

**QIC PROGRAM AND MODEL SELECTION IN GEE ANALYSES**

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The generalized estimating equation (GEE) method is widely used in statistical analyses of longitudinal data in epidemiological studies. It is an extension of the generalized linear model (GLM) to account for the possible correlations between repeated measurements in an individual. Unlike the GLM method, which is based on the maximum likelihood function for independent observations, the GEE method is based on the quasi-likelihood theory. There is no likelihood function for GEE. The Akaike's information criterion, a widely used method for model selection in GLM, is not applicable directly to GEE. However, Pan (Biometrics 2001; 57:120-125) proposed a new model selection method for GEE. Based on this method, I developed a general computing program to calculate the QIC value for all the link functions, correlation structures and statistical distributions available in Stata software version 9. In this presentation, I introduce this program and demonstrate how to use it to select the best working correlation structure and the best model through representative examples in longitudinal studies.