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Cost-benefit analysis of *Chlamydia trachomatis* screening in pregnant women

Chlamydia trachomatis is the most common bacterial sexually transmitted infection in the United States. In 2010, more than 1.3 million such infections in the United States were reported to the Centers for Disease Control and Prevention. In 2013, the estimated direct lifetime cost of treatment for chlamydia and its complications was more than $500 million. Because the majority of chlamydia infections are asymptomatic, untreated infections may result in chronic pain, pelvic inflammatory disease, and infertility. The infants of untreated pregnant women may acquire the infection during delivery, which puts them at risk for neonatal conjunctivitis and respiratory tract infections. Although the United States and a few other countries routinely screen pregnant women for *C. trachomatis*, other nations have not adopted this approach due to the belief that it is not cost-effective. The authors conducted a study to model the cost benefit of chlamydia screening in all pregnant women ages 16 to 25 years compared to no screening in an area with a high prevalence of chlamydia infection. They used a decision-analysis model to assess two study arms: chlamydia screening in pregnant women and no chlamydia screening in pregnant women. The model examined direct costs to the health care system associated with chlamydia screening and infection during pregnancy. Rates of morbidity due to chlamydia infections were derived from primary epidemiological studies. The results showed that for a cohort of 6,444,686 pregnant women in the 2015 U.S. population, a screening program, as well as treatment expenses, would cost the health care system $256,305 million per year. This would result in an increased expense of $124,650 million, with 328,000 more cases of chlamydia identified and treated, with a calculated cost of $19.34 per screened individual. If a modern postscreening prevalence estimate of 6.7 percent were used, instead of a prescreening era prevalence estimate of eight percent, this would result in expenses of $22.14 per screened individual. The authors concluded that in a high-prevalence region, prenatal screening for *C. trachomatis* results in increased expenditures, but also a significant reduction in morbidity to woman-infant pairs. The study suggests that screening programs are appropriate if the cost per individual is deemed acceptable to prevent the morbidity associated with untreated infections.

Ditkowsky J, Shah KH, Hammerschlag MR, et al. Cost-benefit analysis of Chlamydia trachomatis screening in pregnant women in a high burden setting in the United States. *BMC Infect Dis.* 2017;17:155. doi:10.1186/s12879-017-2248-5.

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Specimen mislabeling in the blood bank: a CAP Q-Probes study

In the blood bank, laboratory specimens labeled incorrectly due to patient misidentification are of particular concern. They may lead to erroneous ABO patient typing and result in an acute hemolytic transfusion reaction followed by serious morbidity or death. Accrediting agencies such as the CAP and American Association of Blood Banks have developed standards to help reduce the number of mislabeled specimens. The authors conducted a study in which they assessed the rates of blood bank ABO typing specimens that were mislabeled or contained the wrong blood in tube (WBIT), or both, and compared them to rates in a similar study performed in 2007. They compared normative rates of mislabeled specimens submitted to the blood bank using a Q-Probes study, a College of American Pathologists performance benchmark study that represents the spectrum of practice settings. The

intent of this 2015 Q-Probes study was to determine if the rates diminished compared to the rates in a 2007 Q-Probes study and if the use of barcoding may have contributed to the reduced rates. Participants enrolled in the 2015 CAP Q-Probes study submitted data for the first quarter of 2015 for mislabeled and WBIT ABO typing specimens. The results showed that for the 30 institutions submitting data on 41,333 ABO blood typing specimens, there were 7.4 events of mislabeling (306 specimens) and 0.43 events of WBIT (10 of 23,234) per 1,000 specimens submitted. Mislabeling rates were lower for institutions that required that specimens be labeled with the patient's birth date. The rates of specimen mislabeling and WBIT were otherwise not associated with any other practice variable evaluated, including barcoding. Slightly less than 38 percent (11 of 29) of the participants used barcoding to identify patients, which is a five-fold increase over the 2007 Q-Probes study. The authors concluded that the rates of mislabeling and WBIT in the 2015 study were not statistically different from those in the 2007 Q-Probes study, despite the increase in the number of laboratories reporting the use of barcoding. The investigators noted that in a multi-institution study, it may be more difficult to assess the impact of barcoding on mislabeling prevention than in a more tightly controlled single-institution study.

Novis DA, Lindholm PF, Ramsey G, et al. Blood bank specimen mislabeling: a College of American Pathologists Q-Probes study of 41333 blood bank specimens in 30 institutions. *Arch Pathol Lab Med.* 2017;141:255–259.

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