COMMUNITY VITAL SIGNS
Incorporating Social Determinants of Health into Electronic Health Records to Promote Patient and Population Health

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HealthLandscape
American Academy of Family Physicians
Data! Fostering Health Innovation in Kentucky and Ohio
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Visiting Your Doctor
- Registration
- Nurse
  - Weight
  - Blood Pressure & Pulse
  - Temperature
- Physician
  - Lab Tests
  - Action Plan
- Maybe 10 minutes spent with your doctor
- 525,960 total minutes in a year (more or less)

Where are the Community Vital Signs?

Patient A
- Clinical Vital Signs
  - Adult Male, Age 45
  - BMI -> 31
  - Diabetic
  - A1c -> 10.1
  - Hypertensive (Stage 2)
  - Smoker
- Community Vital Signs
  - Wealthy Suburb
  - Low Crime Rates
  - Access to Parks, Grocery Stores
  - Walking/Biking Paths
  - Low Unemployment

Patient B
- Clinical Vital Signs
  - Adult Male, Age 45
  - BMI -> 31
  - Diabetic
  - A1c -> 10.1
  - Hypertensive (Stage 2)
  - Smoker
- Community Vital Signs
  - Low-Income Neighborhood
  - High Crime Rates
  - Food Desert
  - No Sidewalks
  - Poor Quality Parks

Would Community Vital Signs change how doctors treat patients?
Challenges: Selecting Community Vital Signs

- IOM Reports - Capturing Social and Behavioral Domains in Electronic Health Records: Phase 1 & Phase 2

**Vital Signs**

Core Metrics for Health and Health Care Progress


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Challenges: Geography & Availability

<table>
<thead>
<tr>
<th>Domain</th>
<th>Geography/Access to Data</th>
<th>Integrity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socioeconomic Composition</td>
<td>Income, Poverty, Unemployment</td>
<td>County, ZCTA, census tract</td>
</tr>
<tr>
<td>Racial/Ethnic Composition</td>
<td>Black, White, Hispanic</td>
<td>County, ZCTA, census tract</td>
</tr>
<tr>
<td>Economic Conditions</td>
<td>Income inequality, Uninsured</td>
<td>County, ZCTA, census tract</td>
</tr>
<tr>
<td>Environmental Exposures</td>
<td>Air pollution, water quality</td>
<td>County</td>
</tr>
<tr>
<td>Built Environment</td>
<td>Land use</td>
<td>County</td>
</tr>
<tr>
<td>Neighborhood Resources</td>
<td>Population density</td>
<td>Census tract</td>
</tr>
</tbody>
</table>

**Geography:** How do we define community/neighborhood?

**Availability:** What kinds of data are available?

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Challenges: Community Vital Signs

- How to integrate Community-level data into the Clinical encounter?

- Technical Requirements
  - Interoperability – EHRs
  - HIPAA

- Evidence-based practices requirements
  - Translating community vital signs to action
HealthLandscape
Community Vitals Signs API

Ubuntu Linux, Nginx web server, Python/Gunicorn WSGI server @ Amazon AWS

What's Next? – Case Management

What's Next? – Clinical Encounter
What's Next

- Amazon Machine Image
- OVA export / import
  - VMWare
  - Oracle VM Virtualbox
- For more information: info@HealthLandscape.org

Questions

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