

Health Statistics from EHRs:
Land of Opportunity or Turnip Patch?

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Outline

- Goal: reuse clinical data for health statistics as a byproduct of care
- Requested focal topics:
 - What data are routinely collected in EHRs?
 - What data are standardized across different EHRs?

Vision for Delivering Quality Care

“Do the Right Thing” – Everytime

- Shape quality patient-care decisions in real time...
 - ... at the point of care
- As a **byproduct** of delivering care:
 - Measure quality performance
 - Provide physicians feedback to facilitate spread and sustained performance
 - Support public health reporting
 - Facilitate clinical research

Questions Posed?

1. What data are in the EHR?
2. Are they standardized and combinable?
3. How do you access EHR data to answer your surveys and calculate your measures?
4. What important population health questions can you answer with the data you have?



Questions Posed?

4. What are the important population health questions?
3. What data do you need to answer the important population health questions?
2. Are they standardized and combinable?
1. Can we make them exist in EHRs?

Sample Data in the EHR

- Problem list
- Encounter diagnoses
- Medications
- Past medications
- Allergies
- Family history
- Past medical history
- Past surgical history
- Vital signs
- Chief complaint
- Progress notes
- Lab test results
- Diagnostic test results
- Test images/tracings
- Immunizations
- Procedures
- Drawings
- Scanned documents
- Level of service
- Drug interactions
- Alerts
- HM Reminders
- Patient instructions

(Mostly) Standardized Data in the EHR

Mapping Required

- **Problem list**
- **Encounter diagnoses**
- Medications
- Past medications
- Allergies
- Family history
- **Past medical history**
- **Past surgical history**
- Vital signs
- Chief complaint
- Progress notes
- **Lab test results**
- Diagnostic test results
- Test images/tracings
- Immunizations
- **Procedures**
- Drawings
- Scanned documents
- **Level of service**
- Drug interactions
- Alerts
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Interoperable Data in the EHR

No Mapping Required

- Problem list
- Encounter diagnoses
- Medications
- Past medications
- Allergies
- Family history
- Past medical history
- Past surgical history
- Vital signs
- Chief complaint
- Progress notes
- Lab test results
- Diagnostic test results
- Test images/tracings
- Immunizations
- Procedures
- Drawings
- Scanned documents
- **Level of service**
- Drug interactions
- Alerts
- HM Reminders
- Patient instructions

Just a Sampling
of Other Data Issues

Cartwright, Eileen Age Sex DOB MRN Allergies PCP INS MyChart
56 y.o. F 8/12/1950 24707 No Known Allergies HARRIS, MARY !* BCBS Inactive

Visit Navigator (1/31/2007 visit with SEEGER for OFFICE VISIT - Asthma) - Viewing

Images Questionnaires Admin Benefits References SmartSets Scans Dictations Open Orders Change PCP Print AYS Media Manager

- SnapShot
- Chart Review
- Results Review
- Flowsheets
- Problem List
- History
- Letters
- Demographics
- Order Entry
- Imm/Injections
- Allergies
- Medications
- Patient Education
- Forms
- Graphs
- MAR
- Doc Flowsheets

Charting

- Chief Complaint
- Vitals
- Allergy
- Medications**
- BestPractice**
 - AGL
 - SmartSets
- Progress Notes
- Dx and Orders
- Pt. Instructions
- LOS
- Follow-up
- Close Encounter

Allergies: «Reviewed on 1/31/2007» No Known Allergies

Vitals : (Last filed) BP: P: T: T Src: Resp: W: H:
SpO2: PF: BMI: BSA: LMP: Tobacco: Not Asked

< Not Reviewed >

BestPractice Alerts

Patients with persistent asthma should be on inhaled corticosteroids

Progress Notes
[Create Note](#)
None

Diagnoses and Orders (View Only)

Diagnosis Entry Order Entry Pending Future Standing Primary diagnosis

➔ 1. MILD PERSISTENT ASTHAM [1000001]

Patient Instructions
None

Level of Service
No LOS code currently selected.

Follow-up
No follow-up scheduled.

Close Encounter
[Close Encounter](#)

Visit Navigator

[Hotkey List](#)

Exit Workspace

[Nav Hotkey List](#)

[Back to top](#)

Management of Asthma

Clinically Meaningful Classification

- Mild intermittent
- Mild persistent
- Moderate persistent
- Severe persistent

Asthma Codes

ICD9-CM

- 493.00 Extrinsic asthma, unspecified
- 493.01 Extrinsic asthma, with status asthmaticus
- 493.02 Extrinsic asthma, with (acute) exacerbation
- 493.10 Intrinsic asthma, unspecified
- 493.11 Intrinsic asthma, with status asthmaticus
- 493.12 Intrinsic asthma, with (acute) exacerbation
- 493.20 Chronic obstructive asthma, unspecified
- 493.21 Chronic obstructive asthma, with status asthmaticus
- 493.22 Chronic obstructive asthma, with (acute) exacerbation
- 493.81 Exercise induced bronchospasm
- 493.82 Cough variant asthma
- 493.90 Asthma, unspecified
- 493.91 Asthma, unspecified, with status asthmaticus
- 493.92 Asthma, unspecified, with (acute) exacerbation

Inhaled Corticosteroids in Asthma

Population Health / Quality Example

- Clinical guideline / health statistics / research data requirements
 - Denominator (patients with **persistent asthma**)
 - Numerator (**getting ICS**)
- Interoperable data standards **available**
 - Denominator (**none**)
 - Numerator (**none**, RxNorm)

Asthma Codes

ICD10-CM

- J45.20 Mild intermittent asthma, uncomplicated
- J45.21 Mild intermittent asthma with (acute) exacerbation
- J45.22 Mild intermittent asthma with status asthmaticus
- J45.30 Mild persistent asthma, uncomplicated
- J45.31 Mild persistent asthma with (acute) exacerbation
- J45.32 Mild persistent asthma with status asthmaticus
- J45.40 Moderate persistent asthma, uncomplicated
- J45.41 Moderate persistent asthma with (acute) exacerbation
- J45.42 Moderate persistent asthma with status asthmaticus
- J45.50 Severe persistent asthma, uncomplicated
- J45.51 Severe persistent asthma with (acute) exacerbation
- J45.52 Severe persistent asthma with status asthmaticus
- J45.901 Unspecified asthma with (acute) exacerbation
- J45.902 Unspecified asthma with status asthmaticus
- J45.909 Unspecified asthma, uncomplicated
- J45.990 Exercise induced bronchospasm
- J45.991 Cough variant asthma
- J45.998 Other asthma

Other Issues

- Identifying numerator inclusions
 - Coded (e.g., immunization, colonoscopy)
 - Not-coded
 - Smoking cessation counseling
 - Low fat or low cholesterol diet instructions
- Identifying denominator exclusions
 - Coded (e.g., age, sex)
 - Not-coded (examples)
 - Allergies
 - Medically ineligible
 - Patient refusal

Reusing Data as a Byproduct of Care

Implications for EHR Design

- Structured data – not too little, not too much
- Clinically meaningful – used directly for care *by physicians*
- Efficient workflow
- Enter once *by the right professional*; reuse many

Candidate Next Steps

For Population Health Statistics

1. Reexamine health statistics priorities
2. Design clinical measures that reflect population priorities
3. Enumerate critical data elements
4. Identify gaps in data standards and ensure that critical data elements are on SDO roadmap
5. Work with CCHIT to ensure that EHRs capture health statistics data as part of user workflow

Health Statistics from EHRs

Opportunity Awaits

- Use of EHRs provide significant opportunity to efficiently capture more accurate indicators of public health
- Good time to re-evaluate health statistics measures to capitalize on availability of EHR data in 3-7 years
- Enumerate critical clinical data elements that should be captured in EHRs