Using secondary data to monitor racial/ethnic minority health inequities in Michigan: The Michigan Health Equity Data Project

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Introduction
African Americans, American Indians/Alaska Natives, Arab Americans, Asian Americans, and Hispanics/Latinos together comprise 22.5% of Michigan’s total population. These minority populations experience disproportionately adverse health outcomes, or health inequities.

Pairwise Disparity
Pairwise Disparity describes the difference between a minority population rate and the reference population rate. Pairwise disparities in each time period were measured using absolute and relative differences:

Absolute disparity = Minority estimate – Reference estimate
Relative disparity = Minority estimate / Reference estimate

Change in pairwise disparity over time was measured using the percent change in relative disparity:

% Change = (Relative disparity in time 2 - Relative disparity in time 1) / (Relative disparity in time 1)

Choice of reference group
For all pairwise comparisons the white population served as the reference group. This choice was made because, in Michigan, it is the only population large enough to provide a stable comparison over time.

Calculating Disparities

Population Disparity
Population Disparity describes how much disparity exists in the entire population for one indicator by combining the disparity experienced by all subgroups into one measure. This is helpful when prioritizing public health action by indicator instead of by subpopulation.

For each indicator, population disparity was estimated with an Index of Disparity (ID), which describes average subpopulation variation around the total population rate.

ID = \( \frac{1}{N} \sum (r - R)^2 \)/R \* 100

where: Subpopulation rate, R=Total population rate, n=number of subpopulations
ID is expressed as a percentage, with 0% indicating no disparity and higher values indicating increasing levels of disparity.

Change in ID over time was measured using the absolute difference in ID from one time period to another:

Change in population disparity over time = I(D(t) – I(D(t-1))

Results

Table 1. Indicators with the smallest and largest relative disparities between racial/ethnic minority populations and the white population, 2005-2009.

<table>
<thead>
<tr>
<th>Population</th>
<th>Smallest Disparity (Best)</th>
<th>Largest Disparity (Worst)</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>1.0 Gerontina occurrence</td>
<td>27.3 Health Insurance, 2001-2003</td>
</tr>
<tr>
<td>American Indian / Alaska Native</td>
<td>1.0 Gerontina occurrence</td>
<td>3.1 Health Insurance, 2001-2003</td>
</tr>
<tr>
<td>Asian</td>
<td>0.9 Infant Mortality Rate</td>
<td>1.4 Mental Health, 2009</td>
</tr>
<tr>
<td>White</td>
<td>0.6 High School Dropout Rate</td>
<td>2.6 Infant Mortality Rate, 2009</td>
</tr>
</tbody>
</table>

Table 2. Indicators showing the largest improvements and worsenings in relative disparities between Time 1 and Time 2, by race/ethnicity.

<table>
<thead>
<tr>
<th>Population</th>
<th>Largest Improving</th>
<th>Largest Worsening</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>13.8% Reduction in Infant Mortality Rate</td>
<td>44.4% Increase in Infant Mortality Rate</td>
</tr>
<tr>
<td>American Indian / Alaska Native</td>
<td>12.5% Reduction in Death by Suicide, 2001-2009</td>
<td>34.8% Increase in Death by Suicide, 2001-2009</td>
</tr>
<tr>
<td>Asian</td>
<td>9.7% Reduction in High School Dropout Rate</td>
<td>6% Increase in High School Dropout Rate</td>
</tr>
<tr>
<td>White</td>
<td>10% Reduction in Infant Mortality Rate</td>
<td>4% Increase in Infant Mortality Rate</td>
</tr>
</tbody>
</table>

Discussion
The Michigan Health Equity Data Project (HEDP) provides a consistent methodology to identify and monitor racial and ethnic minority health inequities in Michigan. More specifically, the HEDP:

1. Gathers standard, comparable data for each racial/ethnic population
2. Combines multiple indicators in one place
3. Includes focus on social determinants
4. Provides quick access to data for community groups, policymakers, and others
5. Identifies gaps in knowledge
6. Monitors health equity over time for specific minority populations and the overall population.

Limitations:
Disparities are not necessarily inequities.
No individual or local level data, statewide only.
No information about if or how indicators are associated with each other.
No statistical information about the precision of reported rates.
Equity calculation is a relative number, does not indicate health status.

References
2) 2000 Michigan Resident Birth Files, Vital Records and Health Data Development Section, Michigan Department of Community Health

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