

## POSTER ABSTRACTS

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#### Developing a Virtual Data Warehouse: KPCO's Experience

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**Background:** Virtual Data Warehouses (VDWs), as defined relative to the Cancer Research Network (CRN), are algorithms designed to produce standardized data elements across health plans. VDWs provide a mechanism for quick response to data requests relative to multi-site cancer research. The warehouses are virtual both in the sense that data from diverse health plans can be combined consistently and that data may or may not be stored in final form until a request for data is made. VDWs will be developed along content lines, e.g., tumor registry, demographics. Information on whether a person has insurance at a given time is basic to much research; therefore the enrollment VDW was given high priority. Methods of developing the enrollment VDW varied by site.

**Methods:** The CRN's Scientific and Data Resources Core (SDRC) reviewed various definitions of enrollment used in CRN studies and identified elements necessary to most research. Challenges faced at Kaiser Permanente Colorado (KPCO) included determining sources of enrollment data, changing the format of source data to that prescribed by the SDRC, and deciding how best to store the data. Data were extracted from DB2 tables and manipulated using SAS V8.02. KPCO made the decision to store data in datasets defined by date ranges; these data can be combined via a macro according to specific data requests.

**Results:** Once the sites' VDWs were developed, two SAS programs were distributed in November 2003. One program required slight modification to allow for data to be subset prior to pulling from KPCO's mainframe. Both programs, one used in conjunction with the demographics VDW and one in conjunction with the virtual tumor registry, ran smoothly in a matter of minutes and produced credible output.

**Conclusion:** Preliminary results indicate that implementation of the enrollment VDW at KPCO was successful. VDWs allow health plans to create site-specific algorithms to produce consistently defined variables and to store data in the manner most appropriate to the site. Although implementation of a VDW requires extensive preliminary work, the end product is enhanced ability to respond quickly to diverse research requests.