I-SPY 2 & 3 TRIALs
Advances in Clinical Research & Data Capture
I-SPY’s Primary Aim: Accelerate Pace of Progress

Current drug development model is too slow, too expensive, and not sustainable

The I-SPY mission is to:

- Implement efficient trial designs with use of biomarkers and/or surrogate endpoints to drive knowledge turns

- Increase therapeutic agents tested with a standing trial and extensive network of clinical sites

- Integrate the processes of clinical care and research, both technologically and culturally with team approach
I-SPY’s Acceleration of Knowledge Turns

BIOMARKER PHASE

- Feedback to consortium
- Agreement on candidate marker
- Analysis of biomarker data
- File IDE

SCRENNING PHASE

- Adapts on drugs (~60 patients)
- Drug graduates or is dropped
- Continuous enrollment
- I-SPY 2 TRIAL amendment approved

CONFIRMATORY PHASE

- pCR signal confirmed
- Surgical Therapy to Confirm pCR
- Enroll, randomize on qualifying biomarkers
- Agents adapt on biomarker (~300 patients)

CONFIRMATORY PHASE

- 3 YR RFS confirms pCR result
- Enroll, randomize on qualifying biomarkers
- Identify next agent combination

Agent Enters

- New agent/combination qualifies and is approved for I-SPY 2

Full Approval

Accelerated Approval for Agent/Approval for biomarker/PMA
I-SPY 2 TRIAL

22 Participating Trial Sites, Expanding to Canada
Screening 40+ patients per month
Clinical Trial Data Capture – Advances with TRANSCEND

- An integrated modular platform to support adaptive clinical trials like I-SPY 2 TRIAL
- Structured, coded eCRFs with source documents attached to CRF in Electronic Data Capture system
  - Enable real-time, remote source data verification within EDC
- Randomization as an automated web service
  - Using data that has been source data verified
- Combining evaluation of drugs and biomarkers together
  - Scientists need access to data early and in an integrated fashion (one stop shopping)
  - Clinical, Pathology, Imaging data along with biomarker data of various types (microarray, sequencing, etc.)
Key Features of TRANSCEND

- Scalability with Salesforce, cloud-based environment
- Modular, can securely integrate with other applications as well
Clinical Care & Research: EHRs and EDCs

Typical process for clinical research today

- ‘Abstract’ from EHR records instead of paper
- Data quality is still very poor
- ‘Forage’ for information but now across the EHR because data ‘location’ and recording is not standardized
Irony of EHRs, physician productivity, information ‘finding’

- Data shows physician productivity is not improved by EHRs and may be negatively impacted due to documentation challenges.

- ‘Note Bloat’
  - Clinicians spend time ‘constructing’ large, verbose, narrative notes.
  - Providers spend time sifting through bloated notes of others to find key pieces of clinical data to care for the patient.

- Emerging Observations
  - Survey of 9 family practice physicians at 1 academic medical center, Providers with 2+ years of experience with EHRs,
    - Average 46 mins of free time lost per clinic day per physician.
    - Means physicians charting not in clinic but at home, nights, weekends.

(1) http://www.redwoodmednet.org/projects/events/20130725/rwmn_20130725_mcdonald_v2.pdf
EHR ‘Data Quality’… it’s not all you think it is

- EHR clinical notes are often subjected to ‘cut & paste’ by clinicians, causing risk:
  - Incorrect information/diagnoses propagated forward
  - Perpetuates out-of-date information, not clear if the author really is reflecting on the ‘today events’
  - Leads to less independent thinking of the case (of concern in training clinics)
  - Auto-inserted data contributes to poor readability of the for no practical reason
  - Hammond study – highest copying events – **physical examination!**

- 90% of EHR using physicians admitted to copying, 80% planned to continue

Project INSPIRE – Workflow Study

- Systems Engineers mapped clinical workflow at 4 University of California Breast Care Clinics, participating in Athena
  - UCSF, UCSD, UC Davis, UC Irvine
  - 2 are HIMSS Stage 7
  - 40 interviews, 12 unique roles/perspectives including California Cancer Registry

- Compilation of 348 pain points & observations
- Created high-level process map of clinical care of breast care patients
- Who has ownership of what data element?
- What data elements should be captured?
- When should the data be captured?
Most common pain point – finding information in EHR
Capturing key data in checklists rendered in EHR – data then reused in eSource

Identify key data elements and provide a single place in EHR for this data

Providers fill out dynamic forms ("checklists") at key points of care

Data is now "more structured" and usable for decision support, comparable analytics, etc...
Re-engineering how we capture data within EHR, integrate with better data

Project INSPIRE:
‘capturing and exchanging key clinical data for care coordination in high impact conditions’

Our Vision:

Dynamic Structured Form for Data Capture
(XML-driven and questionnaire like with skip/branch, etc. Rendered *within* EHR)

COTSP = Chemotherapy Treatment Plan and Summary (Breast Cancer specific)
Decreasing the pain of information finding – Motivating a transformational culture change

Everyone has to search through notes to find the proper data, often it is conflicting

- Clinicians
  - Taking care of a returning patient
  - Ongoing care management
  - Generating survivorship care plans (ASCO standards)
- Billing, Abstractors
- Cancer Registrars
- Clinical Researchers & Trial Coordinators
- Quality improvement

We need to start putting in place the critical building blocks of a Quality Management System