of the World

Overview

- Math & statistics
- Specialized programming
- AI/ML with subject matter expertise



Data Science vs Data Scientist & Data Analyst





Clinical Data Science (CDS) - Redefined

Path to Clinical Data Science

- Shift towards CDS
- Evolution of CDS
- Decision-Making Drivers

Identification of 4 core emerging best practices

- Evolution of CDR
- Automation
- Risk-based approach

Driving Forces behind the evolution of CDS

Clinical Research 2.0

Master Protocols
Adaptive Design
Synthetic Arms

De-centralized Trials

Sensors & Wearables
Home Nursing
Tele-medicine

Intelligent Technologies

ML, NLP & Voice
Recognition
Predictive Data Review
BOTs

Risk-based Approach

Quality Tolerance
Limits (QTLs)
Quality by Limits
Critical to Quality
Factors





Clinical Data Analytics - What ChatGPT says?



ChatGPT



"Clinical data analytics is the process of examining and interpreting data from various sources within the healthcare industry to gain insights and improve patient care, research, and overall healthcare operations. It involves using advanced analytical techniques and technologies to transform raw healthcare data into meaningful and actionable information".

Key components of clinical data analytics include:

Data Collection

Data Integration

Data Cleansing

Data Storage

Data Analysis

Predictive Analytics

Descriptive Analytics

Prescriptive Analytics



Future-ready skills for Clinical Data Analytics with a Case Study



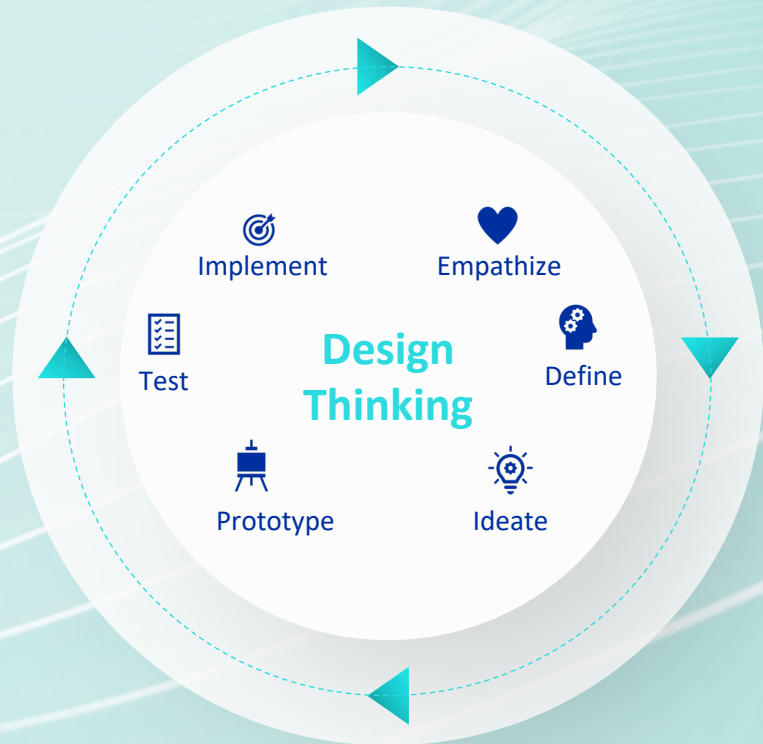
Design Thinking & Analytics

- **Problem-solving approach**

- Understand
- Explore, and
- Materialize

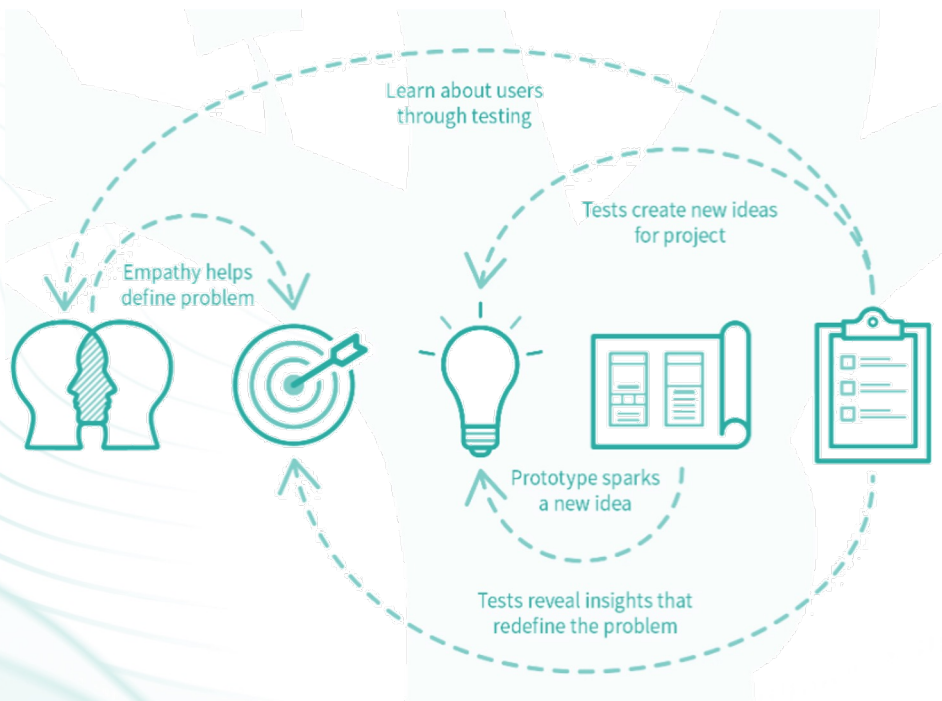
- **6 Phases**

- Empathize
- Define
- Ideate
- Prototype
- Test
- Implement





Design Thinking is a Non-Linear Process

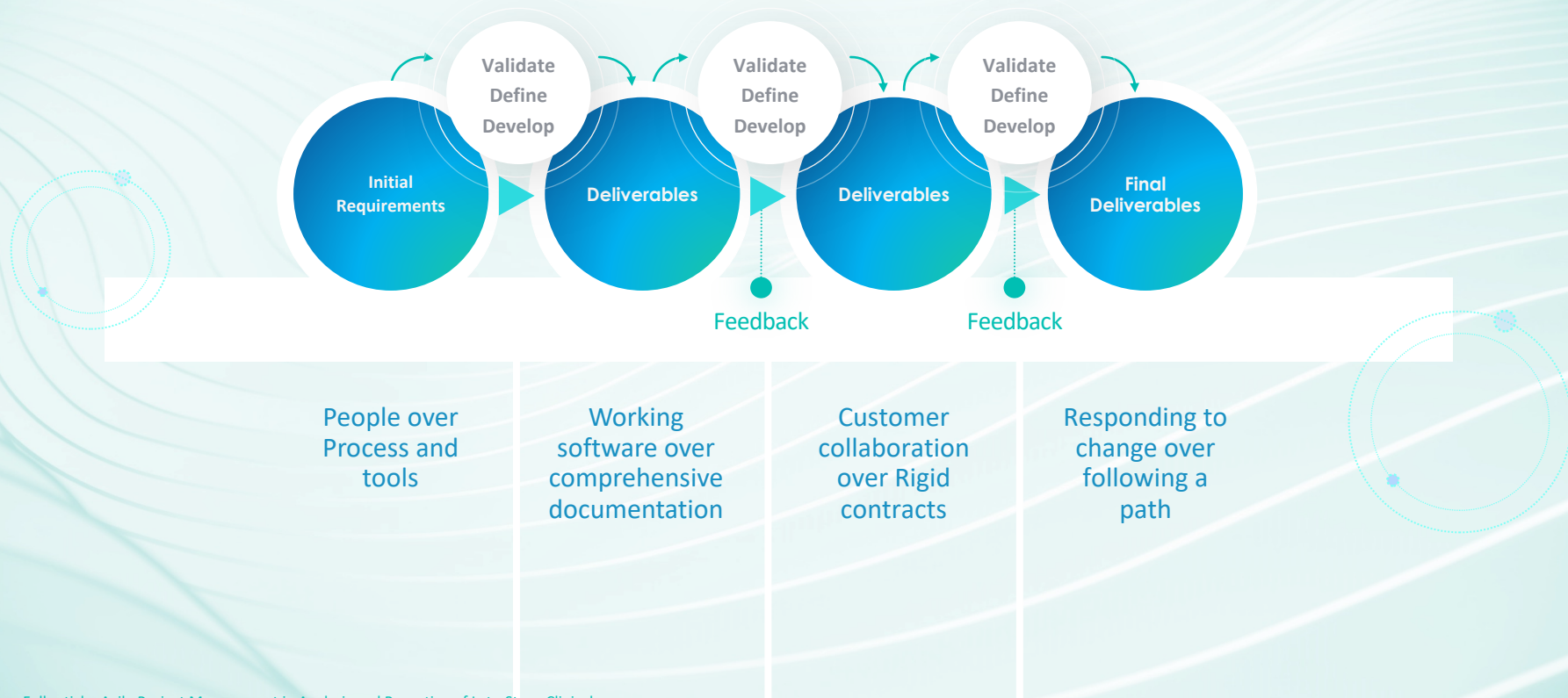


Why blend Design thinking into clinical analytics?

- Continuously engagement
- Addressing the needs of real users
- Vital human-centered design process
- Reap business benefits and opportunities
- Ensures customer centricity.



Agile is a Mindset...



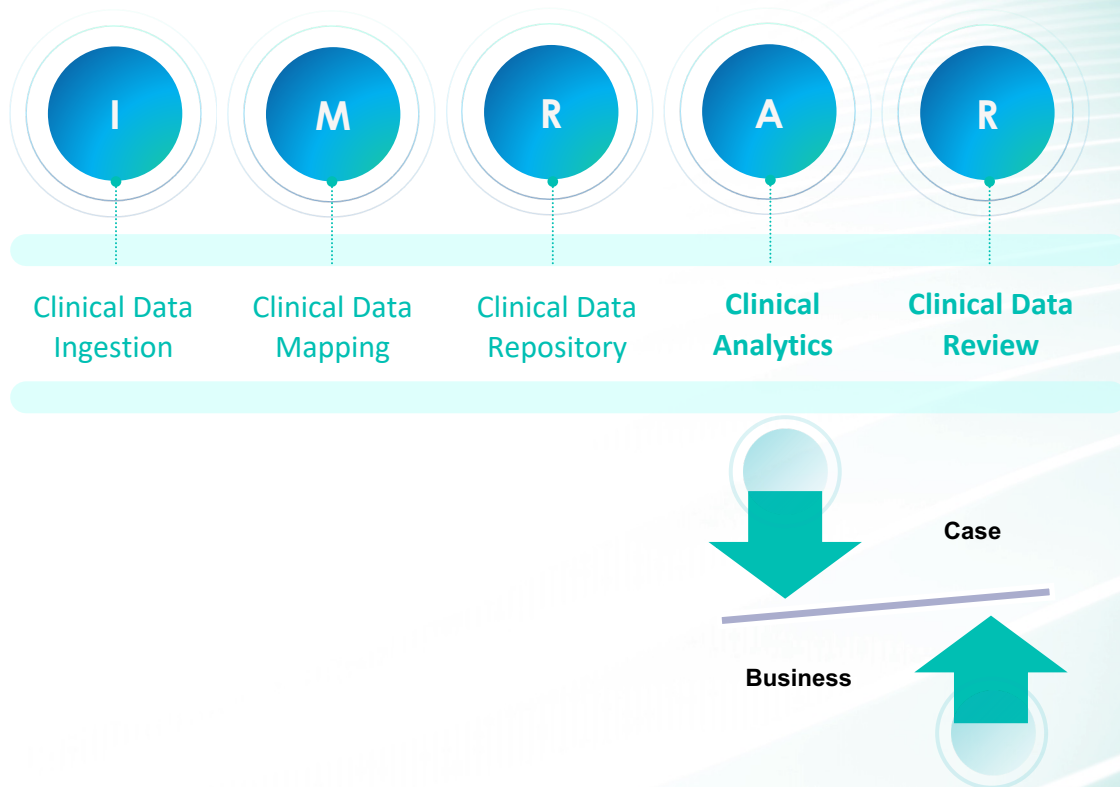


Advanced Analytics in a Key Area within Clinical Trials

Orchestrated data suite platform

Achieved by:

- Robust Tech suite
- Near Real-time access of clinical data
- Seamless integration of systems and workflows
- Cross collaboration
- Big data & AI/ML capabilities





Clinical Analytics Platform



Pain points

The system gets bulky with humongous data and transformation.
Lack of efficient UI/UX
Lacks clarity into query status and overall review status.

Methods

Leveraging a Data Lake, cloud-based, open source, Apache spark-enabled suite.
Intuitive and user-friendly dashboard
A new workflow management solution
Integrated discrepancy and query management solution.

Impact

Seamless medical data review.
Intuitive interface and enhanced self service
Seamless query management
Cross-Functional Collaboration

Medical data
review
Business case





Soft Skills for Data Analytics

Communication

Research

Curiosity

Collaboration

Creativity

Critical Thinking



References & Acronyms

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- [Full report: IQVIA Report on clinical trial continuity during covid](#)
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- [Fullreport: Evolution of clinical Data science Clinical-to-Data-Science-V9.0.pdf](#)

Acronyms:

[AI/ML](#): Artificial Intelligence & Machine Learning, [GIGO](#): Garbage IN Garbage Out, [Ops](#): Operations, [CDRP](#): Clinical Data Review Platforms, [Data Viz](#): Data Visualizations, [ML Ops](#): Machine Learning Operations, [NLP](#): Natural Language Processing, [EDC](#): Electronic Data Capture, [UI/UX](#): User Interface & User Experience

[illegible]

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