

# **NYU Langone Medical Center Experience**

**Institute of Medicine Roundtable on Value & Science-Driven Healthcare Digital Learning Collaborative**

**Standards-based EHR-enabled Research, May 30, 2014**

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# Disclosure/Confessional

- Contains forward-looking statements
- Probably contains vendor-specific perspectives, based on with whom we are working
- I have perhaps irrationally overblown aspirations for this meeting
- I have spent a lot of time in the past 10-15 years consistently pooh-poohing the premise of this meeting

# The standards: Integrating the Healthcare Enterprise (IHE) Integration and Content Profiles

- “A standards-based framework for sharing information within care settings and across networks by addressing critical interoperability issues”
  - An international non-profit standards development organization’ leveraging the work of HIMSS, CDISC, HL7, DICOM, etc.
- Some clinical-research-related IHE profiles of especial interest to us (*i.e.*, me):
  - Retrieve Process for Execution (RPE)
  - Retrieve Form for Data Capture (RFD)
  - Clinical Research Process Content (CRPC)
  - Data Element Exchange (DEX)

## c. 1995 – c. 2010: Pooh-poohing

- Three grades of biomedical data:
  - Care-grade
  - Research-grade
  - Pharmaceutical-grade
- The “paperless hospital”: would the EHR ever contain much more than scanned-in physician scribbles?
  - Exceptions: labs, billing codes

O/E:-	Pink ✓	6	pell
	Conscious, alert ✓		fatich
	Jaundice		
	Hydration		at full
	Dyspnoec/Tachypnoec		
	Ankle Oedema		
CVS:-			0 active bleed
LUNGS:-			0 all over
PIA:-			0 bying glucose
NEUROLOGICAL ASSESSMENT:-			0 tran sur

# 2010-ish onwards: New optimism, new (non-phony) buzzphrases

- Meaningful use
- Other ONC activities
- New taxonomy
- Information Commons (via EHR-based data sharing pilots)
- Knowledge Network of Disease

## Toward Precision Medicine

Building a Knowledge Network for Biomedical Research  
and a New Taxonomy of Disease



# NYU Langone Medical Center (NYULMC)

- Integrated school of medicine and hospital system under single corporate structure, ~ 20,000 faculty, staff and students
- Three-hospital system, 1,100 beds
- Ranked #1 overall patient safety and quality in U.S. (UHC 2013)
- > 5,000 doctors, > 2,500 nurses
- 30+ academic departments and institutes, >4,500 faculty, > 1,500 full-time, 1,000 medical/graduate students, 1,125 residents and fellows
- First-of-its-kind three-year MD program at a center of this size
- >\$250 million annual research expenditures
- Ranked #1 among research universities technology licensing
- > 5,000 research papers published in 2012
- ~1900 active clinical studies, >850 interventional trials
  - >22,000 enrolled participants
- Founding partner in the New York Genome Center (NYGC)

# 2007: New leadership @NYULMC

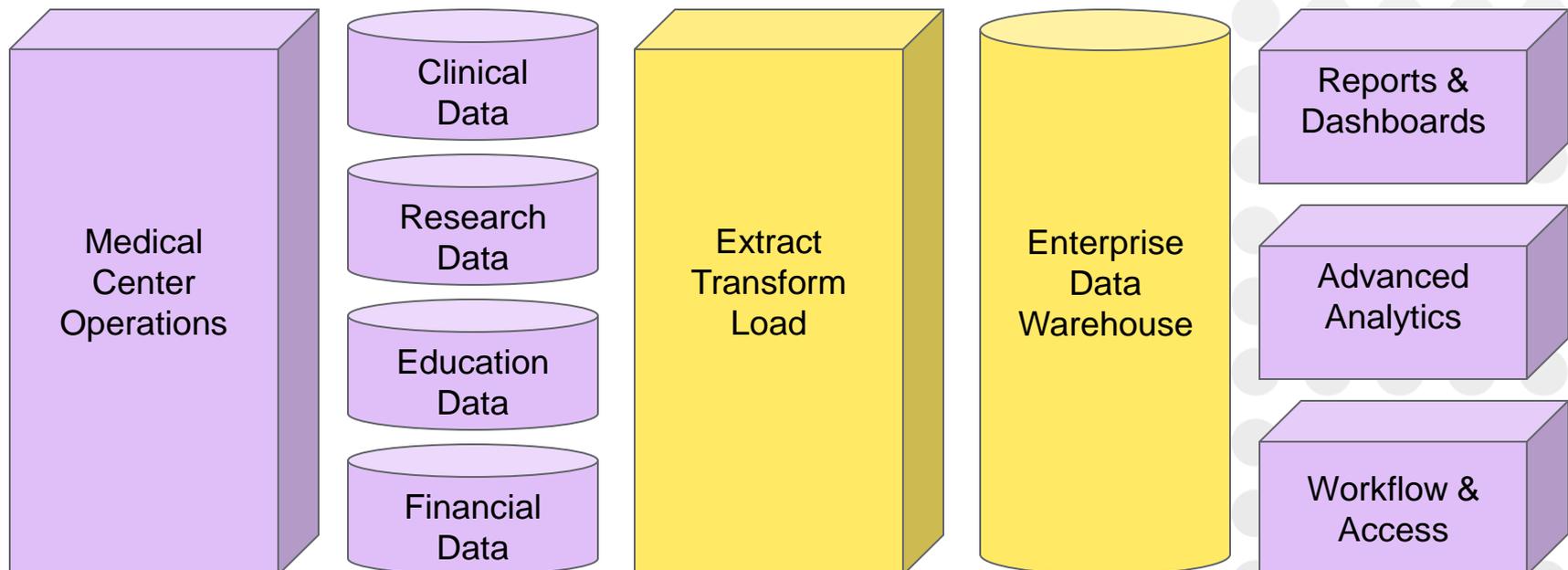
Vision: to transform NYULMC from an ad hoc, distributed management and decision-making organization into a centralized data-focused enterprise aspiring to be “a world-class patient-centered integrated academic medical center”.

## Motivations:

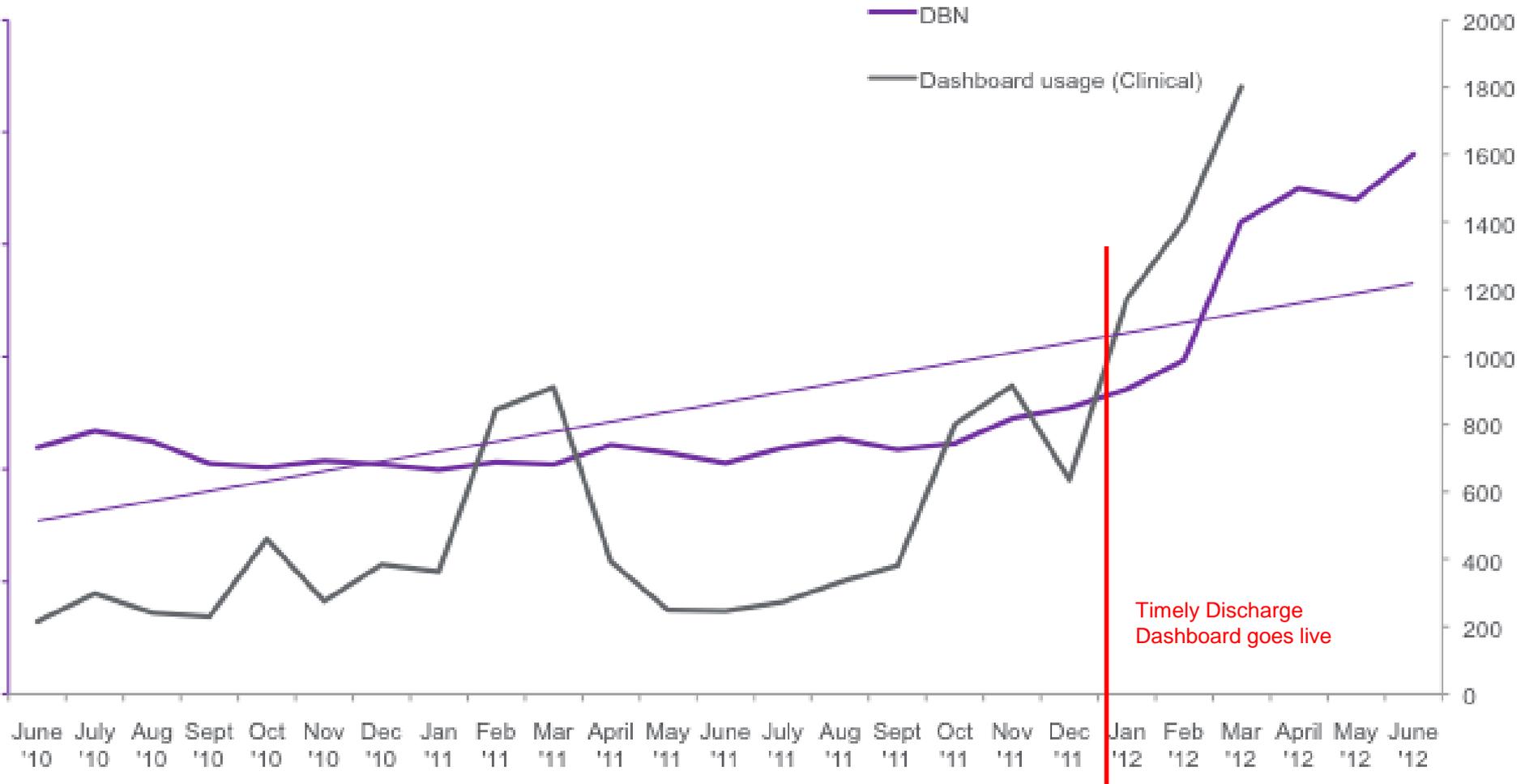
- Exploit the efficiencies of integration (school & hospital vs. academic medical center)
- Become a quantified organization; achieve and demonstrate quality improvements
- Employ enterprise-wide strategic planning
- Practice excellence as a core value

# Challenge: A Dearth of Actionable Data

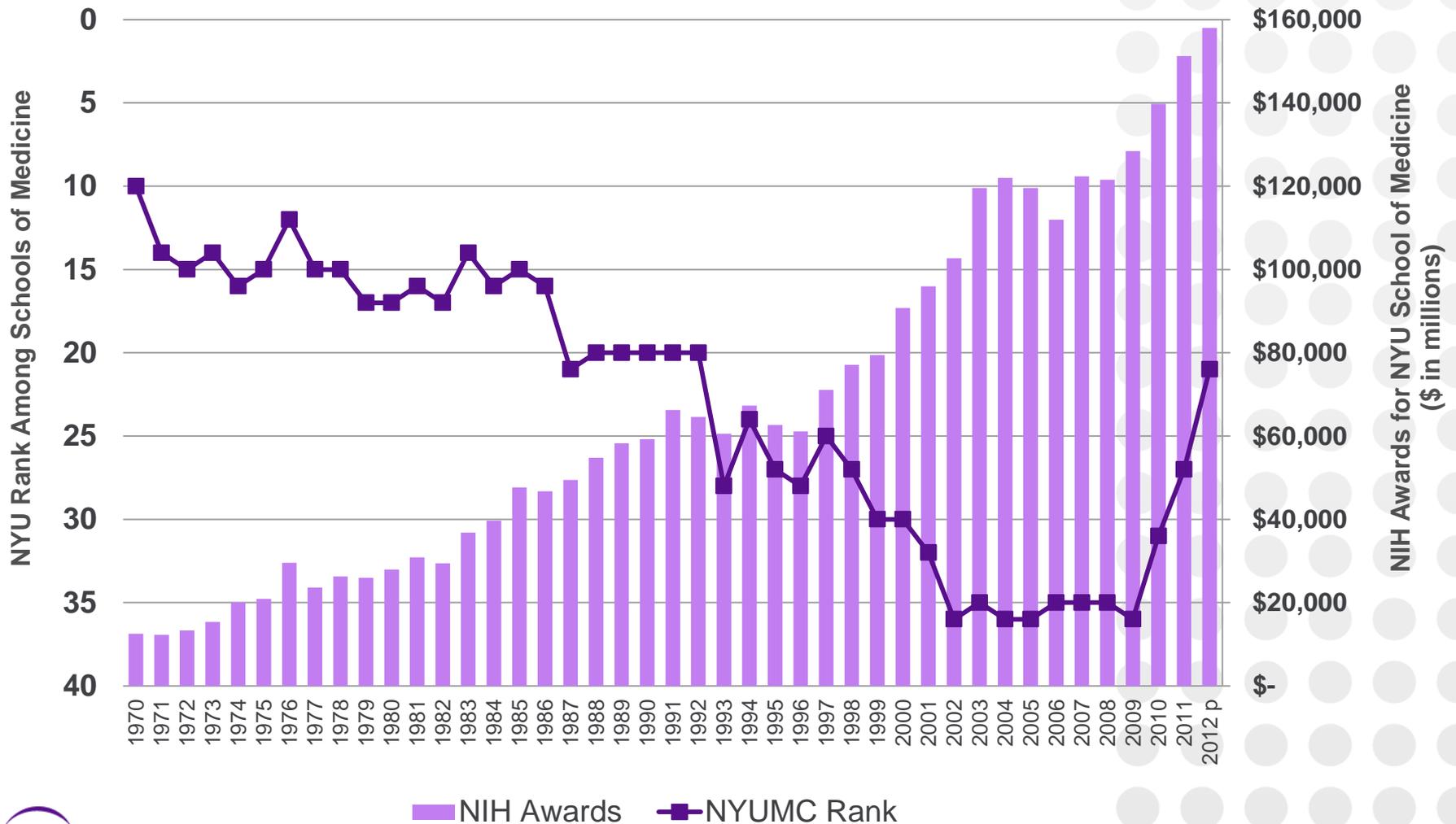
- Response: an Enterprise Data Warehouse
  - Reconcile multiple and often inconsistent—if not competing—versions of the truth
  - Magically resolve data ambiguities and conflicts just-in-time for reporting and analysis
- Transformative first-order effects
- Second order effects: urgent need for data governance



# Example result: discharges before noon @NYULMC: Hawthorne Effect?



# Example result: NIH funding rank



# Leveraging the EHR for research @NYULMC

- Recognize that something has happened over the last few years:
  - EHRs have matured, as has the way in which AMCs use them
  - The dream of pharma sponsors – a seamless flow of data from the EHR to the sponsor – is perhaps now within our grasp
- Leverage the integration that is in the DNA of NYULMC, make precision medicine a reality
  - Move towards a rapid learning health system
- Leverage technologies available:
  - Epic deployed enterprise-wide
  - Robust platform for support and management of research
  - Next generation of data warehousing @NYULMC
    - Centralized, data governance as an integral part

# Milestones (forward-looking, but starting now, timeframe: 9-12 months)

**1. ADT interface, Study protocol information and patient-study association in EHR and CTMS, creation/governance of BPAs**

Foundation for all subsequent steps, enables flagging of potential study participants



**2. Development of study billing grids in EHR**

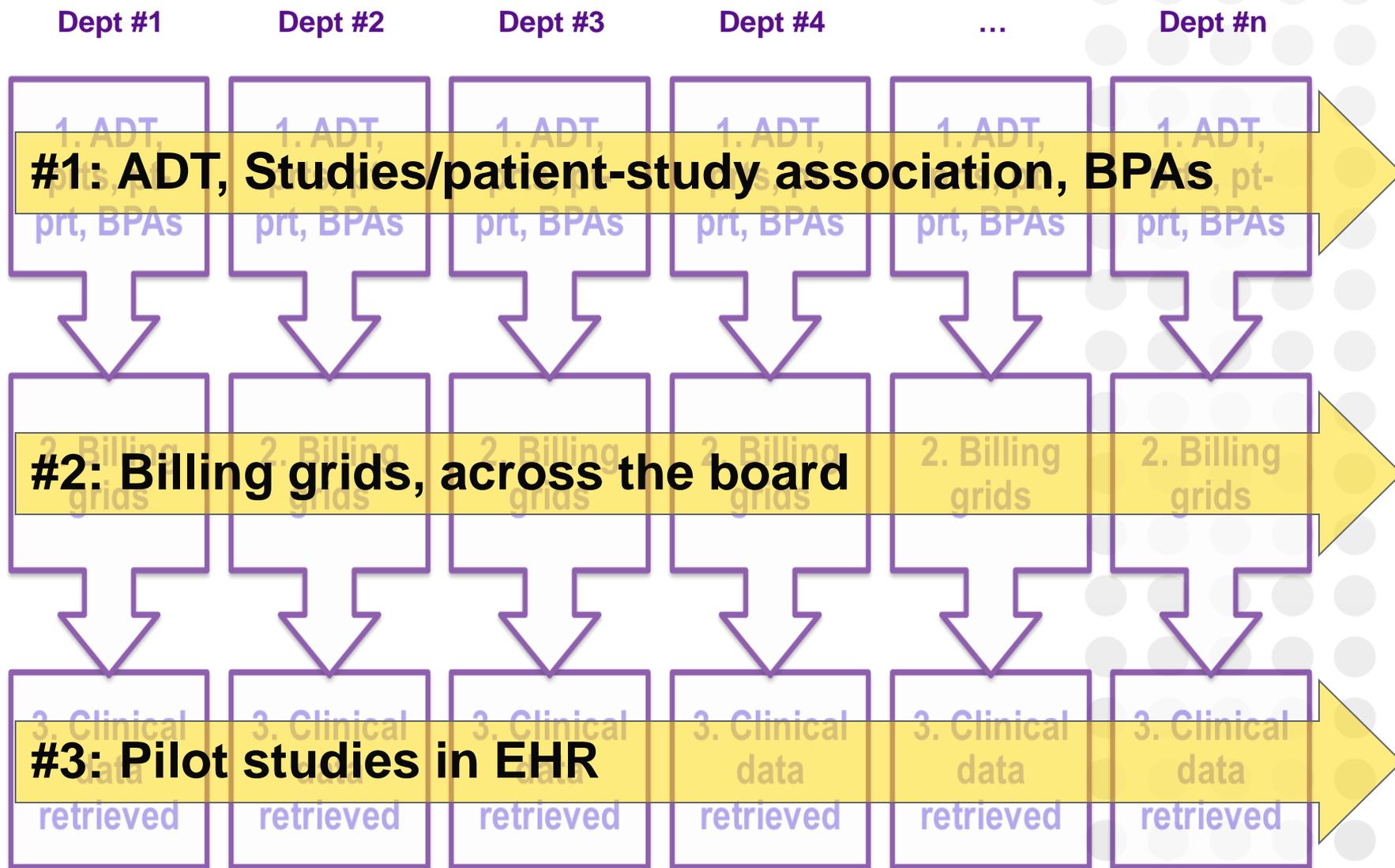
Enables billing (via association of visits and orders with studies)



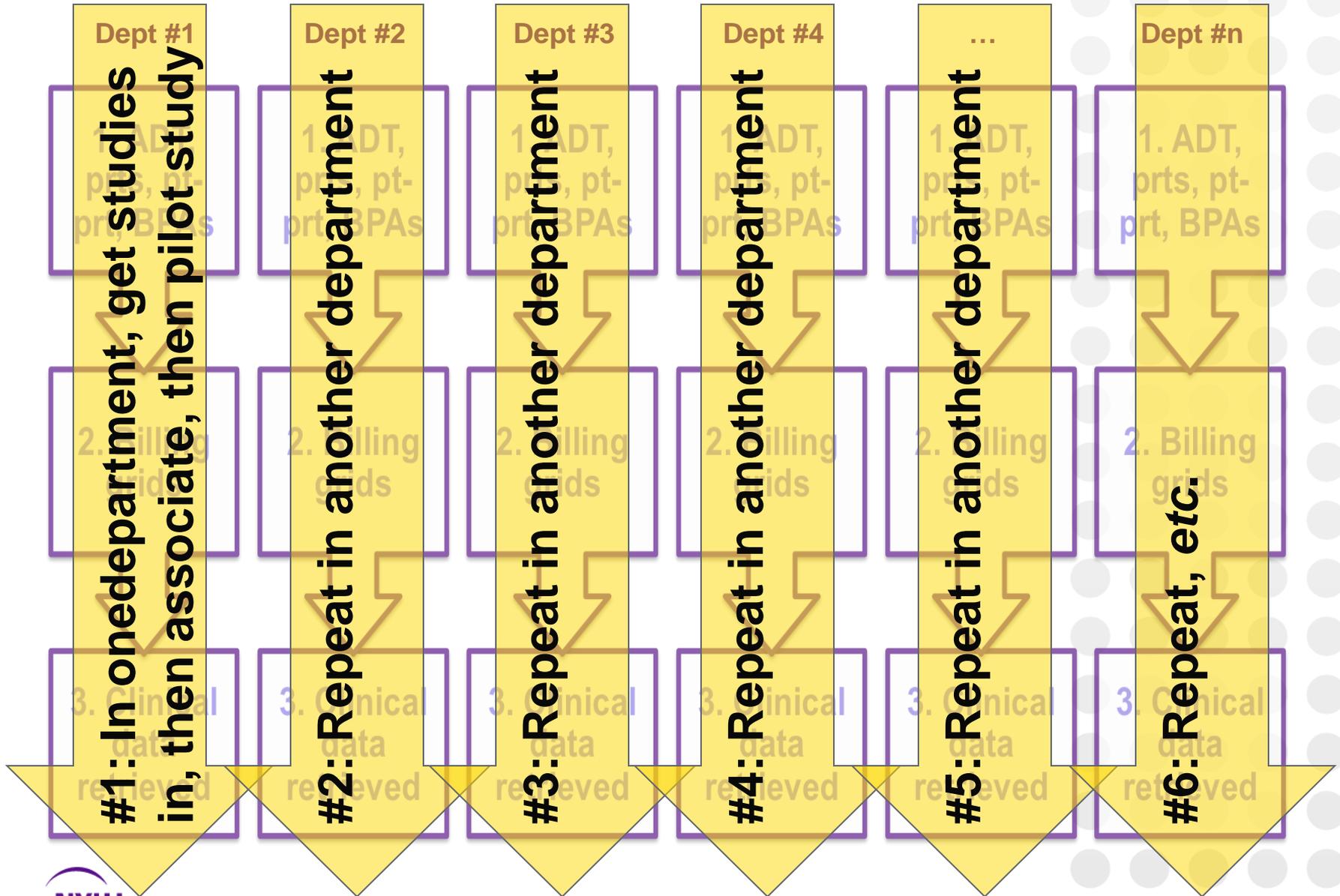
**3. Clinical data retrieved from EHR, used in trials**

Standards-based EHR-enabled clinical research

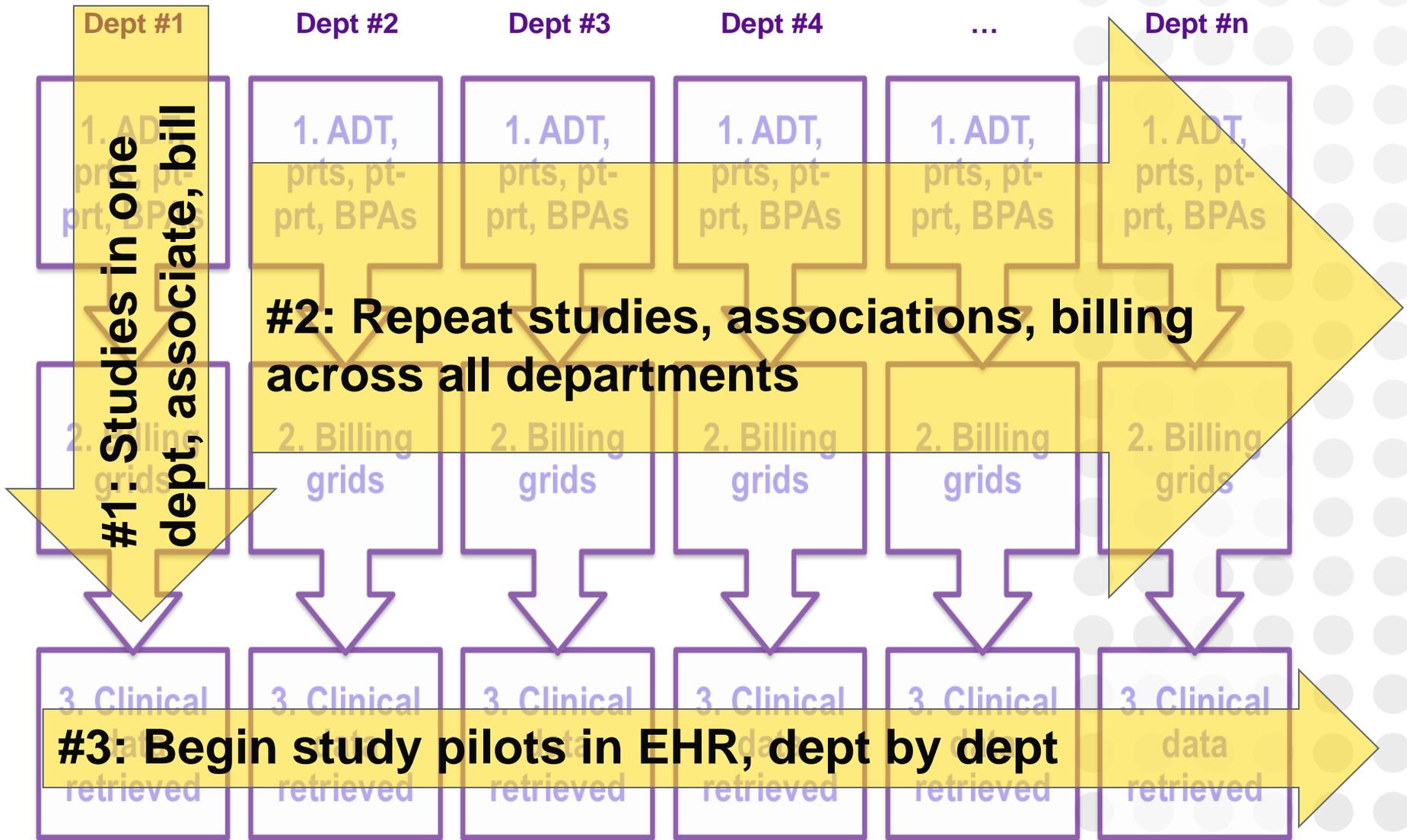
# Implementation Option A:



# Implementation Option B:



# Implementation Option C:



# Thank you; perhaps irrationally overblown aspirations for this meeting

- Steps to a quasi-formal “community of practice” aka “coalition of the willing”
- Provider-driven expansion/extension of the standards

