

USE OF CAPSULE TECHNOLOGY'S NEURON® TO INTERFACE WIRELESSLY TO THE EPIC™ INTRAOPERATIVE ANESTHESIA MODULE

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The Department of Anesthesia at the University of Iowa Hospitals went live with the Epic intraoperative anesthesia module on November 8, 2010. For the interface between the anesthesia physiologic monitor and the anesthesia machine and Epic, we chose the Neuron, a relatively new product from Capsule. After extensive testing, for the fixed locations, we hard wired the Neuron into our Ethernet backbone. Having many satellite locations where hard wiring was impractical or impossible, we used the wireless feature of the Neuron to provide connectivity. After verifying that the wireless strength (WiFi) in all of the satellite locations was satisfactory, we installed the Neuron on 4 roaming anesthesia machines. For our Epic workstations, we use a Dell Latitude laptop as the CPU with a slaved touch-screen monitor and slide-pad keyboard mounted on an articulated arm on the right-hand side of the machine. In the satellite locations, the Dell also operates wirelessly. The Neuron uses a digital interface module to identify the device it is connected to. All the electrical mains connections-machine, laptop, anesthesia machine, Neuron, and touch screen come to a common power strip. On arrival at a new location, the provider plugs the power strip into an electrical outlet and then turns on the Neuron and the laptop. While both are booting, the provider establishes the gas connections and checks out the machine. To initiate electronic record keeping, the provider opens the Epic application, selects the patient, launches the intraoperative module and starts data collection. The provider enters drugs and events as necessary

In more detail, we use the General Electric S/5 monitor and ADU anesthesia machine. The output of these is RS-232. The Neuron translates these data streams into TCP/IP and sends them over the hospital Ethernet backbone to the Capsule server. This server then translates the data streams to HL-7 and sends them through the Cloverleaf data switch to Epic. To ensure accuracy in patient data flow, Epic contains a look-up table that links the ID of the laptop with the ID of the Neuron. Since going live, this wireless system has performed flawlessly.

This demonstrates the successful use of modern devices with wireless capability in optimal patient care and clinical documentation.