

Using Visual Dashboards to Improve Data Accuracy

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“He who has carefully investigated a printed table, finds, when done, that he has only a very faint and partial idea of what he has read”

- William Playfair, 1786

Background

- Data lies at the heart of any clinical trial, though errors can arise in various ways. Traditional approaches often rely on manual checks or reviews of derived datasets, which can increase the risk of human error or mask issues after analysis.
- Adopting the use of simple visualisations based directly on source data enables near-real time data correction and provides a platform for intuitive topline results for early decision making.
- Modern clinical trials have access to an increasing number of data visualisation tools, making the adoption of a visual approach more accessible than ever.

Power of Visualisations

Graphics Tell a Story...

- Even the simplest of clinical trials collects tens of thousands of data points, whilst more complex trials reach well into the millions.
- **Graphics can transform an overwhelming amount of data into an accessible and coherent form.**
They reveal trends that could otherwise be hidden.
- Humans are oriented to **pattern recognition**.
Many types of deviations and outliers are therefore more reliably identified in graphical displays.

... and Bring Teams Together

- All relevant members collaborate through a single centralised hub, bridging the gap between all relevant departments.

Decision Making

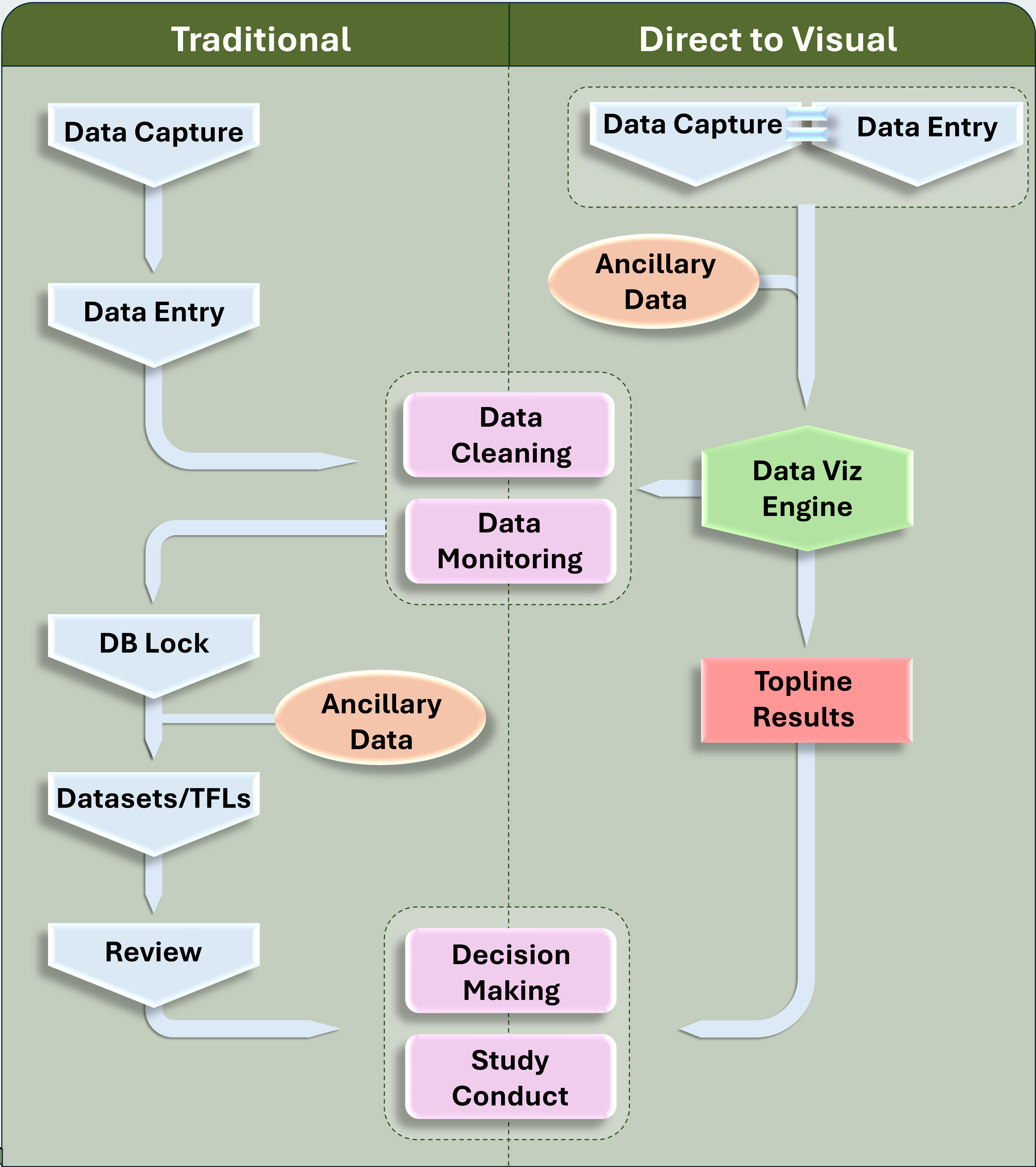
Deciphering the Data

- Topline results can be provided sooner than the traditional approach to allow **early insights into decisions on dosing, enrolment, or analysis**.
- Investigators and sponsors can interact with and analyse the data together.

Study Conduct

Positive Feedback Loop

- Each data point is linked to the equipment used and the individual who collected it.



- Insights can be gathered during and/or after study conduct to **identify faulty equipment or possible retraining opportunities** to correct systemic data entry errors.
- **Trends in clinic conduct** can be outlined within and between different sites.

Data Cleaning + Monitoring

Glitch in the Matrix

- Data errors are a burden for any trial, including:
 - **Incomplete data entry**
 - **Typographical errors or inconsistent entries** (transcription from eSource to EDC)
 - **Device malfunctions or readout errors**

Our Approach

- Utilise **ClinSpark®** as both eSource and EDC. **Data Visualisation Engine** is connected directly to the database via **MySQL**.
- Manual checks are replaced with or guided by interactive graphical ones.
- Upfront **discussions are held between Data Visualisation team and all relevant stakeholders** to decide on collection of outputs required.
- **Bespoke visualisations** are created via direct connections to the database or ancillary data files and refresh in near-real time as data is captured.