

About Saint Luke's eICU®

1. What is the Saint Luke's eICU® system?

The eICU system is a patient monitoring station capable of observing and evaluating critically ill patients in multiple ICUs and hospitals from a single location. It is staffed with experienced physicians and critical care nurses. The eICU physicians and nurses are all licensed in the states of Missouri and Kansas. They continually scrutinize clinical, physiologic, and laboratory data of patients in the monitored ICUs, with the *capacity* to detect changes in the patient's condition allowing the team to optimize interventions to benefit the patient's condition.

2. What is the role of the eICU system?

The eICU program functions as a safety net around the patient, nurse, and attending physician(s)*. The eICU system provides critical care monitoring and availability of critical care physician skills continuously. Even full-time intensivist physicians cannot be at the bedside of every patient on a 24 hours a day / 7 days a week basis to observe progress and maintain care plans. The critical and unstable condition of ICU patients together with the complexity of their treatments warrants very close monitoring. The role of the eICU system, therefore, is to help eliminate errors and prevent harm through the increased intensity of monitoring by highly trained physicians, experienced critical care nurses, sophisticated software (the ultimate trend monitor) and consistent use of evidenced-based medicine.

3. How does the eICU system perform this role?

All patients admitted to an ICU that is connected to the eICU system will be *monitored* in the eICU. However, the attending physician will select which of three levels of *intervention* within which s/he will permit the eICU physician to function when participating in the care of the patient. The three levels are:

Category 1: eICU program acts in a manner analogous to a vigilant nurse, alerting the attending physician regarding any potentially life-threatening change in the patient's status or newly reported

critical test results. If it appears that the danger to life is *immediate* (e.g., cardiac arrest, respiratory arrest), the eICU physician will intervene providing appropriate medical interventions until on-site physician(s) can get to the bedside. Otherwise, the eICU physician will *not* intervene in the care of the patient.

Category 2: eICU system acts in a manner analogous to a vigilant and informed house officer, intervening *only and entirely* in concordance with the plan of care already established by the attending physician (e.g., replacing electrolytes if needed, titrating FiO₂, etc.). If a change in the patient's status appears to require a change in the plan of care, the eICU physician will *not* make the change, but will instead contact the attending physician who will then determine any changes in treatment.

Category 3: eICU program acts in a manner analogous to a vigilant and ubiquitous fellow, maintaining the care plan of the attending physician(s), but also initiating treatment for new situations that may develop such as agitation, diuresis, volume depletion, rhythm disturbances, unexpected changes in oxygenation status, or any life-threatening emergency. In this category, the eICU physician does initiate the intervention. All such interventions are documented in the patient's record. If the intervention and/or the change in patient status are *major*, the eICU physician will notify the attending physician *immediately*. (When the interventions or changes in status are *minor*, the documentation placed in the patient record will serve to inform the attending physician.) If the eICU physician has concerns regarding the care plan of the bedside physicians, they will initiate physician-to-physician verbal contact to discuss the concerns. The authority of the attending physician will remain paramount; the care plan of the attending physician is the care plan that the eICU system will follow. The eICU physician will not change or override existing physician orders without the expressed or implied consent of the attending physician. (Designation of a patient as Category 3 in effect gives consent to the eICU physician to write new orders in appropriate response to clinical developments.)

4. How does the eICU system write orders?

The eICU system does not place verbal orders on a chart. Rather, all eICU-generated orders will be timed, dated, and electronically signed by the eICU physician. All such orders will be accompanied by a timed, dated, and electronically signed physician progress note by the ordering physician describing the circumstance and the reason for the order. Both the order and the progress note will be printed and placed in the chart, becoming part of the permanent medical record.

5. What is recorded by the eICU system?

The eICU program tracks the vital signs and test results, creating an electronic medical record (EMR) for the ICU patient. An abstracted form of the admission H&P and bedside physician progress notes is made part of this EMR, and other notes and orders are monitored by the eICU system to ensure that any and all interventions are consistent with the overall plan of care. This EMR is also available for viewing and data entry in the actual ICU. Consequently, attending and consulting physicians may write their notes directly into the EMR. Clearly, this helps facilitate communication between the eICU physician and the bedside physicians. Any such notes are also printed and made part of the permanent medical record. The data in the EMR itself is deleted from our server when the patient is discharged from the hospital. The only permanent records are those placed in the paper chart in the actual ICU. The audio/visual interactions are not recorded at all. Any such monitoring is “real-time” only.

6. Does the eICU system bill for services provided and, if not, how is it funded?

The eICU system never bills the patient. SLHS is looking into the option of insurance carriers reimbursing at a slightly higher rate for the increased monitoring we are providing our ICU patients. The SLHS has funded this project, through buying the licenses and technology, as a patient safety initiative by investing capital dollars to initiate this project. SLHS anticipates a return on this investment in the form of improved patient safety,

decreased morbidity and mortality, and decreased ICU length of stay. These are accomplished by early detection and treatment of adverse clinical developments/events. We are developing criteria to evaluate outcomes, and the findings pertaining to these outcomes will be reported back to each hospital on a regular basis at appropriate committees.

7. Does the eICU system increase the liability of the bedside physicians?

To the contrary, it appears that the eICU system actually *decreases* liability. As an example, when the eICU system was initiated in the Sutter Healthcare System in California, cardiovascular physicians having this concern petitioned Norcal, the carrier for most of Northern California, asking about increased liability. They were told that not only would they *not* have an increased liability, but to have an intensivist monitoring their patients would almost certainly decrease their risk considerably. (Physicians with similar concerns may also want to contact their liability carrier about this.) Moreover, if an intervention initiated by an eICU physician prior to any notification of the attending physician results in a bad outcome, it is the eICU physician who is liable, just as with any consultant who acts independent of the attending physician.

8. Is the eICU system subject to Peer Review?

The bedside physician or consultant may request that a case be peer reviewed if desired. The eICU system has an internal peer review committee that will be responsive to the charges and requests of the hospital to deal with any such concerns or issues. All eICU physicians will be credentialed at the individual hospital(s) and will be subject to the same standards and bylaws as the physicians who practice on those campuses.

9. Is the eICU system HIPAA compliant?

Yes, the eICU system is both HIPAA and JCAHO compliant. The eICU system is governed under the telemedicine rules and regulations. The eICU system has a sanctioned set of policies and procedures.

* “Attending Physician(s),” as used herein, means physicians actually participating in the care of the patient in the hospital. It always refers to the Attending Physician, but frequently also encompasses the consulting physicians. It will also include the care provided by physicians in training at all levels.

