Are We Moving Toward ‘Siteless’ Clinical Trials?

Exploring the current and future potential of home-based studies.

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Worldwide Speakers

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Agenda

- Welcome & Introductions
- Clinical Assessments in Siteless Studies
- Operational Approach to Siteless Studies
- Patient Centricity: Healthcare Tailored to You
- Closing
- Q & A

Its Not About Predictions

"…where a calculator on the ENIAC is equipped with 18,000 vacuum tubes and weighs 30 tons, computers in the future may only have 1000 vacuum tubes and weigh only 1.5 tons" – Popular Mechanics, 1949

Its About Creating Opportunity

Specialists

Assisted Living

Insured

Children

Care Providers

Uninsured

Nursing Homes

Women

Consumers

Investigators

Physicians

Seniors

Intermediaries

Labs

Facilities

Nurses

Patients

Pharma & Biotech

Bio Tech

Payers

Global Regulation Regional Variation

Med Tech

Data Management

Governments

Products & Services

Medicare -Medicaid

EMEA

CROs

Basic Researchers

FDA

Devices

Labs

Business Models

Neither orderly nor rational, multiple stakeholders impact R&D with conflicting data needs

….and Asking a Few Questions

- Does it promote innovation in design; i.e. “quantum of effectiveness”
- Is it specific to a therapeutic area, or phase of research?
- Will utility vary by method of acquisition, geography?
- What about regulatory sentiments and data integrity?
- Does this change the business operation of a CRO or a site?
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Clinical Assessments in Siteless Studies

A Systemic Approach to Maximizing Data Quality

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More Than Just Wearables/Devices/Smartphones

- Typical studies have 5-15 safety and efficacy assessments
- Often need functional and/or symptomatic endpoints with surrogate (biomarker) endpoints
- Home based studies likely to incorporate more PROs
- Home based studies cannot ignore considerations ClinRo or PROs

PRO Considerations for Siteless Studies

- FDA Accepting PRO Claims – for primary and secondary claims (Gnanasakthy et al, 2012)
  - Pain most common, neurology next, almost every therapeutic area (except oncology)
- Considerations for PROs in Site-less studies
  - Multiple versions of PROs –ensure right one with validated translations
  - Ensure fit for use, applicability, statistical considerations (multiplicity of assessments)
  - Ensure quality of PRO – appropriate recall period, deal with missing assessments,
  - Paper vs ePRO – frequency, primary vs secondary, and indication can be driving factors
  - Documented training for visiting nurse (as applicable) as well as patient/caregiver
    - Reminders for comparison time point, time of assessment, guidelines, etc.

ClinRO Considerations for Siteless Studies

- ClinRO is standard for many subjective endpoints
  - Especially in neurology and psychiatric indications
  - Global improvement, symptom severity, safety and secondary efficacy measures
- Despite Clinician requirement, ClinROs can be used in site-less studies
  - Remote administration, online, or visiting professional
- Considerations for ClinROs in Site-less studies
  - What assessments could/should be done in clinic
  - Completed by visiting nurse or requires more technical expertise (travelling rater)
  - Applicability of remote administration (phone, web based)

Considerations for Siteless Assessments

- Site based issues now pushed to home
  - Incomplete or out of window assessments
  - Patient scheduling/ compliance, travelling nurse scheduling
  - If paper based ClinROs or PROs, gathering source documents
- Shift to training patients rather than sites
- Ultimately need to understand patient and family dynamics for assessments

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Associate Director Project Management, WCT Evidence

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Operational Approach to Siteless Studies

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Understanding the Patient Journey with Advanced Analytics

- New meaningful ways to leverage patient data when designing your study and recruitment approach
- Value of data from wearables and devices only – provide a framework for getting the data you need

Data Requirements

- Consent process and patient understanding of technology
- Back to the drawing board new set of rules
- Data cleaning process for post-registration, self-monitoring data collection
  - No remote monitored
  - Remote calibration of devices
  - Multiple PRO scales
  - Patient data and input only managed by patient (biometric 'passwords' and identification)

Best Practices for Operationalizing Late Phase Research

- Best practices for selecting and implementing technology to enable remote monitoring and truly virtualize late phase studies
- Use of integrated technology platforms to accelerate study start-up and minimize operational cost/risk
- Best practices for keeping physicians and patients engaged long-term
- Worldwide Research Contact Call Centre (Long follow-up)
- Validation and integration of devices
- Online, offline engagement tools for specific indication/therapeutic area
- ePROs and e-diaries
- Security of data warehouse

Where Do We Go from Here?

- Impact of workforce
- Wearables have been used since the 1970s
  - Uptake: 25% of the US population have a smart phone within 2 yrs. of the introduction
- Passive monitoring
- Limited control on how the device is used
- Establish a strong the cross-functional team to support technology driven projects
- Storage of large amount of data
- Device durability
- Monitoring the device functions or malfunctions, fixing issues remotely
- Ongoing monitoring overall/average results
- Data ‘blending’
- Digital ‘biomarkers’

Where Do We Go from Here?

- What validation is needed to ensure the device is providing correct data for the correct patient population? Solution needs to be fit-for purpose, disease specific devices/apps
- Need a clear idea of what you what and find the device with the right technology
- Migration of app to other devices, enable cross device validation
- Device used from phase I/II/III used to collect patient data passed MA for long-term chronic disease
- Increase patient control of their own health; changing patient relationship with healthcare
- Regulatory perspective (when a wearable becomes a medical device)
- Industry-wide agreement on standards, processes and validation – Worldwide Clinical Trials is currently setting up discussions with our partners to how we can help shape this future

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Patient Centricity: Healthcare Tailored to You

Conducting studies from home

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Changing Landscape

Patients can be recruited and enrolled from remote locations

One Study Coordinating Center

Ideal for rare disease populations, patients with travel difficulties, infants, elderly

Ease of data collection from multiple sources

Reduced costs and increased efficiencies

Online recruiting

Remote data base searches

Study and Patient Portal

Retention

Home health care nurses

Telemedicine

Numerous health monitoring apps

Less sites

Less clinical monitors

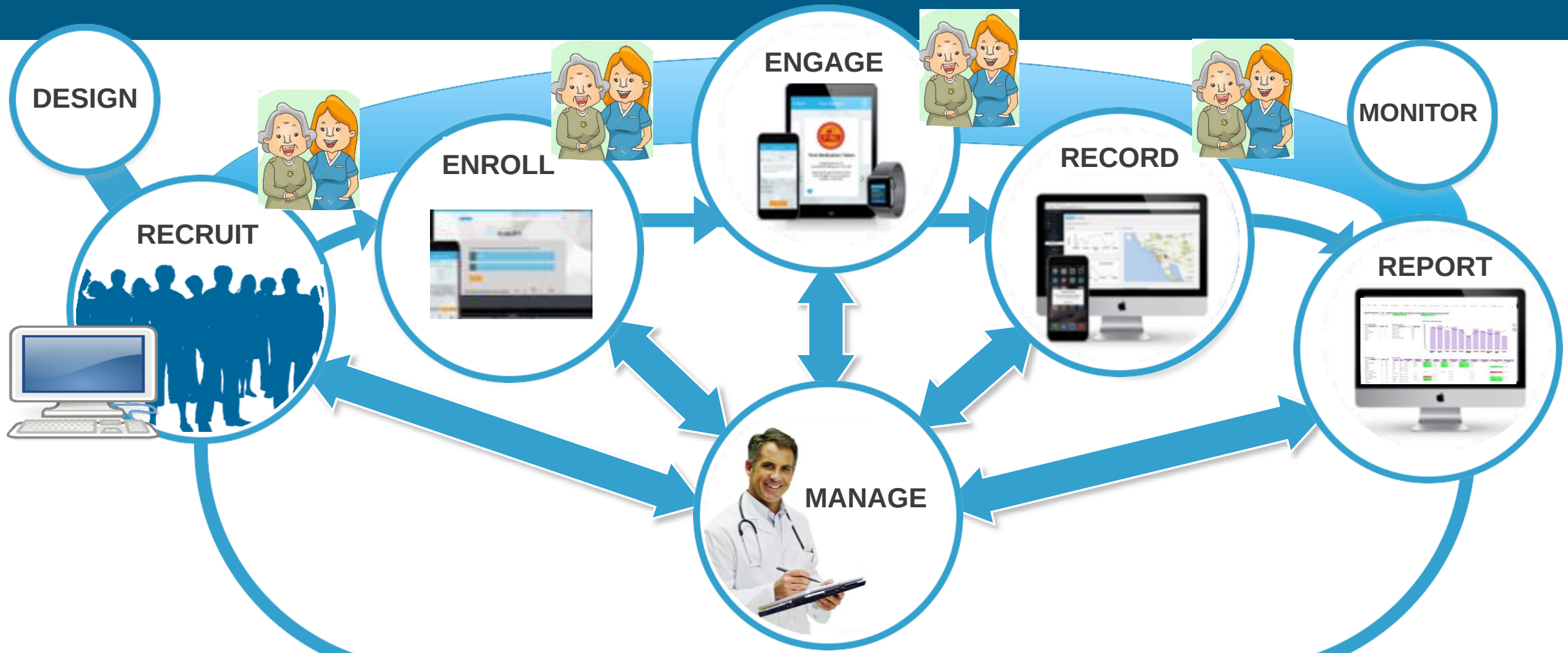
More patient focused

More apps

Reduced study timelines

Reduced costs

Future Siteless Trials



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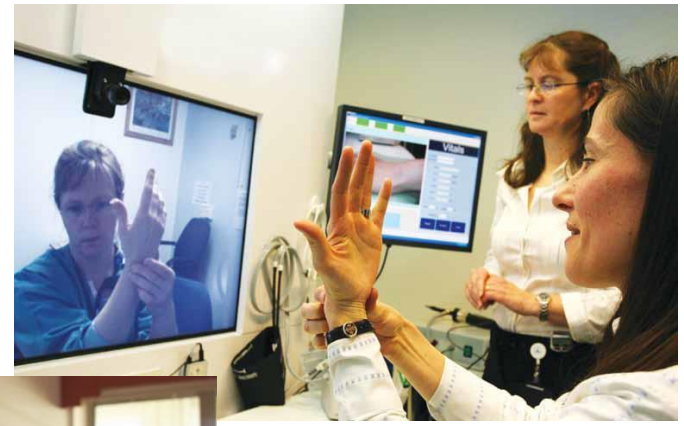
Telemedicine and Homecare

- The use of telecommunication and information technologies to provide clinical health care at a distance.
- Allows healthcare professionals in multiple locations to share information and discuss patient issues as if they were in the same place
- Home-bound and would otherwise require an ambulance to move them to a clinic
- White coat syndrome may be avoided
- Reduces the need for outpatient visits and enable remote prescription verification and drug administration oversight, potentially significantly reducing the overall cost of medical car

Increase Subject Convenience

- Improve Recruitment
- Improve Retention
- Improve Compliance
- Expand Geographic Reach
- Accelerate Trials
- Reduce Trial Costs



Home assessments
Health Care Quality Improvement Interventions

- Stepped Wedge Design
  - Sequential rollout of Quality Improvement (QI) intervention
  - Outcomes at each point at which new group of participants ("step") receives intervention
  - Observed differences in outcomes between control section and intervention section of wedge attributable to intervention
- Time Series Design
  - Outcomes measured at multiple points before and after the introduction of intervention
  - Multiple points before and after intervention allow the intervention effect to be estimated while accounting for the underlying secular trends.
- Controlled Before-After Studies
  - Control population identified with characteristics similar to those of the study population
  - Outcomes measured in study and control populations before and after intervention
  - Observed differences between groups in the post-intervention period or in change scores (from baseline in each group) attributable to the intervention
- Uncontrolled Before-After Studies
  - Outcomes measured before and after the introduction of intervention in the same study setting.
  - Observed differences in the outcomes are assumed to be attributable to the intervention

Fan et al., 2010

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Q & A

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Thank You!

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