Declining rates of US infant male circumcision could add billions to health care costs

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A team of disease experts and health economists at Johns Hopkins warns that steadily declining rates of U.S. infant male circumcision could add more than $4.4 billion in avoidable health care costs if rates over the next decade drop to levels now seen in Europe.

In a report to be published in the *Archives of Pediatrics & Adolescent Medicine* online Aug. 20, the Johns Hopkins experts say the added expense stems from new cases and higher rates of sexually transmitted infections and related cancers among uncircumcised men and their female partners. They say the study is believed to be the first cost analysis to account for increased rates of multiple infectious diseases associated with lower rates of male circumcision, including HIV/AIDS, herpes and genital warts, as well as cervical and penile cancers. Previous research focused mostly on HIV, the single most costly disease whose risk of infection is decreased by male circumcision, a procedure that removes foreskin at the tip of the penis, hindering the buildup of bacteria and viruses in the penis' skin folds.

Senior study investigator, health epidemiologist and pathologist Aaron Tobian, M.D., Ph.D., says that roughly 55 percent of the 2 million males born each year in the United States are circumcised, a decline from a high of 79 percent in the 1970s and '80s. Rates in Europe average only 10 percent, and in Denmark, only 1.6 percent of infant males undergo the procedure.

"Our economic evidence is backing up what our medical evidence has already shown to be perfectly clear," says Tobian, an assistant professor at the Johns Hopkins University School of Medicine. "There are health benefits to infant male circumcision in guarding against illness and disease, and declining male circumcision rates come at a severe price, not just in human suffering, but in billions of health care dollars as well."

The 20-year decline in the number of American males circumcised at birth has already cost the nation upwards of $2 billion, Tobian and his colleagues estimate.

The Johns Hopkins team's analysis showed that, on average, each male circumcision passed over and not performed leads to $313 more in illness-related expenses, costs which Tobian says would not have been incurred if these men had undergone the procedure.

According to the team's analysis, if U.S. male circumcision rates among men born in the same year dropped to European rates, there would be an expected 12 percent increase in men infected with HIV (or 4,843); 29 percent more men infected with human papillomavirus (57,124); a 19 percent increase in men infected with herpes simplex virus (124,767); and a 211 percent jump in the number of infant male urinary tract infections (26,876). Among their female sex partners, there would be 50 percent more cases each of bacterial vaginosis (538,865) and trichomoniasis (64,585). The number of new infections with the high-risk form of human papillomavirus, which is closely linked to cervical cancer in women, would increase by 18 percent (33,148 more infections).

Tobian says state funding cuts in Medicaid, the government medical assistance program for the poor, have substantially reduced numbers of U.S. infant male circumcisions, noting that 18 states have stopped paying for the procedure. "The financial and health consequences of these

decisions are becoming worse over time, especially if more states continue on this ill-fated path," he says. "State governments need to start recognizing the medical benefits as well as the cost savings from providing insurance coverage for infant male circumcision."

The problem in the United States is compounded, Tobian says, by the failure of the American Academy of Pediatrics to recognize the medical evidence in support of male circumcision.

The Johns Hopkins team says it plans to share its study findings among state government officials across the United States to help raise awareness of its medical and cost-benefit analysis.

In the study, researchers constructed a novel economic model to predict the cost implications of not circumcising a male newborn. Included in their forecasting was information from multiple studies and databases that closely tracked the number of overall infections for each sexually transmitted disease, as well as the numbers of new people infected. Costs were conservatively limited to direct costs for drug treatment, physician visits and hospital care, and did not include indirect costs from work absences and medical travel expenses.

The most recent states to stop Medicaid funding for infant circumcision were Colorado and South Carolina, in 2011. States that already had funding bans in place include Louisiana, Idaho and Minnesota, all since 2005; Maine, since 2004; Montana, Utah and Florida, since 2003; and Missouri, Arizona and North Carolina, since 2002. California, North Dakota, Oregon, Mississippi, Nevada and Washington – all stopped funding before 1999.

More information:

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