Community-level Indicators for Occupational Health: Needed & Feasible

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Analytic Tools and Methods Branch (proposed)  
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Epidemiology and Analysis Program Office

CSTE Conference -- June 5th, 2012
OVERVIEW

• Note some current community-level health indicator initiatives
• Focus on upcoming usage: Community Health Assessments
• Possible data sources, and select data characteristics, for calculating community level occupational health indicators (COHIs)
• Few examples of measures of community level occupational health that we’ve calculated/used within NIOSH/DSHEFS
• Next steps
COMMUNITY LEVEL INDICATORS
- ACTIVITIES AND USAGE

• County Health Rankings & Roadmaps
  • Collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute.

• Community Health Data Initiative
  • Major new public-private effort that aims to help Americans understand health and health care performance in their communities -- and to help spark and facilitate action to improve performance. Part of the U.S. Health and Human Services “Open Government Plan”

• Health Care and Education Reconciliation Act of 2010 has resulted in 3000+ non-profit hospitals in the US having an urgent need to conduct individual community health assessments to qualify for tax exempt status. These will use community level indicators!
EAPO’s mission is to collaborate with our CIO and STLT partners to create and promote quality, timely and useful cross-cutting scientific products and services. We do this to strengthen the science of public health and ultimately to improve public health decision-making.
Division of Epidemiologic and Analytic Methods for Population Health (DEAMPH)

- Epi Info
- The Community Guide
- CSTE Cooperative Agreement
- Health Disparities
- Analytic Consultations
- Small Area Estimations
- Community Health Assessments
- Statistical Advisory Group Hosting
- Summary of Health Measures (Healthy Life Expectancy)
- Metrics Development for Health Outcomes and Determinants
Community Health Needs Assessment and Improvement Plans – Forces at Work

- **Tax-Exempt Hospitals requirements for IRS** (n>3,000)
  - Conduct community health needs assessment & implementation strategy
  - Involve public health experts and engage community members

- **Voluntary Public Health Accreditation through the Public Health Accreditation Board (PHAB)** (n>2,600)
  - For state, tribal, local and territorial health departments
  - Launched Fall 2011
  - Requires a state/Community health assessment and State/Community health improvement plan

- **Community Transformation Grant** (n=61)
  - Conduct a community health needs assessment
Community Health Assessment and Improvement (CHA/CHIP)

Organize • Assess • Prioritize and Plan • Implement

Data and Analytic Tools • Evaluate

Monitoring • Improved Health Status

Shared Ownership among Stakeholders
Ongoing Involvement of Community Members

* This framework is a draft visual model for discussion only and should not be considered official.
Data/Indicator Gaps

Gaps – Chronic Disease Morbidity

- **CMS Demonstration Project**
  - CDC CMS Data Work Group
  - +65 Indicators – Good Surrogate?

- **Small Area Estimation Methods**
  - CDC Program
  - External Org.
  - Report on Best Practices

- **Summary Measures of Population Health**
  - Life Expectancy
  - Years of Potential Life Lost
  - Healthy Life Expectancy
Identifying data of potential value for calculating community-level OHIs

Enumerate data sources

Table of data sources and characteristics

Note data characteristics (aka metadata) relevant for COHIs.
(Go to table)
Specific examples of possible community level occupational health indicators
Mortality Risk
County-level indicator using CFOI and ACS data

\[
RR = \frac{Exp \ Occ \ MR_{\text{County}}}{Obs \ Occ \ MR_{\text{US}}}
\]

Where:

\[
Exp \ Occ \ MR_{\text{County}} = \frac{\sum_{i=\text{occup}} n \ Np_i}{\sum_{i=\text{occup}} n \ N_i} \times 100,000
\]

Where:

- \( N \)=County population of workers in the \( i^{th} \) occupational group
- \( p \)=National rate of fatal occupational injury for the \( i^{th} \) occupational group
County-level occupational mortality indicator using CFOI and ACS data

Mapping county values of the relative risk indicator allows local public health officials to make comparisons with neighboring counties and other counties in their geographic region.
Position of County-Level Relative Risk Estimates for Fatal Occupational Injury Within Peer-County Strata

<table>
<thead>
<tr>
<th>FIPS1</th>
<th>County</th>
<th>Expected Deaths2</th>
<th>MR3</th>
<th>RR4</th>
<th>Peer County Stratum</th>
<th>Mean RR for Stratum5</th>
<th>SD6</th>
<th>Range</th>
<th>&gt; Stratum Mean</th>
<th>&gt; Stratum Mean +1 SD</th>
<th>&gt; Stratum Mean + 2 SD</th>
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<td>0.45</td>
<td>4.31</td>
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<td>65</td>
<td>1.23</td>
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<td>73</td>
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2. Based on the application of national occupation-specific fatality rates to county population.
3. Mortality Rate. Estimated annual county mortality rate from occupational injury per 100,000 employed, civilian persons aged ≥ 16 years.
4. Relative risk. Ratio of the county-specific mortality rate to the national fatality rate.
5. Unweighted mean of relative risks for all counties in the peer county stratum.
7. Where a rank of 1 indicates the highest RR in the stratum.

The rank within peer county strata allows local public health officials to compare themselves with demographically similar counties.
OSHA tests exceeding the workplace personal exposure limit for lead in air sample.
Mapping ODI data
Filtering the data to create a community health indicator
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Filtering the data to create a community health indicator
Creating a choropleth map: Using census data as a community health indicator
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NEXT STEPS

• See who in the OH community are currently pursuing (or plan to pursue) COHIs and would like to work with us to advance this effort

• Publish a document explaining the need, feasibility, and table of data sources/characteristics for potentially calculating community level occupational health indicators

• Continue our collaborations between CDC/OSELS and CDC/NIOSH
Thank You!

For more information, please contact the Centers for Disease Control and Prevention.

1600 Clifton Road NE, Atlanta, GA 30333
Telephone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov    Web: http://www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
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