

Review & Commentary on Health Policy Issues for a Rural Perspective – May 1st, 2007

Small Numbers Matter

by Tim Size, RWHC Executive Director

A diverse crowd of clinicians, administrators, academics, consultants and policy makers met in Dallas-Fort Worth in late March at the wonky but well named National Conference on Small Numbers. Thanks to the Federal Agency for Health Research and Quality for being the primary sponsor as “small numbers” is an issue that rural health and rural health providers need to address in a big way (pun intended). “The purpose of the conference was to address the critical issue of accurately assessing the health status of populations through the measurement of indicators of quality of care and patient safety in small community hospitals and rural facilities that experience small cell size issues.”

Or said differently, our ability to address the statistical challenges related to “small numbers” will increasingly and significantly affect public opinion about rural health as well as how rural providers are paid; so pay attention. As noted by Dr. Steven Garfinkel, Managing Research Scientist at the American Institutes for Research, saying there is no good data for rural providers is not the answer, as “consumers typically view missing data as a negative, regardless of the reason.”

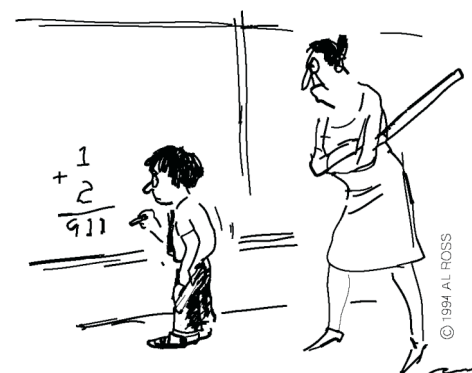
A pitch perfect keynote address was given by Dr. Nancy Dicky, President of the Health Science Center at Texas A & M (and the first woman ever elected

President of the American Medical Association). She emphasized that along with all of America’s healthcare providers, smaller rural hospitals, individual physicians and units within large hospitals are being called to demonstrate what they do makes a positive difference for their patients. Her talk addressed three interrelated themes: that the Value Based Purchasing (also known as Pay For Performance) movement was rapidly picking up steam; that the significance of physicians’ historic distrust of measurement needs to be addressed and creative solutions to the “small number” problem is absolutely critical for rural health. She challenged the meeting participants to ask themselves what information they would need as a patient or consumer as they like others are given the “opportunity” to make choices and share in the responsibility for their health care.

Dr. Dicky made it clear that many in Washington, DC, and around the country believe that the easiest thing they can do is (a) ignore the challenge of small numbers, (b) “blind out” the data or (c) simply dismiss the care in low volume settings as “immeasurable.” She challenged those of us in Dallas-Fort Worth saying we had the obligation to change current methods of measurement to assure that all clinicians and provider sites were included. She warned us, in words to the effect, that to continue to exempt low volume providers from public reporting of quality measures and the growth in “pay for performance” is like saying rural providers are not worth anyone worrying about or being foolish enough to visit as a patient.

At the same time she emphasized that it was absolutely necessary that clinicians and administrators

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One solution to a “small numbers” problem.

who understand rural health be “at the table” as solutions are designed. Coincidentally, the very day she spoke was the deadline for the Rural Caucus in the House of Representatives to accept original sponsors for the MedPAC Rural Representation Act of 2007. The Act is designed to address the growing frustration with the failure of Congress’ Medicare Payment Advisory committee, MedPAC, to have anything close to representation proportional to the rural population in America. According to the National Rural Health Association, “only one of the seventeen Commissioners has solid rural credentials,” exactly the problem Dr. Dicky warned us about.

Dr. Dicky understands that while physician quality champions are active in many parts of the country, physicians and physician groups will push back in a major way unless their concerns are treated with respect; the deafer the ears of those advocating change, the stiffer will be the resistance. There is a fine line to walk between “waiting for perfect measures” and changing clinical processes now to incorporate what science already tells us is best for the patient. Ironically, the practice of Medicine has always been all about managing human variability and uncertainty so physicians are well prepared for the ambiguity inherent in this new age of measurement.

At the close of her talk, she made clear that we were not boxed in by the limits of statistics—when the numbers are too small to show the level of quality of care being provided, peer review mechanisms can and should be implemented to provide assurances that the care is excellent or where it can be improved.

The **Rural Wisconsin Health Cooperative (RWHC)** was begun in 1979 as a catalyst for regional collaboration, an aggressive and creative force on behalf of rural health and communities. RWHC promotes the preservation and furthers the development of a coordinated system of health care, which provides both quality and efficient care in settings that best meet the needs of rural residents in a manner consistent with their community values.

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Dr. Robert Baskin, a senior mathematical statistician at the Agency for Health Research and Quality shared his frustration with himself and his colleagues saying “we need to give better advice than to say ‘just increase the sample size.’ ” And if you ever thought mathematical statisticians couldn’t be really funny, you would be wrong. Or at least current Federal rules require him to be funny, as he had to recite upfront that the “views expressed in this Power Point presentation were the presenter’s alone and that no official endorsement by the U.S. Department of Health and Human Services is intended or should be inferred.” He then proceeded to help the many non-statisticians among the participants to get back in touch with Statistics 101, which in this writer’s case is unfortunately under forty years of dust.

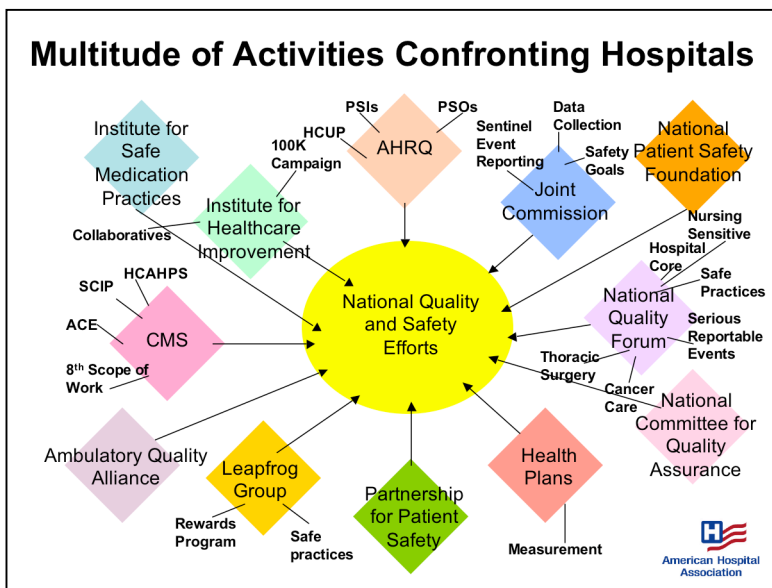
From a statistical perspective, “small counts” (typically thought of, depending on the situation, as less than 30 or 50 individuals or events in a reporting period) raise concerns about “reliability” or “validity.” Reliability looks at the consistency or repeatability of the measure and validity looks at whether the intended target population is being measured. Throughout the conference, there was a clear tension between two views. One view was that if you count all the patients in a rural hospital you have described everyone so the fact that there is a small number of observations doesn’t matter. The opposing point of view and seemingly the one in the majority, is that in small number situations you are typically describing what happens during the reporting period to one group of patients but whether the treatment received in the future by another group of patients at that location can reliably be predicted is in fact another matter. Unfortunately, advocates of the second school of thought seem to say there was no obvious or easy solution to the statistical challenge of improving reliability or validity of small numbers.

Dr. Jerod Loeb, Executive Vice President for Research at The Joint Commission, summarized another key tension in health care performance measurement with the following story. “A man is flying in a hot air balloon and realizes he is lost. He reduces his height and spots a man down below. He lowers the balloon further and shouts: ‘Excuse me, can you tell me where I am?’ The man below says: ‘Yes, you’re in a hot air balloon, hovering 30’ above this field.’ ‘You must be a performance measurement expert,’ says the balloonist.

‘I am,’ replies the man. ‘How did you know?’ ‘Well,’ says the balloonist, ‘everything you told me is technically correct, but it’s of no use to anyone.’ The man below says: ‘You must be a CEO.’ ‘I am,’ replies the balloonist, ‘but how did you know?’ ‘Well,’ says the man, ‘you don’t know where you are, or where you’re going, but you expect me to be able to help. You’re in the same position you were before we met, but now it’s my fault.’ ”

Many in the room seemed to murmur agreement when the above slide from the American Hospital Association was presented, graphically demonstrating the cacophony of measurement voices. Participants noted the critical need for national rivalries amongst dueling experts to be put aside in the interest of a coherent national strategy for quality accountability. Going beyond “lip service” to a national alignment of measures is particularly urgent for providers with small numbers as they simply do not have the resources to waste addressing multiple versions of similar demands.

Dr. Loeb offered a perspective that what you feel about performance measurement and related statistical challenges is often an issue of where you stand is where you sit. Many professionals trained to think critically and analytically say that there are “too many issues to be resolved, too costly without enhanced health information technology.” While many purchasers and public officials trained to not let “the perfect be the enemy of the good” are ready to move ahead with measurement and “want the data now.” Solutions suggested for the small number problem focused on increased sample size by aggregating data over time or creating composite measures amongst related measures. Aggregating data over time is relatively simple but then very much slows down the feedback needed by providers as part of quality improvement processes as well as slowing down how quickly that improvement can be reported to the public and payers. While there are also limitations to the



use of composite measures, this approach attracted much attention.

Dr. Paul Nietert from the University of South Carolina could have given a talk on how to make complex academic issues particularly understandable but in fact he talked about his team’s development of a system of performance measures for individual physicians, the

Summary Quality Index, SQUID for short. Their approach collapsed multiple process and outcome measures by determining the “number of measures for which the patient is eligible” (E) and the “number of eligible measures for which the patient has met his or her morbidity specific target.” The patient level SQUID is then simply M divided by E. A patient’s SQUID reflects the proportion of targets met for which he/she is eligible. A clinical practice’s SQUID reflects the average proportion of targets achieved by the practice’s patients. While Dr. Nietert spoke to both the strengths and limitations of this approach, many participants seemed excited by his work and its application to smaller physician practices.

Dr. Gulzar Shah, Director of Research at the National Association of Health Data Organizations, noted that an additional use of composite measures was that “consumers will use them to select a hospital, providers will use them to focus on drivers of quality, purchasers will use them to select hospitals to improve the health of their employees and policy makers will use them to address population health improvement.” But composite measures come with shortcomings such as “masking important differences amongst providers” and as “being less ‘actionable’ given the difficulty of identifying the root of a problem.” The best solution may be the use of composite measures along with sampling over a longer time.

Dr. Filardo Nicewander from the Baylor Health Care System spoke to three objectives which should frame our policy agenda as composite scores are developed: (1) composite scores should still provide the best

summary possible of the individual indicators, (2) combine counts across measures that give more statistical power for comparing differences between hospitals and (3) composite scores should be understandable to the non-statistical audience.”

Over the next few months the Federal Centers for Medicare and Medicaid Services (CMS) will be finalizing a Congressionally mandating plan for an inpatient hospital Value Based Purchasing (VBP) Program. In their second draft plan, CMS has indicated an interest to combine reporting on a minimum number of cases and/or minimum number of measures to determine whether a hospital could be scored for the VBP incentive payments. The rural health advocacy community must continue to engage with CMS on this and other options as CMS moves to adjust payments to all hospitals (except Critical Access Hospitals) based on a variety of performance measures.

Rural providers and clinicians as well as all hospitals with units facing the challenge of “small numbers” can’t afford to be left behind.

Thanks to Dr. Josie Williams, Director of the Rural and Community Health Institute at Texas A & M, and her colleagues for organizing this timely and much needed national conversation.

Role of Transfers Key to Measures of Quality

From “Heart Attack Death Rates Not Higher at Iowa’s Rural Hospitals, Study Used a More Sensitive Analytic Method than Previous Research Approaches,” a University of Iowa Press Release, 4/05/07:

“Contrary to some previous studies, rural hospitals in Iowa do provide quality care for patients with heart attacks and do not have higher death rates when compared to urban hospitals, report University of Iowa researchers. The study, which was based on data from 119 urban and rural hospitals in Iowa, used a different, more sensitive analytic method than previous research approaches. The findings appear in the March/April issue of the *Annals of Family Medicine*.”

“Rating hospitals’ quality of care for diseases such as heart attacks is a rising trend in the United States. However, the ratings need to be accurate, said Paul James, M.D., professor and head of family medicine at the University of Iowa.”

“ ‘Older approaches did not take certain biases, or confounding factors, into consideration, and so comparing rural to urban hospitals was like comparing apples to oranges. We used an approach that allowed us to study patients that were comparable who attended rural and urban hospitals,’ he added.”

“Rural hospitals can provide some life-saving measures and have the role of triaging heart attack cases, which could result in a patient being transported to an urban hospital. Yet, in some cases, a patient's family may, in consultation with a physician at a rural hospital, choose not to send a family member who has had a heart attack to an urban hospital. For example, if the patient is elderly and has other, complicated health conditions, the family may want the person to stay closer to home and support networks.”

“The UI study attempted to control for the finding that the sickest heart attack patients may stay at rural hospitals while the healthiest are transferred to an urban hospital. In such cases, based on patient preferences, it may be appropriate for that patient not to be transferred to a large, urban hospital,’ James said.”

“ ‘Our study took into consideration that the traditional techniques to measure hospital heart attack care were not properly sensitive to the type of patients admitted to the rural hospitals and did not take into account the important role that physicians play in directing patients from a rural hospital to a more advanced, urban hospital,’ James added. James said that rating hospitals is becoming more common due to federal government and Medicare/Medicaid emphasis on paying hospitals for performance.”

“Some agencies judge the quality of a hospital based on mortality rates without understanding the factors that contribute to those rates. While the UI study was limited to Iowa hospitals, investigators aim next to analyze datasets from other states.”

More Health Care Isn't Same as Better Care

From “Variations in the Costs and Quality of Medical Care: Is More Always Better?” by Elliott S. Fisher, M.D., M.P.H., in the 2006 edition of America’s Health Rankings by United Health Foundation:

“For many years, researchers at Dartmouth have been studying how health care is delivered across the nation and have come to believe that Americans have much to gain from a better understanding of how the quality and costs of care vary across regions—and how they can best contribute to creating a healthy population.”

“The care of patients with chronic illness presents a major challenge to health care systems throughout the world. According to the U.S. Centers for Disease Control, more than 90 million Americans live with chronic disease such as diabetes, cancer and heart disease. Of the 1.7 million Americans who die each year, seven out of ten deaths are caused by chronic diseases. Additionally, the medical care costs for people with chronic disease account for more than 75% of all U.S. health care expenditures.”

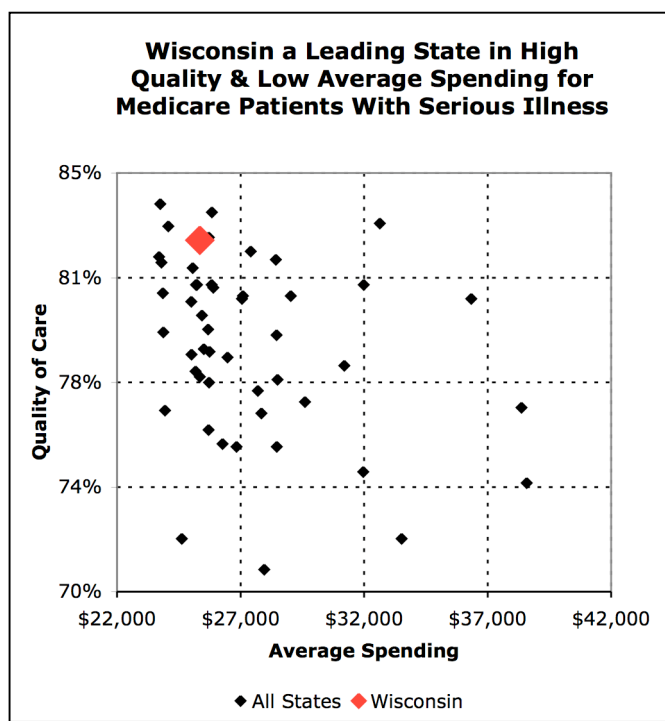
“The care of patients with chronic illness also presents an important opportunity. As the most recent edition of the *Dartmouth Atlas of Health Care* reveals, dramatic variations in treatment of Medicare beneficiaries with severe chronic illness exist across U.S. states, regions and hospitals. To ensure that differences in utilization are not due to differences in underlying illness levels, the analyses focus on patients with at least one serious chronic illness who are in their last two years of life. Differences in utilization, therefore, reflect variations in how similar patients are treated in different health systems.” Some key findings have emerged:

“Patients with chronic illness are treated very differently in different states. The average number of days spent in the hospital by seriously ill Medicare beneficiaries during their last six months of life varies more than twofold. States in New England, the Midwest, the Mountain states and the Pacific Northwest had low rates compared to residents of Hawaii, New York and New Jersey. Utilization rates for other services, such as physician visits and the number of different physicians seen during the last six months of life, are highly correlated with hospital stays.”

“Differences in utilization drive important differences in spending. The money Medicare spent per patient varied nearly twofold. Some of the differences in spending are a consequence of differences in the prices Medicare pays providers. The most important factor, however, is the greater volume and intensity of care delivered in high cost states and regions. In other words, the variations in costs are largely due to differences in the *volume* of discretionary services provided to similarly ill patients—variations in how much time similarly ill patients spend in the hospital, in how often they see physicians, in how many specialists are involved in their care, and how frequently patients have tests and minor procedures.”

“Variations in spending have several causes, including limited evidence, optimistic assumptions and unmanaged supply. Evidence-based medicine focuses

primarily on the ‘*what*’ of treatment (what drug, which surgical procedure) rather than the ‘*how*’ (by whom, where delivered, over how many visits). Current research provides no guidance on whether a patient with well-controlled high blood pressure should be seen once per month or once every six to twelve months. In the absence of strong evidence, other factors drive clinical decisions—including the widely held assumption that more medical care means better care. Although this assumption is



reinforced by fee-for-service payment and physician fears of malpractice—these factors do not vary across regions. What varies across U.S. regions and health care organizations is the supply of medical resources relative to the size of the population served. High spending states have many more physicians and acute care hospital beds on a per-capita basis than low spending states—and the current payment system ensures that they stay busy.”

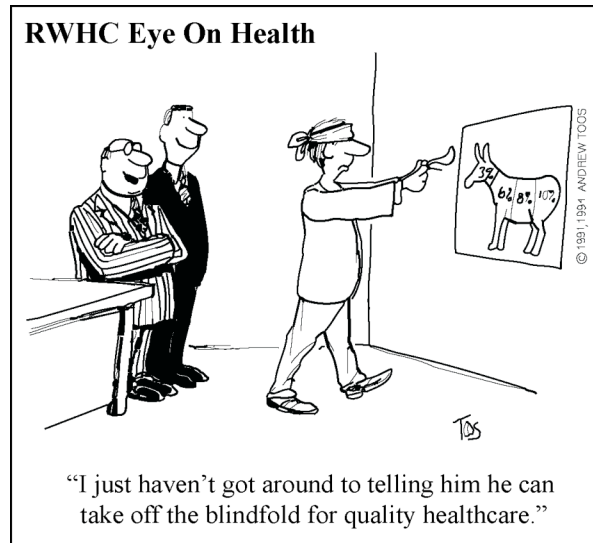
“More services don’t necessarily mean better outcomes. The critical question is whether greater use of these discretionary “supply-sensitive” services such as hospital stays, visits, specialist referrals, results in better health outcomes. Extensive research has now documented that greater use of these services across the range of practice observed in the U.S. is, if anything, associated with slightly worse outcomes, poorer quality and lower satisfaction with care. Physicians report that quality is worse in higher spending regions and, likewise, the most recent measures of the quality of hospital care show no evidence that higher spending is associated with better hospital quality. On the contrary, as in earlier work that focused on both inpatient and outpatient quality measures there is a weak negative association between spending and state-level average performance on Medicare’s current measures of hospital quality. The reasons why higher spending would be associated with worse quality on these measures remains a topic of research, although a likely possibility is that the higher spending regions have more complex delivery systems and greater complexity increases the chance of errors.”

“The remarkable variations in the costs and quality of care for patients with chronic disease—and the evidence that regions that provide lower cost care can do so with equal or better quality and outcomes—represent an important opportunity. The U.S. has made tremendous gains in understanding the underlying biological causes of disease and disability. However, we have much to learn about how best to translate our knowledge into policies and clinical practices

that achieve the best possible health outcomes for all at an affordable price.”

How Doctors Think, or Sometimes Don’t

Jerome Groopman’s new book, *How Doctors Think*, has been widely and favorably reviewed. From “Where Doctors Go Wrong” in *Time*, 3/15/07:



“Groopman’s book makes abundantly clear that despite all the electronic databases that are being used to improve health care, a lot of medicine still comes down to a doctor or two puzzling out what might be wrong with your body. Experience, assumptions and human nature can guide them or lead them astray. Groopman says patients can prompt broader, sharper and less prejudiced thinking by asking doctors open-ended questions and learning to identify some of

their common thinking mistakes.”

Error 1: I Recognize The Type—“Doctors, like most of us, are often led astray by stereotypes that are based on someone’s appearance, emotional state or circumstances. Thus a homeless man’s disorientation might be quickly attributed to alcoholism when the real culprit is diabetes. Groopman describes this kind of ‘attribution error’ in the case of a nervous young woman who kept losing weight even when prescribed a high-calorie diet. Her doctors, convinced that she was lying about her food intake, suspected anorexia or bulimia, but her problem, diagnosed after years of ill health, turned out to be celiac disease—an allergy to wheat. Had the patient been male or older or less anxious, the doctors might have got it right in the first place.

Error 2: I Just Saw a Case Like This—“ ‘We all tend to be influenced by the last experience we had or something that made a deep impression on us,’ Groopman says. So if it’s January, your doctor has just seen 14 patients with the flu and you show up

with muscle aches and a fever, he or she is more likely to say you have the flu—which is fine unless it's really meningitis or a reaction to a tetanus shot that you forgot to mention. The best defense—besides giving as complete a history as you can—is to be alert and ready to ask questions anytime a doctor says, 'There's a lot of this going around.' ”



What's the problem? “Unlike at any other time in U.S. history, a significant number of our children and teenagers are obese or close to it—currently more than a third of them, about 25 million kids. Most of these obese kids will become obese adults, who are likely to live sicker and die younger than their parents' generation.”

Error 3: I've Got to Do Something—“Physicians typically prefer to act even when in doubt about the nature of the problem. And yet this kind of ‘commission bias’ can lead to all sorts of new problems if the treatment turns out to be incorrect. ‘Don’t just do something. Stand there,’ one of Groopman’s mentors told him years ago when he was uncertain of a diagnosis. This buys a doctor time to think—which is especially important when trying to ensure that something hasn’t been overlooked.”

Error 4: I Hate (or Love)

This Patient—“Groopman cautions that emotions are more of an issue than most physicians like to admit. Doctors who are particularly fond of a patient have been known to miss the diagnosis of a life-threatening cancer because they just didn’t want it to be true. But negative emotions can be just as blinding, sometimes stopping a doctor from going the extra mile. ‘If you sense that your doctor is irritated with you, that he or she doesn’t like you, then it’s time to get a new doctor.’ Studies show that most patients are pretty accurate in describing their doctors’ feelings toward them.”

RWHC Eye On Health



Is childhood obesity a real epidemic? “Yes. The prevalence of childhood obesity is excessive and rapidly escalating, with severe clinical consequences. All communities and populations are adversely affected, particularly low-income communities. Left unabated, the epidemic will overwhelm health care delivery and financing systems and destabilize health programs and other services for children, the elderly and the poor.”

How did it happen? “To maintain a healthy weight, the energy we consume in calories must equal the amount of energy we burn. At least three decades we’ve been terribly out of balance—taking in enormously more energy than we burn. There is no one culprit. Individual and family choices are driven by a mix of genetics, biology, socio-economic factors, commercial, cultural influences, and the 24/7 availability of junk foods.”

Is there an answer? “We have to restore the energy-balance equation so that ENERGY IN = ENERGY BURNED in our individual and collective lives. Preventing childhood obesity will require more than asking people to eat right and move more. It is not fair to ask people to take responsibility for making healthier choices unless they have the opportunity to make those choices.”

“In the communities hardest hit by obesity, families don’t have what they need to make healthy choices. They don’t have grocery stores that stock affordable fresh fruits and vegetables. There aren’t enough safe places for kids to play. All families want to raise

Yes, Virginia, Childhood Obesity Is Real

Risa Lavizzo-Mourey, M.D., M.B.A., explains the thinking behind the Robert Wood Johnston Foundation’s five-year, \$500-million commitment to reverse the childhood obesity epidemic in this interview:

healthy kids, but they find it hard to do so because of the barriers they face. To reverse the childhood obesity epidemic, we must remove these barriers and provide families with better access to healthy choices. We'll have to change policies to support healthier lifestyles. And, as a society, we'll have to make deep down social, cultural and personal change."

Do we know what works? "We already know how to change behavior to save lives. We've reduced drunk driving and protected millions of Americans from the harm of tobacco through education, advocacy, good public policy and strong leadership. And it's hard to imagine getting behind the wheel of a car today without buckling up. These success stories provide examples of how a national commitment to policy and social change can transform individual behavior."

"With childhood obesity, past efforts have been too small, slow, and fragmented—a jumble of unconnected state, school, community, business and philanthropic efforts. Missing is a sense of national urgency to act and the resources to help communi-

ties, states and the nation coordinate efforts, advocate for change and evaluate impact."

Why act now? "The evidence is compelling: Millions of promising young lives are being redirected away from hope and health toward disease and early death. The public, though concerned, doesn't know what to do in the face of such an obvious epidemic. Current anti-obesity efforts by government and industry are fragmented and underfunded. It's time to tilt the scales toward action."

What's our vision for the future? "A massive national social and cultural mobilization reverses the epidemic of childhood obesity. Prevention is an ongoing public priority, and food and beverage industries are partners in prevention. Schools are free of junk food and offer effective physical education. Families and kids 'get it'—they understand what they can do to restore the energy balance in their own lives. Fresh fruits, vegetables and other healthy foods are accessible and affordable in every neighborhood. Civic leaders foster policies that support healthy eating and active living. Our kids' anticipated life span is greater than their parents'."

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