Shaping Convergent Strategies in Comparative Effectiveness Research

CER: Informing Public and Private Payer Decision-Making

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Disclaimers

- I have not had significant direct funding with any pharmaceutical company for over 20 years.

- This presentation represents my personal views and not those of a current or past employer.

- The data in this presentation is either pro forma or in the published literature; there is no proprietary data.
CER Questions

- Do we need Comparative Effectiveness Research (CER) to improve plan members’ health status?

- Will CER methods be selectively applied to companies’ data sets?

- CER methods be important for assessing population impacts of alternative healthcare approaches? (an example)
If you do nothing, 2% of your population gets sicker every year.

Healthy/Non-Users
35% Prevalence
5% Costs

$400

Stable
30% Prevalence
10% Costs

$1,500

At Risk
20% Prevalence
25% Costs

$4,000

Struggling
10% Prevalence
30% Costs

$11,000

In Crisis
5% Prevalence
30% Costs

$42,000

5% Prevalence
30% Costs

30% Prevalence
10% Costs

20% Prevalence
25% Costs

$4,000

35% Prevalence
5% Costs

$400

Population Health Imperative

Per Member Net Payments

Pro Forma data

Illness Burden
Population Health as Strategic Component

- Investments in *health care benefits*
- Line of Sight
- Business Value

- Financial Management
- Population Health Management
- Stakeholder Engagement
- Supplier Performance Management

Investments in *health care benefits* lead to a Line of Sight for Business Value, encompassing components such as Financial Management, Population Health Management, Stakeholder Engagement, and Supplier Performance Management.
Potential for Secondary Analyses of Existing Clinical Datasets for CER

- **Typical CER**
  - Estimating incidence and prevalence
  - Estimating treatment needs
  - Developing health policy
  - Testing clinical hypotheses
  - Performing meta-analyses

- **Innovative challenges* (examples)**
  - Cross-design synthesis to standardize and compare clinical data collected by different methods
  - Evaluation of new statistical models and methods on treatment effectiveness outcomes

*Ref.: NIH Challenge Grant 05-AA-101 (high priority)
NIH Challenge Grants for CER

- Prevention and Risk Factor Reduction Strategies for Disabilities (05-AG-102*)
- Comparative Effectiveness Studies of Non-Pharmacological Treatments for Chronic Low Back Pain (05-AT-101*)
- CER on Cancer Screening (05-CA-102*)
- Cost-Effectiveness of Patient Navigation (05-CA-103*)
- Understanding the Effects of Bariatric Surgery on Type 2 Diabetes and Cardiovascular Risk Factors (05-DK-101*)
- Support Pilot CER Projects in Community Settings (05-RR-102*)
Health of Individuals and Populations
Population Impact Assessments

- Ask the question -- make the options explicit
- Collect data
  - Relevant population denominators
  - Prevalence and current practice
  - Estimated data on baseline risk of identified outcomes
  - Library of evidence for risks (Relative Risks and Relative Risk Ratios)
- Calculate impact -- population impact measures
- Understand -- values, training, culture, receptivity
- Use -- implement results in prioritizing services using change and knowledge management
Population Impact Numbers

**Need:** Public health counterpart to evidence based medicine

**Solution:** Population impact measures to use evidence that is combined with collected data to provide local context to measure of risk and benefit, and to support health policy decision making

**Types:** Eliminating a risk factor (PIN-ER-$t$) and the number of events prevented by the intervention in your population” (NEPP)

Population Impact

* Includes embedded numbers

Total Population

- # Diseased*
- # Treated*
- # Events Prevented by Intervention*

Adapted from R. Heller “Evidence for Population Health” (2005), Oxford U. Press
Atorvastatin vs. Simvastatin Study*

- Case-referent design
- Full time employees from 23 companies with 2 years continuous postindex enrollment
- Matching (13,584 in each group)
  - Initial drug dose
  - Baseline inpatient CVD events
  - Average wage
  - Propensity score
- Primary study outcomes collected for 2 years
  - Rate of inpatient CVD events
  - Total costs to employers

*Simpson RJ, et al. 2009; Mayo Clin Proc 84(12):1065-1072  (authors funded by Pfizer)
Impact at 40% Prevalence by Rx Mix and Compliance

[Graph showing the impact of atorvastatin and simvastatin ratios on cardiovascular events over 2 years.]
Impact at 20% Prevalence by Rx Mix and Compliance

Δ # cardiovascular events in 2 years

Atorvastatin Simvastatin Ratio

- 140-160
- 120-140
- 100-120
- 80-100
- 60-80
- 40-60
- 20-40
- 0-20
Added Cost for Index Drug Depending on Prevalence and Rx Mix

Atorvastatin Simvastatin Ratio

Atorvastatin $946 mean; Simvastatin $489 mean.
Summary

- We need CER studies to enhance decision making for improving plan members’ health status.

- CER methods can be selectively applied to and supplemented by companies’ data sets.

- CER methods be important for assessing population impacts of alternative healthcare approaches.
Thank You