UK HealthCare

LEXINGTON, KY

Combining timely clinical and financial data in EPSi for better results

UK HealthCare uses EPSi™ to combine clinical and financial data for more complete and accurate decision support information. Integrated financial management helped UK HealthCare measure outcomes from the modification of its transfusion program, saving more than $2.4 million in direct costs over five years. It also reduced unnecessary lab testing in its Pediatric Intensive Care Units (PICU), while maintaining high-quality care.

UK HealthCare is the brand name for the University of Kentucky's healthcare system. UK HealthCare represents the hospitals, clinics, outreach locations and patient care services and activities of the university's six health profession colleges (Medicine, Nursing, Health Sciences, Public Health, Dentistry and Pharmacy). It is one of the fastest-growing academic medical centers in the United States.

The organization has a long history with decision support, dating back more than 20 years. Integrated performance management is fundamental to many of the decisions at UK HealthCare, according to Associate Director of Decision Support Todd Hjorth, MPA. "Having a tool like EPSi gives us the data and reports we need," he said. "It's incredibly pivotal when trying to control something like length of stay, for example."

> "EPSi helped us show the direct cost savings over five years was more than $2.4 million...If we use activity-based costing, the savings would have more than doubled that amount."
>
> **Todd Hjorth, MPA,** *Associate Director of Decision Support*

CLIENT PROFILE:

Academic medical center and regional referral center

757 beds

80+ specialized clinics

35,180 inpatient discharges annually

91,146 emergency visits annually

428,582 outpatient visits annually

2,200+ practitioners

1,700+ nurses

EPSi SOLUTIONS:

- Budget Manager
- Cost Manager
- Product Line Analyst
- Productivity Manager
- Strategic Product Budgeting

> "EPSi helped us find simple, minimal to no-cost approaches to decrease the numbers of labs ordered for PICU patients…with no negative impact on PICU length of stay or the observed-expected mortality ratio by sending fewer labs."
>
> **Todd Hjorth, MPA,** *Associate Director of Decision Support*

Managing measures to cope with high length of stay

UK HealthCare went live with EPSi in July 2013, and it uses EPSi to help manage a vast number of clinical and financial measures, such as length of stay.

"We're operating at a very high occupancy rate, at about 89%," Hjorth said. "Releasing patients as soon as they're ready is really important to make sure there are available beds for new patients."

UK Healthcare uses the University Healthcare Consortium (UHC) benchmarks as its key metric for expected length of stay. "We compared our length of stay data with the UHC expectation and found some challenges when discharging patients to rehab facilities," Hjorth said.

With EPSi, UK HealthCare is able to easily load UHC benchmarks and compare them with actual patient experience to assist with analysis and resulting action plans. This is one example of key uses of analytic information that EPSi provides the organization.

Advanced reporting gives leadership valuable insights

EPSi provides much of the data for UK HealthCare executive reporting. "The C-suite receives dashboards every day and most of that information comes from EPSi," Hjorth said.

Leadership counted on information from EPSi to help navigate complex challenges, such as the transition from ICD-9 to ICD-10 codes in October 2015. Unlike many healthcare organizations that didn't know how the coding change would affect net revenue, UK HealthCare was well prepared.

Because EPSi is compatible with ICD-10 and has been for some time, UK HealthCare has been able to use the solution to estimate the net revenue implications. "We dual coded all of our inpatients and a good portion of our outpatients before the ICD-10 changeover," Hjorth said. "I reported weekly on the ICD-10 impact on our Case Mix Index (CMI) through EPSi, which is the only solution in our organization that could store both code sets."

Hjorth continued, "We knew that with ICD-10, we could expect about a 2- to 3% increase in our CMI. I was able to give senior leadership peace of mind that we wouldn't see detriment to our net revenue as a result of the ICD-10 regulatory requirement."

Implementing policy change for blood transfusion program

When a patient has abnormally low hemoglobin (Hb) levels, it's common practice for clinicians to order RBC transfusions to help carry oxygen to all parts of the body. However, the threshold or "trigger" for when such transfusions are necessary has changed over the last several decades.

OUTCOMES:

- **Reduced transfusion thresholds** to decrease unnecessary use of red blood cell (RBC) units and reduce hospital costs: **Saved 11,575 RBC units over five years**
  - Reduced direct costs by $2.4 million over five years
  - Estimated activity-related cost savings of more than $5 million over three years
- **Reduced unnecessary lab testing** in the PICU: Average monthly labs per patient day dropped from **12.51 to 8.29 (33%) within two years.**
  - Average monthly lab charges per patient day dropped from $1,619 to $1,395 (14%) within two years.

UK HealthCare used evidence-based guidance to evaluate its policy on RBC triggers and determined it could safely lower its transfusion trigger from 8 g/dL Hb to 7 g/dL Hb. The National Institutes of Health (NIH) suggested an HB 7 trigger policy in 1988; however, most institutions implemented an HB 8 trigger policy as a compromise and UK HealthCare had done so as well. It also found that using one unit of RBCs could be as effective as the routine two-unit transfusion. "Why give two units when one will do?" Hjorth asked.

In 2010, UK HealthCare adopted this new policy and a transfusion committee developed an educational program for physicians, nurses and blood bank staff to explain the change and the rationale. Physicians practicing outside of the new trigger limits or ordering the previously routine two-unit RBC transfusion had to justify the medical necessity. All of the data is captured within EPSi, which receives the information automatically from the billing system.

"One of the clinicians involved with the RBC transfusions needed information down to the charge level and EPSi is the only system that combines the encounter with charge-level data," Hjorth said. "We could give them specific units billed, per day, per patient."

Reducing unnecessary PICU lab tests

To help improve quality and safety of patient care, the PICU collaborative practice workgroup at Kentucky Children's Hospital wanted to reduce unnecessary lab tests. These tests can cause pain, anemia, infection and unnecessary cost and treatment for the youngest of patients.

UK HealthCare first analyzed monthly PICU lab volume and charge data, adjusting numbers for daily patient volume and case mix index. After collecting baseline data for nine months, UK HealthCare implemented simple interventions to decrease unnecessary labs. For example, caregivers started including the anticipated lab schedule on the daily plan written on a dry erase board in the patient room.

They also minimized the number of recurring labs without an end date. "EPSi provides information about the encounter and charge-level detail, and clinicians have been able to change order sets for unnecessary tests," Hjorth said. "For example, if it takes a week to get results from a lab test, there's no sense in having a recurring order for that test every day."

More accurate contract modeling with EPSi Clinical Analysis

UK HealthCare uses EPSi to improve contract modeling for transplant cases, which tend to be very costly procedures with complex contractual arrangements. Contracts often pay a fixed case rate for each inpatient transplant along with the next few months of related inpatient or outpatient follow-up visits. Because each visit isn't separately reimbursed, there was a need to model these arrangements based on the entire episode and not specific to each encounter or visit.

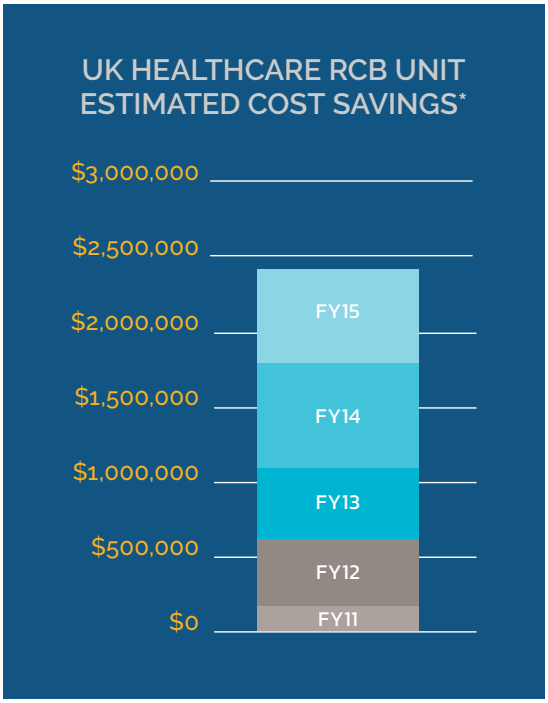
UK HealthCare uses EPSi's Clinical Analysis code to accurately identify and model these patient populations more accurately.

"We've used EPSi Clinical Analysis to flag transplant encounters for contract calculations," Hjorth said. "Because we can use a more episodic-based analysis, we have a much more accurate view of each service line."

Finding simple, no-cost approaches to saving millions

Using EPSi for integrated performance management has helped UK HealthCare achieve good clinical and financial results. For example, as a result of UK HealthCare's efforts to modify the trigger levels in its blood transfusion program and move from a two-unit transfusion to a one-unit protocol, it saved 11,575 RBC units and avoided unnecessary transfusions over five years, when compared to a 2009 baseline.

"EPSi helped us show the direct cost savings over five years was more than $2.4 million," Hjorth said. "If we use activity-based costing, the savings would have more than doubled that amount."



* Based on $210 per Red Blood Cell (RBC) Unit saved compared to 2009 baseline levels

It also helped reduce the number of lab tests in UK HealthCare's PICU. The monthly average of labs per patient day was 12.51, but that figure dropped to 8.29 within two years of implementing changes to reduce unnecessary tests. Pre-intervention average monthly lab charges per patient day were $1,619 and that number dropped to $1,395.

"EPSi helped us find simple, minimal to no-cost approaches to decrease the numbers of labs ordered for PICU patients," Hjorth said. "It's important to note that there was no negative impact on PICU length of stay or the observed-expected mortality ratio by sending fewer labs."

Hjorth said the decision support team continues to work closely with UK HealthCare clinicians to identify and address other complex questions requiring both clinical and financial data. "We've been very happy with EPSi," he said. "The staff is great to work with. Their responsiveness has been really quite great."

EPSi™

www.epsi.io

An Allscripts company

Chesterfield, MO

San Ramon, CA