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Is It Cost-Beneficial to Screen Adolescent Males for *Chlamydia*?

In this issue, Randolph and Washington present a careful and thorough analysis of the cost and benefit of screening adolescent boys for chlamydial infection by use of a leucocyte esterase dipstick method.[1] They use a decision analytic model. Decision analysis is controversial and usually provokes a wide range of responses. Appreciation of the technique is an acquired taste. To few does it come naturally. The usual complaints result from disagreement with the assumptions that have been made.[2,3] But the beauty of the method is that for those variables whose values are not firmly established, one can and should do sensitivity analyses to examine what would happen if the extremes of an hypothesized range were true. The greatest problem with the method is in its interpretation. Often, too much emphasis is placed on a simple conclusion, whereas the results should be presented to show how the conclusions are effected by varying estimates of the unknown variables. Preferably, the limits of the variable where the overall conclusion is true should be given.

For example, in the Randolph paper an assumption that is based on weak data is the proportion of infected females who will develop pelvic inflammatory disease if untreated. The estimates are derived from a few observational studies that retrospectively determined the occurrence of pelvic inflammatory disease in women exposed to fresh chlamydial infections in men. Not only are the numbers small, but we do not know that the same rate of disease outcome would hold if all the infections detected by screening methods in men were not fresh ones. The same type of criticism can be made concerning the cost benefit studies of screening in women.[4] They assume that the infections detected and prevented will have the same proportion of adverse outcomes as the consequences of fresh infection. These are important issues because all cost benefit studies of chlamydia are largely driven by the potential costs of complications of the infection in women.[5] Nevertheless, this particular study tells us in the sensitivity analysis discussion that, even if the estimates of the risk of pelvic inflammatory disease were too high, and were even as low as 10 percent, the cost of the screening test would be less than half the cost of diagnosis by an antigen detection test. In other words, the comparison remains valid.

Another area with an assumption that is based on limited data is the quality of the leucocyte esterase test. The sensitivity and specificity of the test that are used in this paper are not very well established. Again, the sensitivity analyses allow one to look at the results throughout a range of estimated values for test quality.

Where does this exercise lead us? We are not yet ready to adopt this screening method as a chlamydia control measure, since a number of unknowns remain to be answered by appropriate studies.

- First, *what would be the acceptance of the technique applied to adolescent populations?* Some of the answers are suggested by recent studies[6,7] but this must be extended to a broader set of subjects.
- Second, *would clinicians be willing to give anti-chlamydia treatment on the basis of a screening test?* It would depend upon the extended prevalences of various urethral infections in that population. In some groups, the risk of gonorrheal infection may be so high that it would be advisable to use the screening test only to select adolescents for chlamydial and gonorrheal culture. At the very least, it may be advisable to give therapy directed at both organisms. Conversely, if it is known that most screening-test-positive adolescents have chlamydial infection, the assumptions of the Randolph study regarding treatment are valid.
- Finally, *it is not clear that the detection and treatment of asymptomatic chlamydial infection in males would add significantly to control efforts.* Currently, plans for chlamydial control encompass detection and treatment of asymptomatic female cervical infection. This condition occurs in the range of 2–35 percent; in the largest sample, to date, of family planning clinics in the northwestern states, the rate in over 100,000 women is 7–12 percent.* It is surprisingly constant over widely disparate samples. We know far less about the asymptomatic infection in males. In the few studies that have been done, the rate is in the range of 5–15 percent. Thus, there seems to be little difference in the prevalences between males and females. This appears to suggest that screening and treatment of asymptomatic males might be a useful addition to chlamydia control strategies.

Presently we have no effective national chlamydia control program. Effective and inexpensive diagnostic methods are needed for the detection of asymptomatic infection. The lessons from gonorrheal control are important. In the late 1970s, inexpensive and effective methods for diagnosing gonorrheal infection in women were introduced which permitted the development of a national gonorrheal control program. This effort systematically searched for population subsets of women with rates of asymptomatic infection sufficient to warrant screening and treatment of them and their sexual partners. The result was the reversal of an ascending incidence curve, and a transition to the descending curve which is still present today. For gonorrhea, screening and treatment of asymptomatic males was not part of the program, except for detection and treatment of asymptomatic infection in the sexual partners of screened women.

We have not had the opportunity to initiate an analogous

*Hanson V, DeLisle S, Lea V, Smith CE: PHS Region X Family Planning STD Chlamydia Project. Paper presented at 116th Annual Meeting, American Public Health Association, November 1988, Boston.

program for chlamydial control. Diagnostic methods are quite expensive. A screening and treatment program for women and their partners would cost over $50 million. The largest component of that estimate is the cost of the diagnostic test. The study by Randolph and Washington suggests that screening and treatment of males might be added to any such program—or, at the least, evaluated in a pilot phase. It is clear that our present approach, directed at symptomatic infection, will not appreciably affect the occurrence of chlamydial infection. Because leucocyte esterase screening in women is not currently feasible, this less expensive technique is restricted to males. Perhaps it is now necessary to evaluate what addition of this inexpensive screening method, applied broadly in samples of men, would contribute to chlamydial control.

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Action Plan Proposed for Improved Nursing Data

Data from both nurse-based and employer-based surveys are needed in order to address key policy questions arising from the performance of the labor market for nurses, according to a new federal report. The report is the result of a study conducted in response to a recommendation of the Health & Human Services Secretary's Commission on Nursing, which described the national shortage of nurses but pointed to inadequacies in the data available to policy-makers. Specifically, the report recommends:

- Collection of data on nurses in non-hospital settings; this is identified as a top priority;
- Investigation into the feasibility of establishing a master file on licensed nurses; and
- Further development of quality-of-care indicators sensitive to nursing.

The data improvements plan emphasizes limitations on federal resources and the need for public-private cooperation. Accomplishing the full set of recommendations would require at least until 1995. The report was prepared for the Health Resources and Services Administration (HRSA) by a panel of 38 nursing and data experts convened in September 1989, working with the Project HOPE Center for Health Affairs in Chevy Chase, Maryland.

Information about the study, *An Action Plan for Establishment of a Minimum Nursing Data Set,* is available from the Division of Nursing, Bureau of Health Professions, Rm 5C-26, HRSA, 5600 Fishers Lane, Rockville, MD 20857. Tel: 301/443-5786.