Magnolia Market Access:
Meet Your Presenters

Beni Turner

Director,

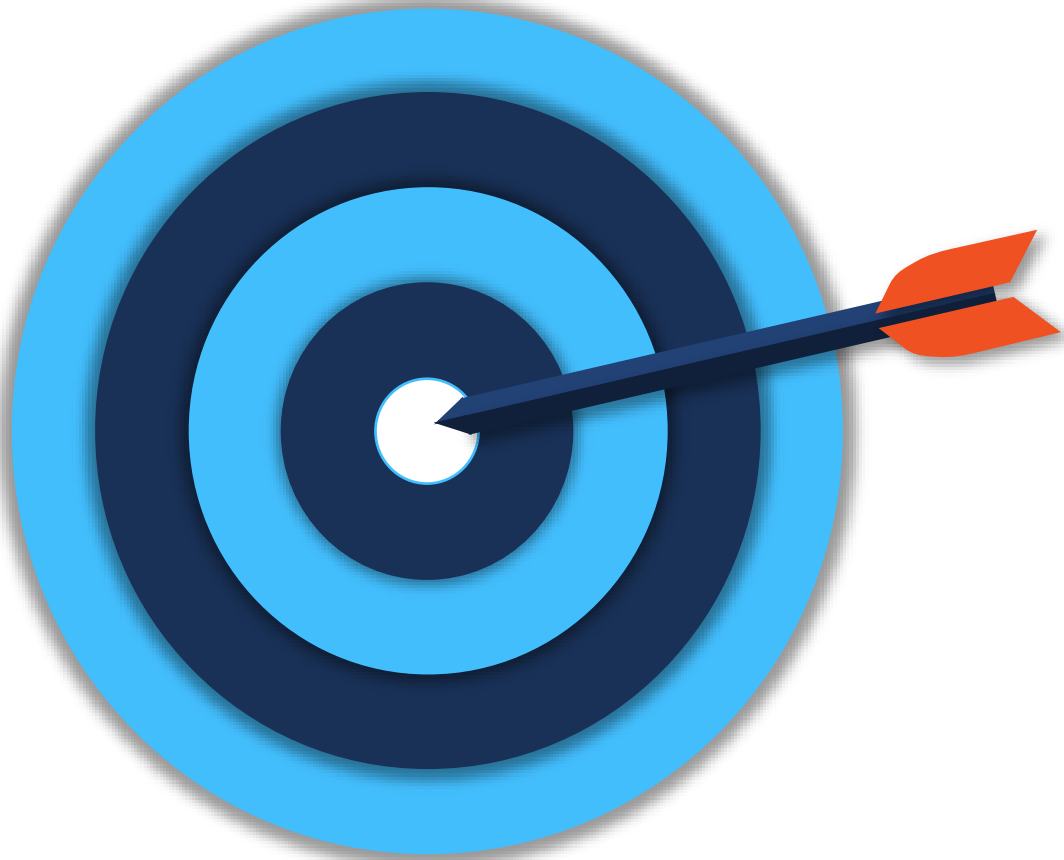*Real World Clinical Insights*

Martine Etschmaier

Senior Director,

Global Market Access & Value Insights

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Senior Vice President,

Real World Evidence & HEOR Strategy

Objectives

01 Defining Unstructured Data

02 Unstructured Data Sources

03 Curation Considerations

04 Practical Applications

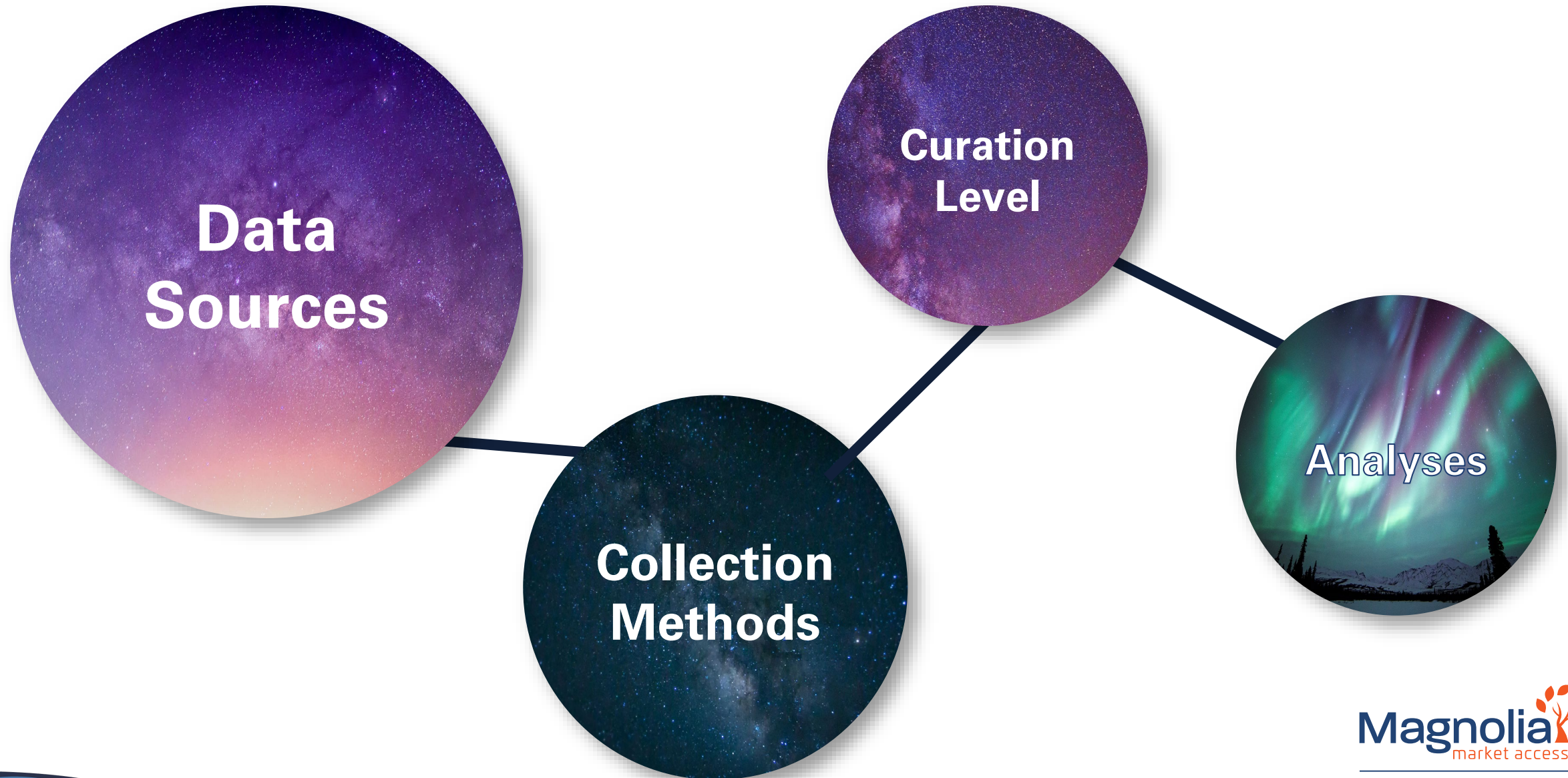**05** Future Trends & Innovation Opportunities

Introduction

Unstructured Data, Curation, & Considerations

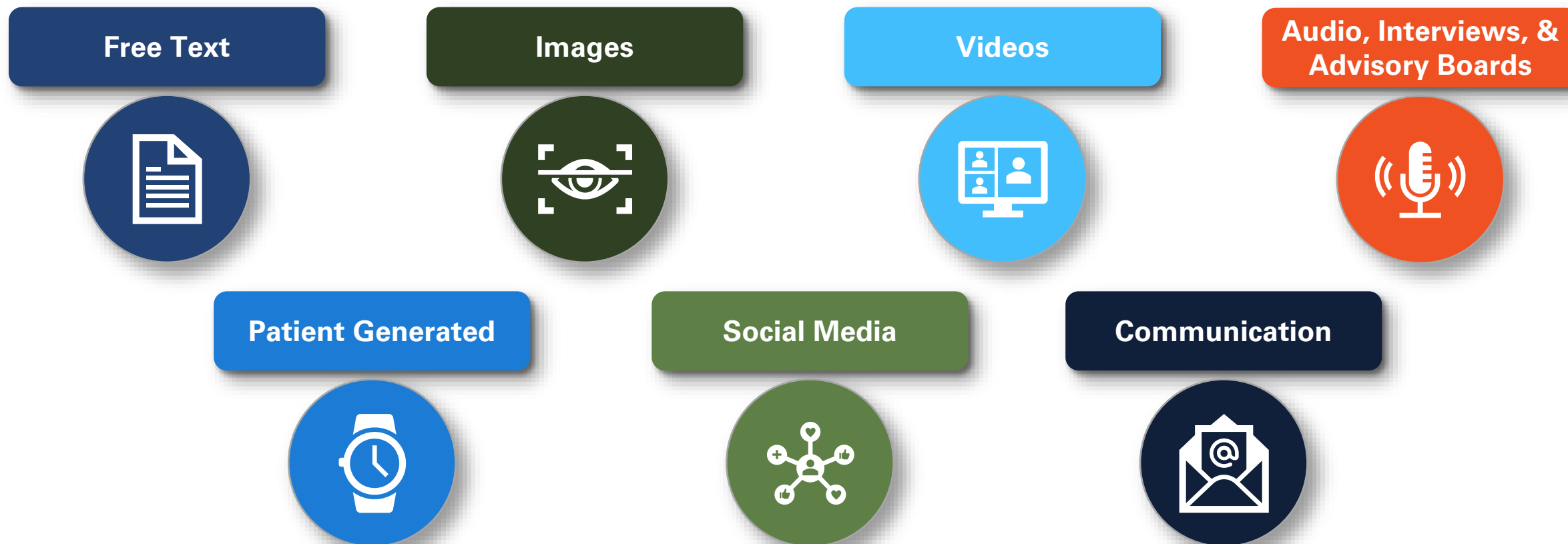# The Big Data Era: Unraveling the Vastness of Our Digital Universe

147 ZB

Mapping the Data Cosmos: From Sources to Collection to Insight

Data Sources

Curation Level

Collection Methods

Analyses

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Unstructured Data

- Information that doesn't fit neatly into a predefined data model or schema
- Has no inherent organization and requires some level of curation for analysis and insight generation

Free Text

Images

Videos

Audio, Interviews, & Advisory Boards

Patient Generated

Social Media

Communication

Navigating Unstructured Data Sources

Charting the Course for Market Access Strategy

Healthcare Provider Notes

Pathology Reports

Imaging Reports

Claims Data

Clinical Trial Results

Conference Presentations

Scientific Literature

Clinical Guidelines

Expert Opinions
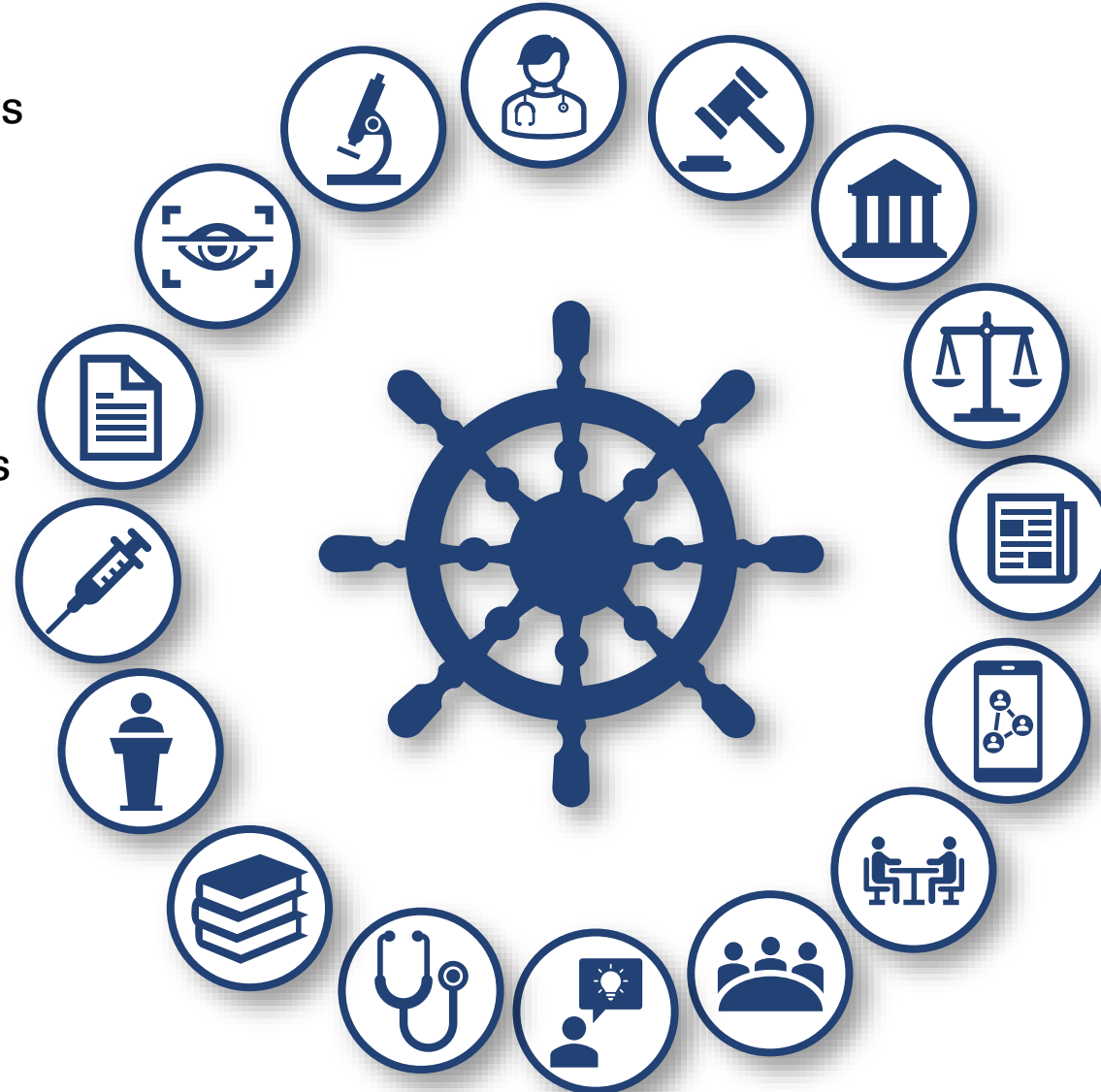
Patents

Regulatory Updates

Policy Papers

Industry News

Social Media

Interviews

Online Forums

Unstructured Data to Inform Market Access Strategy – Selected Example Sources
Choosing the Right Methodology for Primary Market Research to Gather Insights From Key Stakeholders

Surveys	Web-Assisted Individual Interviews	Focus Groups	Advisory Boards	Delphi Panels

Primary market research provides manufacturers with proof of assumptions, key unknowns in the market, actionable next steps, etc., and can service as a support function for other market access tools

Understanding Data Curation

- The process of providing shape to shapeless data

Important Curation Considerations

- Based on data use and audience, may need to consider:
  - Annotation
  - Linking
  - Compliance
  - Monitoring & Updating

Collection

Curation or Organization

Cleaning & Quality Control

Storage & Preservation

Reporting

Shaping Chaos: Varying Levels of Structure in Unstructured Data Curation

CHAOS

ORDER

The level of data structure provided through curation efforts exists along a continuum

Shaping Chaos: Varying Levels of Structure in Unstructured Data Curation

CHAOS

ORDER

Loosely structured curation can include:

- Thematic Mapping
- Concept Mapping
- Sentiment Analysis

Shaping Chaos: Varying Levels of Structure in Unstructured Data Curation
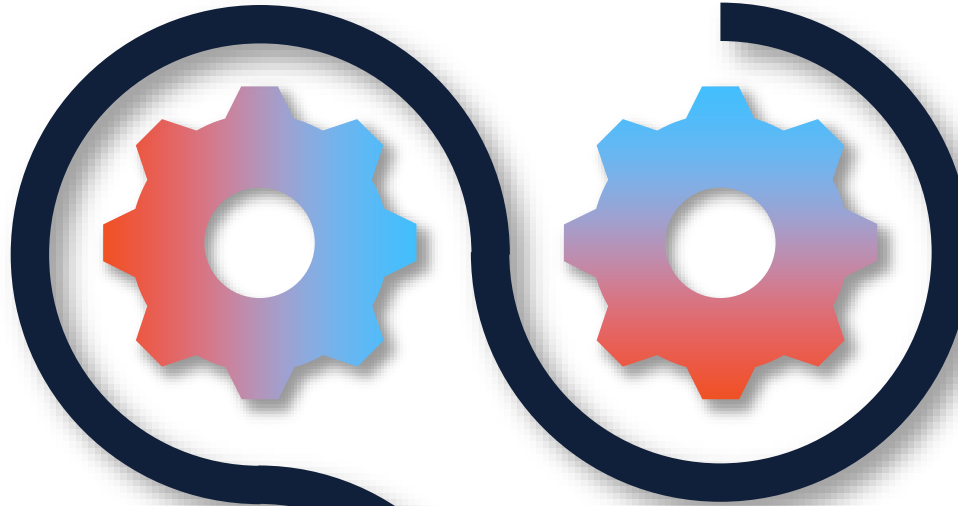
CHAOS   **ORDER**

Highly structured curation can include:

- Coding Qualitative Data
- Systematic Literature Review
- Clinical Chart Review or Abstraction

Curation Concerns Begin at Project Ideation

DATA RELIABILITY

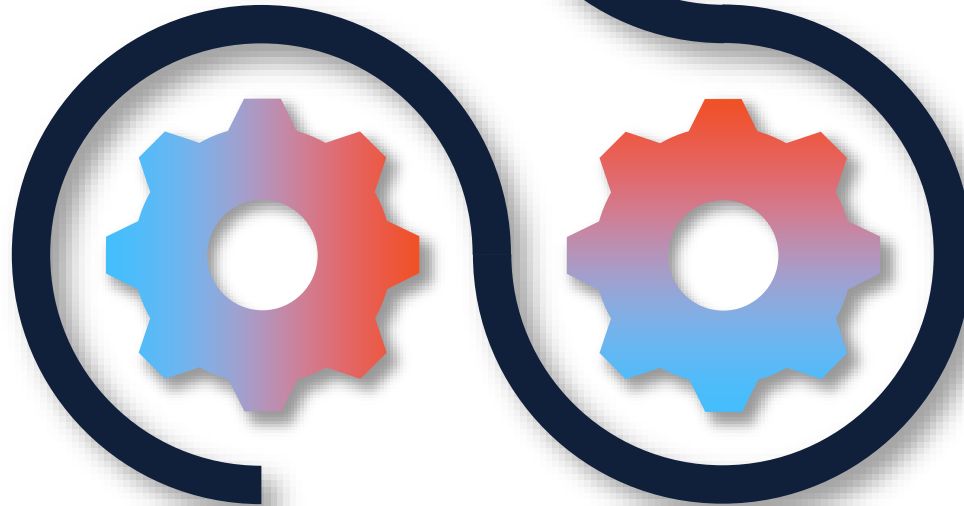Curated data feeds should be continuously tested for reliability and accuracy against source data

INTERPRETING MISSINGNESS

Lack of or missing data does not necessarily indicate a no

ADDRESSING BIAS

Design of curation plans should be done with an eye for potential sources of bias

CROSS FUNCTIONAL COLLABORATION

Development of data capture forms and collection system logic should be performed with representative input across the project team

Curating Unstructured Data Utilizing AI, NLP, & LLMs

Ensuring Accuracy & Quality in AI Curated Data

1 SOURCING DATA

Data sources should be *diverse*

Reduce risk of bias and false positives, data sources should be relevant and specific to the project, heterogenous, and representative of diverse populations and/or opinions

2 TRAINING

Algorithms require training to ensure *true positive* results

Critical to ensure that algorithms or models used are consistently and specifically trained and validated on data of interest for the analysis
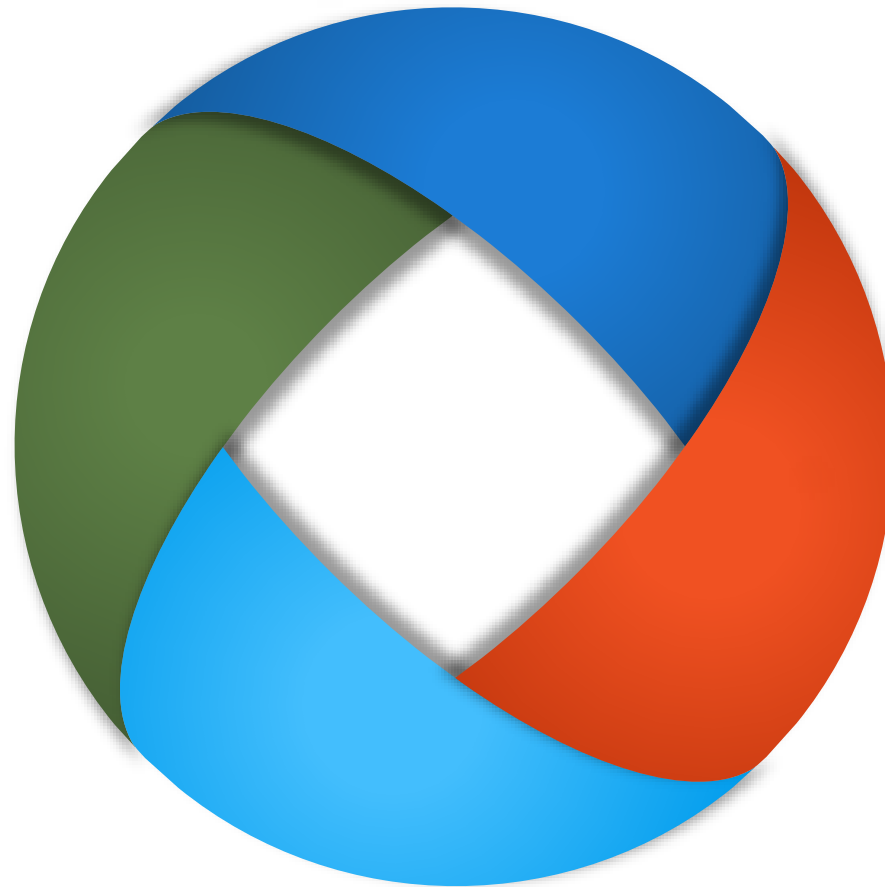
3 REVIEW

Human monitoring of algorithms is necessary

Comply with regulatory standards through the use of regular, streamlined human review of algorithm curated data

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Data Integrity: The Essential Role of Retaining Source Links & Audit Trails

Accuracy

Transparency

Reproducibility

Accountability

Applications for Unstructured Data

How Can Unstructured Data Solve for Present Day Challenges In Market Access

Real-World Treatment Performance

Enhancing Traditional Structured Real-World Evidence Insights

Challenge

- Market access decisions often require evidence of a treatment's effectiveness in the real world, beyond highly controlled clinical trial data
- Real-world treatment practices may differ from guidelines

Unstructured Data

- Healthcare Provider Notes
- Pathology Reports
- Imaging Reports
- Claims Data

Curation Benefits

- Demonstrate value
- Support & enhance submission value
- Competitor evaluation
- Enhance pricing & positioning strategies

The Payer Perspective

Strengthen Value Propositions, Evidence Plans & Coding Strategies

Challenge

- Smaller sample sizes limit ability to extrapolate to each payer segment
- Value of product to stakeholders is unclear
- Payers have data needs that differ from data garnered for regulatory review
- Inadequate coding can make patient and treatment identification difficult

Unstructured Data

- Clinical Guidelines
- Expert Opinions
- Interviews
- Policy Papers
- Industry News

Curation Benefits

- Maximize access
- Gain insights for data generation activities
- Uncover barriers
- Validate economic model assumptions
- Confirming price and rebate strategies
- Support creation or affirmation of codes

Competitive Intelligence

Leveraging Unstructured Data to Enhance Competitive Market Intelligence

Challenge

- Staying updated on competitors' market strategies and product performance is critical
- Understanding market landscape requires constant review of unstructured data

Unstructured Data

- Conference Presentations
- Patents
- Clinical Trial Results
- News Articles

Curation Benefits

- Gain intelligence to assist with product positioning
- Identify emerging trends
- Proactive pipeline customized to unmet needs

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Providing Context: Size & Content of the EHR

In the US, hospitals alone generate an average of **838,440 terabytes** of patient medical data per day

838,440 TB

838,440 TB

12,000 times
the size of the
entire Netflix
content library

If the EHR is an Iceberg…

If the EHR is an Iceberg…

Structured Data is what's visible above the water **<20%**

Unstructured Data is below the water's surface **>80%**

If the EHR is an Iceberg: What We Can See Above Water

- **Demographics:** Sex, Age, Ethnicity, etc.
- **Diagnosis and Billing Codes:** ICD-CP ICD-PM, CPT, HPCS, LOINC
- **Numerical Values:** Height, Weight, BP, etc.
- **Categorical Values:** Blood Type, Disease stages of diagnosis, etc.
- **Medications**
- **DE&I**

If the EHR is an Iceberg: What is Below the Surface?

- **Signs & Symptoms**
- **Provider Notes, Results, & Reports (Clinical, Pathology, Operative, Imaging, Discharge Summaries, etc.)**
- **Procedure Details**
- **Problem Lists**
- **Lab Reports**
- **Genomics Reports**
- **OTC Medications**
- **Tumor Size & Characteristics**
- **Minimum Residual Disease**
- **Lines of Therapy**
- **Reasons for Medication Discontinuation**
- **Disease Severity Measures**
- **Patient Reported Outcomes**
- **Social History & Nuanced, Nonclinical Social Needs**
- **Patient Generated Data (wearable, DTx, etc.)**

If the EHR is an Iceberg: What is Below the Surface?

Unstructured Data may be at different depths

Curation Difficulty Increases with Data Depth

If the EHR is an Iceberg: Changes in Water Levels

- **Signs & Symptoms**
- **Date of Death**
- **Cause of Death**
- **Lab Results**
- **Behavioral Risk Factors**

- **Disease Assessment Scales**
- **Progression-Free Survival**
- **Performance Scores**
- **Histology & Genomics**

Real-World Patient Experience

Demystifying the Patient Experience Outside Clinical Trials

Challenge

- Siloed data streams
- Lack of information surrounding patient sentiment, experience, and concerns in structured data

Unstructured Data Sources

- Healthcare Provider Notes
- Social Media
- Online Forums
- Pathology Reports
- Imaging Reports

Curation Benefits

- Reveal important patient details
- Identify emerging trends
- Increased strategy specificity
- Improve access and support

The Regulatory Landscape

Tracking Regulatory Updates, Optimizing HTA Submissions, & Enhancing Clinical Trials with RWD

Challenge

- Constantly evolving guidelines and requirements for regulatory considerations
- Timely information critical to compliance
- Inherent clinical trial enrollment challenges, including lack of diversity, pharmaceutical companies require integration of novel data generation methods

Unstructured Data

- Scientific Literature
- Clinical Guidelines
- Expert Opinions
- Regulatory Updates
- Policy Papers
- Industry News

Curation Benefits

- Proactive & timely strategy adjustments
- Enhance cost evidence
- Ensure continuous compliance
- Maintain competitive advantage

Benefits & Value

Enhancing Market Access Strategy Through Unstructured Data

The Value: Incorporating Unstructured Data in Market Access Strategy

Optimize Pricing & Reimbursement Strategy

Tailor Stakeholder Engagement

Influence Regulatory & Policy Adaptation

Improve Resource Allocation

Patient-Centered Strategies

Incorporate Predictive Analytics & Forecasting

Crisis & Reputation Management

Future Trends

Opportunities for Innovation in Unstructured Data Curation

Future Trends & Innovation Opportunities

07 Enhancements in Data Quality & Management

Increased Need for Interoperability Focus **01**

06 Crowdsourcing & Collaborative Curation

Expanding AI-Driven Curation **02**

05 Shifting to Real-Time Curation

Novel Approaches to Ethical Considerations **03**

04 Supercharging the Audit Trail
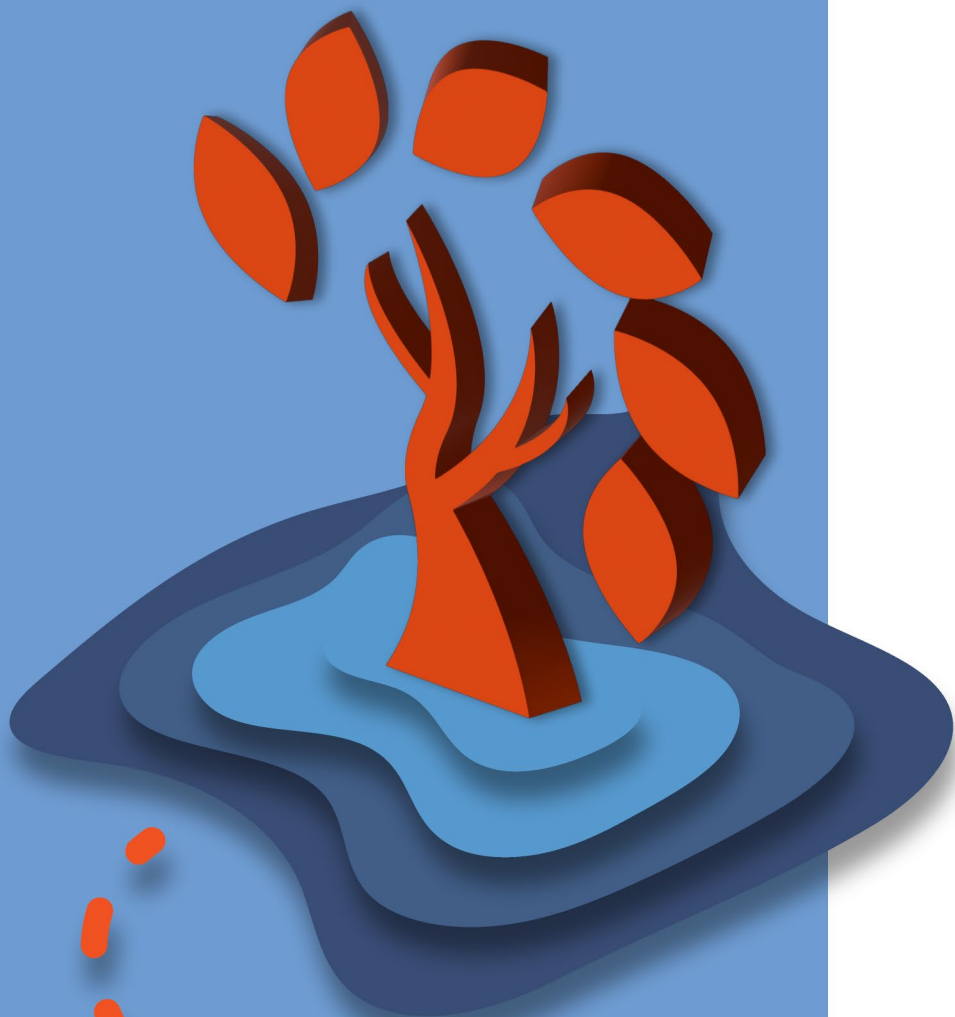
Thank you!

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