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Cost-Effectiveness of Alternative Methods for Diabetic Retinopathy Screening

The paper by Lairson et al. (1) on the cost-effectiveness of alternative methods of screening for diabetic

retinopathy rightly includes an analysis of the sensitivity of their conclusions to alterations in some of the program parameters. However they do not take into account the error in their estimation of the sensitivities of the four screening tests that they have compared. Because sensitivity and specificity are proportions, the 95% CIs can be calculated with the general formula for the SE of a proportion (2), yielding the results shown in Table 1.

The problem of accurately estimating the sensitivity of a test where the sensitivity is low is of particular relevance to screening for diabetic retinopathy because sensitivity is a major determinant of cost-effectiveness. Including CIs in the estimate of the cost per true-positive case detected is a critical step in the production of evidence with which to make important health-care policy deci-

sions. As Table 2 demonstrates, recalculation of the results of the analysis in this paper make the conclusions less clear, because the CIs of the cost-effectiveness ratios overlap.

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CI, CONFIDENCE INTERVAL.

References

1. Lairson DR, Lorimor RJ, Pugh JA, Jacobson J, Kapadia AS, Velez R: Cost-effectiveness of alternative methods for diabetic retinopathy screening. *Diabetes Care* 15: 1369-77, 1992
2. Altman DG: *Practical Statistics for Medical Research*. London, Chapman and Hall, 1991

Prevalence of Diabetes in Asian Indians

Our observations (1-4) are similar to those of Ramachandran et al. (4a) and show that the prevalence of diabetes in Asian Indians is considerably higher in high risk (urban, upper socioeconomic groups) than in low risk (rural, low socioeconomic groups) populations. They attribute this disparity to altered life-style conditions prevailing in rural and urban areas. We have focused attention on dietary habits and fat intake and find that the prevalence of diabetes

Table 1—CIs for sensitivity and specificity

	45° PHOTO WITHOUT DILATION	45° PHOTO WITH DILATION	OPHTHALMOLOGIST EXAMINATION	TECHNICIAN EXAMINATION
SENSITIVITY	0.61	0.81	0.33	0.07
UPPER 95% CI	0.72	0.90	0.44	0.14
LOWER 95% CI	0.50	0.72	0.22	0
SPECIFICITY	0.85	0.96	1.00	0.99
UPPER 95% CI	0.89	0.99	1.00	1.00
LOWER 95% CI	0.81	0.94	0.99	0.97

Table 2—System and patient cost per true-positive case detected

	45° PHOTO WITHOUT DILATION	45° PHOTO WITH DILATION	OPHTHALMOLOGIST EXAMINATION	TECHNICIAN EXAMINATION
SYSTEM	378	295	390	794
COST/TRUE- POSITIVE (\$)				
UPPER ESTIMATE	463	331	581	—
LOWER ESTIMATE	320	265	294	379
PATIENT	171	139	306	1009
COST/TRUE- POSITIVE (\$)				
UPPER ESTIMATE	209	156	454	—
LOWER ESTIMATE	144	125	230	481