

Computer-assisted data collection in multicenter epidemiologic research

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The Atherosclerosis Risk in Communities (ARIC) Study uses a computer-assisted data collection (CADC) system in which staff at four Field Centers directly record into microcomputers much of the data obtained from the 16,000 study participants during 4 hours of interviews and exams. A pilot study was conducted to evaluate the feasibility of training Field Center staff in the use of a CADC system and to assess study participants' reaction to such a system. When asked to compare CADA to a paper-based system, all five of the pilot study staff members preferred the CADA system. The 16 pilot study participants either had no preference (63%) or preferred CADC (37%). With respect to data quality, no systematic differences between the two methods of data collection were evident in the pilot study. The CADC system required a pproximately 10% longer for data collection, keying, and editing than the paper-based system took for collection alone. Immediate data entry in a CADC system may improve data quality by eliminating a transcription step and by allowing prompt detection of suspicious values while the participant is still available to provide confirmation or correction. CADC simplifies data collection by automating complex branching questions and can enhance data completeness. The ARIC CADC system is based on commercially available software customized by the study's Coordinating Center. The microcomputer-based CADC system described in this report may serve as the prototype for future epidemiologic studies that collect standardized data on large numbers of participants at a small number of sites.

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