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Stagnant or Increasing Infant Mortality:

The MCH Director's Role in Responding

PAUL SILVERMAN: Thank you. The problem that we attempted to address was the observation, first of all that our increasing infant mortality rates were increasing. We wish in fact, they were stagnant. The cause of this was not clear. We have a large race disparity, and we began this chore being poor, resource poor for both the ability to analyze data and to conduct interventions. This is a complicated slide, but I'll just direct your attention to the two lines in the middle, which have the red lines. Those are the overall state infant mortality rates. You could see the yellow lines, the yellow boxes are increasing, in about the mid-1990s, and the black boxes is the national rate, which is decreasing. And the lines on the top of the graph are for African-Americans and the lines at the bottom of the graph are for whites. So this pattern exists in both races.

We conducted what we called a Stage 1 analysis, which is an attempt to ask the question, as Marion proposed a few minutes ago, is the increase in the infant mortality due more to more smaller babies or is it because there is an increasing risk of smaller babies dying? Or a combination of the two? And what we observed is that first of all the increase was entirely due to excess deaths among

very low birth weight infants, three-quarters of which occurred in multiple births. We observed that multiple births were also increasing, that the very low birth weight, that the number of very low birth weight babies and their death rate both were increasing. And oddly enough, we found that the increase was mostly among infants who were born to mothers with what we call nontraditional maternal risk factors. They were older, married, privately insured, suburban, more educated, and in their first trimester of care.

We broke this analysis down by race, and this slide looks at the contribution of more small babies to the increasing infant mortality rate among very low birth weight babies. Among whites, we found that half of the increase in very low birth weight deaths could be attributed to more very low birth weight babies. This group was among mothers who were younger and less educated and on Medicaid, and in fact, 39% of the increase occurred among multiple births. The pattern is different among the African-American population, one-third of the increase was in very low birth, one, increase in the very low birth weight death rate was attributed by one-third to the increase in very low birth weight babies. There was no risk factor association, and a much higher percentage of the increase was attributed to multiple births.

In this slide, we're looking at the contribution of an increase in the risk of smaller babies dying to the overall increase in the infant mortality rate among very low birth weights. Among whites, it explained half of the increase in very low birth

weight deaths, primarily occurred among babies 1,000 grams or less. It did include those nontraditional risk factors that I spoke of earlier, and multiple births explained 84% of the very low birth weight deaths. Among African-Americans, the increase in the mortality rates among very low birth weight babies explained two-thirds of the overall increase in deaths had occurred to babies 500 grams or less, primarily. Also, it included the nontraditional risk factors, and multiple births explained 67% of the excess very low birth weight deaths.

We have not yet conducted what I would term a Stage 2 analysis, but we have generated and analyzed, or at least, some of the risk factors and hypotheses that I've indicated here. We went through a process to identify risk factors, hypotheses that can explain both the increase in the mortality rate and the increase in the number of very low birth weight babies. And these range from, as has been pointed out before, possible changes in vital statistic reporting, such that fetal deaths were more likely to be classified as live births now, which subsequently die, to aggressive pregnancy management, such as the cesareans that we just heard about. I will say we have very good evidence that will suggest that babies in the very low birth weight category are sicker today than they were a few years ago.

All of this was occurring in Delaware at a time when the governor was creating an infant mortality task force because at this time, there was one year, I believe it was 2004, or 2002, when Delaware had the highest infant mortality rate in the

country. The task force issued recommendations and resulted in considerable funding for a small state like Delaware, and the work is being carried on now by a consortium. With this money, we began to rebuild the MCH epidemiologic capacity in the Division of Public Health. We developed a new Center for MCH Epidemiology. We were lucky enough to be able to have a MCH epidemiology assignee begin in Delaware in August of 2005. We developed some really excellent university-based student projects, which contributed to the analysis I just showed you. We have three new FTEs, including statisticians and epidemiologists, and we're recruiting fellows when we find those opportunities such as with the Council of State and Territorial Epidemiologists and Universities. We're developing analytic tools, which we haven't had, such as FEMA. There prior to this time was no FEMA in Delaware, PRAMS, registry for improved birth outcomes, which were following women over time and contacting them and trying interventions for those who have had previous birth poor outcome, data linkages, and the Stage 2 research agenda is also one of our initiatives.

We implemented several services, such as community-based comprehensive family practice team model, to increase access to supplemental care, and also a pre-conception care program. Did I miss one here? No, okay.

Lessons learned, this has been a lot of activity over the last couple years, and there is no possible way it could have happened without political will. That was an extremely important part of the reasons we've been able to push forward.

There's a tremendous resistance to study among politicians and laypeople. They'd rather do. And there's a tension there that needs to be addressed. Translating epidemiology into program practice requires a great deal of discipline, and it requires efforts to get program people and epidemiologists to speak the same language. I would say also that most of our successful communications were because we took a lot of time to translate the science into something that can be understood by the lay community. And it's also very important that we be strategic about our partnerships. And that's it.