Real World Evidence: Quantifying the Patient Journey

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The Patient Journey

- Understand
- Quantify
- Influence
Transforming the Healthcare Ecosystem

“It’s staggering to see the pace at which digital technology is changing the traditional and highly regulated world of health care.”

RWE Intensifying Across Product Lifecycle

Source: Adapted from McKinsey Practice Perspectives on RWD
Features of Desired Analytical Ecosystem

• Open and Collaborative
  ◦ Within and between Business units
  ◦ Also with Vendors!

• Comprehensive
  ◦ Deep set of “out of the box” capabilities
  ◦ From data to insight

• Flexible
  ◦ Exists as part of current architecture without disruption

• Grows and changes over time!
Desired Business Outcomes (some examples)

- We want to be able to:
  - Integrate RWE with current and planned RCTs, and compare!
  - Quickly see safety signals in our products and TA in general
  - Plan an RCT program based on most current “real world conditions”
  - Assess value-based contracting in a proactive mode
  - Create a culture that is not afraid to ask the provocative question
  - Evaluate our product performance using machine learning algorithms
  - Stream device data safely and securely and analyze it on the fly
  - Automate the simple and focus people on the complex
  - Prove we are a patient-centric company by providing data and analysis back to patient communities (safely, securely, accurately etc.)
Example Analyses
Population Level – Drug / Disease Prevalence
Cohort Selection – Condition Prevalence
Patient Level Drill Down - Patient Profile
Time-to-Event Models of Drug Usage and Outcomes
OHDSI CohortMethod built-in

Cohort Plots

Kaplan-Meier Plot

Original cohort:
Treated: n = 459
Comparator: n = 80

Removed subset in both cohorts
& > 100 days of time, prior

Have at least 1 day at risk

Study population:
Treated: n = 265
Comparator: n = 500

Screen clipping taken: 9/13/2016 1:13 PM
Summary
What we offer in the RWE space

• Opportunity to maximize the investment made in Spotfire in the RWE/HEOR/Epi space

• We achieve this by:
  ◦ Creating “accelerators”
  ◦ Using open-source as the foundation
  ◦ Integrating the best new features of technology platform
  ◦ Understanding that “one size does not fit all”

• Which is valuable because:
  ◦ Decrease time to value realization
  ◦ Maximize collaboration PKI and our customers
Available today

- **Data**
  - Map sources to CDM(s) of choice
  - ETL to connect CDM(s) to Spotfire

- **Cohort Builder**
  - Build cohort in the same place as you will analyze it
  - OHDSI CohortMethod

- **Visualization**
  - OHDSI-like interactive visuals

- **Advanced Analytics**
  - Module Template Accelerators (e.g., safety signal detection)

- **Architecture**
  - Parallelized computing
Roadmap

• Short term (Q3/4 2016)
  ◦ Add more OHDSI packages: PatientLevelPredict etc.
  ◦ Add OHDSI ACHILLES visualizations (more interactive)
  ◦ Medication Adherence/Persistency
  ◦ Meta-analysis (e.g., comparative effectiveness)

• Medium term (2017+)
  ◦ Streambase technology integration (streaming devices, IOT)
  ◦ Connections to other PKI offerings
    - Signals for Translational
    - Clinical Data Review Dashboards
    - Signals Perspectives
  ◦ Semantic Explorer

• Seeking Partners to co-develop!