Implementing the New York City Macroscope Electronic Health Record Surveillance System

Research In Progress Webinar
Wednesday, May 3, 2017 12:00-1:00pm ET/ 9:00-10:00am PT

Funded by the Robert Wood Johnson Foundation
Agenda

Welcome: **C.B. Mamaril, PhD**, Systems for Action National Program Office, and Research Assistant Professor, University of Kentucky College of Public Health

Implementing the New York City Macrooscope Electronic Health Record Surveillance System

Presenters: **Katharine H. (Tina) McVeigh, PhD, MPH**, Division of Family and Child Health [tmcveigh@health.nyc.gov](mailto:tmcveigh@health.nyc.gov) and **Sharon Perlman, MPH**, Division of Epidemiology, [Sperlma1@health.nyc.gov](mailto:Sperlma1@health.nyc.gov), New York City Department of Health and Mental Hygiene

Commentary: **Sungwoo Lim, DrPH, MA, MS**, Bureau of Epidemiology Services [slim1@health.nyc.gov](mailto:slim1@health.nyc.gov) and **Jenny Smolen, MPH**, Bureau of the Primary Care Information Project [jsmolen@health.nyc.gov](mailto:jsmolen@health.nyc.gov), New York City Department of Health and Mental Hygiene

Questions and Discussion
Presenters

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New York City Department of Health and Mental Hygiene  
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IMPLEMENTING THE NEW YORK CITY MACROSCOPE ELECTRONIC HEALTH RECORD SURVEILLANCE SYSTEM

Katharine H. McVeigh, PhD, MPH
Sharon E. Perlman, MPH

New York City Department of Health and Mental Hygiene

S4A Research in Progress Webinar Series, May 3, 2017, 12:00-1:00 PM (ET)
## Acknowledgments

### NYC Macroscope Team

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<th>Name</th>
<th>Affiliation</th>
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<tr>
<td>Byron Alex</td>
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<td>Jay Bala</td>
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<td>Katherine Bartley</td>
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<td>Pui Ying Chan</td>
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<td>Claudia Chernov</td>
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<td>Andrew Fair</td>
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<td>Amy Freeman</td>
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<td>Ryan Grattan</td>
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<td>Carolyn Greene</td>
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<td>Charon Gwynn</td>
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<td>Candice Hamer</td>
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<td>Tiffany Harris</td>
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<td>Stephen Immerwahr</td>
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<td>Laura Jacobson</td>
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<td>Jacqueline Kim</td>
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<td>Kevin Konty</td>
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<td>Ram Koppaka</td>
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<td>Sungwoo Lim</td>
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<td>Elizabeth Lurie-Moroni</td>
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<td>Nicola Madou</td>
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<td>Katharine McVeigh</td>
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<td>Remle Newton-Dame</td>
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<td>Camelia Oros</td>
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<td>Katherine Otto</td>
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<td>Sharon Perlman</td>
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<td>Jesica Rodriguez-Lopez</td>
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<td>Matthew Romo</td>
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<td>Lauren Schreibstein</td>
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<td>Sarah Shih</td>
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<td>Jesse Singer</td>
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<td>Jenny Smolen</td>
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<td>Elisabeth Snell</td>
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<td>Kathleen Tatem</td>
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<tr>
<td>Lorna E. Thorpe</td>
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<tr>
<td>Leuk Woldeyohannes</td>
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<tr>
<td>Yihong Zhao</td>
<td>1</td>
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</tbody>
</table>

### Organizational Partners

- 1 NYC Department of Health and Mental Hygiene (or formerly)
- 2 City University of New York School of Public Health
- 3 NYU School of Medicine

### Funders

- Robert Wood Johnson Foundation
- de Beaumont Foundation
- Robin Hood Foundation
- NY State Health Foundation
- Doris Duke Charitable Foundation
- Centers for Disease Control and Prevention

### Fund for Public Health in New York

CUNY Research Foundation
Background

INTRODUCING THE NYC MACROSCOPE
“If we have data, let’s look at data. If all we have are opinions, let’s go with mine.”

- *Jim Barksdale, former Netscape CEO*

Good data allow for:

- Better policy and programmatic decisions
- Advocacy
- Evaluation/accountability
- Use resources more efficiently
Traditional surveillance methods include

- Birth and death certificates
- Notifiable disease reporting
- Hospitalization records
- Surveys
Electronic Health Record Use Has Increased in the Past Decade

Potential to Use EHRs for Population Health Surveillance

Traditional surveys are very valuable, but becoming more difficult to conduct.
- Telephone survey response rates decreasing
- Examination surveys are extremely expensive, labor intensive, often have lengthy lag times between data collection and dissemination.

EHR-based surveillance can complement existing surveillance systems.

May be only source of information in jurisdictions with limited local data.
Possible Limitations to EHR-Based Surveillance

- Only those in care
- Patients and providers in an EHR network may not be representative
- If data are aggregated, there may be duplicate records
- Data may not be collected and recorded in uniform way
- Data may be in free text or other field that is difficult to access
The **NYC Macroscope** uses primary care practice data from an EHR network to track conditions important to public health, focusing on chronic conditions.

Led by NYC Health Department, in partnership with CUNY SPH (colleagues now at NYU)
Bridges public health and healthcare

“The Hub” allows secure exchange of aggregate data with PCIP practices through a distributed model

The Hub currently covers:

- Nearly 700 practices
- 1.9 M patients in 2013
Key Features of NYC Macrooscope

- Hub Population Health System
  - eClinicalWorks EHR platform

Inclusion/exclusion criteria
- Practice – Documentation quality thresholds guided by Meaningful Use standards
- Provider – Primary care only
- Patient – Visit in 2013, ages 20-100, sex recorded as male or female, NYC Zip Code
Macroscope Sample Size and Coverage

All Adult NYC Patients: 1,317,438 (n=660 practices, 2229 providers)

Seen by primary care, not specialist: 766,655

Retained after quality inclusion criteria: 716,076
(n=393 practices, 953 providers)

2013 Macroscope primary care coverage: ~17%*

*Denominator is CHS 2013 estimates of 4,137,212 NYC adults (20+) that saw provider in 2013
Coverage and Representativeness of NYC Macroscope Sample

- Restricted to good documenters*
- Represented 17% of the 4.1 million adult New Yorkers in care in 2013
- Approximately 10% of all primary care providers in NYC
- Population coverage ranged from 8%-47% across neighborhoods
- Lower penetrance in more affluent areas of the city

* Met Meaningful Use Stage 1 criteria for vitals and diagnoses, with each provider prescribing a medication for at least 20% of patients
Key Features of NYC Macroscope, continued

Weighted to the distribution of the NYC adult population that had seen a health provider in the past year

Validated against 2 population-based reference surveys

- 2013-14 NYC Health and Nutrition Examination Survey (NYC HANES)
  - N = 1,527; 1,135 in care
- 2013 NYC Community Health Survey (CHS)
  - N = 8,356; 6,166 in care
### Outcomes

**Prevalence, Treatment and Control**
- Diabetes
- Hypertension
- Cholesterol

**Prevalence**
- Obesity
- Smoking
- Depression

**Use of Preventive Services**
- Vaccination against influenza

### Population Subgroups

**Sex**
- Male
- Female

**Age**
- 20-39
- 40-59
- 60-100
## NYC Macroscope Indicators Definitions

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Macroscope 2013 (n=716,076)</th>
<th>NYC HANES 2013-14 (n=1,135 in care)</th>
<th>CHS 2013 (n=6,166 in care)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity (BMI)</td>
<td>Measured height, weight</td>
<td>Measured height, weight</td>
<td>Self-reported height, weight</td>
</tr>
<tr>
<td>Smoking (current smoker)</td>
<td>Structured smoking section**</td>
<td>Self-reported</td>
<td>Self-reported</td>
</tr>
<tr>
<td>Hypertension, diabetes and cholesterol diagnosis</td>
<td>Ever diagnosed</td>
<td>Self-reported diagnosis</td>
<td>Self-reported diagnosis</td>
</tr>
<tr>
<td>Diabetes Augmented</td>
<td>Ever diagnosed** or A1c≥6.5** or Medication prescribed</td>
<td>Self-reported diagnosis or A1c≥6.5</td>
<td>n/a</td>
</tr>
<tr>
<td>Hypertension Augmented</td>
<td>Ever diagnosed* or Systolic≥140, diastolic≥90* or Prescribed meds*</td>
<td>Self-reported diagnosis or Systolic≥140, diastolic≥90</td>
<td>n/a</td>
</tr>
<tr>
<td>Cholesterol Augmented</td>
<td>Ever diagnosed or Total cholesterol≥ 240** or Medication prescribed</td>
<td>Self-reported diagnosis or Total cholesterol≥ 240</td>
<td>n/a</td>
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<tr>
<td>Depression</td>
<td>PHQ-9≥10 or ever dx</td>
<td>PHQ-9≥10 or ever dx</td>
<td>n/a</td>
</tr>
<tr>
<td>Influenza Vaccination</td>
<td>CVX, CPT or ICD-9 code*</td>
<td>Self-report*</td>
<td>Self-report*</td>
</tr>
</tbody>
</table>

* In the past calendar year.
** In the past 2 calendar years.
Validation Study Results

POPULATION-BASED PREVALENCE ESTIMATE COMPARISONS
Used a priori criteria to determine if estimates were comparable enough to well-established surveys to consider using for population health surveillance.

<table>
<thead>
<tr>
<th>Test for Comparison</th>
<th>Metric</th>
<th>Criterion</th>
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</thead>
<tbody>
<tr>
<td>Statistical Equivalence</td>
<td>Two One-Sided Test (TOST)</td>
<td>P &lt; 0.05</td>
</tr>
<tr>
<td>Statistical Difference</td>
<td>Student’s T-Test</td>
<td>P &lt; 0.05</td>
</tr>
<tr>
<td>Relative Difference</td>
<td>Prevalence Ratio</td>
<td>0.85-1.15</td>
</tr>
<tr>
<td>Prevalence Difference</td>
<td>Prevalence 1 – Prevalence 2</td>
<td>± 5 points</td>
</tr>
<tr>
<td>Consistency across 6 strata (age x sex)</td>
<td>Spearman Correlation</td>
<td>&gt;= 0.80</td>
</tr>
</tbody>
</table>
Prevalence of Selected Indicators

- Hypertension Diagnosis
- Obesity Diagnosis
- Diabetes Diagnosis
- Smoking
- Depression
- Influenza Vaccination

NYC Macroscope
NYC HANES
Community Health Survey

Performed well
Performed poorly
### NYC Macroscope 2013, NYC HANES 2013-14 and the 2013 Community Health Survey, New York City Adults in Care in the Past Year

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Hypertension</th>
<th>Smoking</th>
<th>Diabetes</th>
<th>Obesity</th>
<th>Hypercholesterolemia</th>
<th>Depression</th>
<th>Influenza Vaccination</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYC Macroscope % (95% CI)</td>
<td>32.3 (32.2, 32.4)</td>
<td>15.2 (15.1, 15.3)</td>
<td>13.9 (13.8, 14.0)</td>
<td>27.8 (27.7, 27.9)</td>
<td>49.3 (49.1, 49.5)</td>
<td>8.2 (8.1, 8.2)</td>
<td>20.9 (20.8, 21.0)</td>
</tr>
<tr>
<td>NYC HANES % (95% CI)</td>
<td>32.5 (29.4, 35.7)</td>
<td>17.7 (15.1-20.8)</td>
<td>12.6 (10.6, 14.8)</td>
<td>31.3 (28.5-34.2)</td>
<td>46.9 (42.6, 51.3)</td>
<td>15.2 (13.0 – 17.7)</td>
<td>47.6 (44.0-51.3)</td>
</tr>
<tr>
<td>Community Health Survey % (95% CI)</td>
<td>31.6 (30.18, 33.0)</td>
<td>14.9 (13.6-16.3)</td>
<td>12.5 (11.5, 13.6)</td>
<td>24.7 (23.2-26.3)</td>
<td>47.9 (45.7, 50.1)</td>
<td>n/a</td>
<td>47.3 (45.5-49.0)</td>
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</table>

### NYC Macroscope vs. NYC HANES

<table>
<thead>
<tr>
<th>Test of Difference (t-test) p &gt; 0.05</th>
<th>NYC Macroscope</th>
<th>NYC HANES</th>
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<tbody>
<tr>
<td>Absolute Difference &lt; 5</td>
<td>✔️ (0.15)</td>
<td>✔️ (2.55)</td>
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<tr>
<td></td>
<td>✔️ (1.36)</td>
<td>✔️ (3.46)</td>
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<tr>
<td></td>
<td>✔️ (2.36)</td>
<td>✗ (10.8)</td>
</tr>
<tr>
<td>Prevalence Ratio of 0.85 - 1.15</td>
<td>✔️ (1.00)</td>
<td>✔️ (0.86)</td>
</tr>
<tr>
<td></td>
<td>✔️ (1.11)</td>
<td>✔️ (0.89)</td>
</tr>
<tr>
<td></td>
<td>✔️ (1.05)</td>
<td>✗ (43)</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Test of Equivalence (TOST) p &lt; 0.05</th>
<th>NYC Macroscope</th>
<th>NYC HANES</th>
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<tbody>
<tr>
<td></td>
<td>✔️ (p=0.93)</td>
<td>✔️ (p=0.08)</td>
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<td>✔️ (p=0.19)</td>
<td>✗ (p=0.02)</td>
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<td></td>
<td>✔️ (p=0.29)</td>
<td>✗ (p=0.01)</td>
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<table>
<thead>
<tr>
<th>Test of Equivalence (TOST) p &lt; 0.05</th>
<th>NYC Macroscope</th>
<th>NYC HANES</th>
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<tr>
<td></td>
<td>✔️ (p&lt;0.01)</td>
<td>✔️ (p=0.04)</td>
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<td>✔️ (p&lt;0.001)</td>
<td>✗ (p=0.14)</td>
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<td>✗ (p=0.12)</td>
<td>✗ (p=0.99)</td>
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<th>Spearman Correlation r ≥ 0.80</th>
<th>NYC Macroscope</th>
<th>NYC HANES</th>
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<tr>
<td></td>
<td>✔️ (1.00)</td>
<td>✔️ (0.83)</td>
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<td>✔️ (1.00)</td>
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<td></td>
<td>✔️ (0.80)</td>
<td>✔️ (0.71)</td>
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<td>✔️</td>
<td>✔️</td>
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<th>Recommendation</th>
<th>Ready for Use</th>
<th>Ready for Use</th>
<th>Ready for Use</th>
<th>Ready for Use</th>
<th>Use with caution</th>
<th>Not ready for use</th>
<th>Not ready for use</th>
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</table>

SENSITIVITY AND SPECIFICITY OF NYC MACROSCOPE INDICATORS
Background

NYC Macroscope prevalence estimates similar to gold standard survey estimates
  • obesity
  • smoking
  • diabetes
  • hypertension
  • hypercholesterolemia.

But, was the similarity a reflection of
  ▪ good measurement properties?
  ▪ cross-canceling errors?

Were these results generalizable to other EHR systems?
To answer these questions, we

- Recruited NYC HANES participants who had visited a doctor in the past year (consent/HIPAA)
- Obtained printed copies of EHR records and abstracted data
- Classified patient health outcomes by applying NYC Macroscope algorithms
- For each individual, linked NYC Macroscope and NYC HANES outcome classifications and assessed whether those classifications were similar or different
- Across individuals, computed sensitivity and specificity to summarize the agreement between NYC Macroscope and NYC HANES classifications
Sensitivity and Specificity

Sensitivity

100% Sensitivity

Positive test

Negative test

Blue = has the condition
Green = does not have the condition

Specificity

100% Specificity

Positive test

Negative test

Blue = has the condition
Green = does not have the condition
Outcomes limited to those that had performed well in population level analysis

- Smoking,
- Obesity,
- Hypertension (2),
- Diabetes (2)
- Hypercholesterolemia (2)
Statistical Analysis

Sensitivity and specificity of NYC Macroscope indicator definitions

- In data from providers who contribute to the NYC Macroscope
  - To assess NYC Macroscope performance

- In data from practices that do not contribute to the NYC Macroscope
  - To assess generalizability beyond NYC Macroscope

Validity threshold: Sensitivity \geq 0.70 \text{ AND } Specificity \geq 0.80
Meaningful Use
- To assess the utility of including documentation quality criteria in system development

Unstructured Data
- To assess the potential benefit of incorporating natural language processing in system design
Participant Inclusion/Exclusion Flow Chart

Enrolled in NYC HANES 2013-14
N=1,524

Had a doctor visit in past year
n=1,135

Signed consent
n=692

Signed HIPAA waiver
n=491

One or more EHRs obtained
n=277

EHR contained valid data
n=190

Not in care
n=389

No consent
n=443

No HIPAA waiver
n=201

No EHR, no visits, specialist, unable to locate, not released
n=214

Excluded provider type
n=87

NYC Macroscope records
n=48

Non-Macroscope records
n=142
No significant differences in patient characteristics across samples

<table>
<thead>
<tr>
<th>Number</th>
<th>NYC Macroscopic</th>
<th>Non-Macroscopic Records</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>All Records</td>
<td>MU1 Subsample</td>
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<tr>
<td>Records/Patients</td>
<td>48</td>
<td>142</td>
<td>86</td>
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<tr>
<td>Providers</td>
<td>39</td>
<td>133</td>
<td>79</td>
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<tr>
<td>Practices</td>
<td>34</td>
<td>89</td>
<td>49</td>
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<tr>
<td>EHR Vendor Platforms</td>
<td>1</td>
<td>&gt;20</td>
<td>&gt; 15</td>
</tr>
</tbody>
</table>
48 NYC Macroscope Records

Sensitivity

- Obesity
- Smoking
- Diabetes Diagnosis
- Augmented Diabetes
- Hypertension Diagnosis
- Augmented Hypertension
- Hypercholesterolemia Diagnosis
- Augmented Hypercholesterolemia

Specificity

- Obesity
- Smoking
- Diabetes Diagnosis
- Augmented Diabetes
- Hypertension Diagnosis
- Augmented Hypertension
- Hypercholesterolemia Diagnosis
- Augmented Hypercholesterolemia

Validity threshold ≥ 0.70

Validity threshold ≥ 0.80
Sensitivity

- Augmented Hypercholesterolemia
- Hypertension Diagnosis
- Augmented Hypertension
- Diabetes Diagnosis
- Augmented Diabetes
- Smoking
- Obesity

Validity threshold ≥ 0.70
Sensitivity

Validity threshold ≥ 0.70
Specificity

- Augmented Hypercholesterolemia
- Hypercholesterolemia Diagnosis
- Augmented Hypertension
- Hypertension Diagnosis
- Augmented Diabetes
- Diabetes Diagnosis
- Smoking
- Obesity

All Non-Macroscope Records (n=142)
- Non-Macroscope with MU1 Restriction (n=86)
- NYC Macroscope (n=48)

Validity threshold ≥ 0.80
Summary

- Both indicators of hypercholesterolemia performed poorly
- All other measures performed well
- Consistency across NYC Macroscope and Non-Macroscope records
- Restricting records to those from providers who have attested to Meaningful Use improved the sensitivity of obesity, smoking and hypertension diagnosis indicators
Strengths and Limitations

Strengths
- Heterogeneity of providers (N = 172) and EHR vendor platforms (N > 20)
- Innovative sample and gold standard criterion

Limitations
- Small sample size/large confidence intervals
Conclusions

- NYC Macroscope indicators of obesity, smoking, diabetes and hypertension prevalence
  - Are ready for use by NYC Macroscope
  - Are generalizable to EHR data from other sources

- Further work is required to develop valid indicators of hypercholesterolemia

- We recommend incorporating meaningful use criteria into EHR surveillance system design to maximize validity
Next Steps

- Assessment of methods to adjust for bias and missing data
- Development and testing of approaches for small area estimation
- Exploration of application of NYC Macroscope methods to other data sources (RHIO, CDRN)
- Planning and fundraising for a child module
Primary NYC Macroscope Publications


Other NYC Macroscope Publications


Anticipated Release – May 2017

Under Review
McVeigh KH, Lurie-Moroni E, Chan P, Schreibstein L, Tatem K, Romo ML, Thorpe LE, Perlman SE. Generalizability of Indicators from the New York City Macroscope Electronic Health Record Surveillance System.
# NYC Macroscope Factsheets

## Obesity

### Prevalence and comparison by data source

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Prevalence Rate</th>
<th>Reference Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYT Macroscope</td>
<td>27.8%</td>
<td>25.0% (95% CI: 25.0% - 27.8%)</td>
</tr>
<tr>
<td>NYC HANES</td>
<td>24.7%</td>
<td>24.0% (95% CI: 23.9% - 24.8%)</td>
</tr>
</tbody>
</table>

### Prevalence in NYC Macroscope, NYC HANES, and CHS

<table>
<thead>
<tr>
<th>Year</th>
<th>NYC Macroscope</th>
<th>NYC HANES</th>
<th>CHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>27.8% (26.0% - 29.6%)</td>
<td>24.7% (23.3% - 26.1%)</td>
<td>24.7% (23.7% - 25.7%)</td>
</tr>
</tbody>
</table>

### Prevalence comparison statistics for obesity in NYC Macroscope vs. NYC HANES and CHS

<table>
<thead>
<tr>
<th>Test</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>McNemar’s Test</td>
<td>0.001</td>
</tr>
</tbody>
</table>

### Summary

The NYC Macroscope data on obesity prevalence was statistically different from the estimates from CHS, but not from the estimates from NYC HANES. There was high agreement and high absolute/relative standard differences between the datasets. NYC HANES participants with obesity were significantly different.

### Recommendation for use

Recommended

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### Validity of obesity indicator in a sample of EHRs from NYC HANES participants

#### Sensitivity (S), Specificity (Sp), and ROC Curve

- Sensitivity: 0.98
- Specificity: 0.96
- ROC Area Under the Curve (AUC): 0.98

#### Positive Predictive Value (PPV) and Negative Predictive Value (NPV)

- PPV: 0.99
- NPV: 0.97

#### Positive and Negative Likelihood Ratios (LR+)

- LR+: 10
- LR-: 0.01

#### Positive and Negative Post-test Probabilities (Pp+ and Pp-)

- Pp+: 0.99
- Pp-: 0.01

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### Acknowledgements

The NYC Macroscope is supported by the New York City Department of Health and Mental Hygiene. The study was conducted in collaboration with the New York City Department of Health and Mental Hygiene and the New York City Department of Education.

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### References

For more information on this project, please visit [NYC Macroscope project website](http://www.nycmacroscope.org).
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For more information, please visit our website
https://www1.nyc.gov/site/doh/data/health-tools/nycmacroscope.page
Project Updates


Implementation and Diffusion of the New York City Macroscope Electronic Health Record Surveillance System

Overview

This study sought to accelerate the diffusion of standardized Electronic Health Record (EHR) - based surveillance capabilities so that useful, timely and geographically pertinent EHR data can be used to:
1) monitor trends in health outcomes over time; 2) facilitate heightened engagement and performance by health and public health system stakeholders; and 3) inform decisions regarding different population-based policies and interventions to improve health outcomes. Led by the NYC Department of Health and Mental Hygiene in partnership with the City University of New York School of Public Health and the New York University School of Medicine, this study was nested in larger studies of EHR population health measures included in the NYC Macroscope. Indicators were evaluated for prevalence, treatment and control of hypertension, high cholesterol and diabetes, prevalence of obesity, smoking and depression, and receipt of influenza vaccination. Reliability was assessed by comparing EHR data with abstracts of 190 chart reviews; EHR health status classifications were compared to classifications based on data collected for the NYC HANES 2013 and were used to assess validity. Dissemination products include 10 indicator fact sheets designed for practitioners working to build health status monitoring systems based on EHR derived data.

Publications

- Can Electronic Health Records Be Used for Population Health Surveillance? Validating Population Health Metrics Against Established Survey Data (eGEMs, December 2016)
- Monitoring Prevalence, Treatment, and Control Of Metabolic Conditions In New York City Adults Using 2013 Primary Care Electronic Health Record: A Surveillance Validation Study (eGEMs, December 2016)
- Characterizing Adults Receiving Primary Medical Care in New York City: Implications for Using Electronic Health Records for Chronic Disease Surveillance (Preventing Chronic Disease, April 2016)
Commentary

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Questions and Discussion
### Upcoming Webinars

**Thursday, May 11, 1-2pm ET/ 10-11am PT**
**CROSS-JURISDICTIONAL RESOURCE SHARING AND THE SCOPE AND QUALITY OF PUBLIC HEALTH SERVICES**
Justeen Hyde, PhD, Investigator, VA Center for Healthcare Organization & Implementation Research
Debbie Humphries, PhD, MPH, Clinical Instructor in Epidemiology, Yale School of Public Health
-- a Public Health PBRN DIRECTIVE Project

**Wednesday, June 14, 1-2pm ET/ 10-11am PT**
**CROSS-JURISDICTIONAL SHARING ARRANGEMENTS BETWEEN TRIBES AND COUNTIES FOR EMERGENCY READINESS**
Maureen Wimsatt, PhD, MSW, California Tribal Epidemiology Center, California Rural Indian Health Board

**Wednesday, June 21, 12-1pm ET/ 9-10am PT**
**ACCOUNTABLE COMMUNITY OF HEALTH STRUCTURES AND CROSS-SECTOR COORDINATION**
Eli Kern, MPH, Public Health - Seattle and King County
Acknowledgements

*Systems for Action* is a National Program Office of the Robert Wood Johnson Foundation

Based at the University of Kentucky in Lexington, it is a collaboration of the:

- Center for Public Health Systems and Services Research in the College of Public Health, and
- Center for Poverty Research in the Gatton College of Business and Economics
Thank you for participating in today’s webinar!

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For more information about the webinars, contact:  
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Speaker Bios

**Tina McVeigh** is the Director of Research for the Division of Family and Child Health at the New York City Department of Health and Mental Hygiene and the principal investigator of the NYC Macroscope chart review study. Dr. McVeigh has a Master's degree in Public Health and a Doctorate in measurement, evaluation and statistics, both from Columbia University, and has worked on research and surveillance projects in the domains of maternal, infant and reproductive health, HIV/AIDS, substance abuse, mental health, early childhood development and educational outcomes, and the use of electronic health records for population health surveillance.

**Sharon Perlman** is Director of Special Projects for the Division of Epidemiology at the New York City Department of Health and Mental Hygiene. She is co-principal investigator of the NYC Health and Nutrition Examination Survey (NYC HANES) and a founder of the NYC Macroscope. Ms. Perlman has a master’s degree in public health from Columbia University. Her research has focused on chronic disease, mental health, health impact and disease modeling, and the interaction between public health and primary care.

**Sungwoo Lim** is the Director of Research, Evaluation and Methodology for the Bureau of Epidemiology Services at the New York City Department of Health and Mental Hygiene. He and his team provide analytic support to DOHMH evaluation projects, and lead an effort to develop and implement innovative methods to improve validity of survey and administrative data via modeling and data matching. Dr. Lim has been using NYC Macroscope chart review study data for a variety of new projects involving EHR estimate calibration, imputation of missing EHR data, and the creation and validation of small area estimates from EHR data.

**Jenny Smolen** is a Research and Evaluation Data Analyst for the Primary Care Information Project at the New York City Department of Health and Mental Hygiene. Jenny oversees the use of clinical EHR data queried through the Hub Population Health System to support and evaluate internal programs. Jenny serves as the liaison for collaborations that use Hub data, such as the NYC Macroscope, and applies lessons learned from the Macroscope to Hub data analysis processes.