



Learning From Others:

A Case Report From the Anesthesia Incident Reporting System

Review of unusual patient care experiences is a cornerstone of medical education. Each month, the AQI-AIRS Steering Committee abstracts a patient history submitted to the Anesthesia Incident Reporting System (AIRS) and authors a discussion of the safety and human factors challenges involved. Real-life case histories often include multiple clinical decisions, only some of which can be discussed in the space available. Absence of commentary should not be construed as agreement with the clinical decisions described. Feedback regarding this article can be sent by email to the AIRS Committee: airs@asahq.org. Report incidents or download the AIRS mobile app at www.aqiairs.org.

Case 2016-7: The Five-Year Anniversary of AIRS

A 54-year-old female underwent general endotracheal anesthesia for a laparotomy. Approximately 45 minutes after an uneventful induction and intubation, the anesthesiologist noted that there were no recorded blood pressure readings on the electronic anesthesia record. Thinking there was an issue with the link between the monitor and the computer, he checked the patient care monitor and discovered no blood pressures had been taken for the case.

One of the common questions the Anesthesia Incident Reporting System (AIRS) committee receives is how an AIRS submission becomes a case report. For this month, we will take a break from our usual detailed case analysis and describe how the committee analyzes reports and produces the monthly article for the *ASA Monitor*.

Background of AIRS:

The Anesthesia Quality Institute (AQI) created the first nationwide system for capturing adverse events in the course of perioperative care. AIRS was launched in mid-2011, and this summer marks the five-year anniversary of the system. AIRS is an electronic reporting tool that allows anesthesiologists to report adverse events and near-misses and to learn from the experience of our colleagues.

AIRS cases are submitted from anesthesiologists around the country, and in some instances, the world. All anesthesia providers are encouraged to report unintended events that resulted in or had the potential to cause patient harm. As this is a nationwide system, AIRS is well positioned to detect early trends that may occur at a low rate locally. Examples of what to report are: unusual medication reactions, unforeseen or unpredictable manifestations of patient disease, drug shortages, and events related to anesthesia equipment, or electronic medical record systems.

Anesthesiologists can report events with confidence; the reporting system is secure and only committee members have access to the AIRS reports. The reports are sent over a secure encrypted Internet connection and held on an isolated

AQI server. The reporting anesthesia provider has the option of entering a report anonymously or confidentially. When reports are made anonymously, the AQI has no mechanism to retrieve demographic information on the reporter or his or her institution. Confidential reporting, on the other hand, allows the AQI to contact the reporter to clarify a report or add additional information. This has been used on occasion and added value to the case reports.

AIRS is an integral part of the AQI. The AQI is a federally designated Patient Safety Organization (PSO), which comes with powerful federal legal protection from discovery for the reporting anesthesiologist. The PSO designation mandates that all AIRS reports and the information contained therein, as well as the committee's analysis of the reports, be designated as "patient safety work product" and as such is protected by federal law from legal discovery. The PSO designation also mandates strict confidentiality of this information. The AQI and the AIRS committee will never reveal the identity of any patient, provider, facility or practice contained in AIRS reports.

How a Report Becomes a Case

Members of the AIRS committee review the submitted reports on a frequent basis and look for trends and interesting cases relevant to the anesthesia community. Particularly, committee members are looking for reports that illustrate new sources of risk, novel complications that have not been previously described, and reports that highlight systems issues that are the root cause for events. AIRS reports and the analysis of them are particularly relevant as they are not theoretical, but real events that occurred while patients were under the care of an anesthesiologist.

One novel way the committee can analyze the database is to generate a "wordle" from the narrative text of all of the collective AIRS reports. A wordle is a pictorial where the more common a word is, the larger the word appears. Figure 1 is the current version of this analysis.



When a committee member identifies a trend or case that adds value to the anesthesia community, a case report is generated. These reports are designed to describe the case, the background behind it, identify the causative factors, and apply our best recommendations given the current state of medical and patient safety knowledge. The reports are peer reviewed by the entire committee and, in some cases, have gone through extensive debate and revision.

The educational basis behind the case reports is “learning from others” and avoiding the situations that have caused patient harm. Additionally, the committee reviews the literature, applies human factor analysis and suggests strategies to improve the safety of anesthesia.

On this five-year anniversary, the AQI would like to thank the volunteer membership of the AIRS committee for their service (AIRS Committee Membership table below). The committee has generated 58 case reports that are available for review in their entirety at www.aqihq.org/casereportsandcommittee.aspx.

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AIRS Committee Membership	
Patrick Guffey, M.D.	Chair, Children’s Hospital Colorado
Patrick McCormick, M.D.	Vice Chair, Icahn School of Medicine at Mount Sinai
Meir Chernofsky, M.D.	Uniformed Services University
Richard Dutton, M.D.	Chief Quality Officer, U.S. Anesthesia Partners
David Gaba, M.D.	Stanford University
David Martin, M.D.	Mayo Clinic Rochester
Alan Merry, M.D.	University of Auckland
Karen Nanji, M.D.	Massachusetts General Hospital
Marjorie Podraza Stiegler, M.D.	University of North Carolina, Chapel Hill
David Polaner, M.D.	University of Colorado, Denver
Stephen Pratt, M.D.	Beth Israel Deaconess
Mohamed Rehman, M.D., FAAP	Perelman School of Medicine at the University of Pennsylvania
Keith Ruskin, M.D.	University of Chicago
DeLaine Schmidt	AQI Executive
Heather Sherman, Ph.D.	Anesthesia Quality Institute
Avery Tung, M.D.	University of Chicago
Tetsu Uejima, M.D.	DuPont Children’s Hospital, Wilmington, Delaware
Joyce Wahr, M.D.	University of Minnesota
Matthew Weinger, M.D., M.S.	AQI BOD Liaison, Vanderbilt University
Former Committee Members	
Jim Caldwell, M.D.	Founding Chair, University of California, San Francisco
Arnold Berry, M.D.	Emory University School of Medicine
Peter Fleischut, M.D.	New York Presbyterian Hospital, Cornell University
David Robinowitz, M.D.	University of California, San Francisco

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While the case reports are the primary product of the anesthesia incident reporting system, the data has also been used in other ways to improve patient safety. The case report referenced in this report, something many anesthesiologists have experienced, is a classic case of human error; the anesthesiologist forgot to measure the blood pressure and did not notice it until later in the anesthetic. However, humans will always make this type of error; it's endemic in the human condition. The question becomes, how do we prevent this error from causing harm to the patient? There is a significant trend of cases surrounding anesthesia equipment and anesthesia information management systems (AIMS). Events that are recorded in the database at some frequency include:

- Charting on the wrong patient
- Sudden system failure
- Failure to record vital signs
- Failure of pharmacy dispensing systems
- Incorrect calculations
- Flawed / Incorrect decision support
- Distraction from all these issues.

In an effort to improve patient safety, committee members have shared this information with multiple EMR vendors. One intervention that is now available in multiple anesthesia information management systems is a pop-up alert that notifies the anesthesiologist if the ASA standards for basic monitoring are not being recorded in the system. This intervention may have prevented the case in this report and is an example of using the AIMS to support the anesthesiologist to prevent a human error from reaching the patient.

AIRS is an example of why anesthesiology leads the medical profession in patient safety. The committee thanks the thousands of individuals for their AIRS submissions over the last five years; you have helped to improve the safety of our specialty. Report incidents in confidence at aqiairs.org.

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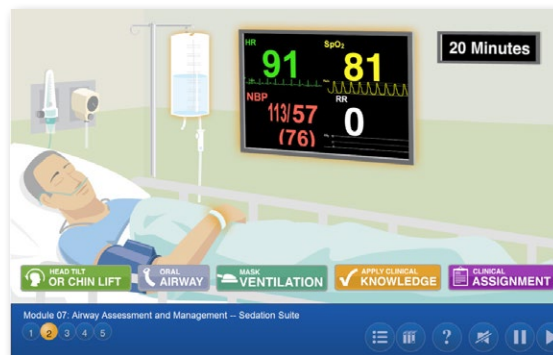
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