

*Health Information Exchange  
Towards Conduct of Comparative  
Effectiveness Research:*

**How Do We Get There?**

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This presentation is intended to shed light on logistical and conceptual needs and initiate development of a strategic plan to facilitate sharing of clinical data towards conduct of comparative effectiveness research through health information exchanges.

## Outline:

### – Introduction:

- Health Information Exchange (HIE) & Comparative Effectiveness Research (CER)

### – Needs:

- Conceptual & Logistical

### – Strategic Planning

### – Conclusion

- Emerging Health Information Exchanges (HIE) are developing the capacity to share patient clinical information among healthcare providers across care settings.

- To date, the majority of HIEs have focused on provision of clinical information for bedside use.

- However, many providers are not using electronic health records at the bedside, even when available.
- Accordingly, questions arise about the utility of HIEs for such providers or those lacking an EHR.

- **These concerns are likely slowing the progress of HIE.**

- Participation in HIE could be accelerated by focusing on clinical utility *away from the bedside*.
- HIE could be used to inform providers by facilitating comparative effectiveness research (CER) of patient centered treatment and system level intervention effectiveness.
  - However, clinical data and the payment management system data necessary to support CER:
    - commonly reside in different “silos”,
    - are of varying formats,
    - often have separate encryption solutions and key management, and
    - may exist within separate internal frameworks of governance and access.

To address logistical barriers to HIE, a set of solutions that a majority of provider entities can agree upon are needed.

- **Logistical needs include:**

- standardized data extraction methods,
- methods of conversion of extracted data to an agreed upon format, and
- an agreed upon method of communication for data transport (SOAP or REST) including encryption and decryption procedures having:
  - user identification,
  - authorization,
  - access and audit capabilities.

- Beyond logistical barriers, clinical providers must be engaged to participate and invest time and capital into HIE, particularly those that don't use EHRs at the bedside.
  - **Conceptual needs** are that prior to initiation of data sharing discussions with providers, data use should be clearly defined in terms of:
    - aims,
    - study design or method of data use,
    - questions and hypotheses to be investigated,
    - significance of the proposed use, and
    - expected outcomes
      - **However, this is difficult when the intent is to develop the capacity for HIE rather than directly engage in it to answer a research question.**
  - » **So, how do we engage a wider population of providers towards HIE outside of defined studies or regarding bedside use?**

- Providers could be engaged towards HIE by focusing data sharing discussions on a common set of data elements useful towards CER of virtually any treatment or intervention.

– **Data elements necessary for most CER include:**

- demographics,
- co-morbidities,
- indicators of severity,
- test results,
- treatments, and
- associated interventions

- **But how do we facilitate data sharing discussions to accelerate HIE?**

- A strategic plan created to guide development of a HIE infrastructure may be helpful in engaging providers to participate and accelerate overall progress.

- **This plan should:**

- Include an assessment of current HIE capacity across providers to determine:
  - which data elements are being shared,
  - who is sharing them,
  - whether and how they are being used, and
  - whether they are advantageous towards the conduct of CER.
- Detail a set of solutions to:
  - derive interoperability of vendor solutions,
  - define a trusted computing environment capable of securely sharing data across silos and networks of diverse and fragmented stakeholders.
- Articulate utility *at and away from the bedside.*

- Participation in HIE could be accelerated by articulating utility both at and away from the bedside.
- HIE towards CER could inform providers about treatment and intervention effectiveness and cost-benefit.
- Data sharing discussions would likely be more successful if focused on specific data elements useful towards CER rather than on undefined and widespread sharing.
- A strategic plan that sets out a strategy to remove logistical barriers to HIE and engage a broad range of providers would likely accelerate diffusion of this innovation.

**Questions/Comments?**