

Premature infants safer because of new feeding system

CASE STUDY



Premier, members and contracted suppliers collaborate to drive change

When neonatal professionals working in Premier member hospitals needed a safer feeding method for premature babies, they called on Premier to help lead the way with its contracted suppliers.

“Safety is at the forefront for us,” said Debbie Campbell, RN, clinical manager of the pediatric ICU at Kosair Children’s Hospital. “Premier helped us to effect a change that will bring about better safety.”

Today, thanks to a collaboration among Premier, member hospitals and two suppliers, tiny infants receiving nutrition through feeding tubes face far less danger from the risk of IV lines and feeding tubes being accidentally connected.

VIASYS MedSystems of Wheeling, Ill., a subsidiary of VIASYS Healthcare Inc. and Baxa Corporation of Englewood, Colo., have worked together to develop enteral-only tubing and syringes for feeding neonates and pediatric patients. These devices contain special connections that are incompatible with the standard Luer connections on IV lines. The new products are the VIASYS CORFLO® Anti-IV Feeding System and the Baxa Exacta-Med Anti-IV Enteral Syringes.

The new feeding system is the result of actions in 2003 of several Premier member committees – Women and Children’s Committee (formerly Pediatric Med/Surg), Clinical Nutrition Subcommittee, Nursing Committee – and Premier’s Safety Institute.

“Patient safety is an interdisciplinary concern in the hospital, and this project shows how many different groups can work together to guide the development of safer patient products,” said Debby Kasper, RD, LD, manager of clinical

nutrition for Premier. “We brought numerous disciplines together to present a unified message to the manufacturers. And, we achieved results.”

Debbie Campbell, RN, clinical manager of the pediatric ICU at Kosair Children’s Hospital, a part of Norton Healthcare in Louisville, KY, is a committee member.

“Safety is at the forefront for us,” said Campbell. “Premier helped us to effect a change that will bring about better safety.” The danger involved a situation where feeding tubes and syringes for premature infants could be connected inadvertently to IV lines, causing nutritional fluids to enter an infant’s bloodstream, potentially resulting in brain damage or death.

“Our member hospitals saw a need for neonatal ICU patients that was not being met by current offerings,” said Cathie Gosnell of Premier’s Safety Institute. “We were able to bring our members together to present their concerns directly with suppliers.”

As technology has made it possible for greater numbers of premature babies to survive outside the womb earlier in development, the tubing misconnection issue has become more visible. NICU patients generally

weigh between 500 grams (1 lb., 2 oz.) and 2,200 grams (4 lbs., 14 oz.). Many of these premature infants are fed through enteral (oral) feeding tubes.

“Physicians discovered that these tiny patients responded positively to small amounts of liquid fed directly to their stomachs at frequent intervals, in a controlled manner,” said Katie Calabrese, a neonatal nurse practitioner who is also a product manager at Baxa Corporation.

However, there were no products made exclusively for feeding these small patients, so nurses and physicians modified existing equipment, such as IV syringes and tubing, to suit their needs. While they often used orange tags to distinguish feeding lines from IV lines, the universal Luer connection on IV lines was still being used for feeding lines and syringes. Mistakes could, and did, occur.

“Different types of tubing and connections are easily confused,” said Gosnell. “If a tubing connection can fit access ports for both IVs and enteral feeding, the risk of an error increases. Tubing is frequently disconnected and reconnected, creating additional opportunity for accidents in a makeshift environment.”

At least six deaths among infants and adults have been attributed to tubing

misconnections, according to a JCAHO Alert issued in 2006, and countless other near-misses are likely to have occurred. As more babies are fed more often this way, the greater the opportunity for mistakes to happen. “Even a near-miss is very frightening,” said Calabrese. “These fragile infants have so little reserve that the smallest error can be devastating.”

At the time of the 2003 meeting, VIASYS MedSystems was the only supplier to accept the challenge from Premier members. The company responded with an innovative solution designed to prevent inadvertent IV and feeding line connections. VIASYS developed safe, non-Luer connections for feeding tubes and then teamed with Baxa Corporation to complete the system with dedicated non-Luer enteral syringe tips.

“Our goal is to eliminate the risk altogether,” said Calabrese. “The only way to do that is to completely remove the Luer applications from the enteral technology. Now we can provide a system that is oral from start to finish.”

The products were tested and refined in Premier member hospitals during clinical trials. Samples were offered to all Premier hospitals at no cost.

The current Premier contracts allow member hospitals to purchase the Baxa and VIASYS products at discount.

“We are using the new products at Kosair Children’s Hospital,” said Campbell. “The new system makes it impossible to give a feeding through an IV line. We definitely have a safer system.”

Campbell also reports that the new system is easier to use than the old, makeshift system. Components are made to work together, and the orange colors give visual cues that the system is connected correctly.

“Premier is a leader in safer medicine and a clinical partner in improving outcomes with its alliance members,” said Patti Foreman-Lindley, VIASYS MedSystems Corporate Accounts Manager. “Premier is the only GPO, to my knowledge, that has been proactive on this subject. As a result, we have developed a complete enteral feeding system designed to reduce human error and save babies’ lives.”

Calabrese agrees that Premier and its member hospitals created the catalyst for change. “We had been working on developing a safer system for a while,

but had not gotten good responses from other manufacturers. It required Premier members saying, ‘we need this,’ to move it forward. These changes can have a direct impact on whether a child goes home.”

The new feeding system is one example of how Premier and its members have been able to band together and urge manufacturers to develop a product that meets their needs and potentially saves lives. “That’s a part of the value of being a member of Premier,” said Campbell. “We were able to use some of our clout, if you will, to tell the vendors to give us a safer product.”

In addition, Premier has been proactive in raising awareness of the tubing misconnection hazard. Both the Nutrition Committee and the Women and Children’s Committee have addressed the issue in their meetings.

“Safety is so important,” said Campbell. “When I told our organization that this product would make our NICU safer for babies, they were happy to pursue it. It is a wonderful feeling to see a problem and know you can be part of the solution.”

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About VIASYS MedSystems

VIASYS MedSystems provides a complete range of enteral access devices to fit specific clinical needs in the hospital, nursing home, and home care markets.

VIASYS Healthcare Inc. is a global, research-based medical technology company focused on respiratory, neurology, medical disposable and orthopedic products. VIASYS products are marketed under well-recognized trademarks, including, among others, AVEA®, BEAR®, BIRD®, CORFLO®, CORPAK®, CORTRAK®, EME®, GRASON-STADLER®, JAEGER™, LYRA®, MEDELEC®, MICROGAS®, NAVIGATOR®, NICOLET®, NicoletOne™, PULMONETIC™, SENSORMEDICS®, TECA®, TECOMET™, VELA® and VMAX®. VIASYS is headquartered in Conshohocken, PA, and its businesses are conducted through its Respiratory Care, NeuroCare, MedSystems and Orthopedics business units. More information can be found at <http://www.viasyshealthcare.com>.

About Baxa Corporation

Baxa Corporation is a medical device manufacturer that provides innovative, solution-based technologies for fluid handling and delivery. Its systems and devices promote the safe and efficient preparation, handling, packaging and administration of fluid medication. The Baxa Exacta-Med Enteral syringes are available individually packaged in 20, 35 and 60 mL sizes.

About Premier, 2006 Malcolm Baldrige National Quality Award recipient

Serving 1,700 hospitals and more than 45,000 other healthcare sites, Premier Inc. is the largest healthcare alliance in the United States dedicated to improving patient outcomes while safely reducing the cost of care. Owned by not-for-profit hospitals, Premier operates the nation's largest healthcare purchasing network, the most comprehensive repository of hospital clinical and financial information and one of the largest policy-holder owned, hospital professional liability risk-retention groups in healthcare. Premier is headquartered in San Diego with offices in Charlotte, N.C. and Washington.