Supporting Comparative Effectiveness Research with Claims Data: Federal Efforts to Develop a Multi-Payer Claims Database

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Brookings Roundtable on Active Medical Product Surveillance

Some Initial Housekeeping

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Multi-Payer Claims Database (MPCD) for Comparative Effectiveness Research (CER)

Dave Knutson
Andre Chappel

Brookings Webinar
Nov 7, 2011

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Catalyst

- $1.1 billion investment in CER enterprise funded by American Recovery and Reinvestment Act of 2009

- $400 million allocated to the Office of the Secretary (OS)

- Federal Coordinating Council (FCC) for CER advised Secretary on how to invest allocated funds

- Due to immediate need, FCC recommended OS focus on CER infrastructure development

- HHS identified value of creating a database that would combine claims data from a range of public and private payers

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Objectives

- Goal: Build a MPCD to support CER, on a foundation of public and private payer claims data

  – **High priority:** Privacy and protection of patients

  – Build a comprehensive database to enable research on priority populations, interventions, and conditions

  – CER broadly defined to include both clinical & delivery system research

  – Increase access and usability of the data

  – Engage private sector in CER infrastructure development and research

  – Lay the foundation for future enhancements with clinical data

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Value Added

- Incorporating public and private data into one source will enhance the value of claims data for CER

  – Easier to find and obtain relevant data

  – Greater geographic coverage and density

  – Ability to study less common conditions

  – Increased demographic and clinical representativeness

  – Potential linking across payers and time

Project Flow

- Phase 1: Strategic and technical design

  – Strategic plan completed April 29, 2010 by Avalere Health

  – Technical design pilot testing nearing completion

    • Tools to combine data from different sources – Vexcel/Microsoft

    • User interface to create customized data extracts – Thomson Reuters

- Phase 2: Implementation of MPCD – Awarded to Optum, Start date: January 2011

Implementation Phase Overview

- Collaborative effort between ASPE, CMS, Optum and other healthcare industry and research leaders

- Database components

  - Hybrid design

    - Data hosting

    - Distributed/federated data network

  - CMS Chronic Condition Warehouse (CCW)

  - Optum Normative Health Information Database (NHI)

  - Two additional data sources

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Data Partner Evaluation Criteria

- Restrictions on use of data

- Quantity and coverage of data

- Quality of data

- Cost to MPCD for their participation

- Overlap with other partners

Advisory Structure

- Governance Board

  – Members recruited by AcademyHealth

  – Consists of researchers, private payers, providers, consumers, states, and the Federal Government

  – Guide MPCD's implementation and future sustainability

- HHS Leadership Council

  – Policy leaders and data experts across multiple agencies within HHS

  – Gain insight into potential implementation issues

  – Facilitate collaboration with similar initiatives

Governance Board

Voting Members

W. David Helms, PhD (Chair)	Peter Bach, MD
Jeff Allen, PhD	Mark Gaskill, MFT
Patrick Baier, DPhil	Bruce Hamory, MD
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Denise Hynes, PhD, MPH, RN	Amol Navathe, MD, PhD
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HHS Leadership Council

Sherry Glied, PhD (Chair)	**ASPE**
Patrick Conway, MD MSc	**OCSQ**
Terry Cullen, MD MS	**OCIO**
Anne Elixhauser, PhD	**AHRQ**
Rick Gilfillan, MD MBA	**CMS**
Rick Kronick, PhD	**ASPE**
Farzad Mostashari, MD ScM	**ONC**
Todd Park	**IOS**
Tom Reilly, PhD	**CMS**
Melissa Robb	**FDA**
Jean Slutsky, PA MSPH	**AHRQ**

Advisory Structure Cont.

- Data Stewardship Council (DSC)

  - Will include all data contributors

  - Provide recommendations on technical design and data access

  - Monitor processing of data in MPCD

  - Review and approve data requests

- HHS Expert Panel

  - Researchers within HHS familiar with claims data and CER

  - Utilize and test the system

  - Provide feedback on how the system can be improved

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Privacy and Security

- Emphasis on privacy and security controls

  - Data use agreements

  - De-identified data at every step of the process

  - PII hashed at source before matching across partners

  - Compliance with FISMA, HIPPA, ARRA, and CMS IT policies

  - Statistician review of inferential de-identification

  - Masking of small cells of data and dates of service

  - Audit reports for contributors to track data processing

  - Data enclave under consideration

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Data Access Model

- Web-based interface

- Three tiers of data access

  - Tier 1: May include a perturbed dataset

  - Tier 2: Standard analytic file (SAF)

    - Limited data set

    - Requests subject to approval of Data Stewardship Council (DSC)

  - Tier 3: Extracts from full set of claims files

    - Obtain richer data than what is available in tier 2

    - Still minimum data necessary

    - Request subject to DSC approval and additional review by data contributors
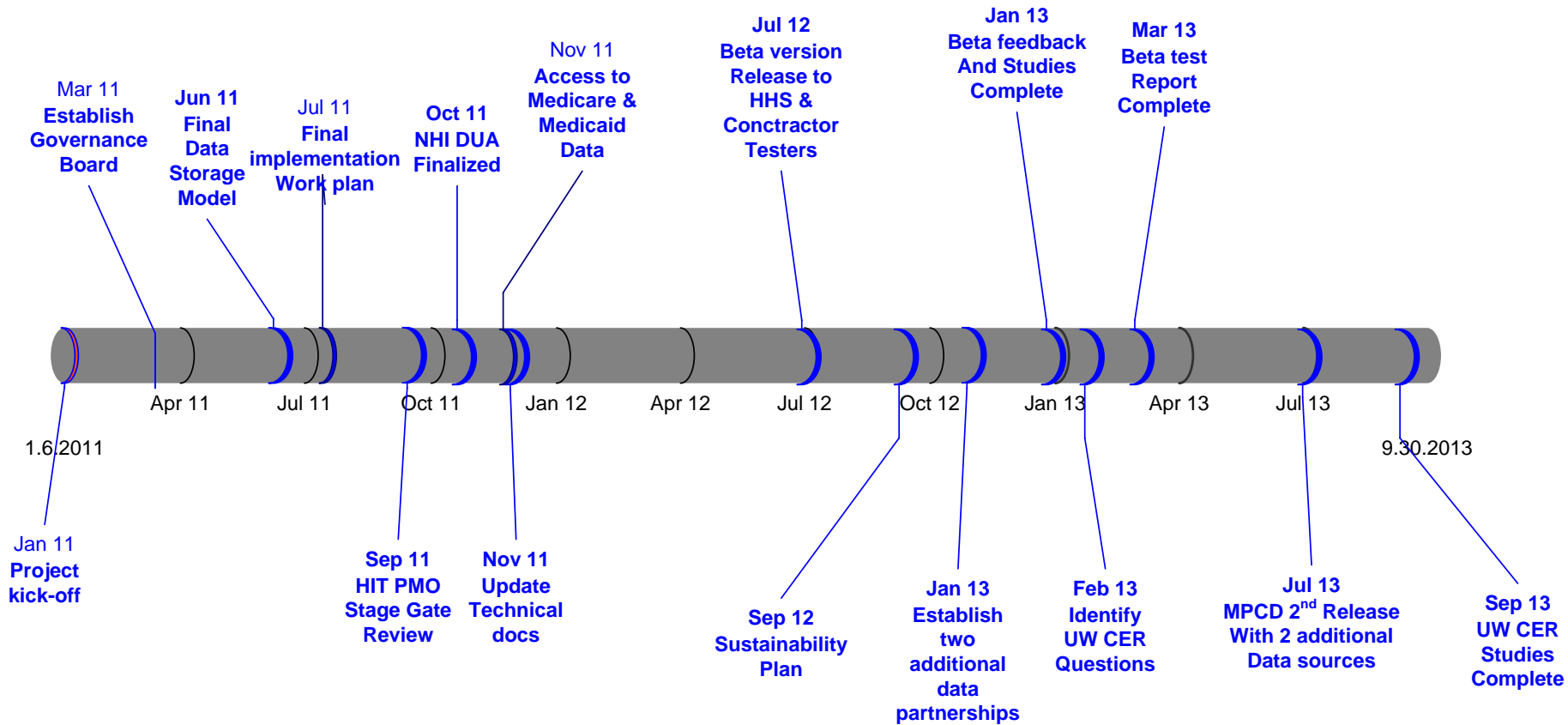
Modifications Under Consideration

- Later release of final database

- Internal beta version to test fully distributed alternatives

    – Mini-Sentinel model

    – Automated fully distributed regression approach

- Perturbed dataset to assist researchers in understanding the data before they submit queries

- Beta test to demonstrate unique value of MPCD and to evaluate the relevance of various analytic strategies for CER

Potential High-Level Timeline Mod

Mar 11
Establish Governance Board

**Jan 11
Project kick-off**

**Jun 11
Final Data Storage Model**

Jul 11
Final implementation Work plan

**Oct 11
NHI DUA Finalized**

Nov 11
Access to Medicare & Medicaid Data

**Sep 11
HIT PMO Stage Gate Review**

**Nov 11
Update Technical docs**

**Jul 12
Beta version Release to HHS & Conctractor Testers**

**Sep 12
Sustainability Plan**

**Jan 13
Establish two additional data partnerships**

**Jan 13
Beta feedback And Studies Complete**

**Feb 13
Identify UW CER Questions**

**Mar 13
Beta test Report Complete**

**Jul 13
MPCD 2nd Release With 2 additional Data sources**

**Sep 13
UW CER Studies Complete**

1.6.2011

Apr 11   Jul 11   Oct 11   Jan 12   Apr 12   Jul 12   Oct 12   Jan 13   Apr 13   Jul 13

9.30.2013

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Key Partners

- AcademyHealth
  - Coordinating Governance Board
  - Supporting outreach to the research community

- National Association of Health Data Organizations (NAHDO)
  - Facilitating state data acquisition

- Buccaneer Computer Systems and Services
  - Hosting MPCD platform
  - CCW data extraction and integration

- University of Washington
  - Participating in database design to ensure value for CER research
  - Will conduct demonstration of CER power and usability of MPCD

Outreach Activities

- Build awareness and demonstrate MPCD utility through:

  – Presentations at selected annual research conferences (e.g., AcademyHealth ARM, APHA, NAHDO)

  – Presentations to other agencies and outside groups (e.g. Brookings)

  – Professional communication from AcademyHealth

  Down the road…

  – Diffusion of information from Governance Board members

  – Publish articles on demonstration analyses and policy applications in selected peer reviewed journals

Future Possibilities

- Include value-added analytics

  - Episode groupers

  - Risk adjustment

  - Quality metrics

- Incorporate non-claims data

  - Lab results

  - Clinical records

  - Electronic medical records

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Roundtable Discussion and Questions

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http://www.brookings.edu/health/Projects/evidence/roundtables.aspx