

REAL TIME QI SYSTEM BASED ON AUTOMATED COMPURECORD RESEARCH MODULE

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Introduction: Previous reports have detailed our use of Windows API Calls to automate data extraction from our AIMS server via the CompuRecord Research Module(RM). This report details extensive trials of a QI system based on this automated, “real time” data extraction and analysis of anesthesia case data from all of our anesthetizing locations.

Methods: When the “Exit OR” event is selected by the Anesthesia Team (AT) the entire case data is made available in the AIMS WSave Folder Using the RM we monitor the WSave Folder and quickly extract all the case data, including all the Vital Signs, into an Access 2003 database, that resides in a temporary folder, and is separate from the VBA Access Db which controls the RM. VBA code modules, queries and reference tables are then transferred into this separate Db by the Controlling Db. Preparation of QI reports, printing of these reports and/or emailing them to the AT members is completed during the time the patient is being transported from the OR to the PACU. Once the QI reports and emails have been completed, the Db with the RM extracted data and the snapshot images of the QI reports are transferred to the G: drive for archival storage. The controlling Db must also restore the RM to its prior status so that monitoring of the WSave folder can be resumed. When the AT reopens the case to complete the PACU summary tasks the case data is removed from the WSave Folder. The case data reappears when the AT closes the case with the Anesthesia End event. The aforementioned data extraction, report preparation and emailing procedures are all repeated a second time. This permits comparison of the case information in the AIMS at the Exit OR and Anesthesia End times – this provides a way to measure the charting capabilities of AT members and assess the effectiveness of the QI reporting process.

Results: Our system has been tested extensively by processing all cases that transiently pass thru the WSave file. Beside the current, ongoing OR cases, WSave also will hold cases whenever completed cases are reviewed for clinical, teaching or billing purposes. These other cases are mixed in with the current OR cases, so it is not uncommon to have the RM extracting multiple cases during the hospital’s day shift. Table 1 gives the distribution of new cases appearing in the WSave Folder during a typical weekday. The actual time for RM data extraction is only 5 to 10 sec per case. Most of the cycle time that occurs when data are extracted is related to working with the RM. After 3 to 4 days of continuous operation, the controlling Db will expand in size from about 20 megabytes to more than 2 gigabytes due to accumulation of temporary files. Once the 2 gigabyte limit is exceeded the system crashes. To avoid this problem the controlling Db must be ‘compacted and repaired’.

Table 1

Count New Cases	0	1	2	3	4	5	6	7
Count Of Count	2638	159	53	31	12	2	3	1