Decision tree supporting **endpoint strategy** for clinical trials utilizing digital measurement of nocturnal scratch

NOCTURNAL SCRATCH

Digital Measures Development

This decision tree is a companion piece to the Considerations to support endpoint strategy for clinical trials utilizing digital measurement of nocturnal scratch

I want to use a digital endpoint in my clinical trial.

Amazing! First, evaluate the existing evidence about the measure.

Has the measure been tested in a clinical setting with patients before?

NO

Test a new DHT, its feasibility, usability, & acceptance in patient population

Evidence captured: Utility & usability outcomes in specific patient population; specifications of source data collected from new DHTs; specifications for data operations (collection, storage, & transfer); economic feasibility; operational feasibility; sample data analysis

YES

V3

Has the measure been verified and analytically validated?

NO

Perform verification & analytical validation of a digital measurement

Evaluate the performance of a DHT to convert sensor outputs into physiological metrics using a defined data capture protocol in a specific subject population.

Evidence captured - verification: performance specs of the hardware; sensor level output data; repeatability & reproducibility; firmware & OS specs; data suitability for algorithm development

Evidence captured - analytical validation: specs of algorithmic output metrics; metrics calculations protocol; comparison to reference standard (including protocol & statistical analysis methods); description of the human subjects population; experimental conditions

YES

Has the measure been clinically validated?

NO

Perform clinical validation of a digital measurement

Evaluate whether the physiological metric acceptably identifies, measures, or predicts a meaningful clinical, biological, physical, and functional state or experience, in the stated context of use and specified population.

Evidence captured: definition & concept of the measure; clinical meaningfulness of the measure; measured concept of interest (COI); context of use (COU); measured outcomes

YES

Congratulations! You have now collected sufficient evidence about the digital measure.

What would you like to do next?

Digital Measure Use

Study phase	Endpoint
Pilot study	Primary, Secondary
Non-pivotal study	Secondary, Exploratory

Digital Measure Use

Study phase	Endpoint
Pivotal study	Primary, Secondary, Exploratory
Non-pivotal study	Secondary, Exploratory

Qualify my new digital measure as a drug development tool (DDT)

Following regulatory qualification via DDT qualification pathway with FDA.

REMEMBER TO:

- Start with defining concept of interest and the context of use
- Gather information about the digital measure in the evidence dossier: Check out the Structure of evidence dossier to support the use of connected sensor products for clinical outcome assessments in clinical trials

Use digital measure to study the disease in real-world or post-market settings

It is assumed that collected data are not intended for submission to health authorities for labeling, post-marketing safety commitment, benefit-risk assessment, or any other purpose.

Read more in *The Playbook:*

- Post-Market Settings - Safety Surveillance Checklist
- Post-Market Settings - Considerations for Digital Companion Checklist

Use digital measure to generate evidence supporting the label claims of a new treatment

Use of a fit-for-purpose digital measure in a drug trial to support regulatory label inclusion

REMEMBER TO:

- Start testing the measure and technology early - in non-pivotal studies
- Perform additional research and development to ensure acceptance of the measure as an endpoint by regulatory authorities
- Document V3 prior to use