Implementation of an Anesthesia Information Management System on an Obstetric Unit

Presenting Author: Jason C Brookman M.D.
Presenting Author's Institution: Massachusetts General Hospital - Boston, Massachusetts
Co-Authors: Micah H. Flynn B.S. - Massachusetts General Hospital - Boston, Massachusetts
John L. Walsh M.D. - Massachusetts General Hospital - Boston, Massachusetts
Lisa R. Leffert M.D. - Massachusetts General Hospital - Boston, Massachusetts
Hovig V. Chitilian M.D. - Massachusetts General Hospital - Boston, Massachusetts

Background: The utility of anesthesia information management systems (AIMS) has been established in the operating room. The implementation of such systems in obstetric anesthesia practice (OAP), however, is less well described. The application of AIMS to OAP presents unique challenges with respect to system design and implementation. These challenges arise from differences in patient care patterns and workflow that exist in OAP compared to the standard operating room. We present our experience with the deployment of an AIMS on the labor and delivery (L&D) unit of an academic medical center.

Methods: AIMS (Meta Vision, Tel Aviv, Israel) had already been in use for 3 years in our main (non-obstetric) operating rooms (MORs). Anesthetic documentation in the L&D unit was being carried out using paper charts. To design the OAP implementation, the differences in workflow and documentation requirements between the MOR and L&D unit were identified; existing templates were modified to accommodate the differences. For circumstances in which the modification of existing templates was insufficient, new components were created.

Results: In contrast to the MOR, the L&D unit consists of a mixture of inpatient beds and ORs where patients move between inpatient beds and the OR's in a somewhat unpredictable manner. Monitoring and documentation needs differ in the obstetric ORs and L&D rooms. Furthermore, anesthesiologists are responsible for the concurrent care of multiple patients. To accommodate these differences, two documentation interfaces were incorporated into the OAP-AIMS: the standard MOR interface and a customized L&D interface for anesthetic management in the labor rooms. A new graphical user interface was added to the MOR AIMS template, along with a virtual "Patient Board", to provide easy access to data on all patients on the L&D unit. The need for access to the AIMS from multiple different locations was initially addressed through the deployment of two mobile wireless laptops; however, due to concerns regarding infection control and emergency access to AIMS, this system was eventually modified by placement of an AIMS computer terminal in each patient’s room.

Conclusions: AIMS implementation for OAP presents unique challenges which arise from the variability in the workflow, the number of concurrent anesthetizing locations and the number of patients being simultaneously tended to by a single provider. These differences must be taken into account in the design and implementation of an OAP-AIMS. This report presents an implementation of an OAP-AIMS which addresses these differences.

References: