Developing Novel Endpoints, Generated using Mobile Technology, for use in Clinical Trials: A Clinical Trials Transformation Initiative (CTTI) Project

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CLINICAL TRIALS **TRANSFORMATION** INITIATIVE

Background

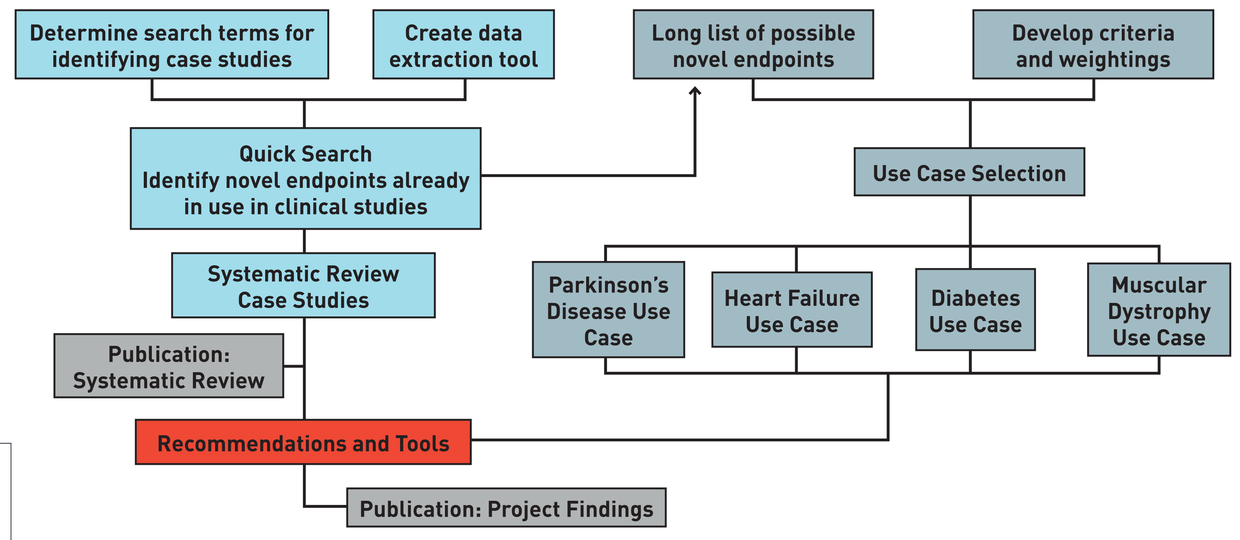
Efficient and reliable assessment of meaningful endpoints is critical to the ability of a clinical trial to detect important treatment effects

- Mobile technology offers new ways to capture functional performance over prolonged periods and as trial participants go about their daily lives.
- There is uncertainty about the approach required to develop and use mobile technology-derived novel endpoints to support regulatory approval and labeling claims.
- In June, CTTI will recommendations and tools that describe the pathway to technology-derived novel endpoint acceptance, including guiding principles for endpoint selection and suggested approaches for optimizing the efficiency of novel endpoint development. These recommendations and tools are summarized here.

Methods

CTTI established a project team to develop recommendations on the selection, development, and application of novel mobile endpoints.

- This project team defined novel endpoints as either (a) new endpoints that have not previously been possible to assess (e.g. tremor), or (b) existing endpoints that can be measured in new and possibly better ways.
- The team comprised individuals from regulatory agencies, pharmaceutical & technology industries, academia, and patient advocacy organizations.



Recommendations

Optimizing Novel Endpoint Selection

Focus on measures that are meaningful to patients.
When selecting outcome assessments for development, the approach should be patient-centered with the patient voice included as standard in the work of clinician experts in the therapeutic area.

Select the device after selecting an outcome assessment.
Selecting a suitable mobile device for data capture should occur only after the clinical outcome assessment or biomarker is identified.

Use a systematic approach to identify key novel endpoints.
CTTI has developed a Selection Tool that may be helpful when deciding between viable novel endpoints for development.

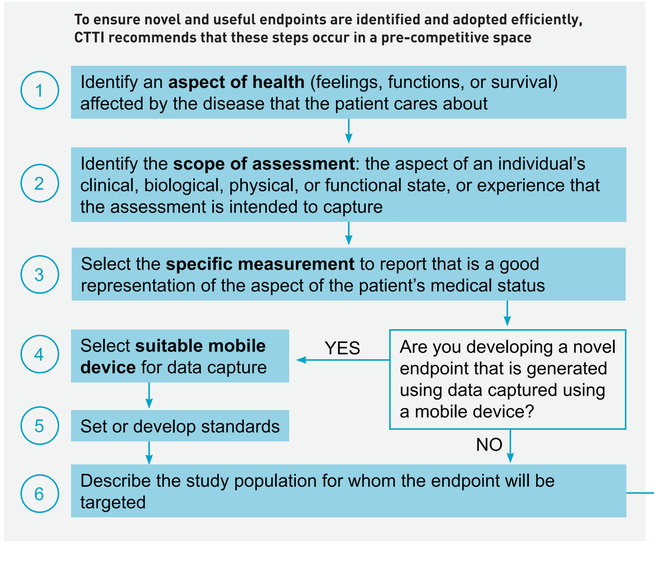
Practical Approaches to the Novel Endpoint Development Process

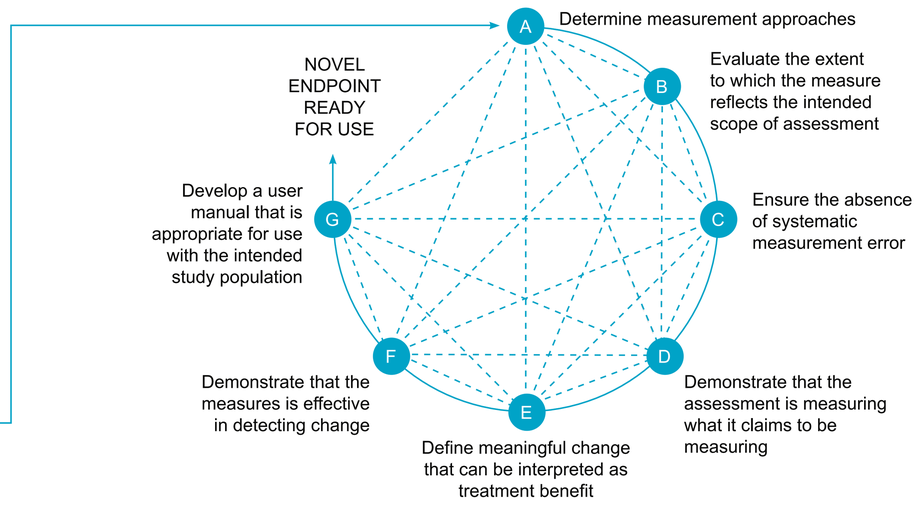
Foster collaboration among key stakeholders.
Sponsors, patients, clinicians, technology companies, and regulators should collaborate in a pre-competitive environment to identify and advance consensus on the mobile technology-derived outcome measures that are most valuable and warrant development.

Create technical standards for mobile technology-derived assessments.
Technical standards are required for the efficient development and rapid adoption of any technology.

Engage with regulators.
Regulators can and should provide critical input throughout the process of developing novel endpoints.

Recommended Approach to Novel Endpoint Development





Include novel endpoints as exploratory endpoints in existing clinical trials and observational cohort studies.
Including novel endpoints in clinical studies as exploratory assessments is the best way to understand what value they offer as well as how to further refine the endpoint.

Think critically about how to optimally position novel endpoints in interventional trials
Where novel endpoints address unmet need, they may be uniquely important as primary efficacy endpoints. However, when well-established, endpoints that effectively demonstrate clinical benefit already exist, novel endpoints may be valuable as complementary assessments.

Anticipated Benefits of Developing Novel Endpoints for Use in Clinical Trials

	SPECIFIC BENEFITS		
	SHORT-TERM	**MEDIUM-TERM**	**LONG-TERM**
Patient Centricity	Development of high-quality, patient-centric, mobile technology-derived endpoints	Greater use of endpoints that matter to patients in clinical trials Reduced participation burden (patient and caregiver) in clinical trials Fewer barriers to trial participation Larger, more inclusive, and more generalizable trials	Increase in clinical trials that yield more complete information on how therapies affect aspects of disease most important to patients Increase in clinical trials that yield better information to inform regulatory and labeling claims as well as subsequent reimbursement decisions Increase in participation and retention of patients in clinical trials through the development and selection of measures that matter to patients
Efficacy	Inclusion of mobile technology-derived endpoints in early-phase trials and in postmarket surveillance	Improved predictability rates for advancement from phase II to phase III trials Increased efficiency of postmarket surveillance	Increase in number of potentially successful treatments taken forward for testing in phase III trials, particularly in high-risk therapeutic areas
Efficiency	Generation of data needed by payers to make coverage determinations during clinical trials	Prevention of delays in coverage, payment, and use decisions	Prevention of delays in patient access to therapies

*The term "clinical trial" is used here to refer to studies done to support regulatory approval for marketing. Source: Clinical Trials Transformation Initiative's Mobile Clinical Trials – Novel Endpoints Project

Next Steps

The recommendations will be launched during a CTTI webinar on Monday, June 26 at noon ET. More details and a link to download the calendar invite for this free webinar may be found at https://www.ctti-clinicaltrials.org/briefing-room/webinars

The CTTI MCT Novel Endpoints Recommendations Packet Includes the Following:
- Recommendations
- Novel endpoint development benefit framework
- Selection tool to support decisions between viable novel endpoints for development
- Guide to interacting with FDA regarding novel endpoint development
- Flowchart of required steps for novel endpoint development
- Required steps for novel endpoint development, with suggested approaches and considerations
- Four use cases to provide tangible examples of novel endpoint development
  - Parkinson's disease
  - Heart failure
  - Diabetes
  - Duchenne's muscular dystrophy

Contact details

For more information or questions please contact the CTTI project manager for this effort, Jen Goldsack jennifer.goldsack@duke.edu