RECENT DEVELOPMENTS IN THE DORFMAN-BERBAUM-METZ (DBM) PROCEDURE FOR MULTIREADER ROC STUDY ANALYSIS

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The Dorfman-Berbaum-Metz (DBM) method is the most frequently used method for analyzing multireader ROC studies. We discuss the following recent developments in the DBM method: (1) the use of normalized pseudovalues allows the method to be based on the original accuracy estimates rather than the jackknife estimates, thus eliminating the problem of jackknife estimates outside the parameter space; (2) the use of less data-based model simplification results in type I errors closer to the nominal level; (3) the use of a new denominator degrees of freedom eliminate the occasional problem of very wide confidence intervals; and (4) sample size computations can be easily made based on pilot data or previous studies. Another recent finding is that the DBM method and the Obuchowski-Rockette method yield identical results when based on the same procedure parameters. This finding means that the DBM procedure only requires the assumptions of the OR method, which are less restrictive and conceptually easier to comprehend; in particular, this relationship makes it clear that the DBM assumptions of normal and independent pseudovalues are not necessary since they are only "working model" assumptions.