

Integration of All Operating Room Digital Data on a Single, Large-Format Display

Mark A. Meyer^a MD MPH, Wilton C. Levine^b MD, Marie Egan^c RN MS, Philip Brzezinski^d, & Warren S. Sandberg^b MD PhD



^aLaboratory of Computer Science, Massachusetts General Hospital, Boston, MA
^bDepartment of Anesthesia and Critical Care, Massachusetts General Hospital, Boston, MA
^cDepartment of Nursing, Massachusetts General Hospital, Boston, MA
^dLiveData Inc., Cambridge, MA



contact: mameyer@partners.org

Introduction

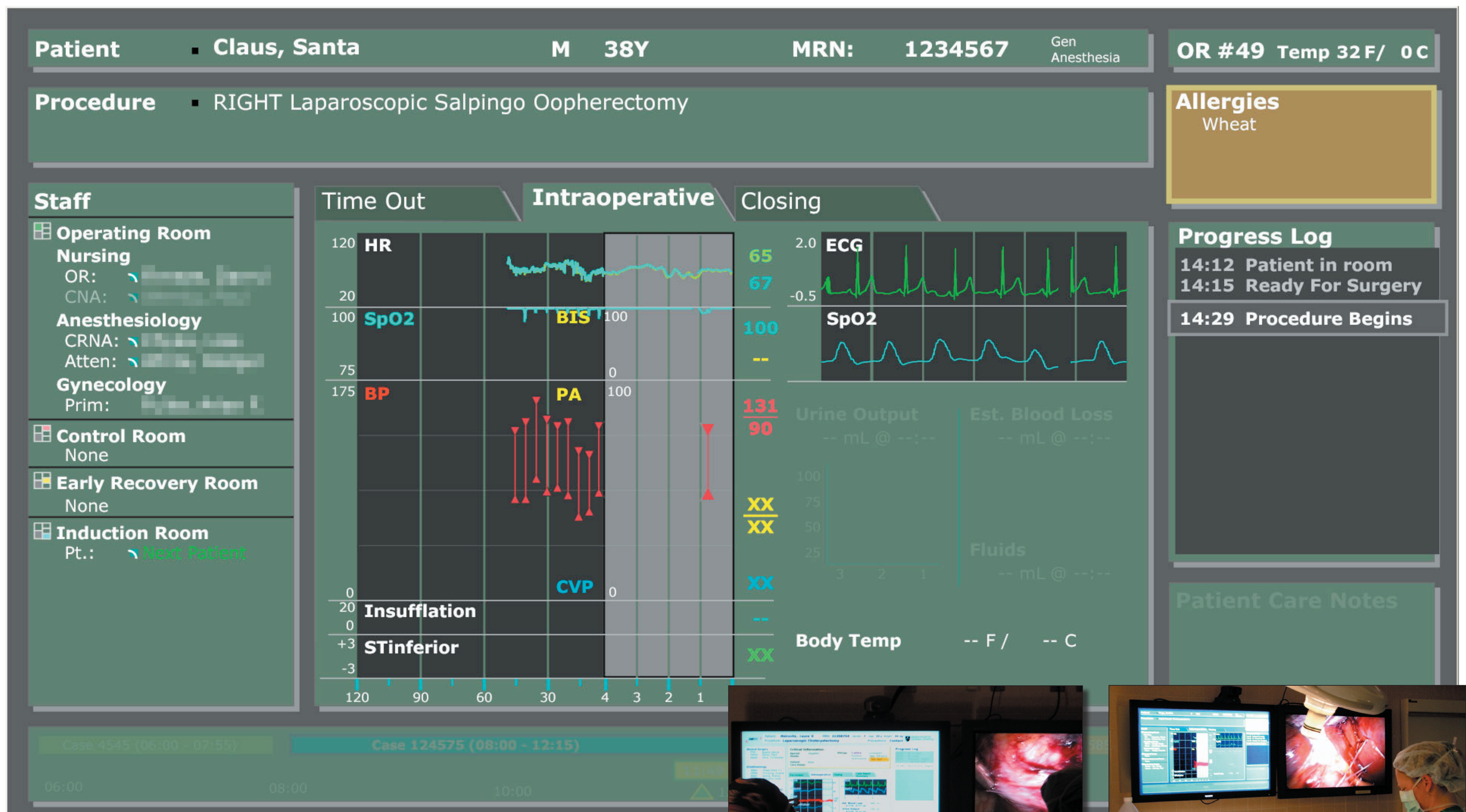
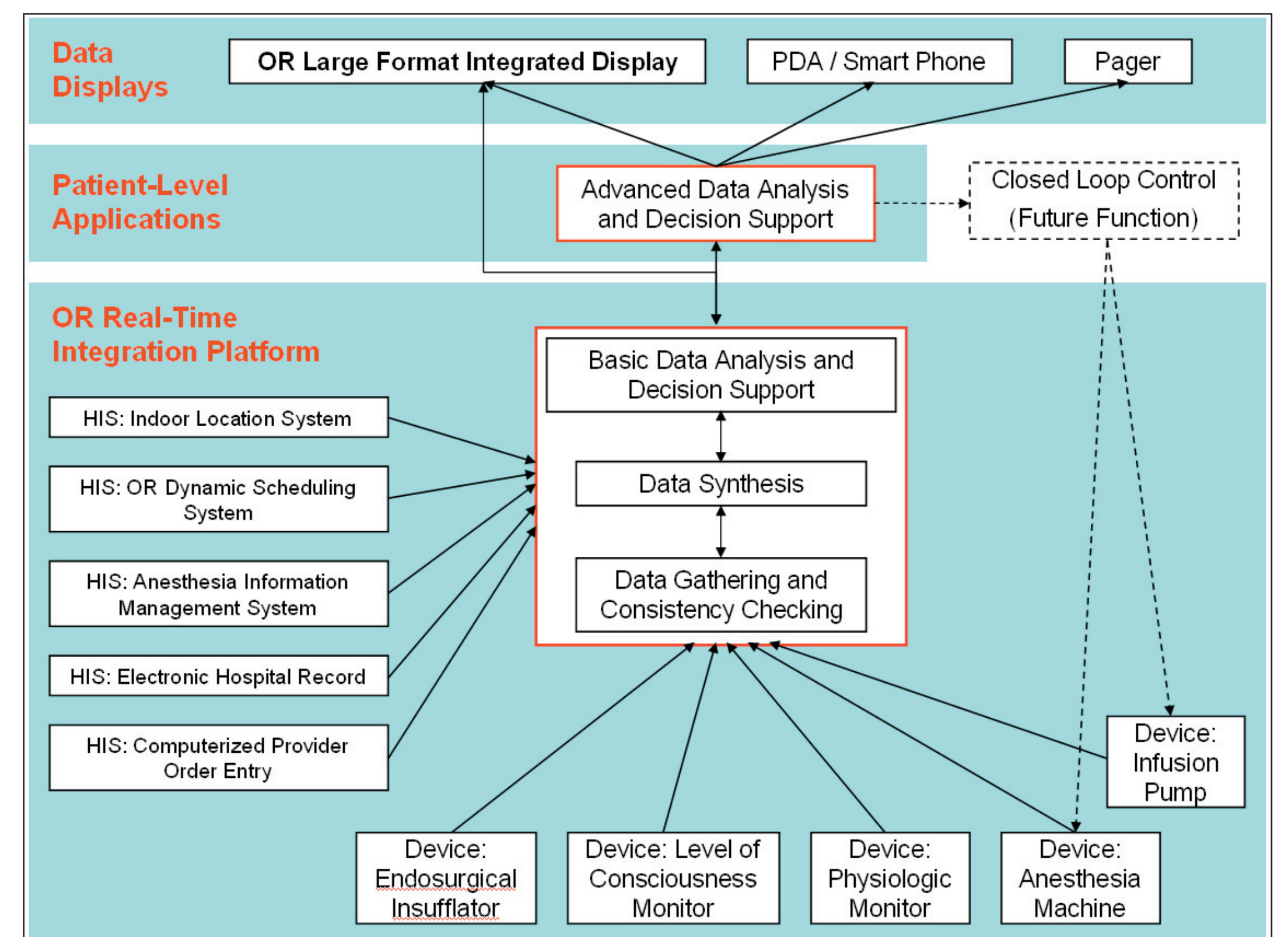
Just-in-time access to information is essential in the operative environment. A collaborative effort through Massachusetts General Hospital with software developers (LiveData, Inc., Cambridge, MA) and human factors designers (Aptima, Inc., Woburn, MA) has developed a system to integrate all operating room digital data onto a single, high definition, large format display visible from anywhere in the OR.

Conclusion

We have achieved whole-OR, single-display integration of all key patient information needed to obtain an instant snapshot of the patient's status. The system provides improved contextual real-time information awareness, real-time access to readiness information and improved patient/personnel identity awareness. It may also be used in workflow support to provide advanced scheduling and resource management support. In the future, it will serve as a platform for augmented vigilance and machine-assisted decision support in the OR.

Results

- Software interfaces were written to obtain key data from each system and data archiving
- Runs on a desktop PC in the OR with a consumer video card and 42" LCD display
- Digital output obtained and interpreted
 - physiologic monitors
 - BIS monitor (Aspect Medical Systems)
 - smart syringe micro-infusion pump (Harvard Medical Systems)
 - surgical insufflator (Storz, Galena, CA)
- Trending of physiologic, drug, gas and endosurgical device data
- Integration of information systems via HL-7 and XML interfaces
 - anesthesia information system (Saturn, Drager, Telford, PA)
 - nursing perioperative record
 - OR Dynamic scheduling system
 - enterprise-wide patient allergy database
 - real-time location system
- Dynamic elements advance automatically
 - triggered by the logging of case milestones
 - provides context specific information
 - no manual OR personnel interaction needed
- Timeline of cases appears across bottom of the display



This project was carried out as part of the OR of the Future Project at Massachusetts General Hospital. For more information about the OR of the Future Project, go to www.cimit.org, or contact Mark Meyer, M.D., M.P.H at mameyer@partners.org or Warren S. Sandberg, M.D., Ph.D., Co-Program Leader, CIMIT / MGH OR of the Future Project at wsandberg@partners.org

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