2010 Nutrition Summit
Changing the Food Environment: Making it Happen
US Department of Health & Human Services and Department of Agriculture
April 28, 2010

Strategies to Reduce Sodium Intake

Jane Henney, MD
Committee Chair, Institute of Medicine

It's just a real pleasure to be with you this afternoon and see friends from many years ago and see many of my colleagues that I worked with in preparing this report that was recently released. Our IOM Committee was tasked with reviewing the state of U.S. and international actions to reduce sodium intake and develop new strategies for reducing sodium intake to the levels recommended by the government's Dietary Guidelines for Americans. As you know, these guidelines are put out every five years; and, currently, the recommendation is an intake of 2300 milligrams of sodium per day for the general population, and 1500 milligrams per day for populations who are seen at-risk of increased or high blood pressure. We were asked to consider a variety of options, including government approaches, food supply approaches, information and education strategies for the public and professionals. What we were specifically not asked to do was a re-review of all of the evidence that really speaks so strongly to the fact of the association between sodium and the development of high blood pressure. This clearly is quite relevant, and I think that you have been introduced throughout the day of the risk one puts themselves from increased sodium intake, and to lower the sodium will really reduce adverse health effects such as high blood pressure and the consequences, or sequela, of heart disease and stroke. It is of note that once Americans reach their fifties, the risk of developing high blood pressure over the remainder of their lifespan, even if they are healthy, is estimated to be 90 percent. And it has been estimated that reducing sodium intakes could prevent more than 100,000 deaths annually and really save billions of dollars, not only in medical costs, but also in overall productivity.

Now, this task was not without its challenges. It certainly was not as straightforward as one might think, because in an ideal world, sodium in the food supply could immediately be reduced to levels that would translate to diets that would meet recommended sodium intake for the average Americans. However, an immediate drop to these levels was certainly not recommended. The ubiquity of sodium in the food supply and its very functions, including improving food taste and flavor, maintaining food safety and shelf life, and impacting the texture of food, presented a number of challenges that would best be overcome in a more gradual fashion than an immediate drop. In particular, changing consumer taste preferences was probably the most important reason for our recommendation of a gradual approach to this process. Past experience has certainly shown us that the public does not always find lowered or reduced sodium products acceptable. However, research and industry experience has shown that incremental decreases in sodium

can be accomplished in such a way that products remain not only acceptable, but flavorful. Now, our categories came in three categories. And we paid a lot of attentions to adjectives here. So, if you go away with any message from this particular report, I would ask you to focus on the adjectives used. The primary recommendation calls for the establishment of a coordinated approach to set mandatory standards for safe levels of sodium in food. Such standards should be set using existing FDA authorities, to modify the generally recognized as safe or GRAS status of salt or other sodium containing compounds. GRAS status and food additive approvals are the two ways in which substances can gain approval for addition to food. Sodium chloride, commonly known as salt, the greatest contributor of sodium intake in the American diet, is currently considered GRAS, or generally recognized as safe, at any level of use. In this report, our committee has recommended that maximal levels be established for salt and other sodium-containing compounds so as to allow persons to consume a normal diet with a reasonable likelihood of keeping their sodium intake to recommended levels. The committee believed that this is the most promising method for reducing sodium intake, because it can be structured in a way that will allow for consumers and food industry to adapt to the needed changes in the least disruptive and the most acceptable way. And even though we said that this needed to be done over time, we certainly recommended that the FDA expeditiously begin this process. And once the process is done, we do acknowledge that this is going to be complex. It is going to require information gathering, stakeholder input, simulation modeling, and determining reduction levels and time tables. It is going to require the development of food category standards based on the category of contribution to the intake and technological feasibility. And, finally, the overall process is going to require systematic monitoring and adjustment as one goes along. We believe this will begin with the FDA taking the steps to gather information and initiate a notice and comment rule making. This process would establish the final maximum levels of sodium that could be used in foods to achieve recommended intakes and set tentative target goals for stepwise reduction. Different target levels will likely be set for various categories of foods based on the feasibility of making the reduction and the relative importance of the food category to overall sodium intake.

For the first step down, a goal level of sodium would be established. This would provide a level playing field for the food industry, as all companies would be carrying out the same reductions and none would be at a disadvantage for reducing sodium and having their product seen as less pleasing than competitors' products. After an appropriate additional period of time, the next step down would take place. After a number of step-downs, the final goal level would be achieved. Such an initiative, we acknowledge, has a number of unknowns. Ongoing research and monitoring should be used to inform the process. And evaluations would take place with each step down to ensure consumer acceptance is maintained, that reductions remain technologically feasible, that actual reductions in sodium intake are achieved, and that no unintended consequences have appeared. Adjustments, of course, in the time frames could occur as new information or new technology arises that might speed up the process; or if there is a need, that the process be slowed down for further research and other considerations.

We believe that changing the food supply, since sodium is so ubiquitous across the food supply, is absolutely essential to achieving the overall goal. But the next category was called "Supporting Strategies." They were meant to support this strategy of modifying the GRAS status of salt and the other sodium-containing compounds. They would be key to the overall success of sodium reduction in America, and they would require coordination and cooperation among a variety of stakeholders. And a few of them could be standalone, but none of them would be enough to make a real difference in achieving the overall goal that we were tasked to do. One was the need to update the sodium labeling regulations related to the nutrition facts panel and sodium claims. Among the recommended strategies is a suggestion to update the percent daily value of sodium to reflect new dietary reference standards. In addition, we believe Congress should be taking action to remove labeling exemptions for foods sold only to restaurants and other food services operations so that they could be properly labeled. It is hoped that this would make it easier for businesses, particularly for restaurants or other organizations that prepare food, to be able to determine the sodium content of the ingredients that they are using in the foods that they prepare. Further, the committee recognized that the food industry would need support in making changes to reduce sodium in their foods. In particular, the committee felt that training may be needed for restaurants and food services operators and their employees since sodium reduction has not had as much attention in this sector as it has in the processing sector.

Finally, it was recognized that sodium reduction efforts would benefit from enhanced research and monitoring. Improvement in our country's health monitoring systems will help to accelerate and determine the extent sodium reduction efforts have succeeded in reducing sodium intake and in improving consumer knowledge and behavior. In addition, further research may provide new information on how to change consumer taste preferences or identify new technologies that will make sodium reduction easier to accomplish. The committee felt that a strategy was needed to support consumers as well. Therefore, a nationally organized campaign to educate the public on the risk of excess sodium intake, to also build support for government and industry activities and support consumers in making behavioral changes. The key is behavioral changes. To reduce sodium intake, we recommended this. I underscored the word "behavior," because we know we have had numerous education awareness campaigns over the last forty years, but we have not and they have not succeeded in ultimately being able to change consumers' actual behavior in this regard. We believe the specific topics of the campaign should be the risk of high blood pressure across the lifespan, the benefits of sodium reduction for all age groups, the ubiquity of sodium in the food supply, and also making consumers aware of sodium reduction in the context of the overall healthy diet. To ensure consistency of this messaging, we recommend that the campaign be coordinated by the Secretary of Health and Human Services. However, such a campaign will only be successful if it has support from a variety of stakeholders. Many groups can play an important role. Certainly, federal agencies such as the CDC, NIH and USDA, but health practitioners, health insurers, schools, public health and consumer associations, and the food industry all have a significant role to play if this is to be successful.

Finally, there were interim strategies, and it was recognized that our primary recommendation, that being the modification of GRAS status of sodium, was going to take time. And for this reason, the committee recommended that the voluntary approaches continue in the interim. Certainly examples of such efforts include the individual initiatives by different food companies, but also the more organized approaches such as the National Salt Reduction Initiative, developed by the New York City Health Department, were seen as strong steps in the right directions. They are incredibly valuable, and there is great hope that they will continue to improve the sodium content of our food supply. But the committee believed that, at the end of the day, such voluntary approaches are challenged by the inability to ensure that there will be compliance, and may not be sustainable in the long term as new concerns or priorities arise or change with either industry or governmental leadership. Therefore, we believe that the level playing field and the framework of gradual reduction would best be accomplished through changing GRAS status and a mandatory standard as an approach to sodium reduction.

In conclusion, it is the opinion of a number of authoritative bodies that the vast majority of the U.S. population is consuming sodium at levels that are simply too high to be safe. And for the past forty years, a number of voluntary approaches have been attempted but have fallen short of reducing the population intake. The recommendations of this committee set a new course for reducing sodium in foods with an unprecedented approach to gradually reduce sodium in a manner that creates a level playing field for food manufacturers and restaurant and food service operations and maintains a tasty, flavorful food supply for consumers. It is the committee's sincere hope that the recommended strategies will be carefully considered and adopted by all stakeholders. Thank you.

Thomas Farley, MD, MPH
Commissioner, New York City Department of Health and Mental Hygiene

I am pleased to give you an update today on a national cell production initiative. This is an initiative that was started by the New York City Health Department but, at this point, is truly a national public/private partnership that has a goal of reducing sodium consumption in the United States by reducing sodium concentration in foods. I want to talk about the process that this initiative has gone through and an update on the status, including the announcement that we made just a couple of days ago. But, first, I want to give you a little bit of background. Again, this initiative is a national partnership, including 18 different national organizations, including the National Heart Association, the American Medical Association, and the American Public Health Association. And it includes a large number of state and local health departments, from Pennsylvania to Tennessee, to Los Angeles and Chicago. The reason we got into this in the first place is the potential for improvement in health and the constituents that we deal with. And just to emphasize that, I want to remind you of a study that came out just recently of the potential health benefits of sodium reduction. The estimates from this study were that, if we reduced sodium consumption by 1200 milligrams per day, that would save between 44,000 and 92,000 deaths per year, including those -- as well as those heart attacks and strokes, and save $10 to $24 billion in health care costs per year. So, the potential benefits of this initiative are enormous.

The goal of the National Salt Reduction Initiative, with that in mind, is to decrease our populations' sodium intake by 20 percent over five years and that would be accomplished by reducing our sodium content of foods by 25 percent over five years. That cannot be achieved by consumers alone, because 77 percent of the sodium that is in foods comes in the form of packaged and restaurant foods. This is not something consumers have control over. Another point that was clear to us in establishing this initiative was that the sodium that comes in foods is not in a small number of food items. People who don't do this all the time think that if we lower the sodium in potato chips and pretzels, we might make a big difference. But, sodium is distributed very widely across our entire food supply. So, people may think of certain foods as being salty, like sausage and like ham, but many others of which people don't think as containing a lot of sodium but nonetheless do, such as bread, such as breakfast cereal. Eleven items cover less than 1/2 percent of the total sodium in our diet. So, setting standards for any one particular food is not going to get us where we need to go. We need to have some sort of process to look across the entire food supply. The model we chose to try to achieve this was based upon a model that was used in the United Kingdom. This was a government-industry collaboration which divided food into different categories and set targets for reducing sodium levels in each of those categories. And those targets were set very thoughtfully, to be substantive, to make a big difference in terms of the total potential sodium reduction, to be nonetheless achievable by the food industry, have that reduction be gradual, because a gradual reduction permits consumers' tastes to adjust over time, to be voluntary, and to be measurable and measured, so that the initiative could see whether it is achieving the results that it is trying to achieve. And here is what has been accomplished in the United Kingdom. Their goal was to reduce salt intake by 1/3 from 2005 to 2010. They set targets by food category, this gradual reduction. Then, they sought commitments from food companies to reach those targets. They received more than 50 commitments from different food companies. And here are some examples of those targets: Heinz reducing by 28 to 33 percent on some of their canned products; Nestle, 25 percent on their soup mixes, Kellogg's, 25 percent on their corn flake cereals. These are substantial reductions in sodium in those examples. And they achieved, not necessarily that magnitude, but they did achieve substantive reductions across their entire food supply because they were able to measure between 2001 and 2008, actually a reduction in sodium consumption by actually measuring sodium in 24-hour urine samples in a representative sample of the population. So, this model has been successful, at least for reducing sodium to that level that you see here. So it was based upon the success of that model that we structured the model for the National Salt Reduction Initiative.

What are the components of the National Salt Reduction Initiative? First, we have established databases of packaged food and restaurant food for us to be able to understand where we are right now as far as sodium availability as well as the sales of the different products. Over the last 18 months to two years, we have met extensively with food companies, over a hundred meetings with industry, to establish what would be categories of food in which we would track sodium levels and what would be the targets for reduction of those sodium levels. Those categories and targets were ultimately established across 62 different packaged food categories and 25 different restaurant food categories. The initiative also includes

an evaluation, which I am going to talk more about later. So, let me talk a little bit about the categories and targets. So, it includes things that people recognize as being salty like snacks, but it also includes dairy items. It includes meats, cold cuts, cereals, soups, vegetables, mixed dishes, canned fish. So of course it doesn't include every food that is sold in the United States, but it includes a large proportion of the sodium that is in our diet. The initiative started with packaged food, and then it became clear there was enough overlap in relationship between packaged food and restaurant food that we had to deal with restaurant food as well. For each of the food categories, we had an individual meeting and invited all of the food companies that were selling food in those categories to discuss the sodium levels and to discuss the appropriate targets. Now, the targets were set based upon the sales weighted average within each category. And it is a bit technical but, nonetheless, very important, so I want to explain this. The reason we did this is that not all products are equal. Some products sell much more than others. And if we only reduce sodium levels in the products that don't sell very well, we are not going to achieve much in terms of reducing sodium consumption. In addition to that, product sales change over time. What is an unpopular product now may be more popular in the future or vise-versa, or even beyond that, the products themselves change over time, companies discontinue products, companies add products. And so, if we simply said, of your existing products, we want them to all reduce their sodium to a certain level or reduce them by a certain percentage, we may not achieve much if new products come on the market, which have higher levels of sodium. So, by establishing a sales- weighted average across the category, we are able to take into account those changing of sales of individual products, achieving the reduction in sodium that we want to achieve, while at the same time allowing the companies flexibility to alter products according to the needs of their own business. So, companies can reduce the total sales-weighted average across their -- all of their products and still have some products that have very high levels of sodium if they have other products with far lower levels of sodium and the sales-weighted average together is meeting our target.

And how do we decide on what were the targets for reduction and for each food category? There is quite a range in the distribution of sodium concentration across all products. This is within a given category. So, the average product is approximately 500 to 600 milligrams per hundred grams, and that is where we also have the most products there, but there are some that have nearly twice that, close to a 1000 milligrams per hundred grams, and some that are maybe one-fifth of that. All of these products are on the market and are selling, and that it would imply that you can sell a product at the median and below and still meet consumer taste preferences. So after looking at these we established targets; for 2012 a target of 500 milligrams per hundred grams; and 2014 target of 440 milligrams per hundred gram. This means that some companies and some products already meet the standard and so they don't need to make any changes, but other companies may need to reduce their products simply to match those of their competitors. It is by looking at these data that we felt these reductions were achievable. Nonetheless, it is step-wise because of the recognition and we need to do this gradually. Starting in 2009, we had many of these meetings with different companies. We have just now announced our final targets. And the first wave of industry commitments in 2012 is when we will be doing our first follow-up to see how the foods have changed. And if

they are meeting the targets that the companies have committed to and then we will do an additional evaluation in 2014. These evaluations so far are assessing the sodium levels in foods to see if we are -- category- specific targets have been met, but we also want to see if we can demonstrate reductions in sodium consumption in the population. And so we are currently doing a baseline evaluation of people in New York City to assess their sodium consumption through measuring it in 24-hour urine samples, and we will be doing that again in 2014.

Just two days ago, we had the pleasure of announcing our final targets and announcing the first sixteen companies who had made commitments to meeting those targets. We had 12 companies that made packaged foods and four companies that made restaurant foods, including some names that are widely known, also including some private label companies, for example, White Rose. Not every company who made commitments made commitments across their entire range of products that they make, but some of them made commitments across a large number of products. And we have some categories. We have several companies who have made commitments. For example, we have sauces and ketchup, Hain Celestial and Heinz, by making commitments to meet those targets. We also have here what is called here "major main entree sauce." This is mainly spaghetti sauce, which people recognize as having high levels of sodium. So, we have Heinz making a commitment on that, and Li Destri is another one and Unilever as well. So, we have several manufacturers now making commitments to reduce the sodium levels in what is basically spaghetti sauce. These are commitments made by different restaurant companies. Au Bon Pain and Subway we have a couple that have made commitments in the same category of sandwiches with ham and cured meat. And additional commitments by Starbucks and Uno Chicago Grill. These are just some sample reductions. People wanted to know -- the idea of sales-weighted average across categories didn't necessarily communicate well to people, and so we have given people some examples of category-specific targets where people could recognize the categories or recognize the products. And we have Quinoa canned beans as a category target with a 25-percent reduction. They have the spaghetti sauce for Ledestri. Heinz ketchup, sort of an iconic brand, reducing their sodium level. Boar's Head liverwurst. So, this does not include every product that's sold in America, but it does include products that everyone recognizes.

I want to talk a little more about our evaluation. We will be monitoring our sodium levels in food. We have assembled a database that tracks sodium concentrations as well as sales, and we will be monitoring that. We do raise the question of whether we need a better national database for tracking sodium levels in food so that we can, on a more real-time basis, establish whether we are moving in the right direction on this through any mechanism to reduce sodium levels in school. And we will also be measuring the sodium intake in people. In New York City, we will be doing 24-hour urine samples on 1800 participants who had been involved in a prior telephone survey. And so we have extensive health information on them from their telephone survey, so we will be measuring their blood pressure and their sodium concentration -- sodium consumption through that. But we do question whether we should also have national samples of this so that we can really track over time, not just what is happening in food, but what is happening in people. And let me just finish by saying we do think this is just the first step in this initiative. We recognize that we have a

long way to go to make the kind of reductions in sodium intake that are needed to achieve those health benefits. Nonetheless, we are very pleased at the progress we have made so far, and we believe that the -- making any additional steps is absolutely worth it, given the potential benefits.