

**NC Institute of Medicine
Task Force on Prevention
April 15, 2008
NC Hospital Association**

Meeting Summary

Attendees

Task Force/Steering Committee Members: Moses Carey, Johanna Chase, Leah Devlin, Lew Ebert, Calvin Ellison, John Frank, Barbara Goodmon, Greg Griggs, Verla Insko, Polly Johnson, William Lawrence, Peter Lehmuller, Michael Lewis, Meg Molloy, Peg O'Connell, Bob Parker, Mary Piepenbring, Austin Pittman, Barbara Pullen-Smith, Bill Pully, Bill Purcell, Joe Sam Queen, George Reed, Pam Seamans, Bob Seligson, Vandana Shah, Jackie Sheppard, Florence Siman, Bill Smith, George Stokes, Michael Tarwater, Lisa Ward, Charles Willson, Joyce Young, Alice Ammerman, Paul Buescher, Steve Cline, Jennifer MacDougall, Ruth Petersen, Marcus Plescia, Carol Runyan, Meka Sales, Kristie Thompson

Interested Persons: Margaret Andrews, Briann Bradley, DeeDee Downie, Allen Dobson, Sally Malek, Tom Ricketts, Jessica Saxe

NC IOM Staff: Pam Silberman, Mark Holmes, Jennifer Hastings, Kimberly Alexander-Bratcher, Berkeley Yorkery, Thalia Fuller, Christine Nielsen

WELCOME AND INTRODUCTIONS

Leah Devlin, DDS, MPH, Co-chair

State Health Director

Dr. Devlin expressed her delight that we have this Task Force and said Task Force members were chosen because of their leadership in their respective fields. She also stated that the North Carolina Institute of Medicine has a history of success in broadening stakeholder share and broadening understanding. Dr. Devlin congratulated Pam Silberman for receiving the Ned Brooks Award from UNC and expressed appreciation to Rep. Verla Insko and Sen. Bill Purcell who she noted are faithful to health and prevention. Dr. Devlin also mentioned that Dr. Bill Roper (who was unable to attend the meeting) is very excited to co-chair the Task Force and that he will be very engaged in the process.

Pam Silberman, JD, DrPH

President & CEO, North Carolina Institute of Medicine

Dr. Silberman thanked everyone for coming and expressed appreciation to the Division of Public Health for its leadership and to the four funders of the Task Force including the Blue Cross and Blue Shield of North Carolina Foundation, the Kate B. Reynolds Charitable Trust, the NC Health and Wellness Trust Fund, and The Duke Endowment. She noted that this Task Force is setting historical precedent and that purposeful thought was given to selecting Task Force members. Dr. Silberman appreciates everyone's willingness to serve, noted that foundation representatives are part of the Task Force's Steering Committee, and that this Task Force represents unprecedented

collaborations. Leah Devlin spoke to Colorado public health leaders who were very impressed with the Task Force on Prevention.

TASK FORCE MEMBER INTRODUCTIONS

DETERMINANTS OF HEALTH

Tom Ricketts, PhD, MPH

Professor, Health Policy and Administration

Director, NC Rural Health Research Program

Chair, Scientific Advisory Committee, United Health Foundations' America's Health Rankings

North Carolina is a forward moving state, but we have work to do. The state health rankings have a long history of being associated with health insurance companies. The advisory group is concerned with determining the "health" of all 50 states. The group is attempting to identify what a healthy state *is* in order to make improvements in health. What is health? Is it happiness? Satisfaction despite a disability? Material happiness may be another indicator of health. The clinical picture presents another facet. The Gallup-Healthways Well-Being Index will be released soon, which may be folded into the Healthy State rankings. The degree of happiness may be connected to prosperity now, but also relates to things that contribute to long-term health. What we do now, such as enacting policies, can have short and long term implications and outcomes. Health is a moving target; it relates to people, places, and activities. It is more than just vital and health statistics.

The social environment, physical environments, individual behavior/biology, health and function, disease, health care, well-being, genetic environments, and prosperity comprise the Evans, Stoddard Model of Health. All of these components affect the health of the population in various ways. This model explains the determinants of health—it's not just about going to the doctor, not just having good genes, not just a structure around you. Opportunities also matter. We don't know what the balance of these ought to be. We don't know exactly how to push to make them change.

The United Health Rankings represents a fairly simple conceptualization of how health determinants work. The model includes personal behaviors, community/environment, public and health policy, and clinical care as determinants. As rankings are created, all of these elements are included. Future considerations for this model include genetics/genomics, explicit environmental factors, and mental health. Health can also be thought of as an interacting process—there are determinants that can be changed with noticeable impacts. The health determinants in the model have been weighted. Earlier in the process of developing the model, outcomes were heavily weighted; now determinants are more heavily weighted.

A 2006 study by Cutler and Lleras-Muney shows that education has a huge impact on health risk behavior. Education has a large return on investment. Education decreases the percentage of people who smoke, who drink, and who are obese. It is clearly a strong input into risk behaviors. It has, however, no effect on drug use. States that have put money into education have seen that money translated into extended life. Cutler's work shows that the biggest step we can take to improve health is education. We do not have analyses of other interventions.

In terms of North Carolina's health rankings, North Carolina has been called "the best of the worst," described as leading the Southeast, and said to be doing okay for an agricultural state that's moving forward. However, the state's relative progress is not great. While there has been improvement, North Carolina has stayed relatively stable in relation to other states. We are in essence keeping up, but not getting ahead.

The Agency for Healthcare Research and Quality (AHRQ) issues health performance and quality dashboard measures for states. North Carolina is a little above average in preventive services, average to below average for acute care measures, and below average for chronic care measures. Overall, according to the AHRQ Performance Snapshot for 2007, North Carolina is below average for all measures. (<http://statesnapshots.ahrq.gov>)

North Carolina has been "stable," and it has made some improvements since 1990 such as overall mortality and years of potential life lost. Recent indicators of improvement include number of children in poverty, immunization coverage, activity days, and the smoking rate. In North Carolina, we have poor "structural" conditions such as a low high school graduation rate, high infant mortality, high prematurity rate, and a wide disparity measure. In this state, we have wide gaps in racial disparities; this may indicate some problems in our health care system. We have had improvement in teen pregnancy and access to care measures such as practitioners and child health insurance.

United Health Rankings showed percentage improvements in the US until year 2000, and then improvements began to flatten off. Obesity is marching up. Smoking has gone down. And we have an insurance problem. We are losing ground in relation to other counties. There is a natural compression in mortality as countries mature. This is a phenomenon of industrialized nations. People tend to live to a natural limit. Mortality rates can only go so far out. Are we flattening out because we are not investing in the predictors of health? We may extend lifespan, but not end up with more overall "quality of life." We measure these as adjusted life years (ALYs). This creates awkward trade-offs. New causes of death are surfacing. People are dying of terminal diseases we cannot do anything about. These people will show up in our mortality structure.

Select North Carolina Health Statistics:

- The biggest rise is in people with obesity. NC fits in with the national trend.
- Cigarette smoking is decreasing.
- There were racial and ethnic differences in influenza vaccination in 2003-2004. NC does well against the rest of the nation. Far more whites aged 65 years and over receive the vaccination than blacks or Hispanics. Large disparity in race leads to large disparity in risk factor.
- Infant mortality rates are an embarrassment for NC. Our white mortality rate is worse than the national. Minority mortality rate is very high; this reflects a structural problem that needs attention. The components that allow this to happen can create problems that have effects later. NC's minority infant death rate is close to Bulgaria's infant death rate. NC's death rate has come down.
- NC's low birth weight rates from 1980 to 2004 are higher than for the US. It is unclear how this coincides with infant mortality.

Data showing ambulatory care sensitive condition hospital admissions (2005) reveal that there are “hot spots” in the state for preventable hospitalizations for children under 18. There are racial, economic, and regional issues and contributors. Does it have something to do with the economy? There are important issues that are problematic in these “hot spots.”

North Carolina’s population is aging, and as we know, older people die more often and older people need more health care. North Carolina has an interesting population profile structure. In the near future, we will have many older people living in the state. The economy and healthcare predictions are built upon 1990s census data, and it is not accurate for the population structure we have now.

Older people expend lots of energy to stay healthy. The number of older people is growing rapidly—in terms of the number of people in hospices, nursing homes, and ICUs. People may live to an old age here in North Carolina, but it will be an intense healthcare delivery time. We need a lot of doctors to deal with the health problems this population presents. The proportion of growth of people 85 and older has slowed. The aging cohort will need different health workers. We will need more gerontologists and hospice workers due to the shift in care emphasis.

Health expenditures in the Southeast had an average 10% growth increase from 1980 to 2004. There is exponential growth of demand for services. We have to learn how to keep people healthy. We are having problems keeping people covered; the private rate goes down, and public coverage increases. What we do today impacts long-term health. We are facing a cost crisis. We don’t have to spend exorbitant amounts of money to have a healthy population. North Carolina is a health a state. Minnesota and Vermont are doing this. It is the future of that health that we are grappling with today.

Comments:

It seems that if we know how we got smoking rates to drop that we could do this for obesity. It is a little harder to tackle obesity. We will use lessons learned from tobacco prevention and control to help frame the work of the Task Force. We will see if we can apply tobacco strategies to obesity.

Does poverty impact health status more than education? Education factors are net for everything. Even controlling for income, education is still a predictor. It is independent of income. There is the Costa Rican paradox: poor country with high health indicators. The country has a universal education program.

Some countries with lower education than North Carolina seem to have higher health rankings. This all depends on cultural contributors and values. Costa Rica is an example. The county has a culture and policies that are different. We have to change America the American way. We cannot compare ourselves directly to other countries. Health contributing factors may not be the same there as they are here. We can learn from other countries. London has a congestion tax and has found health impacts. We can take similar actions to other countries, but we can do them another way.

A Johns Hopkins study examined longitudinal factors—failing math, failing English, and absenteeism. We are one of the only states that require health education in the public system. It is required to graduate. All schools must teach human sexuality according to the standard course of

study, and it must go beyond abstinence. The state does not monitor how this is done, but it does provide tools.

CHARGE TO THE TASK FORCE

Leah Devlin, DDS, MPH

State Health Director

The opening presentation by Dr. Tom Ricketts pointed out that we in North Carolina rank poorly in health outcomes:

38th in years of life lost
36th in deaths per 10,000
45th worst in childhood obesity and in infant mortality
36th in overall health rankings

In almost any indicator one could pick, North Carolina would rank in the lowest third to quarter in the nation—these are abysmal rankings, and it is even more disheartening when one further recognizes that the US consistently ranks poorly against other developing nations.

The changing demographics of North Carolina also present new challenges as the fastest growing segments are the older populations. We have to factor in that health care costs double for people over the age of 65 and double again for those over 85. We spend \$2.2 trillion dollars nationally on health care and this will double by 2016. The percentage of the gross national product that is spent on health care is 16%—this will rise to 20% by 2016.

Much of this is driven by the cost of chronic disease, which contributes to two-thirds of all health care expenditures and 60% of all deaths. Many times these diseases are preventable. Furthermore, of these preventable deaths, three-quarters can be attributed to tobacco, physical inactivity, and nutrition—the other major contributor is alcohol use. And it is important to note that 9 out of 10 adults have at least one of these risk factors.

Chronic disease is not just an issue for adults—indeed it is a LIFESPAN issue—as the risk factors for these chronic diseases actually begin in children—by age 10, 20% of children already have at least 1 risk factor.

Chronic disease is also a LIFECYCLE issue as we have growing concerns that chronic disease and related risk factors in women of childbearing age are contributing to the stagnated infant mortality rates in our state.

Julie Gerberding, the director of the CDC, has said that “domestic extremes such as aging, poor nutrition, lack of fitness create URGENT realities—chronic diseases, injuries, disabilities and infections. TIME matters. Lives are at stake. Fast enough action is essential.”

I hope that as you move into the work of this Task Force you also feel a sense of urgency about the importance of our work. Prevention saves lives just like medical treatment saves lives. It may not be as dramatic or immediate, but make no mistake: PREVENTION SAVES LIVES.

The goal of the Prevention Task Force is to guide all of us in making the prevention of health problems a priority in North Carolina.

To accomplish this goal the Task Force is to:

1. Comprehensively examine the preventable, underlying contributors of the 10 leading causes of mortality and morbidity in the state.
2. Examine health disparities.
3. Prioritize prevention strategies to improve population health based on evidence-based or promising interventions.
4. Develop a comprehensive approach to prevention that includes strategies using the four point framework laid out for us: health and public policy, community and environment, clinical preventive care, and personal behaviors.

It is important to note that we are never going to be able to SERVE and we are never going to be able to TREAT person by person our way of out these problems of poor health status and high costs. Rather a mix of prevention strategies is essential for success.

I was asked to embellish this charge—to cheerlead a bit from my perspective as the State Health Director. I have four hopes.

The first hope is that we will focus not on sickness or illness but on healthness. We have to faithfully move beyond the more common dialogue of “find it and fix it” or “triage and treat” to PREVENT, PROMOTE and PROTECT. This is harder to do than you think.

My second hope is that we will commit to rebalancing the prevention scorecard. There are enormous opportunities in evidence-based prevention strategies that will lead to healthiness in our state. We do not take full advantage of them in our state. While there are imbalances in policy, in personal behaviors, and in community strategies, the most illuminating example of the imbalance is financial. We spend 95 cents of the health care dollar on illness and 5 cents on healthness or prevention. That’s 95 cents on health care, which on a population basis, contributes to only 10 percent of health status.

Don’t get me wrong, I fully support health care for every person in North Carolina. We need to successfully make those decisions and take that issue off the table and then get serious about investing in prevention strategies that really lead to improved healthness for North Carolina.

And we have some terrific examples in North Carolina of how prevention pays: when Charlotte fluoridated its water supply in 1949, it became the largest city in the world to fluoridate community water. Fluoridation reduces tooth decay by 50% and the return on investment is \$28 dollars for every \$1 dollar. We still have 42% of our kindergarteners entering school with tooth decay, so we still need to invest in other prevention strategies such as sealant and varnishes.

The 75% reduction in neural tube defects in western North Carolina over a 5-year period is attributed to a folic acid campaign targeting preconceptional and pregnant women.

Raising the cigarette tax to 30 cents resulted in a drop in cigarette consumption of 18%. Our tax at 35 cents is still well below the national average of \$1.11 cents. Clearly there is dramatic room for improvement in this particular strategy.

“Click it or Ticket,” developed in North Carolina in 1993, has been a hugely successful prevention program implemented by the Highway Patrol. We have gone from 58.1% seatbelt usage in 1993 to 86.7%. If we could get to 90%, an additional 37 fatalities and 600 serious injuries would be prevented.

The “Get Alarmed” effort to place working smoke alarms in homes (undertaken by a fire department and public health partnership) saved an estimated 90 lives over 7 years.

The human papilloma virus is the major cause of cervical cancer, and we now—amazingly!—have a vaccine to prevent cervical cancer. The cost benefit is enormous—\$25,000 per quality adjusted life year saved.

All of our childhood vaccines that prevent 15 different diseases are incredibly cost effective—the return is \$27 for every \$1 invested. But let me make a point about the hepatitis vaccine in particular. Ten years after implementing the 6th grade vaccine program in 1995, the new cases of Hepatitis B dropped from 8.3 to 1.92 per 100,000 populations—a 77% decline. And consider that the full benefit (in cost and health) of lower Hepatitis B rates will not be fully evident until these individuals age and are able to avoid liver infections, cancers, and other complications that result from earlier infection with Hepatitis B.

In rebalancing the health scorecard, let’s admit two biases:

The first, while Ben Franklin said an “ounce is worth a pound”—an ounce is cheaper but there is still a cost. We want prevention to be free—but that cervical cancer vaccine does cost \$300 per child.

Secondly, let’s admit that we hold prevention to a higher standard of cost benefit than we do treatment. We are more willing to accept a “let’s try it and see if it works” or a “defensive medicine” approach in health care. Perhaps sometimes when opportunities for health gains are high it might be worth practicing “defensive prevention,” too.

My third hope is that we will commit to transformative action to fully institutionalize healthness and health equity in all of our health decision making. Health equity, a tweaked definition, again by Julie Gerberding, means the elimination of disparities, fairness in health care, and the ability of all people to achieve their optimal health.

Just to dig a little deeper about health equity—a new study just released documents that while life expectancy for the nation as a whole has increased, the gap between affluent Americans and others who are less affluent has widened. This socioeconomic inequity is evident in life expectancy at birth as well as through every stage of life. In 1980, those in the most affluent group lived an average of 2.8 years longer than people in the most deprived group. By 2000, the affluent group was living 4.5 years longer. The researchers suggested the following plausible reasons, which will be familiar to you:

- People with more money are able to take greater advantage of new medical advances in cancer and heart disease.
- Smoking has declined more in people with greater education and income.
- Poorer people are less likely to have insurance and access health care later when the consequences to their health are worse.
- The neighborhoods of lower income people are often less safe.

- Lower income people are less likely to engage in healthy behaviors.

But here are a few examples of what I mean when calling for transformative action on prevention.

We are making serious and important efforts in North Carolina on access, quality, and cost of health care. Community Care of North Carolina is a world class effort to improve quality and cost in the Medicaid program, the Governor's Quality Initiative has just been announced for the private sector, the NC Hospital Association's work on quality and patient safety—all are important. We need to continue to build on these efforts, and we aim to develop this same quality focus for the public health system as well.

However, let's broaden the debate to include access to high quality, affordable prevention efforts; to quality, affordable fruits and vegetables; to accessible, quality daily physical activity in schools; to wellness programs at work; and to quality air that is smoke free.

Another example: when we act in our state to build a badly needed, state of the art \$50 million cancer research and treatment center, we shouldn't even think of doing that without also stemming the pipeline—supporting the tobacco quit line for the 50% of North Carolina smokers who tried to quit last year and failed, or increasing the tobacco tax to drive down consumption, or creating smoke free worksites and public places—all evidenced-based strategies to reduce cancer in the people of North Carolina. This kind of transformative action will lead to greater healthness.

The fourth hope is that leadership across all sectors of our state will engage in a critical commitment to rebalancing the prevention scorecard and taking on an action agenda. That is why you are here. Again, you were thoughtfully chosen.

To elaborate, it is important that business leaders are engaged in prevention. The average costs of each employee to business are \$18,000 per year in medical and lost productivity costs. A severely obese worker files 2 times as many worker's compensation claims, costs 7 times as much in medical costs, and misses 13 times more work days. Two-thirds of health care costs to a company are in lost productivity—the workers aren't there to do the work! So it is important to keep workers well.

The same is true for academic leaders. If students aren't healthy enough to be at school, to pay attention, to not disrupt others, they are less likely to be successful in school. They are then less likely to graduate and go on as successful adults contributing to the economy, participating in the employer supplied health insurance, and having the financial wherewithal to engage in healthy lifestyle choices for themselves and their families.

Nonprofit and community leaders play a vital role in being nimble and unfettered. They can fill niche roles and are strong advocates when times are dicey for prevention.

Leaders in public health, health care, and insurance all have special obligations to collaborate to ensure that we are most effectively addressing not just clinical services but personal behavior change, health policy, and community environmental changes. We have some exciting collaborations in our state underway, and we need to do more together.

We all have the responsibility to support our elected officials including local boards of health and county commissioners, as well as legislators, as they move through challenging waters that don't always support their own personal commitment to healthness.

There are national efforts that mirror what we are trying to accomplish in North Carolina.

Trust for America's Health has over 100 organizations that are standing on the following principles:

1. We believe that prevention must drive our nation's health strategy.
2. We believe every American [North Carolinian] deserves a healthy and safe place to live, work, and play.
3. We believe that every community should be prepared to meet the threats of infectious disease, terrorism, and national disasters.
4. We believe that every American [North Carolinian] deserves to know what we are doing to keep them healthy and safe.

Other states are moving too—a here is one state's prevention agenda:

- Have a regular doctor—medical home.
- Be tobacco free.
- Keep your heart healthy.
- Know your HIV status.
- Get help with depression.
- Live free of alcohol and drugs.
- Get checked for cancer.
- Get the immunizations you need.
- Have a safe and healthy home.
- Have a healthy baby.

In closing, I hope that this Task Force will lead the way in not just developing but in implementing some very strong recommendations to improve healthness and health equity in our state. We can do it.

One of my favorite quotes comes from *Alice in Wonderland*. One of the characters says, "Sometimes I do six impossible things before breakfast!" Focusing on healthness and committing our leadership to transformative action in rebalancing the prevention scorecard are things we CAN do. We need to do them NOW.

I look forward to the day when each of us can look back to 2008 and say that we were a part of this very exciting and transformative process that the North Carolina Institute of Medicine Prevention Task Force represents. And through our investments in prevention, we will celebrate that we made such an enormous difference for all North Carolinians for generations to come. Thank you.

NC IOM TASK FORCE PROCESS

Pam Silberman, JD, DrPH

CEO & President, North Carolina Institute of Medicine

The North Carolina Institute of Medicine (NC IOM) is a quasi-state agency chartered in 1983 by the North Carolina General Assembly to be concerned with the health of the people of North Carolina; to monitor and study health matters; to respond authoritatively when found advisable; and to respond to requests from outside sources for analysis and advice when this will aid in forming a basis for health policy decisions (NCGS §90-470). The NC IOM studies issues at the request of the NC General Assembly, state agencies, health professional organizations, and the NC IOM Board. The NC IOM often works in partnership with other organizations to study health issues.

The NC IOM membership includes representatives from government; the health professions; business and industry; the hospital, nursing facility, and insurance industries; the voluntary sector; faith communities; and the public at large. Members are appointed by the Governor for 5-year terms. The NC IOM is governed by a 27 member board.

The NC IOM typically creates broad-based Task Forces to study health issues facing the state. Task Forces generally consist of between 30-60 people and are guided by co-chairs who run the meetings. Task Force members typically include representatives of state and local policy makers and agency officials, health professionals, insurers, business and community leaders, consumers, and other interested individuals. Task Forces generally run from 9-18 months. Approximately the first two-thirds of meetings are for fact-finding to identify the problem and identify potential solutions. The last third of meetings are to discuss and refine recommendations and review draft copies of the report. All Task Force meetings are open to the public.

The work of a Task Force is guided by a smaller Steering Committee consisting of people with expertise or knowledge of the issue. The Steering Committee helps shape the agenda and identify potential speakers. Presentations to the Task Force may include research summaries and/or statistics, descriptions of programs, challenges or barriers to best practices, and national developments. Presenters may be Task Force members, researchers, national or state leaders, state health care professionals, consumers, or NC IOM staff.

The NC IOM staff will prepare agendas, invite speakers, gather information, and identify evidence-based studies (when available) to inform the work of the Task Force. The staff write the first draft of the report. Task Force and Steering Committee members are encouraged to comment on written materials and recommendations throughout the process. The Task Force report is circulated several times before being finalized. Task Force members may be asked to prioritize recommendations. Task Force members will take a final vote on the recommendations and report. NC IOM Board members review the report before it is finalized. Reports are distributed widely to a variety of stakeholders and interested persons.

Recent NC IOM studies have been on the following topics: Chronic Kidney Disease (2008), Health Literacy (2007), Ethical Issues in Pandemic Influenza Planning (2007), Trends in Primary Care and Specialty Supply (2007), Covering the Uninsured (2006), and the Healthcare Safety Net (2005).

The NC IOM also publishes the North Carolina Medical Journal. Each issue contains a special focus area with articles and commentaries discussing specific health issues. Typically, one of the

issues of the NC Medical Journal will focus on the work of a Task Force. An issue brief will describe the work and recommendations of a Task Force. The NC Medical Journal is circulated to more than 30,000 people across the state.

The NC IOM Task Force on Prevention is supported by the Blue Cross and Blue Shield of North Carolina Foundation, the Kate B. Reynolds Charitable Trust, the NC Health and Wellness Trust Fund, and The Duke Endowment.

The charge to this Task Force is to develop a Prevention Action Plan to guide the Division of Public Health and community organizations in prioritizing their prevention efforts to improve overall population health. One of the biggest challenges is that each task force member has his or her own passion. We want Task Force members to continue their work, but also want members to help us come up with top prevention strategies to improve population health. To accomplish this goal, the Task Force is asked to do the following:

- Comprehensively examine the preventable, underlying causes of the 10 leading causes of mortality and morbidity in the state.
- Examine health disparities.
- Prioritize prevention strategies to improve population health using evidence-based or promising interventions.
- Develop a comprehensive approach to prevention that includes strategies to address the four factors impacting health outcomes (personal behaviors, clinical care, community/environment, public and health policy).

In 2009, the NC IOM and the DPH will host a statewide summit to release the Prevention Action Plan.

Typically, the NC IOM reviews the progress made on Task Force recommendations 18-24 months after the release of a report.

Comments:

We cannot afford to have a state full of sick people. The system cannot afford that. Rising costs are tough. Prevention is the way to relieve this.

Q: How can we incentivize restaurants to make healthy foods?

A: The community/environment emphasis (in the health determinants model) will help this Task Force consider this.

There is a potential to change demand; however, prevention may not change demand because of lag time. Faster path to improved health may lie within benefits design. As cost shifting continues, that could have a huge impact on peoples' decisions regarding health care.

A lot of research goes into documenting evidence-based strategies, but not into developing strategies. This is an ongoing challenge. We still have to tackle this. The Task Force will use promising practices where evidence-based strategies are not available.

Tobacco control has lots of evidence-based strategies, but sometimes you have to take a risk and gather data on practice-based evidence by adding research components to practice. Pilot tests are commonly part of Task Force recommendations.

To rebalance the prevention scorecard, it's important to make the case that it is worth the investment.

Q: Will the Task Force be involved in the politics of the recommendations?

A: The NC IOM is not an advocacy organization, but Task Force members can advocate and promote recommendations the Task Force makes. The NC IOM is a quasi-state agency and does not advocate.

Sometimes a recommendation comes up that seems like a good recommendation, but the group that it affects is not at the table. It's hard to take on a recommendation when we don't have the experts that can address poverty, school dropouts, etc. We are trying to focus on health promotion strategies that can improve population health. We recognize there are other components that are important.

Some media out there are saying that prevention isn't really cost-effective, that we must consider quality of life as equally important. It's not just dollars that matter.

Q: Does omitting reducing the high-school dropout rate as a strategy harm our best efforts?

A: We can highlight the importance of it, but cannot recommend strategies to reduce rates. We can highlight the importance of education and education achievement. This may mobilize other groups.

OVERVIEW OF NORTH CAROLINA'S LEADING CAUSES OF MORTALITY AND MORBIDITY

Mark Holmes, PhD

Vice President, North Carolina Institute of Medicine

Preventable diseases can affect health in many ways. Mortality is death from the disease, and morbidity is disability from the disease. Research has tended to focus on mortality because it is easier to measure. There are lots of measures for these concepts including death rate, quality adjusted life years (QALY), disability adjusted life years (DALY), years of life lost (YLL), years of life lost to disability (YLD), and years of productive life lost (YPLL).

The NC IOM determined that considering the overall burden of disease, which includes death and disability, was the most accurate way to measure disease burden for the purposes of this Task Force. To do this, YLL, which is a measure of mortality calculating the years of life lost due to death (lost years of life = life expectancy at age of death – current age). This calculation places more weight on death at an earlier age. Infant mortality will give greatest YLL. Life expectancy changes as we age.

Examples include:

At age 0: Life expectancy = 76 years/YLL = 76 – 0 = 76

At age 50: Life expectancy = 80 years/YLL = 80 – 50 = 30

At age 75: Life expectancy = 86 years/YLL = 86 – 75 = 11

Data from 2005 show that motor vehicle accident deaths result in greater YLLs than Alzheimer deaths because typically people who die of the latter are older; therefore, their YLL is quite different.

The Health Profile of North Carolinians: 2007 Update ranks causes of death. Alzheimer's ranks at #6 while motor vehicle injuries rank at #9. The average YLL for these differs quite a bit. The burden should be both mortality and morbidity.

YLL data in North Carolina is good. The NC State Center for Health Statistics compiles vital statistics and life expectancy data. And we can group similar conditions (eg, heart disease, cancers) working off of 113 causes of death using ICD-10 codes.

The 10 leading causes of YLL are as follows: cancer, heart disease, motor vehicle accidents (MVA), infectious diseases, cerebrovascular disease, chronic lower respiratory disease, infant mortality, alcohol and drug use, non-MVA injuries, and diabetes. (Infectious disease includes HIV, pneumonia, and influenza.)

YLD is years of life lost to disability; however, it may be more appropriately defined as "years lost to disability." It is a morbidity-only measure. $YLD = \text{condition-specific weight} * \text{years with condition}$. Weight ranges from 0 (perfect health) to 1 (death).

Example weights include:

Otitis media	.023
Bipolar affective disorder	.367
Alzheimer's	.666
Acute myocardial infarction	.437
Episode of limiting low back pain	.061
Breast cancer	.09
Amputated arm	.257

North Carolina has poor disability data. To determine morbidity in North Carolina, we used 1996 data (from Michaud et al) and adjusted it for North Carolina's population today (2005). There was no adjustment for trends. The data omit some diseases or conditions we know we have disability information for, such as back pain and cancer. These data aren't perfect, but they are the best we have.

The 10 leading causes of morbidity burden in NC are as follows: alcohol and drug use, unipolar depression, chronic lower respiratory disease, osteoarthritis, dementia, cerebrovascular disease, diabetes, congenital abnormalities, MVAs, and bipolar disorder. Notice that mental health conditions are listed here in contrast to mortality.

To combine mortality and morbidity, we use DALYs. These tell you the overall burden combining mortality and morbidity ($DALY = YLL + YLD$) implicitly implies a trade-off. For example, living 1 year at perfect health is equal to living 3 years with Alzheimer's.

North Carolina's disease burden is the sum of mortality and morbidity represented by DALY. In order of decreasing disease burden, the top 10 for North Carolina (using 2005 data) are as follows: cancer, heart disease, chronic lower respiratory disease, alcohol and drug use, MVAs,

cerebrovascular disease, infectious disease, diabetes, unipolar depression, and non-MVA unintentional injuries. Infant mortality was #11 or #12. Heart disease and cancer have greater mortality than morbidity. Unipolar depression is disability-driven data.

We want to focus on upstream factors, the risk factors. The leading causes of death and disability differ from the actual causes of death and disability. The underlying root cause of disease is reported in Mokdad et al (2005) in *JAMA*. Mokdad et al calculates the YLL (but no disability) for the top 10 causes of death.

Ideally, we would like to be able to assign a relative risk of death and/or disability for each risk factor. For example, smoking increases your risk of death by heart disease by 68%, quadruples risk of death by lung cancer, etc. However, comprehensive data on this front do not exist. (Mokdad et al collected risks of death, for nonspecific causes, due to each risk factor.) The best we can do is compile risk factors for each disease, but we are unable to quantify relative risks of each factor. Actual causes of death in the US include tobacco, poor diet and physical activity, alcohol consumption, microbial agents, toxic agents, motor vehicle, firearms, sexual behavior, and illicit drug use.

The actual causes considered for the Task Force are alcohol and drug use; bacteria and infectious agents; diet, physical inactivity, overweight, obesity; emotional and psychological factors; exposure to chemicals and environmental pollutants; tobacco; and risky sexual behavior.

The following list gives the prevalence of certain risk factors in North Carolina (Behavioral Risk Factor Surveillance System, 2006):

- *Everyday* smokers in NC was higher than in the US (17% vs. 14.9%).
- Binge drinking in NC was lower than in the US (11.3% vs. 15.4%).
- Obesity was higher in NC than in the US (26.6% vs. 25.1%).
- Overweight in NC was slightly less than in the US (36.2% vs. 36.5%).
- Adult obesity in the US and in NC rose steadily from 1991 to 2002. (NC's percent of obese adults, however, has been higher than the US percentage for every year in the range.)
- North Carolinians who exercised in past month was lower than in the US (76.2% vs. 77.4%).
- North Carolinians eating 5 fruits/vegetables per day was lower than in the US (22.5% vs. 23.2%).
- Smoking rates in NC have come down since 2002; however, for every year in the time period from 1990 to 2002, the percent of adults in NC who smoke has been higher than the nation's.

Disease burden should include mortality and morbidity to get a proper assessment of the overall disease burden in North Carolina. To better focus prevention efforts, we should consider actual causes of disease rather than leading causes.

Comments:

Why is violence not in the top 10? Cancers are lumped. MVAs and non-MVAs are broken out. Some might lump them, too, so then violence could be included with injuries. Injuries would then be #3 (violence + non-MVA + MVAs).

Overweight children and type 2 diabetes are not in the list, but we are dealing with the underlying risk factors.

NEXT STEPS

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The Task Force will generally meet once a month (or once every other month) to develop a prevention action plan. To do this, the Task Force will:

- Comprehensively examine preventable, underlying causes of death or morbidity.
- Examine health disparities.
- Prioritize prevention strategies based on *evidence-based interventions*.
- Develop a comprehensive approach to prevention.

This Task Force will take a comprehensive approach and will examine evidence-based strategies that have been shown to make a positive impact in preventable causes of death and morbidity in the following arenas:

- Personal behaviors
- Community and environment
- Clinical care
- Public and health policy

The preventable causes of death and morbidity that the Task Force will consider are alcohol and drug use; bacteria and infectious agents; diet, physical inactivity, overweight, obesity; emotional and psychological factors; exposure to chemicals and environmental pollutants; tobacco; and risky sexual behavior.

In future meetings, the Task Force will examine the underlying causes of death and morbidity (eg, tobacco, diet/exercise/overweight).

The structure for each meeting will include a description of the problem in North Carolina (including health disparities); programs, policies, and practices already in place in North Carolina; and what more can be done (based on review of evidence-based strategies in four arenas). The next meeting on May 8 will focus on tobacco. The July 31 meeting will focus on diet, physical activity, overweight, and obesity.

Task Force members will examine and recommend specific evidence-based prevention strategies for each underlying cause of death and morbidity. At the end of the Task Force process, the members will prioritize prevention strategies, and top prevention strategies will be incorporated into a Prevention Action Plan for the state

Comments:

The goal is for the Task Force to finish its work one year from now and have a summit in the fall of 2009. DPH has hired a full-time employee who will work on implementation of Task Force recommendations.

The final discussion of the meeting centered on the following topics:

- *The interest of including education and social determinants such as poverty, and housing within the model and within the scope of work of the Task Force.* It was noted that the Task Force will build on income when it is revealed as a disparity and that the steering committee will discuss social determinants as their next meeting. One participant noted that they would like for one meeting to be devoted to social determinants. It was noted that social factors should be built into the report.
- *How promising practices are defined.* One participant noted that we will have to try some new approaches, or we won't move forward. It was also noted that it is important to do what works, not just what feels good, and that model fidelity is important. Furthermore, an approach may work somewhere, but not somewhere else for many reasons. The staff of US Community Preventive Services are very good at helping to determine promising interventions. Evidence-based approaches for tobacco are great. For obesity, they are nonexistent.
- *The need for goals to measure success.* A participant noted that we need to be careful about setting unreasonable expectations. The concept of including realistic achievement and making progress is important. It is important to compare North Carolina to the nation because while we may make improvements within the state, we don't want to be the 5th worst state in the nation. We must have benchmarks and a way to measure progress. The NC IOM will get all speakers to compare current North Carolina health indicators to Healthy People 2010 goals. We will also have a presenter that tells the Task Force about what others from around the county are doing around each underlying cause. A participant noted that it is important to break through what is achievable, to reach a higher bar. Someone remarked that Healthy Carolinians 2020 could be used; it will be ready within the year.
- *Implementing the recommendations.* One participant noted that Task Force recommendations should be divided up into groups and assigned to who can make them happen and that perhaps there can be a "players only" meeting. It was also noted that there were a lot of organizations in the room that have political action committees that can advocate at the legislature.

Other comments from Task Force members included:

- Data can be "cut" in different ways, and it is important to consider this. We need to let the data speak and not let the lenses we wear obscure our view.
- Firearms should be added to the list of risk factors.
- The importance of having a medical home should not be overlooked as we move forward.
- Mental stress should be incorporated into discussions.
- Accountability for meeting goals should be considered.
- Education leads to a prepared workforce, which then leads to an improved economy.
- Socioeconomic status correlates with health status.