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County Health Rankings – Part I Jefferson County's Results and what it means By James L. Holly, MD Your Life Your Health *The Examiner* February 26, 2010

(This part of this series is taken directly from the Robert Wood Johnson website and/or from the report itself. Unless specifically noted, the following is taken directly from the County Health Rankings report and explanation.)

The County Health Rankings is a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute. The Rankings show how counties measure up within each state in terms of:

- how healthy people are
- how long they live
- how important factors affect their health, such as tobacco use, obesity, access to healthcare, education, community safety, and air quality.

The County Health Rankings is a new standard for public health and community leaders to use in identifying gaps and developing solutions to improve the health of their communities. This is the first release (February, 2010) of what will be an annual snapshot of county-by-county health within each state.

The mission of the Robert Wood Johnson Foundation is "to improve the health and health care of all Americans. Our goal is clear: To help Americans lead healthier lives and get the care they need." It is this writer's judgment that the Foundation places a great deal more confidence in government funded and government run healthcare programs than in any other model. Notwithstanding, there is a great deal to be learned from this work.

Why rank counties' health?

To serve as a call to action for communities to

- Understand the health problems in their community
- Get more people involved in improving the health of communities
- Recognize that factors outside medical care influence health

Ranking the health of counties using not only traditional health outcomes, but also the broad range of health factors, can mobilize action on the part of governmental public health and in many other sectors that can influence and are affected by health.

How do people use the County Health Rankings—what are they doing?

- Raising awareness in the general community about the multiple factors that influence health via media interviews and follow-up conversations.
- Initiating community health assessment and planning efforts where none previously existed
- Celebrating successes and promoting existing community health improvement efforts
- Informing policy makers, particularly Local Boards of Health, about the many factors that affect a community's health and about community health improvement planning
- Revitalizing or refining existing community health assessment and improvement plans
- Citing the *County Health Rankings* as justification in securing grant funding to conduct community health improvement efforts and/or to address the determinants of health
- Providing feedback to the University of Wisconsin Population Health Institute to improve the *Rankings* methodology and report.

How do you rank counties' health?

We rank counties' health on two sets of measures:

- Health outcomes (length and quality of life)
- Health factors (health behaviors, access to and quality of clinical care, social and economic factors, and the physical environment).

Health Factors

Health factors in the *County Health Rankings* represent what influences the health of a county. We measure four types of health factors: health behaviors, clinical care, social and economic, and physical environment factors. In turn, each of these factors is based on several measures. A fifth set of factors that influence health (genetics and biology) is not included in the *Rankings*.

Health Behaviors

- Tobacco Use
- Diet and Exercise
- Unsafe Sex
- Alcohol Use

Clinical Care

- Access to Care
- Quality of Care

Social and Economic Factors

• Education

- Employment
- Income
- Family and Social Support
- Community Safety

Physical Environment

- Environmental Quality
- Built Environment

With this introduction, here is Jefferson County, Texas' results.

Snapshot 2010: Jefferson

	Jefferson County	Error Margin	Target Value*	TX Value	Rank (of 221)
Health Outcomes					194
Mortality					179
Premature death	10,112	9,670-10,554	6,324	7,340	
Morbidity					190
Poor or fair health	17%	13-21%	12%	20%	
Poor physical health days	4.3	3.4-5.3	2.6	3.6	
Poor mental health days	3.9	3.1-4.7	2.4	3.2	
Low birthweight	9%	9-10%	7%	8%	
Health Factors					215
Health Behaviors					206

	Jefferson County	Error Margin	Target Value*	TX Value	Rank (of 221)
Adult smoking	21%	17-25%	13%	20%	
Adult obesity	30%	26-35%	26%	29%	
Binge drinking	13%	10-18%	7%	16%	
Motor vehicle crash death rate	21	19-23	15	18	
<u>Chlamydia rate</u>	373		110	365	
Teen birth rate	60	58-62	43	65	
Clinical Care					40
Uninsured adults	22%	20-24%	22%	26%	
Primary care provider rate	97		126	96	
Preventable hospital stays	95	92-97	65	84	
Diabetic screening	80%	78-81%	84%	78%	
Hospice use	33%	30-36%	53%	38%	
Social & Economic Factors					208
High school graduation	63%		87%	73%	
College degrees	16%	16-17%	23%	23%	

	Jefferson County	Error Margin	Target Value*	TX Value	Rank (of 221)
<u>Unemployment</u>	7%	7-7%	4%	5%	
Children in poverty	25%	21-28%	16%	23%	
Income inequality	47		42	47	
Inadequate social support	23%	18-29%	12%	23%	
Single-parent households	12%	11-12%	6%	10%	
Violent crime rate	694		119	519	
Physical Environment					220
Air pollution-particulate matter days	16		0	2	
<u>Air pollution-ozone days</u>	27		0	2	
Access to healthy foods	48%		67%	39%	
Liquor store density	0.6		0.0	0.7	

* 90th percentile, i.e., only 10% are better

Note: Blank values reflect unreliable or missing data

Health outcomes in the *County Health Rankings* represent how healthy a county is. The Rankings measure two types of health outcomes: how long people live (mortality) and how healthy people feel while alive (morbidity).

Mortality

We examine mortality (or death) data to find out how long people live. More specifically, we measure what are known as premature deaths (deaths before age 75).

Morbidity

Morbidity is the term that refers to how healthy people feel while alive. Specifically, we report on the measures of their health-related quality of life (their overall health, their physical health, their mental health) and we also look at birth outcomes (in this case, babies born with a low birthweight).

Premature Death

Within the measure of mortality, the report focuses upon "premature deaths" defined as deaths which occurs before age 75. The County Health Rankings seeks to quantify and compare the health status of county populations by accounting for the burden of premature deaths (premature mortality), an important measure of a population's well-being.

Why Do We Measure It?

Measuring premature mortality, rather than overall mortality, underlies the intent of the County Health Rankings to focus attention on deaths that could have been prevented.[1] By better understanding premature mortality, communities can target resources to high risk areas and further investigate the causes of death.

Measurement Strategies

Vila et al. provides a comprehensive summary of the various methods that can be used to quantify mortality, including the crude death rate, age-specific death rates, age-adjusted death rates, years of potential life lost, and others. Because there is no one best measure that captures all aspects of mortality, a judgment must be made based on which dimension of mortality is most useful for a particular application.

The minimalist approach to measuring mortality is to simply count the number of deaths in a population, divide this number by the total population, and report this number as the crude death rate. While this is an easily understood measure of mortality, rates cannot be compared between different populations because the age distributions in the two populations may be different, leading to confounding in the measure.

To avoid incorrectly comparing populations with different age distributions, it is possible to instead compare age-specific death rates or to summarize rates into an overall ageadjusted death rate. Age-adjusted mortality has the characteristic of capturing the broad distribution of age-specific mortality so that all age groups are weighted according to the size of the age group in the standard population, making it possible to compare mortality measures across different populations. The concept behind Years of Potential Life Lost (YPLL) involves using the number of years of life (life-years) lost due to premature death, defined by a standard cut-off age in a population, to obtain a total sum of the life-years lost before ages 65, 75, or 85 (for example). In contrast to mortality measures, YPLL emphasizes the processes underlying premature mortality in a population. Dranger and Remington provide a more detailed description of the YPLL calculation methodology. As with age-adjusted death rates, it is possible to calculate age-adjusted YPLL rates using a standard population to make the measure comparable among populations. There is debate over how "premature" death is defined and which age -65, 75, or 85 – is most appropriate to use as the upper age limit for calculating YPLL.

Although YPLL and age-adjusted death rates are the most commonly used measures, other measures have been proposed that take a different approach. Vila et al. provides more information about these other measures:

- Potential gains in life expectancy (PGLE)
- Cumulative rate of potential life lost (CRPLL)

Finally, while all the other mortality measures discussed are ways of quantifying and presenting death rates in alternative ways, the life expectancy measure can be thought of as an inverse measure of death, or a measure of how long a population is surviving on average. The life expectancy approach is more complicated than YPLL in that life expectancy changes with age and with time.

What Is the County Health Rankings Measurement Strategy?

The County Health Rankings calculates YPLL using all deaths occurring before the age of 75. Each of these deaths contributes to the total number of years of potential life lost. For example, a person dying at age 50 would contribute 25 years of life to the YPLL index. The YPLL is age-adjusted to the 2000 U.S. population to allow comparison between counties and is reported as a rate per 100,000 people. Three-year averages (2004-2006) are used to create more robust estimates of mortality, particularly for counties with smaller populations. Data comes from the National Vital Statistics System in CDC's National Center for Health Statistics.

Measure Strengths & Limitations

YPLL is a widely used measure of the rate and distribution of premature mortality that allows one to target resources to high risk areas and investigate further into the causes of death.[1] The measure was introduced mainly because simple mortality rates do not fully address the issue of premature mortality, the impact of disease and death, and its cost to society Reduction in YPLL is an important public health goal because it reflects a reduction in premature death.

YPLL is simple to calculate and it emphasizes deaths of younger persons, whereas statistics that include all mortality and not just premature mortality are dominated by

deaths of the elderly.[7] Including all mortality would have a significant impact on the County Health Rankings and may draw attention to areas with higher mortality rates among the oldest segment of the population, where there may be little that can be done to change chronic health problems that have developed over many years.

YPLL is typically used to determine the burden of premature death due to a particular cause within a population, but it can also be effectively used to distinguish the burden of premature death in populations.

YPLL is not without weaknesses. The measure can be difficult for lay people and public health practitioners to interpret. For example, the Epidemiology Bureau in Florida investigated this issue and learned that county Public Health Units often did not understand how to interpret YPLL

YPLL weights deaths that occur at younger ages more heavily than deaths at older ages. For example, using YPLL-75, a death at age 55 counts twice as much as a death at age 65, and a death at age 35 counts eight times as much as a death at age 70.[4] Further, deaths that occur after the age limit are not accounted for at all. Because of this, YPLL can fail to completely capture the burden of chronic disease, especially if the age cut-off is set too low.

In Part II of this series, we will discuss "quality of life" and "quality of healthcare" measures related to the County Health Rankings.