

Social Determinants of Health The Community as an Empowered Partner

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The topic I have been asked to address in this keynote talk is working with the community as an empowered partner. With Melbourne being the home of Our Community this is a bit liker selling coal to Newscastle. It's a wonderful organisation headed by Rhonda Galbally and I'm very pleased to be a part of this. I thank Father Joe Caddy also. Community may be a very boring topic. All of us know that we need to work with the community in this way. We may know it, but we also know how difficult it is to do. Especially if you have been trained, as I have been, to be an arrogant elitist, prima donna expert. We are experts, after all, and all we are trying to do is help people by sharing our expertise. And therein lies the not-so-boring problem.

Let me illustrate this issue by telling you about a smoking cessation project I directed in Richmond California. I came to this project with a dismal record of failure in helping people, one at a time, to quit smoking. I resolved, in the Richmond project, to take a different tack. The Richmond project was designed as a community project. There would be a block captain in every neighborhood in Richmond; we would involve the business community, the schools and many community groups. The idea was to change the climate in Richmond with regard to smoking. To challenge the acceptance of smoking, the values and the attractiveness of smoking.

I wrote a brilliant 5-year research grant and sent it to the National Cancer Institute. It was a bold, and expensive project - \$2,000,000 – and, for that reason, they sent a large

site visit team to discuss it with us. At the end of the visit, they proclaimed the project as brilliant. They in fact later used my brilliant design as the basis for the nationwide COMMIT study that was done in over 20 communities in the nation.

Then we proceeded to implement the project for 5 years and we did a fabulous job. And at the end of the 5 years, we compared the results we achieved in smoking cessation with our two comparison communities – Oakland and San Francisco – and we found no difference in smoking quit rates.

It was only later, after I had stopped brooding over this disaster, that I finally began to see the issue. Richmond California is a very poor city. It has many unemployed people. Lots of crime. Lots of drug use. Very few health services. Lots of air pollution from nearby oil refineries. You get the picture. And I came to Richmond with my brilliant research plan and said: "Hey gang, let's do a smoking cessation project!" Of all the problems faced by people in this community, I doubt that smoking would be very high on their priority list. But of course, I had never asked them about that and I probably would have persisted with my plan anyway. I was the expert after all.

But there is even worse news. Early in the project, a group of teenagers came to us and said they would like to make a rock video about smoking. They would write the music and words but they wanted our help. What they wanted was to invite a famous rock star – I can't remember her name now - to spend one day on the project and they wanted a rock video photography person from Hollywood to come too. Would we help them arrange that? We hadn't budgeted for such an expense but we did it anyway. The rock star came in her limousine and the Hollywood guy showed them how to set up the scenes for filming, and so on.

The video they produced was shown at a large movie theater in the community. The students printed the tickets for this show, they did the advertisements, and they served as ushers. The show was sold out and it received a long, standing ovation from the audience. The video was subsequently shown in many places around the world and the community received royalty money for it.

Unfortunately, the video was not part of my brilliant research plan and we had no money to evaluate its benefits. So the one thing in the project that came from the community, and incidentally, the one thing that probably had the biggest impact, was not taken into consideration by the research team. So much for my brilliance.

Oh – and to add to my embarrassment- the nationwide COMMIT study has reported their results: the study failed to show a difference in smoking cessation rates between the study and comparison communities.

Looking back at this experience, the question is: why was it so hard for us –for me- to see the importance of embracing the community as an empowered partner? It's not that difficult to understand the idea. It is not that difficult to understand the importance of the idea either. Why was I so blind? I think part of the answer is that we public health

experts focus on our diseases and risk factors. We have in Public health things to learn about these diseases and we have messages to convey to people. The problem is that people have lives to lead. The meeting ground between our focus on diseases and their lives is not always smooth. Most often, there is a gap between the two and we do not do a very good job in recognizing and dealing with this gap. I am now going to discuss some rather delicate issues and I run the risk of offending some of you in this room. I apologize ahead of time.

Let me begin by criticizing my own field: epidemiology. We in epidemiology spend a good deal of time attempting to identify disease risk factors. The rationale for this work is that if we can identify these risk factors and share that information with people, they will rush home and, in the interests of good health, change their behavior to lower their disease risk. There are three problems with this model. First, we have had a very difficult time identifying risk factors. Consider one of the diseases in which have done a particularly good job: coronary heart disease. We all know the big risk factors for this disease: cigarette smoking, hypertension and high serum cholesterol. There are perhaps a dozen more risk factors such as physical inactivity, obesity, diabetes, and so on. Taking all of the risk factors we know about, together, we can explain about 45% of the coronary disease that occurs. So for the disease that is the number one cause of death in this country and for which there has been an enormous amount of excellent research, more than half of the disease that occurs is not explained by that research.

That's problem number one. The second problem is that even when people know about their risk, it is very difficult for many people to change their behavior. I was involved many years ago in the classic demonstration of this problem. I am referring to the Multiple Risk Factor Intervention Trial – MRFIT. That study involved men in the top 10% risk category for developing coronary heart disease because of their hypertension, cigarette smoking and high serum cholesterol. Our plan was to get these men to lower their risk and demonstrate the lower disease rates that would eventuate.

Unfortunately, to do this, we were told by the statisticians that we would need to enroll 12,000 men in the study, 1/2 to work with us in the clinic and 1/2 to work with their own doctors as a control group. To find these 12,000 men, we had to screen almost 1/2 million men in 22 cities across the country. That was a lot of work and it was very expensive: about \$200,000,000 (in 1980 dollars) but we thought it would be worth it because we had done a good job in identifying these risk factors and because coronary heart disease was the largest cause of death in the country.

After the first screening, we did two additional, very intensive screenings totaling about 3 hours. We told the men as they were going through these screenings that if they were eligible for the Trial, they would be randomly assigned to work either with us or their own doctor and that they should not volunteer for the study if this was not acceptable. If they were assigned to work with us in the clinic, we would ask them to change their diet, to take pills for their high blood pressure and to stop smoking. Further, they would be asked to come to the clinic very frequently at the beginning, oftentimes with their family, and that the Trial would go on for 6 years. They should not volunteer if they had any

reservations. And we also gave them a big stack of questionnaires to fill out. And we had a psychologist in every clinic who recommended that certain men be rejected because they did not seem to be good prospects for the long haul.

In the end, we selected a highly informed and highly motivated group of men. And we involved them in a superb intervention program. For example, we invited the men and their families to the Clinic to demonstrate low-fat cooking. We took them to the supermarket to show them how to read labels. We went to their homes to cook with them. And so on. We did the study about as well as it could be done.

And the Trial failed. After 6 years, there was no statistically significant difference in heart disease rates between the Special Care group and the control group. This was primarily because so few men in the Special Care group changed their behavior in comparison to men in the control group.

So, the first problem is that we epidemiologists have had a difficult time identifying disease risk factors but the second problem is that even when we are successful in doing this, it has been very difficult for people to change their behavior to lower their risk. The third problem, however, is the most challenging of all. Even if everyone at risk did change their behavior to lower their risk, new people would continue to enter the at risk population at an unaffected rate. This is because we rarely identify and intervene on those forces in the community that cause the problem in the first place.

This a major issue for public health, not just for epidemiology. If one of our goals is to prevent disease and promote health, I don't think we can accomplish this job by an exclusive focus on individual diseases and risk factors. There is a lesson to be learned here by looking at the success we have had in preventing many infectious diseases. Some of that success has been attributable, of course, to vaccines. But most of this success has been due to an improvement in the environment. This improvement came about because of the way in which diseases were classified. Those disease classifications were in terms of water-borne diseases, food-borne diseases, air-borne diseases and vector-borne diseases. These disease classifications are not of much value clinically – in the treatment of individual cases – but they are of great importance in telling where diseases are coming from and where we should direct our prevention efforts. Do we have a similar classification system for the noninfectious diseases of concern today?

If you sent a research grant proposal to the National Institutes of Health to study poverty diseases, to what disease-specific institute would they refer your request? Or what about a proposal to study nutritional deficiency diseases? Or racial discrimination diseases? NIH would not know what to do with such proposals. They would probably send it to the Institute that most closely approximated what you were getting at but that would do fundamental damage to the point of your request.

A couple of years ago, the Canadian government was considering the establishment of an NIH for Canada. Many of us warned them that if they patterned their NIH along the lines of our NIH, it would be a major setback for the cause of disease prevention. Last year, they did establish a Canadian Institute for Health Research. They did set up a whole series of Institutes focusing as we do on heart disease and cancer and arthritis but they also established institutes of Population Health, Gender, Aboriginal Health and so on. We in this country have some institutes of this kind: Aging is one, Child Development is another. Occupational health could be another but they tend to continue a focus on specific diseases that occur in an occupational context. The clinical, individually oriented tradition runs strong.

Suppose we were interested in developing a community-based framework for the prevention of disease and the promotion of health. What would it look like? The first job in developing such a framework would be to identify the most important population determinants of disease. What should we focus our attention on? Actually, this is not a very difficult task. We all, in fact, know the answer but, until very recently, we haven't wanted to talk about it or do anything about it. The most important social determinant of disease is social class. Social class has been an overwhelmingly important risk factor for disease since the beginning of recorded time and it is related to virtually every cause of disease that we know about. We all know this. But we have not known what to do about this observation. If revolution is the only useful intervention to remedy the ills of social class, it is not surprising that public health people have instead been more interested in working on the relationship between physical activity and diabetes.

For example, if you were willing to take on the issue of social class as an intervention focus, what would you intervene on? Money? Is poverty the main ingredient driving the social class-disease connection? Or is it education? Or perhaps inadequate nutrition? Or inaccessible and costly medical care? Or bad housing? Or bad jobs? Or a contaminated physical environment? Which of these is most important? The answer, of course, is that these factors are all important and they are all inextricably bound up together. It makes no sense to try to tease them apart and pretend that one is more important than the other. So let's change the subject and study something else.

The breakthrough in all this came a few years ago when Dr. Michael Marmot studied coronary heart disease in 10,000 British civil servants. He found, as you would expect, that workers at the bottom of the civil service hierarchy, workers who were guards and delivery people had heart disease rates 4 times higher than those civil service people at the very top of the hierarchy. As any self-respecting epidemiologist would be expected to do, he adjusted these data to take into account all of the heart disease risk factors we mentioned earlier plus about 50 others. After adjusting the data for all these factors, the difference in heart disease rate between those at the top and those at the bottom was reduced to 3 1/2 times. This is still, of course, an enormous difference.

The interesting part of the story is that he observed a gradient of disease from top to bottom of the civil service hierarchy. Those at the top had the lowest rates of disease but those one step below them, professionals and executives, doctors and lawyers, had heart disease rates twice as high as those at the very top. Now, we might be able to explain the high rates among those at the bottom in terms of poverty or poor education,

or inadequate nutrition or poor housing, etc but that would not explain why doctors and lawyers had rates of disease twice as high as those at the very top. Doctors and lawyers are not poor. They do not have bad educations. Or poor medical care. Or poor housing. And yet they have disease rates twice as high as those above them. Those above them are the directors of the civil service agencies. All of these people are very senior civil servants who basically run the British government.

Below the professionals and executives in the hierarchy, there is a step-wise gradient of increasing rates of disease. And this gradient persists even after account has been taken of over 50 risk factors that might otherwise explain this phenomenon. And, of course, all of these civil servants are covered by the British national medical care insurance program. When I was visiting Marmot in London, my first thought was that these data were a reflection of some bizarre phenomenon limited to the issue of coronary heart disease. It is not. The same pattern exists for every single disease in the civil service. My second thought was that it was a bizarre phenomenon associated with workers in the British civil service. It is not. This identical pattern has now been seen for virtually every disease in every industrial country in the world.

This is a major breakthrough in our thinking. Instead of shaking our heads at the complexity of social class as a determinant of disease, perhaps there is something we can do about it. Marmot's observations do not mean that we can ignore those at the bottom. It just means that perhaps something else is going on that would explain the higher rates even near the top. This does not solve all of our problems but at least it gives us something to think about and to work on. Which is better than simply ignoring the issue. For his work, Marmot was recently knighted by the Queen of England. And the Nobel Prize Committee is rumored to be thinking about him as well. Which would be another major breakthrough because the Nobel Prize in Medicine is usually given for contributions in molecular biology and other basic laboratory sciences.

Returning to the gradient: How can we explain it? It was easy to understand why those at the bottom might have high rates of disease but how does one explain the high rates among those near the top of the social class hierarchy? A lot of people are working on this question but my own hypothesis involves what I call "control of destiny". By this phrase I mean the ability of people to deal with the forces that affect their lives. Even if they decide not to deal with them. I think this is what "empowerment" means. I don't know if these are worthwhile concepts or not – control of destiny and empowerment - I think they are—but if they are not, we will need some other ideas like them. The point is this: If we are going to prevent disease, we need to intervene on those community forces that cause disease problems and social class is the obvious and most important such factor. Since social class is such a complicated concept, it would really be helpful to identify some concepts that are related to the social class gradient that are amenable to intervention. If control of destiny and are important issues, they are issues we can develop interventions around. I will return to this idea later.

Allow me to summarize the argument so far: I have suggested that a major impediment to effective interventions is that we in public health have messages but that people have

lives and that we need to do a better job of bridging the gap between these two. And I have argued that the reason we experts have such a difficult time in solving this problem is that we in public health focus on specific diseases and risk factors where we have clear expertise.

Then I suggested that the specific disease model approach has not gone well. We can't identify risk factors very well, we can't get people to change their behavior even when we do and, finally, even if they did change behavior, new people would keep coming into the at-risk population because we do not work on those community forces that cause the problem in the first place. My final point was that the most important social force was social class and that we might be able to figure out some approaches to dealing with it in a realistic way.

The reason that this is important is that if we could move away from a focus on diseases and risk factors and begin to think about community and social forces, we could probably relate to the community in a more meaningful way. We would have a better chance of involving the community as an empowered partner.

Let me illustrate what I am getting at. We have a grant from the Centers for Disease Control to study 5th grade children in a low-income community near Berkeley. The focus of the grant is on cigarette smoking and other drug use, violence, poor school performance, sexual behavior, and so on but we decided not to study any of those things. We decided instead to focus on the fundamental issues underlying all of these problems. We decided to focus on hope. Our view was that if these children, mostly from minority groups and mostly from very poor families, had no hope for the future, what difference would it make if they smoked or used drugs or missed school or engaged in violent behavior? So we decided to work on hope and to help these children see that they could have a future. And we decided to work with them, over a three-year period, to teach them ways of implementing their dreams. How to make things work for their benefit. How to select a problem and succeed in solving it. How to develop strategies for getting done what they want to get done. For having control over their destiny.

These kids are not very interested in talking about smoking or drugs or violence but they can become interested in their future. The people we chose to work with them are high school students from their community along with selected undergraduates from the University at Berkeley. We have been working for 6 months now with the high school students and Berkeley undergraduates to help them work with the 5th graders –as partners. The project is starting, even as I speak to you here in St. Louis, and all of us have our fingers are crossed.

This is a very different approach than the usual project directed to smoking, drugs and violence. We are trying in this project to focus not so much on OUR topics but on the topics of concern to the kids. And to work with them as empowered partners. And, of course, we hope that the result will be lower rates of smoking and drug use, lower rates

of inappropriate sexual behavior, and better school performance. We'll see if I got it right this time. With my previous track record....

Our study of San Francisco bus drivers offers another example of what I am trying to get at. We have been studying 2,000 of these bus drivers for many years now. The project started when a former student of mine became the Director of Health for San Francisco city employees and, as part of her job, supervised the physical exam for the bus drivers when they get their driving license renewed. She called me one day to say that she thought the prevalence of hypertension was too high and would I come and have a look. I did. And she was right. Among drivers over the age of 60, the prevalence of hypertension was 90%! So we applied for a research grant to study this problem in detail. We did all the things you would imagine and wrote several journal articles about the problem. Then we began to develop an intervention program to help the drivers.

Then we noticed that the drivers were complaining about a lot of back pain. We got another grant (or two) to study this problem and we wrote several journal articles about that. And we brought in some ergonomic experts to help with the redesign of the driver's seats and so on. Then we noticed that the drivers had high rates of gastrointestinal problems and respiratory difficulties. And recently we have observed that they have high rates of alcohol problems (after work – not while they are driving!). And we get research grants for everything and design interventions for all of these problems and, while what we are doing is not a waste of time, it certainly is not going to solve the problem for the drivers. For example, even if we did a wonderful job on the blood pressures and the back pain and the stomach problems and the breathing difficulties and the drinking issue, as new drivers come to work for the bus company, they will soon exhibit the same disease profile as the old drivers because none of our work is addressing the fundamental problem. The fundamental problem is the job itself. We got so focused on the various specific disease problems of the drivers that we did not recognize the problem common to all the complaints: the job.

I need to say here that I am not against paying attention to specific diseases. I want to help drivers with their medical problems and I am not suggesting we ignore them. What I am suggesting is that we already have physicians and nurses and other clinicians who look after people with medical problems as part of their jobs. But we have virtually no one who has the job of preventing disease in the first place.

We therefore began a new project to see if we could figure out what it is about the job of bus driving that is problematic. It didn't take long to discover the problem. It is the schedule. In San Francisco, drivers must keep to the schedule but it cannot be done. For example, if you were to look at the schedule, you would see that you had to get from Mission and Army Street to Mission and Geneva Street in 2 minutes. It cannot be done. Even if you drove your Ferrari on Sunday morning with no traffic to contend with, and no passengers to pick up, it would take much longer than 2 minutes.

I always thought that a bus schedule was developed by driving a bus from stop to stop and seeing how long it took. That would be OK if you had lots of buses available. There is a shortage of buses in San Francisco and the schedule is therefore made by a computer that simply allocates times depending on the number of buses that are available. But then, drivers are penalized when they are late in arriving at the bus stop. The drivers compensate for this by giving up their rest stops at the end of the line. They just keep driving and hope to minimize their lateness in this way. They dash into a fast-food restaurant when they need to use the bathroom and when they need food.

And since they are almost always late, passengers are almost always mad at them. The drivers feel that they are being unjustifiably blamed for a situation that is not in their control and they sometimes behave impolitely to passengers who then get upset with the driver. Then there is the traffic over which they have no control.

Most drivers have a terrible shift arrangement. They must come to work very early for the morning rush hour and they must be at work for the evening rush hour but they have nothing to do in the hours between these two intervals. There is generally not enough time to go home so the drivers generally hang around and do little. At the end of their very long day, they are usually completely worn out and many go to the local tavern to wind down. By the time they get home, they are often not in good shape for social interaction. They go to bed and get up at 4 AM to begin another grueling day.

Yes, they have hypertension and back pain and stomach and breathing and alcohol problems and they should be helped with those problems. But the job needs to be fixed. The management and bus drivers union have not been on the best terms for many years but they are willing to meet to discuss health issues. Management is motivated to do this because 1/3 of their budget has to be put aside to hire substitute drivers when regular drivers don't come to work. 1/3 of their budget! Further, they are concerned over the fact that so many drivers quit soon after they have completed a very expensive training program. And many others take early retirement. At great cost to the company. And bus companies have high accident rates. The drivers are motivated to work with management for obvious reasons. So we are trying to solve this problem but it is very difficult. But we are working on problems that the drivers care deeply about and about control of destiny and we are focusing on fundamental underlying issues.

Let me provide another example of our attempt to work with the community as an empowered partner. We have during the last 15 years been developing a series of what we call "Wellness Guides". We have developed Guides for moms in the WIC program, for people with disabilities, for people moving from welfare to work, for new parents, and we are now working on a Guide for older people. In addition to California, the Guide for new parents is now also being distributed in Pennsylvania, Kentucky, and Alabama.

These guides are not what they sound like. They are each about 80 pages long with lots of pictures and personal stories and lots of advice on community resources. We have evaluated the usefulness of the Guides and I have been astonished that

something I have done is really working. Unfortunately, this success is not due to my brilliance but to the fact that all of the Guides are developed in close partnership with people from the groups we are intending to reach. For example, the kids do most of the writing on the section on children, older people do most of the writing on the problem of aging, people with mental illness work on that topic, people with disabilities lead us on that topic, and so on. And most of the writing deals with the problems that people face in negotiating the world, not on the details of disease and risk factors.

All of what I have said so far can be boiled down, I think, to three fundamental issues.

1. The challenge of inappropriate funding mechanisms.

It is important that we recognize the pervasiveness of funding mechanisms that reinforce a clinical, individual approach to disease. Most research grants are funded to deal with specific diseases, most training grants do the same, and most of the people in the audience today are working in programs that focus on a particular disease or a particular risk factor. This emphasis on diseases produces a group of disease or risk factor experts and it leads to intervention programs that focus on expert information on diseases and risk factors. This is OK as long as there are some programs in existence that focus on fundamental daily life issues that affect people's lives. By addressing these people issues we have an opportunity to work with people in the community to become empowered partners. If we do not do this, we increase the chances of failing to achieve our goals.

2. The challenge of working together with people from different disciplines

Inevitably, a focus on the environment and on the community requires that we in Public Health think across.

disciplinary lines. We do not do this very well. I was the graduation speaker at my School of Public Health 2 years ago and I tried to discuss this in my talk. I noted that the students in the graduating class represented a very wide variety of disciplines: virology, endocrinology, medicine, mathematics, engineering, political science, geography, genetics, sociology, nutrition, anthropology, economics, to name just a few. And I indicated that while we all had different interests, we were all united in our desire to help make the world a better place. And I suggested that as they went forth to do that, they would likely fail because we at the University had failed them. We had trained them in disciplines but they would soon discover that the problems people face transcend those disciplines and involve schools, parks, roadways, housing, employment, schools, crime, politics and so on. They could come back to the University and point this out to us but we would not change. We faculty would not change because we were trained in disciplinary silos, we faculty receive research and training grants that reinforce our silos and we will continue to train people as we had been trained. This is not good. And it is not likely to lead to collaboration with empowered community partners.

3. The challenge of intervening at many levels.

The third issue is one that I have not really addressed in this talk. I have emphasized that we have not done a very good job in helping people change their behavior. But, as we all know, people change their behavior all the time. On their own. Without our help. A good example of this is cigarette smoking. The prevalence of smoking in California has gone down from about 43% to under 20% in recent years. This is a phenomenal achievement. And it far outstrips the successes we have had in one or another of our smoking cessation programs. This is confronting: we set up programs to help people, most of them don't do what we want them to do, and, behind our backs, they make difficult changes on their own. The decline in smoking was due to a whole series of interventions at many different levels: we learned a lot about smoking addiction from research in experimental psychology and we were able to apply that knowledge. And we learned about techniques of behavior change and were able to benefit from that knowledge as well. But we also informed people about the health risks of smoking. we raised the price of cigarettes, we limited access to cigarette machines, we enforced strict limitations on advertising in magazines and on billboards, and we outlawed smoking in many public places. We developed a health intervention that involved a wide variety of people and that went way beyond the narrow confines of the health field. And it worked. Before we get too relaxed with this triumph, however, we need to be aware that kids are smoking at an increasing rate and, if present trends continue, it is conceivable that we will be back to a prevalence rate of 40% one day.

It is important to recognize that most of the successes we have achieved in behavior change have come about because they have been the subject of a multiple-pronged, multi-level, multidisciplinary approach. These approaches have involved information but they have also involved regulations and laws, mass media campaigns, workplace and other rules, better environmental engineering and design, and so on.

While we are on the topic of successes, there is another success that I have not dealt with. I have been complaining that our interventions on coronary heart disease have failed. And yet, we have since 1970 or so witnessed a tremendous decline in death rates from this disease – one of the most dramatic declines in disease ever recorded. Coronary heart disease is still the number one cause of death but the decline in mortality is an impressive achievement. This decline is due to tremendous advances in the medical treatment of people who already have disease as well as to the fact that people have in fact changed their high risk behavior. And the death rate from many other diseases is also declining. So why am I complaining about failures? Obviously, we are doing something right. And we are. But as is true for most topics, this too is a complicated issue. Even as death rates have gone down, the gap in health between those at the top and bottom of the social class gradient has gotten larger. Progressively larger over the years. So we have along way to go before we can relax with our success.

These are difficult issues. I have struggled mightily with them for many years. Especially difficult is the problem of working with members of the community as

empowered partners. You will note that I have not defined in this talk what I mean by the term "community". As you can tell, however, I mean any group of people we target for intervention- whether they are 5th graders or MRFIT participants or residents of Richmond, California, or bus drivers. Whatever the group, I have not done well in working them. There have been times when I would meet with members of the community about our common interests and I would be shocked that, while I was making my speech, they weren't even taking notes! And then they would interrupt me in mid presentation. I used to go home saying I wasn't going to work with THEM anymore. Then, later, I would realize that that was not a very mature or considered judgment and I would solve the problem by sending OTHER people from my team to meet with them.

It was only years later that I truly began to get the real point. We may at the University be training experts but we really need to begin to train a different kind of expert. This is not an ideological position. It is a very practical issue. We all know that the medical care system is under enormous strain in this country. And we all know that the baby boomers have not entered the older population yet. When they do so, in 2020 or 2030, the number of older people in this country will have doubled. If we think our medical care system is in trouble now, we ain't seen nothin' yet.

Our only hope is to develop better strategies for preventing disease and promoting health and not simply waiting to fix problems after they occur. And to do that, we will have to work with the community as empowered partners. And to do THAT, we will have to fundamentally change our public health model: we will have to change the way we classify disease, we will have to train a new generation of experts, we will have to change the way we organize and finance public health education and research, and we will have to deal with our arrogance. These are very difficult and humbling challenges. I know we can meet them. We really have no choice.

Thank you

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