

POSTER ABSTRACTS

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Validation of an Automated Pregnancy Episode Grouper

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Background: This study validates a computerized algorithm for identifying pregnancy occurrence, pregnancy start and end dates, and pregnancy outcomes using automated patient records containing dates of laboratory tests, diagnoses, procedures, medications, delivery / termination of pregnancy, and type of pregnancy termination. The algorithm will be used to establish the denominator population of episodes for determining the incidence and prevalence of partum and postpartum morbidities.

Methods: All pregnancy episodes occurring to KPNW members (1998-2001) were identified through a computerized algorithm run against the electronic medical record and other utilization files. The algorithm assigns pregnancy outcome data identified from ICD-9-CM diagnoses, text diagnoses from the Emergency department, CPT-4 and ICD-9-CM procedures, and DRGs. If the data suggest similar but different outcome dates, an a priori hierarchy is used to select the outcome date. A controlled selection sample, by type of pregnancy outcome, of 511 women was drawn from a universe of nearly 25,000 pregnant women. All pregnancy episodes for the sample within the study period (n = 650) were abstracted from medical charts by technicians who were blinded as to the results of the computer algorithm. Analyses measured the extent of agreement between the two sources on various dimensions of the episodes.

Results: Very high rates of agreement were found for the following episode elements: diagnosis of pregnancies, liveborn outcomes, ectopic pregnancies, and molar pregnancies. The algorithm had some difficulty confirming spontaneous and therapeutic abortions and discriminating between them. The algorithm produces a number of indefinite outcome classes (e.g., early loss—outcome unknown), and a significant portion of these were classified to a definite outcome by the abstractors (who had access to more information than the algorithm).

Conclusions: Our computerized pregnancy episode algorithm has strong validity for establishing the presence of a pregnancy episode, and performs well in identifying most episode outcomes and beginning and ending dates. Episodes with minimal health care contacts or poorly coded diagnoses and procedures significantly reduce algorithm performance.