Intro to the EDW
For Physician Investigators

Presented to:  Post-doctoral fellows and early career faculty
Presented on:  May 4th 2015
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Intro to the EDW

Agenda

- What is the EDW
- What types of research can it help with
- How to get started!
What is the EDW?
Intro to the EDW
What is the EDW?

The EDW is a SQL database that contains data from many of the transactional systems used by Northwestern Medicine.
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What is the EDW?

Clinical data from NMG (EPIC)
Billing data from NMG (IDX)
Billing data from NMH (Cerner)
Billing data from NMH (PRIMES)
More clinical systems (ancillary)
Clinical data from NMH (Cerner)
Research systems from FSM (eNOITS)
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What is the EDW?

The end goal of the EDW is to provide a more comprehensive dataset and options for interacting with and understanding it.
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What is the EDW?

edw.northwestern.edu**

From NU or NM network only. Requires VPN for offsite access.
What is the data used for?
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What is the data used for?

• Researchers
  – IRB approved studies
  – Prep-to-research

• Quality
  – Process Improvement
  – Meaningful Use

• Operational
  – Performance Dashboards
  – Financial
Common Workflows
Intro to the EDW

Common Workflows

Research, Operations or Quality

**Research** IRB approval is required if EDW is used for Research purposes, especially when results may be published in a journal.

**Operational** Reports that display metrics used by administrators on a day-to-day basis.

**Quality** Reports must support an NMH DMAIC, be sponsored by a physician department chair at NMG or otherwise officially sponsored.

*Research reports should not be used for operational or quality purposes; the reverse typically holds true, as well.*
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Research Uses of the EDW

• Clinical Trial Subject Recruitment

• Retrospective Chart Review

• Prospective, Longitudinal Studies

• Study Feasibility
Clinical Trial Subject Recruitment

• Primary care physician contact information
• Daily updates to the subject population

Example:
“Patients with the diagnoses of peripheral arterial disease and/or coronary artery disease...”
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Research Uses of the EDW

Retrospective Chart Review

• Data in the EDW reaches back about to 1998 and becomes robust after 2000.
• Discrete fields can be used to efficiently define and capture data elements for a population
• Complex NLP can be leveraged for free-text, though not as reliably as discrete fields

Example:
“The study is evaluating patients at NMG Ophthalmology with the following ICD9 codes between Jan 1, 2004 and Jan 1, 2011…”
Prospective, Longitudinal Studies

• Disease, other study registries can be built to keep track of a population, events and outcomes
• Data can be integrated with custom applications

Example:
“For consented patients provide the following data points for the first available Cardiac Cath Report: 1. Mean RA  2. Mean PA  3. PA Saturation % 4. Mean PCW  5. Mean LV  6. Fick Output...”
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Research Uses of the EDW

Study Feasibility

- Aggregate counts of patients meeting defined criteria
- No approval needed for prep-to-research data containing no PHI
- I2b2 is currently available and is being actively developed

Example:
“How many patients we've had over the years with ovarian cancer and a recurrence in the brain…”
Building your report
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Building your report

• Submit Data Request using the EDW Portal
• Work with an EDW Analyst to refine requirements
• Service Agreement
  • Data Steward approvals
• Reports retrieved from the EDW Portal

It’s an iterative process – those pesky details!
Requesting an EDW Report
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Requesting an EDW Report

• Recharge rate of $75/hour
• Discrete data elements are best
• Be able to send screen shots of the data elements you’re looking for
• Free text is difficult to work with
• NLP can be used but is time consuming (expensive) and rarely as accurate as a discrete field
• I2b2 is self-serve and free!
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Requesting an EDW Report

Northwestern Medicine EDW Pilot Data Program

• The Pilot Data Program is an initiative to help jump-start research projects led by less established investigators who do not yet have adequate funding.

More Information
https://edwapps.nmff.org/EDWPortal/Home/About?faq12#faq12

To Apply
https://grants.nubic.northwestern.edu/
EDW Self Service: i2b2
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EDW Self Service: i2b2

• Aggregate counts of patients meeting defined criteria
• No approval needed for prep-to-research data containing no PHI
• Data sets are limited to CPT and ICD codes.
• Data is de-identified causing dates of service to be randomized (within a range). Accuracy of counts will decrease as date range decreases.

Example:
“How many patients we've had over the years with ovarian cancer and a recurrence in the brain...”

Launch from EDW Portal>Applications
Odds and Ends
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Odds and Ends

• The data in the EDW is still owned by the contributing organizations. Data Stewards are representatives from these organizations and approve data and report access requests.

• You must be on-campus (or using a VPN) to access the EDW.
Quick Resource Reference
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Quick Resource Reference

• NMEDWsupport@NMFF.org
• edw.northwestern.edu
• grants.nubic.northwestern.edu
• Randall.Janzen@northwestern.edu
• Biomedical Informatics Navigator