



CASE STUDY: IMPROVED PATIENT SAFETY AND SIGNIFICANT SAVINGS

Clarian Health Partners Achieve Results With
Abacus® System



OVERVIEW

Clarian Health Partners is comprised of Methodist Hospital, University Hospital and Riley Hospital for Children. The medical staffs at these three hospitals are dedicated to saving lives, and while doing so they have earned national recognition, including the distinction of being featured in an article in *US News and World Report*.

Clarian Health Partners has its roots in Indianapolis, Indiana, dating back to 1908. The system has long been a favorite of patients who've benefited from their Level 1 trauma center and surgical expertise, which includes cardiovascular, human motion and neuroscience specialties.

THE CHALLENGE

In 2004, one of the biggest challenges facing pharmacists at Clarian Health Partners was that total parenteral nutrition (TPN) is a specialized field that requires a high level of uncommon expertise. Most pharmacists and technicians come out of pharmacy school with minimal knowledge in clinical nutrition, so Clarian Health Partners wanted to put reliable safety measures in place to ensure that their pharmacies would not make mistakes that could harm patients.

As a multi-hospital group, Clarian Health Partners handles everything from physical care to a huge neonatal population and young children with special medical needs. Creating home-grown TPN warning limits to cover these diverse patient populations was a significant challenge. However, meeting this challenge was crucial to assuring the highest level of clinical therapy and safety for their patients.

THE DISCOVERY PROCESS

Prior to implementing Baxa Corporation's Abacus System, Clarian Health Partners had been using a competitive system for order entry and calculation, which they found to be deficient in terms of its warning, limits capabilities. Knowing this component of their TPN program was essential; they decided to explore other options.

Clarian Health Partners was using several other Baxa products at the time, especially with their pediatric population. So they decided to take a closer look at the company's Abacus TPN Order Entry and Calculation Software.

"When we began our discovery process, we had several people from Baxa come in to demonstrate the Abacus System," notes Mark Barricklow, Clinical Staff Pharmacist, Clarian Health Partners. "This spiked our interest, and Baxa actually arranged for our team to visit other facilities to see the system in use. We were able to ask questions and gather feedback from professionals who had hands-on experience with the system. This was a vital element in our decision-making process."

During their research, Clarian Health Partners discovered that the Abacus program's built-in warning features provided added value for TPN ordering. During TPN order entry, technicians can lose track of ingredient concentrations due to volume calculations or differences in ordering patterns. Therefore, the pharmacies felt it would be good to have a system that establishes flags that warn when a concentration issue could make a particular dose incompatible with a specific patient's profile.

THE SOLUTION

After thorough consideration and analysis, Clarian Health Partners chose the Abacus Software to meet their needs. One reason was the ability to use the system from multiple facilities and send TPNs to a compounder in one central location.

In addition to the warning limits features, which conformed to their already existing warning flags, they also recognized the barcode component designed into Abacus as an important benefit that addressed a key safety issue. Prior to using a bar code for entering and tracking orders, Clarian Health Partners had to have additional checks and balances in place to ensure patient safety.

“We are very happy with the Abacus System warning limits. We couldn't do our jobs without it.” — Mark Barricklow, Clinical Staff Pharmacist, Clarian Health Partners

When Clarian chose Abacus for their order entry and calculation functions, they discovered they would be able to replace these 'extra' checks and balances with the system's barcode capability. This simplified their work processes and served as a parallel benefit to the warning limits.

IMPLEMENTATION

Other than the typical trial and error with the addition of a new system, Clarian Health Partners reports that implementing Abacus and its warning limits system went very smoothly, due to the technical support provided by Baxa Corporation. It took some time for Clarian to operationalize the warning limits, but only because they were implementing them on three campuses. Central to this issue was the process of deciding where to set their limits, and what their facility's best practices *should be* so that their flags could be set properly. This trial and error period is normal because the institutional warning limits Baxa provides are meant to be adjusted to meet each customer's specific clinical needs.

“Baxa was great at giving our pharmacists confidence in the important role they play in executing the warning limits system,” states Medication Safety Coordinator, Brandi Hartnagel. ***“They were very good at training our team about how the Abacus System ties into our entire TPN process. So our pharmacists felt like they were a vital part of the entire implementation process.”***

The Baxa team spent a week with Clarian Health Partners during the initial implementation of Abacus and the Exacta-Mix™ 2400 Automated Compounder. The Abacus warning limits program setup was executed on the phone during a timeframe of four to eight hours that occurred in segments over a period of several days.

THE RESULTS

Clarian Health Partners believes Abacus has greatly increased patient safety because they now have a thorough and solid process in place for warning limits. Each year their team of specialists meets to review best practices and to make sure that within their multiple institutions they are giving the best kind of therapy that the clinical literature supports.

“Once we implemented the Abacus System and became comfortable with it, we found that it saved us a lot of time,” says Mark Barricklow. “Equally important, centralizing TPN production to one location resulted in a savings of about \$40,000, and freed up pharmacist and technician time for other activities. We have also been able to provide better therapy because our systems have become more standardized.”

Brandi Hartnagel summed up her experience with the Abacus warning limits by saying, “We have an excellent system that will alert us to mistakes caused by order-entry or keystroke errors – and also mistakes we can anticipate, especially with practitioners who are not very experienced with ordering TPN for patients. And of course, this speaks directly to the challenge we faced initially.”

SUMMARY

With the implementation of the Abacus System, Clarian Health Partners has achieved results that approximate what health systems have experienced with the program nationwide. By establishing appropriate warning limits with the Abacus TPN Order Entry and Calculation Software, Baxa customers are able to improve patient safety and increase system efficiencies, with the potential of experiencing significant savings for their organization.