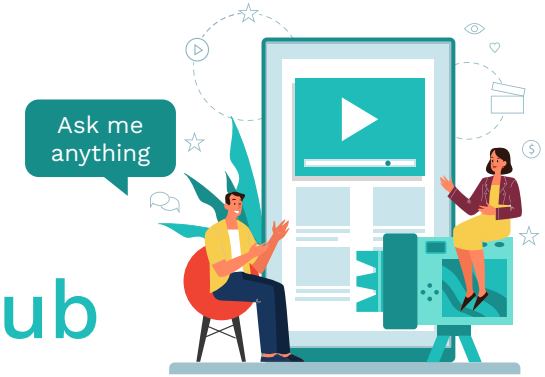
Virtual journal club



Regulatory Pathways for Qualification and Acceptance of Digital Health Technology-Derived Clinical Trial Endpoints: Considerations for Sponsors

DiME DIGITAL MEDICINE SOCIETY

Wednesday, October 30, 2024

11:00am ET

Elena Izmailova
Chief Scientific Officer
Koneksa Health

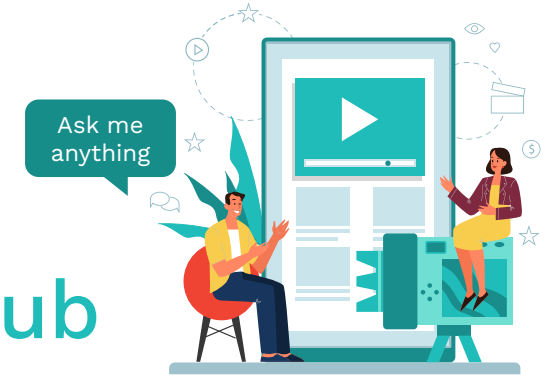
Jessie Bakker
VP Clinical Development
Koneksa Health

Benjamin Vandendriessche
Chief Delivery Officer
Digital Medicine Society (DiMe)
Moderator

But first, housekeeping

- Please note today's session is being recorded
- To ask a question for discussion during Q&A, please:
  - Either 'raise your hand' in the participant window and moderator will unmute you to ask your question live, or
  - Type your question into the chat box
- Slides and recording will be available after today's session

Virtual journal club



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Multi-Stakeholder Collaboration

REVIEW

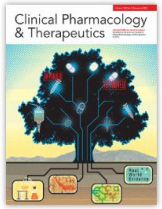
Regulatory Pathways for Qualification and Acceptance of Digital Health Technology-Derived Clinical Trial Endpoints: Considerations for Sponsors

Jessie P. Bakker[1], Elena S. Izmailova[1,*], Aude Clement[2], Steven Hoffmann[3], Christopher Leptak[4], Joseph P. Menetski[3] and John A. Wagner[1]

[1]Koneksa Health, New York, New York, USA; [2]F.Hoffmann-La Roche Ltd, Basel, Switzerland; [3]Science Partnerships, Foundation for the National Institutes of Health, North Bethesda, Maryland, USA; [4]Greenleaf Health, Washington, District of Columbia, USA. *Correspondence: Elena S. Izmailova (elena@koneksahealth.com)

Received March 11, 2024; accepted July 15, 2024. doi:10.1002/cpt.3398

ASCPT American Society for Clinical Pharmacology & Therapeutics



Early View

Online Version of Record before inclusion in an issue

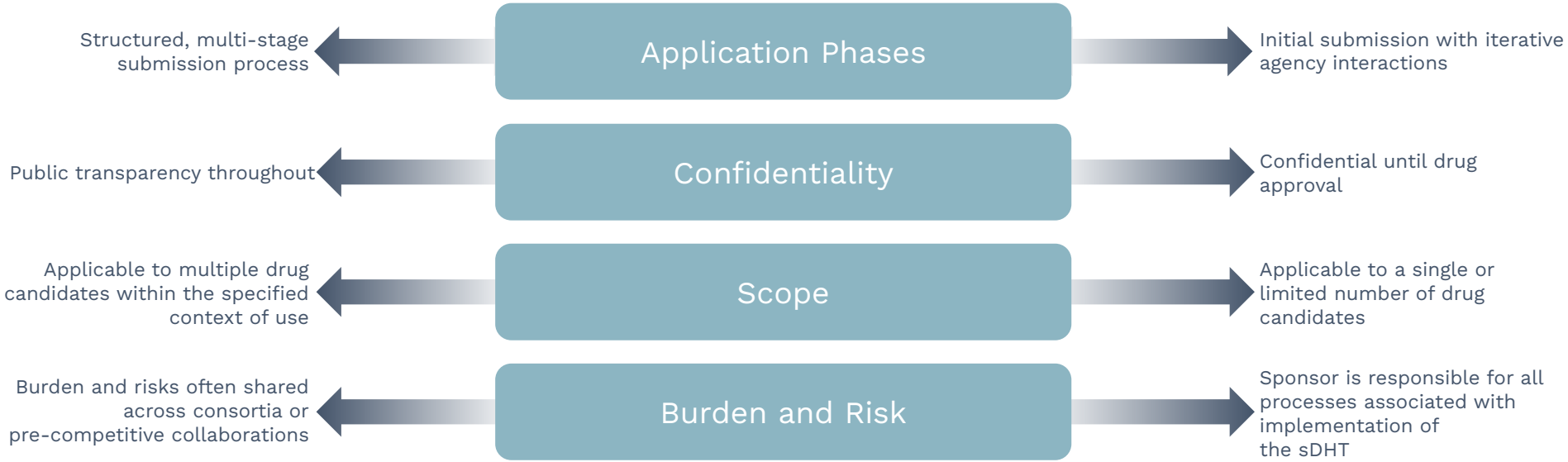
Key Points

- Adoption of digital endpoints in a drug development pipeline can be achieved via the following regulatory pathways in the United States:
  - Qualification via the **Drug Development Tool** (DDT) program
  - Acceptance via the **Investigational New Drug** (IND) pathway
- The digital endpoint evidentiary package includes:
  - Verification and validation evidence supporting the sDHT used for data capture; *and*
  - Evidence supporting use of the measure as a **digital biomarker** *versus* an **electronic clinical outcome assessment** within the specified context of use
- Sponsors may select a sensor-based digital health technology that is:
  - An **FDA-regulated** medical device;
  - A data capture product **developed specifically for research** purposes; or
  - A **low-risk** general wellness product

Attributes of the DDT vs IND pathways

Qualification via the drug development tool pathway

Acceptance via the investigational new drug pathway



Digital biomarker vs eCOA evidentiary packages

*A defined characteristic that is measured as an indicator of normal **biological processes**, **pathogenic processes**, or **biological responses** to an exposure or intervention, including therapeutic interventions*

*An outcome that describes or reflects how an individual **feels**, **functions** or **survives**, assessed through report by a clinician, a patient, a non-clinician observer or through a performance-based assessment*

DIGITAL BIOMARKER EVIDENTIARY PACKAGE

Evidence Supporting the Biomarker

- Biological rationale
- Association between the biomarker and a clinically-relevant outcome
- Technical performance of the measurement method

Evidence Supporting the sDHT

- Hardware, firmware, software, and technical specifications
- Verification testing
- Validation of the data processing algorithms
- End-to-end data flow: collection, storage, transmission, and archiving
- Operational considerations including participant instructions and usability
- Data management and statistical analysis plan
- Controls ensuring data privacy, security, and retention
- Data attribution
- Consideration of risks including clinical risks and privacy risks
- Product agnostic approaches , where applicable
- Raw/sample-level data access, where applicable

eCOA EVIDENTIARY PACKAGE

Evidence Supporting the eCOA

- Disease features meaningful to patients or carepartners
- Ability to capture clinical outcome of interest
- Ability of participants to understand instructions and perform tasks
- Scoring method
- Instrument's sensitivity to change
- Ability to interpret and communicate changes in scores

sDHT regulatory categories

Devices intended for use in diagnosing, treating, preventing, curing, or mitigating disease

Products developed specifically for clinical research data capture

Low-risk products that promote a healthy lifestyle

FDA-regulated medical devices

Research-only data acquisition products

General wellness products

Legally-marketed medical devices

Investigational devices

FDA enforcement discretion

Other general wellness products

Hardware ± software

Software only

Hardware ± software

Software only

Hardware ± software

Software only

FDA-cleared EEG headband

FDA-cleared PSG auto-scoring software

Wrist-worn sleep tracker for research use

App-based reaction time task for research use

Ring-based fitness tracker

App-based step tracker

The application of sDHTs in drug development represents an interesting intersection of the pharmaceutical, medical device, and regulatory sciences. Multiple regulations and FDA guidance documents govern this intersection, raising many questions around identifying an appropriate regulatory pathway, selecting a fit-for-purpose sDHT from the wide variety of regulated and non-regulated products available, and the evidentiary package required to support both the endpoint itself and the sDHT used to capture it.

Bakker JP, Izmailova ES, Clement A, Hoffmann S, Leptak C, Menetski JP, Wagner JA. Regulatory Pathways for Qualification and Acceptance of Digital Health Technology-Derived Clinical Trial Endpoints: Considerations for Sponsors (2024) *Clinical Pharmacology & Therapeutics* doi: 10.1002/cpt.3398.

Q&A

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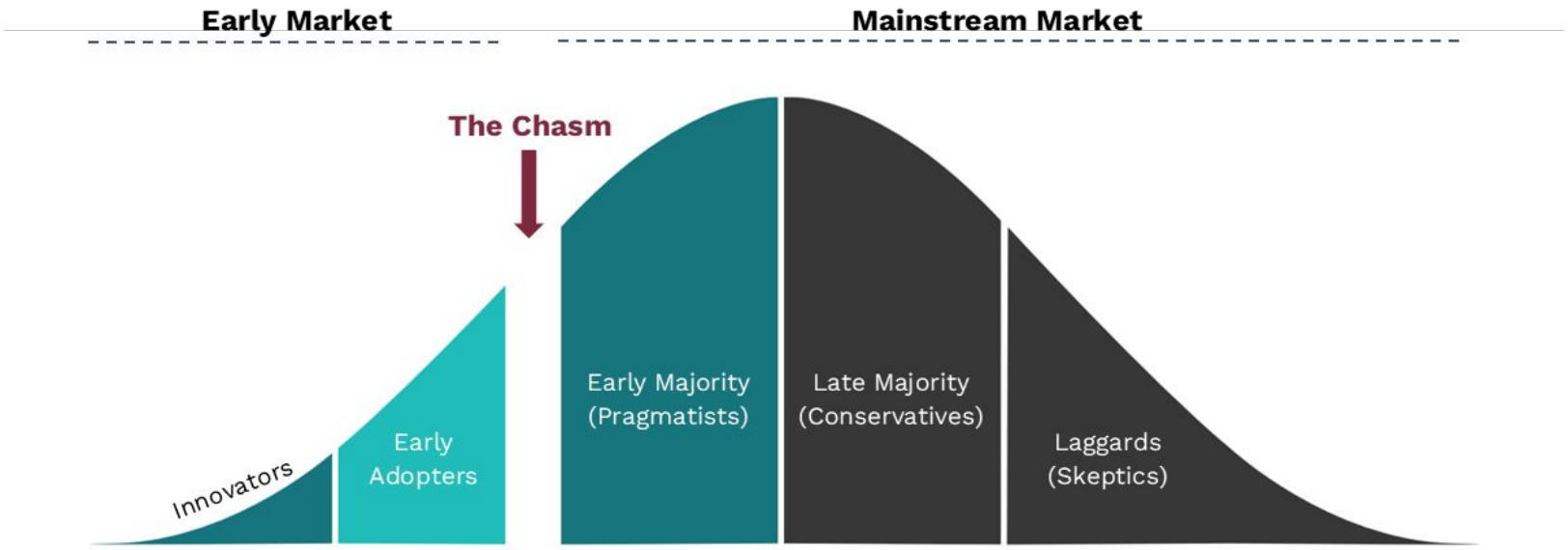
A “How to Guide” to accelerate sDHT adoption in clinical trials



Source: adapted from https://thinkinsights.net/strategy/crossing-the-chasm/

Scaling Digital Health Globally: Navigating National Pathways for Patient Access

International Regulatory Pathways for Digital Health Technologies

DIGITAL MEDICINE SOCIETY

November 19, 2024
@ 11 a.m. ET

Virtual

Miguel Amador
Partner/Chief Innovation Officer
Complear

Jeroen Bergmann
Professor, Head of Dept of Technology and Innovation
University of Southern Denmark / University of Oxford

Brian Flatley
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Thank you

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