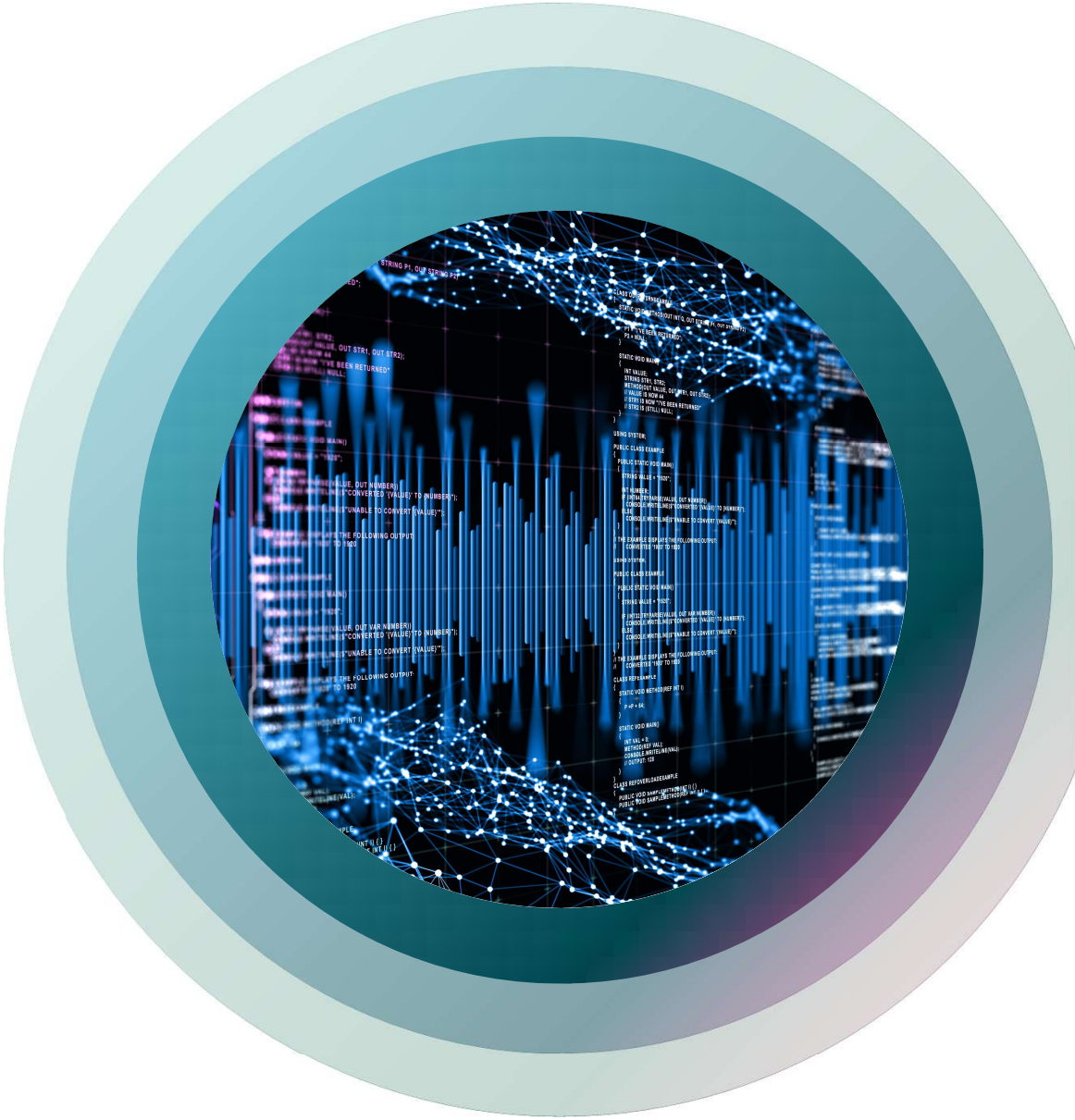
Challenges in Decentralised Clinical Trials and implications for Digital Health Technologies within Industry



Susanne Schaefer

PSI Conference, 18th June 2024

Overview

- Definitions and Acronyms
- Industry Trends
- Key Advantages and Considerations of Decentralised Trials
- Decision to use of DCT/DHT within Clinical Trials
- Digital Health within ICON

What are Decentralised Clinical Trials DCT's?

- Decentralised Clinical Trials are those in which **some or all study related activities occur remotely from the Investigator.**

- Essentially DCT's move the focal point of the research from the clinic to participants homes or local facilities, through tele-health, mobile/local healthcare providers using **participant-centric approaches**

Types of Decentralised Clinical Trial

Hybrid DCT	Full DCT
Some study activities within the participant ecosystem	**All study activities** within the participant ecosystem
Mix of traditional **on-site visits** and **remote visits**	**No** physical on-site participant visits to research centre, but participants may need to visit **local** health care setting
Can be implemented **across all phases** and **most indications**	More likely to be **later phase** or observational studies
Most common within Industry	Increasing in range
Understanding of **the local** and **regional regulations**	
Investigator is responsible for **medical oversight** and **overall safety**	

Facilitating Data Collection using Digital Health Technologies (DHT)

"A digital health technology (DHT) is a system that uses computing platforms, connectivity, software, and/or sensors, for healthcare and related uses"

Connected Medical Devices
- Heart Monitor
- Blood Pressure Monitor
- Blood Glucose Meters
- Weight Scales

Wearables
- Fitbit
- Actigraphy watch
- Continuous Glucose Meters
- Vitals patches

Mobile App
- Cognitive Assessment
- ePRO
- eCOA
- eDiary

AI Software
- Heart Monitor
- Blood Pressure Monitor
- Blood Glucose Meters
- Weight Scales

Examples of Digital Endpoints

DHTs can be used as diagnostic, therapeutic or surrogate endpoints

Digital Endpoints

Respiration rate
Respiratory sounds
Spirometry
Cough

Sleep

Seizure

Fine motor skills
Parkinson's Disease symptoms
Stress

Voice analytics

Heart rate
Heart rate variability
Inter-bat interval
Atrial fibrillation

Galvanic Skin response

Gait assessment
Posture

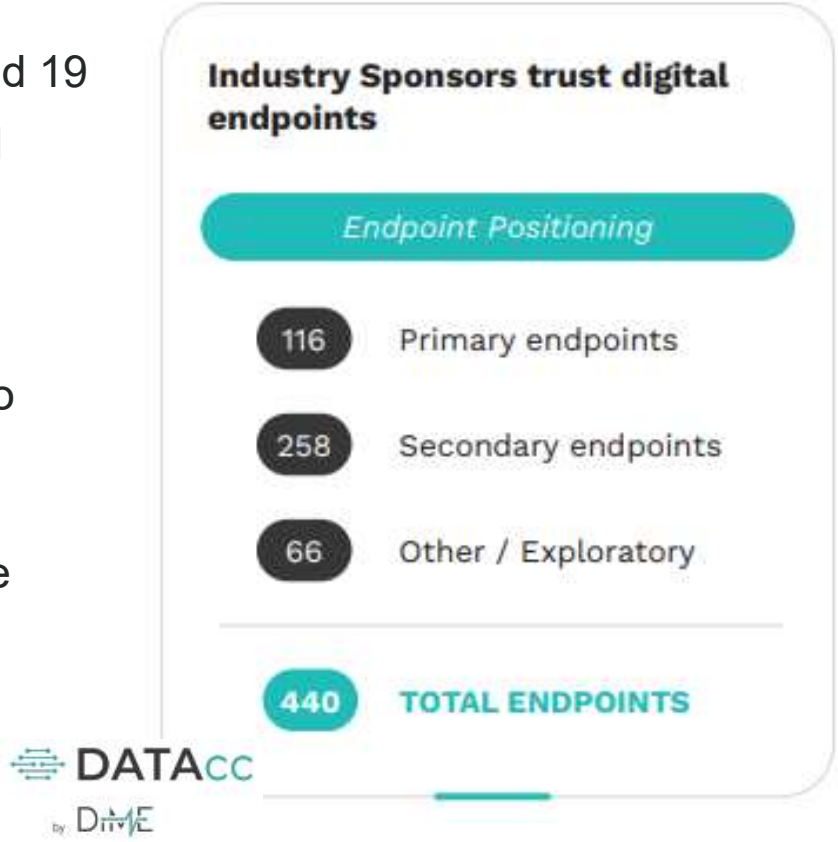
Physical activity
Energy expenditure

Oximetry
Blood pulse wave
Glucose monitoring

Temperature
Weight
Blood pressure
Skin blood perfusion

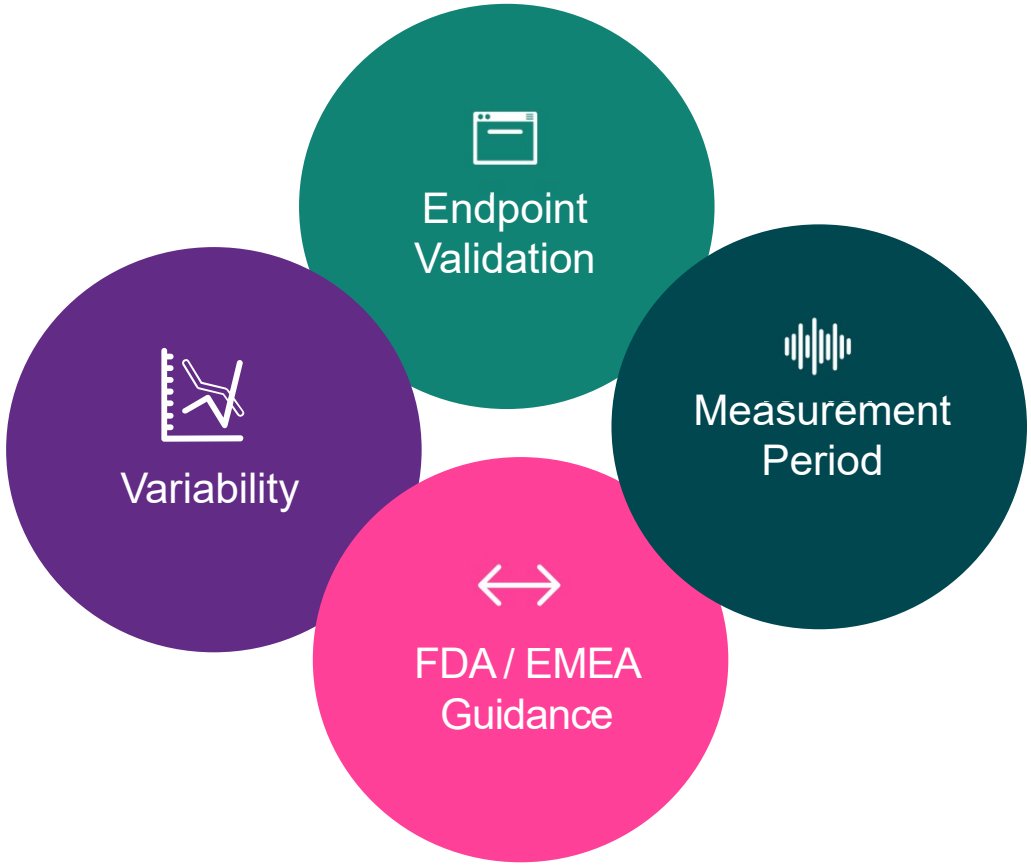
What is happening in Industry?

- Move towards decentralisation accelerated during Covid 19
- Decentralisation was seen as a way to continue clinical development whilst limiting face to face clinic visits
- DHTs previously seen as acceptable for exploratory endpoints only
- Digital data increasingly used in Phase III / IV studies to support primary and secondary endpoints.
- EMA - Approval of 95th centile of the stride velocity as '**essential**' primary endpoint for patients with Duchenne Muscular Dystrophy
- Library of digital endpoints https://dimesociety.org/get-involved/library-of-digital-endpoints/



As of 22 April 2024, 69 Sponsors have collected 440 digital endpoints

Consideration of Digital Endpoints in Industry?



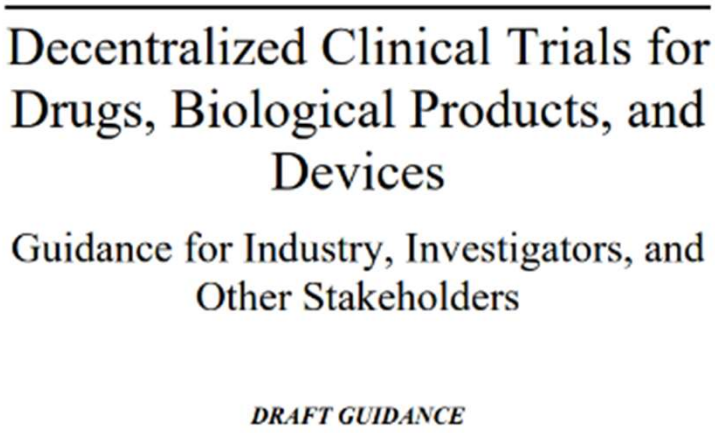
- **Validation of Endpoints**
  Particularly endpoints that power pivotal trials. Reliability and sensitivity. Meaningful change threshold and clinically significant.
- **Measurement Period**
  Timing of assessment period. Sensitive to change
  Minimal methodological guidance on how to select summary statistics
- **Variability**
  Assessments performed at home or by local health care providers may be more variable and less precise than assessments conducted by trained practitioners
- **Regulatory Guidance**
  Predominately Operational guidance FDA, EMEA

Industry – Regulatory Guidance Documents


Digital Health Technologies for Remote Data Acquisition in Clinical Investigations

Guidance for Industry, Investigators, and Other Stakeholders

FDA guidance digital endpoints Dec 2023


Decentralized Clinical Trials for Drugs, Biological Products, and Devices

Guidance for Industry, Investigators, and Other Stakeholders

DRAFT GUIDANCE

FDA Draft guidance DCTs May 2023


ARTICLE

Opportunities and Challenges for Decentralized Clinical Trials: European Regulators' Perspective

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EMA DCT Aug 2022


cdisc

Home / Standards / Standards in Development / Digital Health Technologies

Digital Health Technologies

Key Considerations and Challenges

Increasing Diversity

Potential to increase diversity, widen participation and rapid recruitment

Frequent and Continuous Monitoring

Diversification of endpoints, real time data collection

Ethical Concerns and Data Privacy

Technical literacy of participants, on-going engagement and support

Modification to Standard Practices and Data Strategies

Agile approaches to data management, innovative analytical approaches. Transferability to CDISC standards

Data Quality

Handling continuous streams of data and ensuring data quality and validity.

Compliance

Approaches to maximise compliance, minimise missing data and putative outliers

Considerations to use of DHT's within Clinical Trials

Is the study appropriate for DCT?

- General DCT or standard approach?
- Study design / objectives lend itself to the use of DHTs?
- Use of DHT resulting in unnecessary complexity or participant burden?
- Funder / sponsor / regulator open to using DHTs?

Can the endpoint be measured by a DHT?

- Existance of appropriate DHT to measure the endpoint?
- Digital Endpoint already validated?
- Target population able to use the DHT?

What is the deployment model?

- Distribution of DHT to the participant?
- Training / support / assictance for DHT required?
- DHT available / allowed to use in all study countries?

Digital Health at ICON

ICON Digital Platform

Mobile app for:

- e-consent
- ePRO
- eCOA
- eSource
- Connected Digital Devices
- TeleVisits
- Notifications & reminders

HumanFirst

Concierge Services

Direct to participant service:

- Logistics and platform management
- Adherence Check-ins
- Monitoring / Compliance
- Engagement and Retention
- Home Health Visits

Vision:

- Predictive analytics
- Real-time data analysis
- User feedback integration

Statistical Strategy

R&D environment:

- Estimands framework
- Validated endpoints
- Strategy for DHT analysis / handling
- Collaborations with academia

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