

“Road Testing” Electronic Medical Record Systems

Darren Zinner, Ph.D.

Brandeis University

Health Industry Forum

June 4, 2008

Homework Assignment

For four recently-published RCT studies:

1. Are the main outcome measures routinely collected in the EHR system?
2. Are the main independent and control variable routinely collected?
3. Estimate the relative size of the patient population.

Overview of Studies

| Type of Trial | Topic | Publication | Key Challenges, Measures |
|----------------------------|--|--|---|
| Double-blinded RCT | Antipsychotic Drugs for Schizophrenia | Lieberman et al, <i>NEJM</i> 2005 (CATIE) | Links to pharmacy, Documenting discontinuation |
| Unblinded RCT | Gastric Binding for Control of Type 2 Diabetes | Dixon et al, <i>JAMA</i> 2008 | Diagnostics: Blood pressure Lab values: HbA1c |
| Registry | Bare Metal vs. Drug-Eluting Stents | Valgimigli et al., <i>Circulation</i> 2005 | Specific technology used, Details of surgery |
| Observational Cohort Study | Tx vs. Obs of Low-Risk Prostate Cancer | Wong et al, <i>JAMA</i> 2006 | Tumor size and staging, Time horizon (3-10 years) |

Grading the EHR Systems

Where They Scored Well

- Sample sizes (1x-50x)
 - e.g, Schizophrenia:
RCT enrolled 1500 patients,
VA follows ~100,000 patients
- Medical treatments
 - Procedures
 - Medications
 - Medical Complications
- Lab, Diagnostic measures
 - HbA1c, Blood pressure
 - Tumor size and staging
 - BMI, Weight loss
- Treatment details (searchable)
 - Technology, Equipment used

Where They Scored Less Well

- Documenting death
 - Match against National Death Index or Social Security Index
- Social/Economic variables
 - Marital Status
- Patient-reported measures (possibly searchable in notes)
 - Reason for discontinuing medication
 - Report of physical activity
 - Symptom Scales
 - Some social/medical conditions are not routinely transcribed into ICD-9 diagnoses (alcoholism, depression).

Practical Challenges

- Receiving care from multiple health care providers
- Patient mobility
- Consistency of patient follow-up
- Time frames