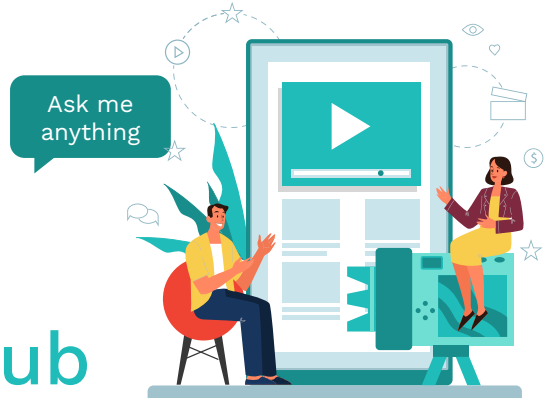
DiMe

Virtual Journal Club



Incorporating Digitally Derived Endpoints within Clinical Development Programs by Leveraging Prior Work

January 18, 2024 | 11 am ET

Sarah Valentine
Partnerships Lead
DiMe
Moderator

Rinol Alaj
Senior Director, Head of Clinical Outcomes Assessment & Patient Innovation
Regeneron

Amy Bertha
Executive Director, Regulatory Policy and Innovation
Bayer

Imein Bousnina
Program Director, US Regulatory Policy
Genentech

Megan Doyle
Director, Global Regulatory and R&D Policy
Amgen

Danielle Friend
Senior Director, US Head Regulatory Policy and Intelligence
J&J

Lauren Oliva
Director, Global Regulatory Policy
Biogen

But first, housekeeping

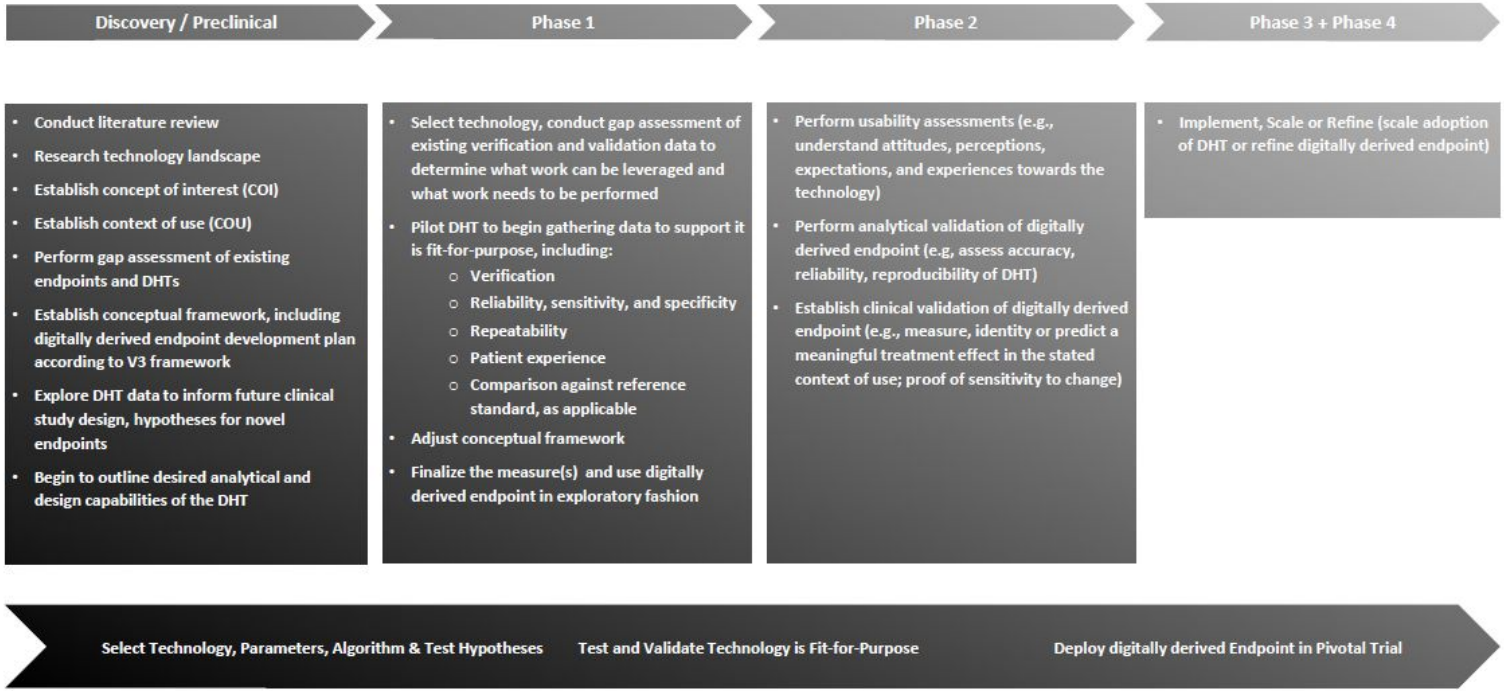
- Please note today's session is being recorded

- To ask a question for discussion during Q&A, please:
    - Either 'raise your hand' in the participant window and come off mute when the moderator calls on you, or
    - Type your question into the chat box

- Slides and recording will be available after today's session

Panelist Introductions

Incorporating Digitally Derived Endpoints within Clinical Development Programs by Leveraging Prior Work



Source: A.Bertha, et al. Incorporating digitally derived endpoints within clinical development programs by leveraging prior work. *npj Digit. Med.* **6**,139 (2023) doi: 10.1038/s41746-023-00886-9

Authors: Amy Bertha (Bayer), Rinol Alaj (Regeneron), Imein Bousnina (Genentech/Roche), Megan Doyle (Amgen), Danielle Friend (Janssen), Rasika Kalamegham (Genentech/Roche), Lauren Oliva (Biogen), Igor Knezevic (Bayer), Frank Kramer (Bayer), Hans-Peter Podhaisky (Bayer), and Sven Reimann (Bayer)

A Framework for Leveraging Prior Work to Demonstrate a DHT and Digitally-derived Endpoint are Fit-for-Purpose

Scenarios	Verification	Analytical Validation	Usability Assessment	Clinical Validation	
Considerations: • Medical Device Status • Intended Use Scope • Endpoint Status	Is the DHT accurate, precise, consistent across time, and uniform across different environmental bench testing conditions?	Does the DHT accurately, reliably, and precisely generate the intended technical output from the input data? Is the data flow defined and validated?	Can the intent-to-treat population of the clinical trial use the DHT? What is the patient burden? Are usability studies needed?	What is the context of use?	Does the measure identify or predict a meaningful clinical, biological, physical, functional state, or experience?
1. Measuring a validated endpoint within authorized device label Use of cleared/approved medical device within its labeled intended use to measure a validated endpoint					
2. Measuring a validated endpoint outside authorized device label Use of cleared/approved medical device outside its labeled intended use to measure a validated endpoint					
3. Measuring a novel endpoint within authorized device label Use of a cleared/approved medical device within its labeled intended use to measure a novel endpoint					
4. Measuring a novel endpoint outside authorized device label Use of cleared/approved medical device outside its labeled intended use to measure a novel endpoint					
5. Measuring a validated endpoint with new digital health technology Use of a new digital health technology to measure a validated endpoint					
6. Measuring a novel endpoint with new digital health technology Use of a new digital health technology to measure a novel endpoint					

No Additional Work Needed
Sponsors can leverage prior work for all aspects of verification, validation, and usability

Additional Work May Be Needed
Sponsors will need to confirm what work can be leveraged, determine if additional work is needed, and perform any needed work, to support certain activities.

Additional Work Likely is Needed
Sponsors will need to generate most data de novo.

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Case Study: Incorporating Digitally Derived Endpoints within Clinical Development Programs by Leveraging Prior Work

Scenario	Verification	Analytical Validation	Usability Assessment	Clinical Validation	
Considerations: • Medical Device Status • Intended Use • Scope Endpoint Status	Is the DHT accurate, precise, consistent across time, and uniform across different environmental bench testing conditions?	Does the DHT accurately, reliably, and precisely generate the intended technical output from the input data? Is the data flow defined and validated?	Can the intent-to-treat population of the clinical trial use the DHT? What is the patient burden? Are usability studies needed?	What is the context of use (CoU)?	Does the measure identify or predict a meaningful clinical, biological, physical, functional state, or experience?
3. Measuring a novel endpoint within an authorized device label Use of a cleared/approved medical device within its labeled intended use to measure a novel endpoint	**Analysis and Rationale**				
	Prior verification data can be leveraged since the portable wearable device is FDA authorized. The verification data that supported the marketing authorization should provide the information needed for verification.	Prior analytical validation can be leveraged since the portable wearable device is being used within its labeled intended use.	Usability can be implied, and additional testing is not needed because the labeled intended use covers the intent-to-treat population of the clinical trial.	The sponsor needs to confirm that the CoU in the clinical investigation matches the labeled intended use of the authorized device. If the CoU for the portable wearable device is patients with insomnia disorder any existing clinical validation data that supported the device marketing authorization could provide some of the information needed for clinical validation of the DHT for use in the clinical investigation.	If available, prior clinical validation may be leveraged since the portable wearable device is designed to measure the same sleep parameters in the same setting as the intended use of the authorized device. However, depending on the analysis plans (e.g., more frequent data sampling compared to polysomnography or lower sensitivity parameters for wakefulness detection) the sponsor needs to generate additional data to justify that the measure predicts a meaningful clinical impact in the stated CoU.

No Additional Work Needed
Sponsors can leverage prior work for all aspects of verification, validation, and usability

Additional Work May Be Needed
Sponsors will need to confirm what work can be leveraged, determine if additional work is needed, and perform any needed work, to support certain activities.

Additional Work Likely is Needed
Sponsors will need to generate most data de novo.

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Making Strides with Digital Measures of Physical Activity: A Digital Strategy for the 6th Vital Sign

Tuesday, February 13

11 am - 12 pm ET

DATACC

Digital Health Measurement Collaborative Community

by DiMe

Bray Patrick-Lake, MFS
Digital Health Specialist
Center for Devices and Radiological Health, U.S. Food and Drug Administration

Laurie Whitsel, PhD
National Vice President of Policy Research and Translation and Senior Advisor, Physical Activity Alliance
American Heart Association

Ankita Deshpande
Head Digital Health and Experience Innovation
Alexion

Yuge Xiao
Associate Director, Clinical Development
Michael J. Fox Foundation

Jennifer Goldsack
CEO
Digital Medicine Society (DiMe)
Moderator

Candice Taguibao
Program Lead
Digital Medicine Society (DiMe)
Moderator

DATACC by DiME

Save the date for our V3+ launch event on **February 27th at 11am ET!**

V3+

Extending the Verification, Analytical Validation, and Clinical Validation (V3) Framework to Ensure Real-World Performance of Biometric Monitoring Technologies (BioMeTs)

Project Partners

AARDEX GROUP
ActiGraph
ATCOR A CARDIEX COMPANY
Exponent
Genentech A Member of the Roche Group
Global Kinetics
janssen PHARMACEUTICAL COMPANIES OF Johnson & Johnson
REGENERON
Sage Therapeutics
Stel
sysnav HEALTH CARE
TNO innovation for life

Source: V3+

DIGITAL MEDICINE SOCIETY

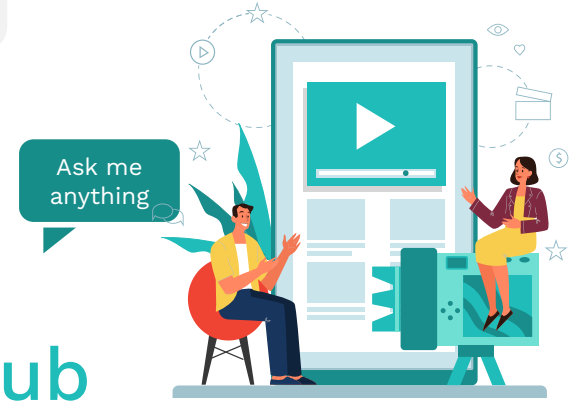
LIBRARY of DIGITAL ENDPOINTS

Join us in our next project as we convene leaders from across the field to **develop the business case** to support the development, adoption, and scale of digital endpoints!

Share your interest in joining us:
Building the Business Case for Digital Endpoints

Source: https://pages.insightly.services/digital_endpoints

Virtual Journal club



The promise of artificial intelligence (AI) and machine learning (ML) for improving clinical outcomes

Thursday, February 15, 2024 11:00am ET

Stephen Ruberg
President
Analytix Thinking
Adjunct Professor, Department of Statistics,
Purdue University

Charmaine Demanuele
Executive Director, AI/ML Digital and Quantitative Sciences
Pfizer

Gregg Gascon
Analytics Advisor
OhioHealth
Assistant Adjunct Professor Biomedical Informatics, College of Medicine
The Ohio State University
Moderator

Simon Turner
Program Lead
DiMe
Co-moderator

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