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Testimony for hearing before the Committee on Governmental Affairs
“Protecting our Kids: What is Causing the Current Shortage in Childhood Vaccines?”
June 12, 2002

Mr. Chairman and distinguished members of the Subcommittee:

I am Dr. Mary Anne Jackson, Professor of Pediatrics and Chief of the section of Pediatric Infectious Diseases at Children's Mercy Hospital and Clinics in Kansas City, Missouri, an area of 1.78 million people. Our pediatric center provides comprehensive primary and tertiary specialty care in 35 pediatric subspecialty areas to children from a 140 county region in Missouri and Kansas plus adjacent portions of Nebraska and Oklahoma. It is the only pediatric medical center between St. Louis and Denver and over 300,000 outpatients and 11,000 inpatients are treated annually.

As a specialist in pediatric infectious disease, I have 3 major roles: clinician, researcher, and educator. I am a clinician providing care and consultation for children with infections. Many of the children for whom I provide care are generally otherwise healthy children, hospitalized with infections such as pneumonia, meningitis, bone infection, or Rocky Mountain Spotted Fever. Children with AIDS, cancer, or transplanted organs develop infections that are highly unusual owing to the failure of their immune system. Premature infants, patients in our burn unit, or patients with complex underlying disease often develop infections that provide special challenges. In my second role, I am a clinical researcher and have presented data nationally that focuses on issues of emerging infections, antibiotic resistance, and prevention of communicable diseases.

I think my most important role, though, is as an advocate and educator for children's health issues. As such, I teach medical students and pediatric residents and provide consultation to community primary care providers. As a community resource, my colleagues and I speak formally to groups of physicians locally, regionally, and nationally. On a daily basis, community pediatricians call us with specific questions related to patients who present diagnostic dilemmas or general questions regarding community outbreaks of disease, antibiotic resistance issues, and such. Last fall, for instance, we provided verbal and written materials to our community physicians regarding smallpox and anthrax. Questions regarding communicable disease and immunizations routinely account for ten to 25 percent of such calls.

The American Academy of Pediatrics Committee on Infectious Diseases offers a handbook to the pediatric practitioner known as "The Red Book". This book summarizes recommendations for childhood immunizations as well as addressing the care of children with a variety of infectious diseases. In the 25th edition, the editors note "the ultimate goal of immunization is eradication of disease; the immediate goal is prevention of disease in individuals or groups. To accomplish these goals, physicians must maintain timely immunization as a high priority in the care of infants, children, adolescents, and adults." I think the key words that bear emphasizing are immunizations must be timely and are of the highest priority. The global eradication of smallpox in 1977 and elimination of polio from the Americas in 1994 are offered as models for control of disease through immunization. There is no doubt that these accomplishments were achieved by combining an effective immunization program with intensive surveillance and effective public health control measures. In addition to polio and smallpox, immunization has successfully curtailed or almost eliminated diphtheria, measles, mumps, polio, rubella, tetanus, and Haemophilus influenzae type b disease.

When I was a pediatric resident at Cincinnati Children's Hospital Medical Center in the early 80s, we routinely treated infants with Haemophilus influenzae type b meningitis; 5% would die and 15% suffered sequelae (complications) from infection, most commonly deafness. Since 1993, following the implementation of conjugate Hib vaccine, I have seen no cases of this disease which previously was so common that a week didn't go by that an affected child wasn't admitted and treated in our institution and pediatric institutions throughout the country. Chickenpox, which is generally regarded as a benign and inevitable infection of childhood, annually caused 4 million cases, 11,000 hospitalizations, and 100 deaths prior to implementation of vaccine in 1995. In our institution, complications of chickenpox, including toxic shock syndrome, were encountered commonly in the late 1980's and early '90s and are infrequently seen today.

However, because the pathogens responsible for these diseases persist in the US and in other countries, immunizations need to be continued and our program is fragile at best. In the US, only 80% of children are adequately immunized; in the state of Missouri, that rate is 84%. In the Kansas City area, efforts from organizations such as the Partnership for Children and the Mid-America Immunization Coalition have worked tirelessly and the percent of children fully immunized has risen from 52% in 1990 (the national average being 40-60%) to 85% in the year 2000 (national average 79%). There are disparities in our regional counties though with a low of 66% in one Kansas county and a high of 94% in one Missouri county. Yet, we can not become complacent as we continue to see children with vaccine preventable diseases. Since 1984, when I came to Children's Mercy, we have cared for 341 infants and children with pertussis (whooping cough) including a two-month-old child who recently spent a month in our intensive care unit. In my community, within the last year or so, an infant from Independence, Missouri died of complications from chickenpox; on November 12, 2000, a five-month-old old boy died of pneumococcal meningitis; and on May 20, 2001, a sweet 15-year-old boy died of liver cancer, a complication of hepatitis b infection inadvertently transmitted to him at birth. These were all deaths due to vaccine preventable diseases.

An unprecedented and unanticipated shortage of routinely recommended vaccines has resulted in inadequate supplies of eight of the eleven routinely administered vaccines, with shortages more acute in the public sector than in the private sector for many of these vaccines. In our state, the Vaccine for Children program supplies vaccines for approximately half of children; at our institution we see 50,000 children for well-baby care, virtually all of them receiving vaccines through the public sector. While the state of Missouri has worked hard to ensure that available vaccine is equitably distributed, we have all had to change our immunization practices dealing with the shortage that most drastically affected supplies of Td vaccine, varicella vaccine, and, most recently, pneumococcal conjugate vaccine (we currently have none). Our physicians are vigilant about keeping track of a child's immunization status. A computer-generated list of each child's immunizations is placed on the front of his or her chart at every visit. Similarly, in private practices the child's immunizations are listed, usually, in the front of the chart. We strongly advocate that opportunities to immunize are not missed.

The vaccine shortage has impacted the physician's ability to provide a consistent recommendation and practice for vaccine implementation. At our institution and in the community, in the event a vaccine is not available, a written list is kept and children are called back once a supply of vaccine comes in. While the

CDC has recommended prioritization of vaccines, my opinion is that this is often not followed. In some practices, there was a sudden vaccine shortage such that prioritization could not occur. Other practices said simply that it is impractical to triage vaccines in the course of pediatric practice. Whether or not a child returns for vaccines once notified is unknown.

The vaccine shortage has impacted on our state's immunization requirements. The state of Missouri has altered its recommendation for day care center attendance, telling physicians in July of 2001 that varicella vaccine was mandated and, less than a year later, rescinding this recommendation in light of vaccine shortages.

What is the impact of vaccine shortages? National data suggest that delays were of sufficient magnitude to have a negative impact on immunization coverage with a decline of almost 10% from 1999 to 2000. While in our state, this decline appears smaller (2%), there is no question that a fall below 80% (and we are tenuously close to this margin) may result in an increase in cases of disease. Data from 2001 will likely show further declines.

Children who start their vaccines on time are clearly more likely to stay current throughout their first year. I am currently involved in an educational program to improve immunization rates in our community and, especially, to empower parents to insist that their child be immunized on time. This appears near impossible to implement if the vaccines are not there to give. Our message to the public and professionals becomes muddled when we document the scope of disease that can be prevented by immunization and then delay and defer opportunities.

Prevention of infectious diseases by immunization has been one of the great public health achievements of the twentieth century. Whether our current vaccine shortages are caused by companies leaving the vaccine market, manufacturing and production problems, or insufficient stockpiles, it is clear that one of the indelible marks of these shortages is that parents and professionals are confused and frustrated and all strides made in the last decade may go by the wayside. Our goal should be to maintain a supply of licensed vaccines that are safe and effective. These vaccines should be available for every child and adult in the US. Vaccine research, development, and production must be enhanced. And last but not least, educational efforts will need to be intensified to ensure that our children are healthy now and as we face the challenges of the future.