CD Summary

August 3, 1999
Vol. 48, No. 16

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RECENT TRENDS IN INFANT MORTALITY IN OREGON

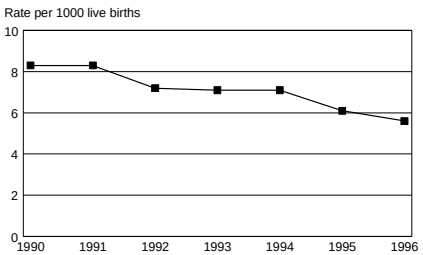
THE RECENTLY RELEASED Oregon Health Division 1996 Vital Statistics Annual Report contains, among other things, good news about infant mortality, which has reached the lowest level ever: 5.6 infant deaths per 1000 live births, a 32% reduction from 1990 to 1996 (figure below).[1] Infant mortality rate (IMR) is a measure of the health of a population. It is sensitive to the effects of poverty, education, nutrition, environmental exposures, stress, and changes in the quality and accessibility of medical care. The IMR in the United States is 22nd among the 62 nations with complete vital statistics.[2, 3]

Infant mortality in the United States has decreased steadily since the beginning of the twentieth century. Reduction of infant mortality early in the century occurred with decreases in infectious disease transmission. Reduction since the 1950s is related to improvements in the medical care of premature infants. This *CD Summary* discusses some of the factors that contributed to the decline of infant mortality in Oregon from 1990 to 1996, and some areas that need attention.

SIDS

There was a 54% decrease in sudden infant death syndrome mortality from 1990 to 1996; this was over half of the decrease in IMR. Reduction in SIDS mortality is, in turn, mostly due to "Back to Sleep" — placing infants on their back to sleep instead of on their stomachs. The "Back to Sleep" campaign began in 1994 and led to sharp reductions in SIDS.[4, 5] Reduction in SIDS mortality may also be due, in part, to higher percentages of women who breastfeed their children, a health behavior known to reduce the risk of SIDS.[6] Breast feeding increased in Oregon from 1990 to 1996, including a 26% increase among mothers on WIC (Special Supplemental Nutrition Program for Women, Infants, and Children).[7] Still, SIDS mortality both before and after the "Back to Sleep" campaign is twice as high in Oregon and other Northwestern states as it is in the eastern United States.[8]

Oregon Infant Mortality Rates



NEONATAL INTENSIVE CARE

Babies born with very low birthweight (less than 1500 grams or 3 pounds and 3 ounces) are the babies most likely to die from complications of prematurity. Despite a modest increase in the number of Oregon infants born with very low birth weight from 1990 to 1996, there has been a 26% reduction in their death rates. Improvements in (perinatal) and neonatal medical care account for the dramatic improvement in the survival of these small babies. New therapies include surfactant for premature newborns and antenatal steroids for women in preterm labor. Oregon birth certificate data show that twenty years ago a baby with a birth weight of 1000 grams had about a 50% chance of surviving the first year; that baby now has about a 90% chance of survival.

NEURAL TUBE DEFECTS & FOLIC ACID

Some neural tube defects (NTDs), especially anencephaly, cause infant death.[9] Publicity since the early 1990s about how well folic acid prevents NTDs has prompted more women to take 400 micrograms of folic acid daily (from supplements or fortified foods).[10] This simple nutritional behavior change may have led to a decrease in NTD-related infant deaths. Furthermore, increased *in utero* diagnosis of NTDs by ultrasound has led to elective abortion of fetuses that, if born, might have died in infancy. The March of Dimes and the Oregon Health Division are working together to increase awareness about the benefit of folic acid supplements.

SUBSTANCE USE BY PREGNANT WOMEN

Pregnant womens' use of tobacco,[11, 12] alcohol[13] or cocaine,[14] behaviors associated with increased infant mortality, have been steadily decreasing in Oregon since 1990.

TEEN BIRTHS

Infant mortality is higher for the babies of mothers 10 to 17 years old than for babies of older mothers. [11, 15, 16] Unfortunately, the teen birth rate in Oregon increased 6% from 1990 to 1996. In contrast, national teen birth rates declined 17% from 1991 to 1996.[17] We hope that teen pregnancy prevention programs in Oregon will reduce teen births in coming years, and so further reduce infant mortality.

UNINTENDED PREGNANCIES

Infant mortality for unintended pregnancies is higher than for intended pregnancies.[18] We expect to decrease unintended pregnancies because of recent expansions in eligibility for contraceptive services for poor and working women, and because of increased awareness and availability of post-coital contraception ("morning-after pills"). The advent of medical (nonsurgical) abortion may have an effect on these numbers.[19]

CONCLUSION

Despite the overall reduction of infant mortality, not all the news is good. Infant mortality is not evenly distributed in the population. Substance-using women and teens, and women with unintended pregnancies have higher rates of infant mortality, as do women with low education, low income, low social support and no prenatal care. Oregon does not provide universal public medical insurance for pregnant women, leaving some of these women

CD Summary (ISSN 1058-7888) is published biweekly, free of charge, by the Oregon Health Division, a part of the Dept. of Human Services.
800 NE Oregon St., Portland, Oregon 97232
Periodicals postage paid at Portland, Oregon.
Postmaster—send address changes to:
CD Summary, 800 NE Oregon St., Suite 730, Portland, OR 97232

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vulnerable. Black women in the United States have rates of infant mortality more than twice as high as white infant mortality, and the disparity is increasing.[20] The IMR has been decreasing for both white and black babies, but in most states the reduction has been greater for white babies. In Oregon, however, black infant mortality has decreased more than white infant mortality since 1990, narrowing the gap. The federal government is supporting two multi-pronged infant mortality reduction programs in Oregon, including one in a largely black area of Portland.

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THIMEROSAL AND VACCINES

Thimerosal is a bactericidal mercuric compound used in some, but not all, vaccines. A recent FDA safety assessment found that infants on the current immunization schedule may be exposed to a cumulative amount of *ethyl* mercury from thimerosal that exceeds some federal guidelines for exposure to *methyl* mercury, a substance toxic to the fetal brain. Though the fetopathology of *ethyl* mecury is unknown (hence the lack of federal exposure guidelines), this theoretical risk prompted the American Academy of Pediatrics (AAP) and the U.S. Public Health Service (USPHS) to ask vaccine manufactures to remove thimerosal from vaccine formulations. Vaccine manufacturers agreed.

Until vaccines are thimerosal-free, AAP, USPHS and the Oregon Health Division urge clinicians to continue immunizing children according to the schedule set forth by the Advisory Committee on Immunization Practices (ACIP). Why? Because the *known* risk of death and disability from vaccine-preventable diseases far outweighs the *theoretical risk* from exposure to thimerosal. The AAP and USPHS do not recommend testing children who received thimerosal-containing vaccines for mercury exposure.

In theory, however, immunizations given at the time of birth may pose a greater risk to the developing brain than those administered when an infant is older. For this reason, clinicians may choose to give the first dose of hepatitis B vaccine at two months of age rather than at birth, until a thimerosal-free vaccine is available. Clinicians should take advantage of this flexibility in the hepatitis B immunization schedule *only* when the infant's mother is known to be hepatitis B surface antigen (HBsAg)-negative *and* does not belong to a population at high risk of early childhood HBV infection (Asian-Pacific Island immigrants, household contacts of chronic carriers). A plethora of additional thimerosal information is located at http://www.ohd.hr.state.or.us/ccfh/imm/welcome.htm.