Implementation and results of an electronic, photo based, anesthesia sign-in at a large, academic pediatric hospital

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Background
Recent research suggests implementation of the WHO surgical safety checklist may reduce morbidity and mortality. Identification of the correct patient prior to induction of anesthesia is a key part of the surgical checklist and is included in the anesthesia sign-in. Further, if an electronic automated anesthesia record is utilized, verification that the correct patient is critical to avoid documenting on the wrong patient. Significant barriers exist to implementing an effective anesthesia sign-in, and facilitating a highly reliable process for patient identification.

Methods
We designed and implemented an electronic sign in with photo verification (figure 1) as part of our anesthesia information management system (Epic Systems, Verona WI) in December 2011. Then, we performed independent audits throughout 2012 to verify the checklist was being utilized. Any instances of charting patient information though the use of the AIMS system was also recorded. Our incident reporting system was queried for any cases where the checklist prevented a serious safety event.

Results
Over 32,000 anesthetics have been performed using the AIMS system since December 2011. The checklist and sign-in process prevented one serious safety event where a patient was transported and almost induced in the wrong operating room for the incorrect procedure. One instance of charting medical information on the wrong anesthesia record occurred during this interval and the checklist was not utilized. All other anesthetics were charted to the correct record, indicating a reliability rate of 99.997%. During the first 3 quarters of 2012, 275 audits were performed with the electronic sign in performed 264 times with a reliability rate of 96%.

Discussion
We have successfully implemented the anesthesia sign in component of the WHO surgical checklist and have prevented a serious safety event though its use. Further, through independent audits and feedback to the clinician we have achieved a reliable use of the electronic sign in. Charting on the wrong patient is a significant problem. By informal survey of academic institutions this occurs on average in approximately 1 out of every 1000 anesthetics. Use of the sign in may have greatly reduced this issue and displaying the patient’s picture may have increased our success. 100% compliance with the checklist will be necessary to completely eliminate this issue.

References
3 - Hyman D, Laire M, Redmond D, Kaplan DW. The use of patient pictures and verification screens to reduce computerized provider order entry errors. Pediatrics. 2012;130(1)