

INTEROPERABILITY SHOWCASE™



Use Case Title: Pregnancy & Surgical Complications

Short Description: During a routine ultrasound, the fetus is diagnosed with a birth defect of the abdominal wall, which requires multiple neonatal surgeries to repair. On delivery day, the mother is admitted to the hospital and vitals are checked for mother and fetus with a fetal monitor. Fetal surveillance results show that the fetal heart rate is absent variability with recurrent late decelerations occurring. Following team discussion, the patient agrees to a C-section. The mother is transported from labor and delivery on a transport monitor, which docks with a bedside monitor in the Operating Room (OR). At that time, the patient is placed on an anesthesia delivery system. During the C-section delivery, the mother experiences a severe reaction to anesthesia with subsequent respiratory failure. While the mother is immediately intubated and placed on mechanical ventilation, the baby is safely delivered. Following delivery, the mother is transported to the ICU where her monitoring is seamlessly transferred to a bedside unit that connects to her ventilator. The newborn is transferred to the care of the NICU surgical team and prepared for surgery to repair the abdominal wall. This showcase follows the care of both mother and baby as they move across multiple care areas with real-time, gapless clinical documentation to their electronic medical records.

Value: Maternal-Fetal Healthy outcomes improvement and patient safety are of primary concern in U.S. Population Health Initiatives. Continuous patient vital signs, labor assessment, surgical status, and well-being monitoring while in-patient and in transport is demonstrated in this hospital scenario.

Participating Vendors: Epic, Mindray, OBIX, Vyaire

Scenario	Vendor	Products	Standards
Introduction Rachel arrives at the L&D department in active labor and is registered into the Epic EHR.	Epic	EpicCare Inpatient	HL7® IHE PAM

<p>OBIX BeCA Fetal Monitor and OBIX Perinatal Data Software w Surveillance</p> <p>Once admitted into Epic, an encounter is automatically initiated in the OBIX perinatal system. Rachel is placed on the OBIX BeCA fetal monitor, which will capture and display maternal HR, P, BP and pulse ox. Maternal vital signs will also display on the OBIX system’s Central Surveillance screens at both the nurse’s station and patients’ bedside. The OBIX BeCA FM also captures and displays the fetal heart rate and uterine contraction pattern in either a large numeric or waveform view. With tight integration between the OBIX and Epic systems, Rachel’s tracing can be launched directly within Epic for review. All vital signs captured from the OBIX BeCA fetal monitor are sent to Epic, validated by the end user, and become a part of the legal medical Epic record.</p> <p>Shortly after admission, Rachel’s vital signs fall outside of range. These changes are indicated on the OBIX Systems surveillance screens with out-of-range vital signs highlighted in red. The fetus is compromised, and the staff is alerted by both an audible and visual alert when the fetal heart rate also falls out of range. Using the OBIX system’s E-Tools, the nurse is able to assess the FHR baseline, variability, accelerations and in this case decelerations; and has identified a category 2 tracing. The nurse contacts Rachel’s physician to discuss her status and the need for a cesarean section delivery is identified and preparations begin.</p> <p>Pre-op medications are ordered and administered from the Epic medication administration record. Through the medication administration interface between Epic and OBIX, medications given to Rachel also display on the OBIX fetal heart rate tracing lending insight during strip review.</p> <p>Rachel is prepped for surgery and the nurse is able to click directly on the FHR tracing in OBIX and document the treatment Rachel has received. The documentation is then sent to Epic and auto-validated into the Epic documentation flowsheet allowing Epic to be one source of truth for all documentation.</p>	<p>OBIX</p>	<p>OBIX Perinatal Data System</p> <p>OBIX BeCA Fetal Monitor</p>	<p>HL7 IHE PCD DEC</p>
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<p>L&D OR The mother, transported from L&D on a N1 transport monitor, which docks with a Mindray N17 bedside monitor in the OR. At that time the patient is placed on a Mindray A-Series A9 Anesthesia delivery system.</p> <p>In preparation for the C-Section the mother is placed on a Mindray N1 Transport monitor and transported to the OR. During transport the patient is admitted to Mindray N1, which wirelessly transmits all patient vitals and waveforms to the EPIC electronic medical record via the Mindray eGateway. Once in the OR, the N1 Transport monitor will be docked to the Mindray N19 OR monitor on the Mindray A9 anesthesia system. For efficiency, patient registration automatically gets passed across to the OR monitor saving time and reducing complexity as the C-Section commences. The N19 monitor will now transmit all patient vitals and waveforms to the EPIC EMR via the Mindray eGateway, which is displayed on any EPIC workstation within the enterprise.</p>	Mindray	eGateway	HL7 IHE PCD DEC WCM
<p>During the C-section delivery, the mother experiences a severe reaction to anesthesia with subsequent respiratory failure. While the mother is immediately intubated and placed on mechanical ventilation with a Vyaire Medical bellavista 1000, the baby is delivered safely. Following delivery, the mother is transported to the ICU. Since the mother is already connected to the N1, it is simply just undocked from the N19 during transport. In the ICU the Mindray N1 monitor is placed into a dock that is connected to a 21-in LCD display and a Mindray N17 monitor that is connected to the bellavista ventilator. Rachel's association to the ventilator is completed by scanning the barcode on her wristband along with the barcode on the ventilator. Epic's EMR sends the Admission Discharge Transfer (ADT) feed for Rachel to the Vyaire Ventilation Server which associates the data from the bellavista ventilator to Rachel's record. The interoperability of the bellavista ventilator provides availability of her ventilation data in multiple locations where it is needed by clinicians. Rachel's data can be viewed within the Vyaire Messenger mobile app which is in the hands of respiratory therapists, nurses, and physicians on the floor, on the Mindray bedside monitor, and within the Epic EMR interfaces. The respiratory therapist that is responsible for Rachel's care must regularly chart her ventilation data. Vyaire's connectivity with the Epic EMR using HL7 enables this data to be automatically charted, freeing up the therapist's time</p>	Mindray Vyaire	Bellavista 1000 Ventilator	HL7 IHE PCD DEC IHE PCD ACM

<p>to assess and provide direct care for Rachel. The Epic Hyperspace flow sheet is updated every minute with ventilator data, allowing a clinician to simply review and validate charted parameters.</p>			
<p>Rachel's newborn was immediately admitted on a separate N1 Transport monitor, transferred to the NICU and prepared for surgery to repair the abdominal wall.</p>			

