

**Kansas County Health Rankings 2009 —
Technical Document**

May 2009

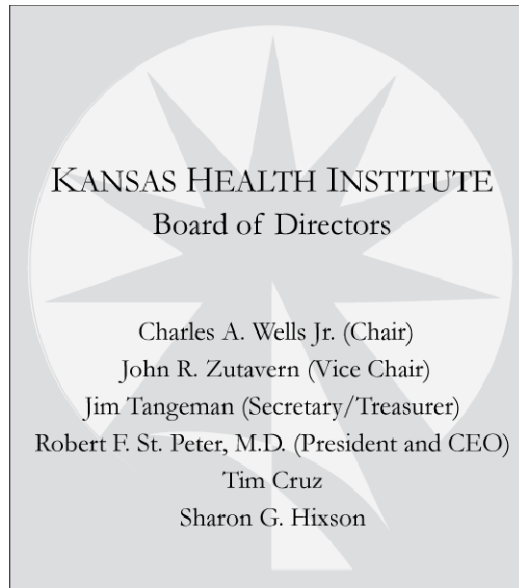
KHI/09-07TR

Gianfranco Pezzino, M.D., M.P.H.
Cheng-Chung Huang, M.P.H.



KANSAS HEALTH INSTITUTE

212 SW Eighth Avenue, Suite 300
Topeka, Kansas 66603-3936
(785) 233-5443
www.khi.org



The Kansas Health Institute is an independent, nonprofit health policy and research organization based in Topeka, Kansas.

Established in 1995 with a multi-year grant from the Kansas Health Foundation, the Kansas Health Institute conducts research and policy analysis on issues that affect the health of Kansans.

Copyright© Kansas Health Institute 2009
Materials may be reprinted with written permission.

METHODS

The methodology used in the *Kansas County Health Rankings 2009* is essentially the same used for the *Wisconsin County Health Ranking* report.¹ The county health rankings are based on three health outcomes indicators and 28 health determinants indicators. For each of the chosen indicators, the project staff estimated the values and calculated the z-scores. Counties were ranked based on their z-scores.

Z-scores from multiple indicators were combined to calculate indexes, and counties were ranked on their indexes as well.

For each indicator, the measured value would be expressed in a “negative,” or least desirable, fashion. For example, the low birth weight indicator measures the percent of live births who weigh under 2,500 grams and the cigarette smoking indicator measures the percent of adults who currently smoke. A county with a higher percentage of low birth weight babies or a higher percentage of adult cigarette smokers is considered having less desirable performance in the health rankings.

To calculate the z-scores, the mean and standard deviation of the measured values were obtained across all 105 counties. A z-score result of a county represented the performance of this indicator measured by the distance in terms of the number of standard deviation units from the mean of all Kansas counties. Positive z-scores represented desired performance and negative scores represented undesired performance. To avoid that an overall index rank would be strongly influenced by one extreme component score, we truncated z-scores at -3.0 or 3.0 if the actual score fell outside of this range.

Weighted averages of the z-scores were used to calculate the summary health index ranking, outcomes and determinants rankings and the rankings for the four major components of determinants, in accordance with the weights shown in the table on page 3. Indicators within each subcategory were given all the same weight. For the summary health index, outcomes were given a weight equal to 25 percent and determinants accounted for 75 percent of the total.

If ties occur in assigning ranks for any individual measure (i.e., if the z-scores and underlying data were identical), then the same rank is given to the places that are tied; for example, if the top

two places are tied, these two would each be given a rank of one, while the third place holder would be given a rank of three.

When the number of observations for an indicator fell below a certain acceptable threshold, the information was not reported and the indicator value appears as not reported (NR or NA) in the report. There are three rules about data suppression for individual indicators:

1. Measures with a sample size of less than 50 respondents are censored, such as indicators based on BRFSS and the childhood lead poisoning indicator based on children who received a blood lead test.
2. Measures with a vital or incident event count of less than six events are censored, such as numbers of live births born to teen mothers and numbers of violent crime offenses.
3. Measures with an age-adjusted vital or incident rate with event counts less than 20 events also are censored, such as breast cancer deaths (for age-adjusted breast cancer death rate) and total deaths by age (for age-adjusted years of potential life lost per 1,000 population).

When an indicator value is not reported, the values are still included in the calculation of indexes, and all available data (including the non-reported values) are used to create the component and overall determinant ranks. For example, although an individual measure for cigarette smoking may be censored for County A because the sample size is too small, the available estimate will still be used in calculating the overall determinants score.

To reduce the chance of data suppression and increase stability of the estimates in less populated counties, we combined multiple years of data for most indicators. As a rule (with few exceptions), we generally combined three years of vital statistics data and six years of BRFSS samples. Some indicators are based on the 2000 Decennial Census county-level data, a one-time report that will not be updated until after the 2010 census. Single year data were used for similar national data sources, such as unemployment rate from the Bureau of Labor Statistics and the Small Area Model-based Estimates on health uninsured and children in poverty from the U.S. Census Bureau. We tried to use the latest year(s) of data availability as of October of 2008. A complete list of indicators and their descriptions, years and sources can be found in a separate document.

Table 1. — List of the indicators used for the Kansas County Health Rankings and their respective weights for the calculation of the indexes.

Weights %	Component	Sub-category	Individual indicator
Health Outcomes 100%	Mortality (33.3% of Outcomes)		
		• Years of potential life lost – YPLL	
		General Health Status (33.3% of Outcome)	
(25% of the Combined Health Index)	Low Birth Weight (33.3% of Outcome)	• Self-reported fair or poor health of adults	
		• Percent live births weight 2500 grams or less	
Health Determinants 100%	Health Care (10% of determinants)	Access to Care (5%)	1. No health insurance (1.7%)
			2. Did not receive needed health care (1.7%)
			3. No dentist visit in past year (1.7%)
		Quality of Preventive and Outpatient Care (5%)	4. No influenza vaccine shots in past year (1.7%)
			5. No adequate prenatal care (1.7%)
			6. Breast cancer deaths (1.7%)
	Health Behaviors (40%)	Tobacco (10%)	1. Cigarette smoking (5%)
			2. Smoking during pregnancy (5%)
		Diet and Exercise (10%)	3. Physical inactivity (1.7%+1.7%)
			4. Overweight and obesity (1.7%+1.7%)
		Alcohol Use (10%)	5. Low fruit and vegetable consumption (1.7%+1.7%)
			6. Binge drinking (10%)
		High Risk Behaviors (10%)	7. Not always wearing seatbelt (2.5%)
			8. Teen birth (2.5%)
			9. Sexually transmitted diseases (2.5%)
10. Violent crime (2.5%)			
(75% of the Combined Health Index)	Socio-economic Factors (40%)	Education (13.3%)	1. High school non-graduation (6.7%)
			2. No high school diploma (Census 2000) (6.7%)
		Income (13.3%)	3. Unemployment rate (6.7%)
	Social Support (13.3%)	4. Children in Poverty (6.7%)	
		5. Divorce rate (6.7%)	
		6. Single parent households (Census 2000) (6.7%)	
Physical Environment (10%)	Air Quality (3.3%)	1. Respiratory Hazard Index (1999) (1.6%)	
		2. Secondhand smoke (1.6%)	
	Water Quality (3.3%)	3. Nitrate and coliform levels in water (3.3%)	
	Built Environment (3.3%)	4. Housing with increased lead risk (Census 2000) (1.1%)	
		5. Lead poisoned children (1.1%)	
		6. Commuting to work drive alone (Census 2000) (1.1%)	

¹ 2008 Wisconsin County Health Rankings, available online at <http://www.pophealth.wisc.edu/UWPHI/pha/wchr/2008.htm#more>