

## Reference Case: Significant cost savings for anesthetic gases

Hospital-wide savings of over \$100,000 per year for anesthetic gases in reference to 21 machines, significant time savings per patient, and device downtimes that are close to zero. The anesthesiologists at the Anesthesia Department at Lexington Medical Center in Columbia, South Carolina, are very satisfied with their 40 Dräger Apollo anesthesia machines.



David Arrington, Lexington Medical Center Pharmacy Director, isn't an individual that is easily impressed. Mr. Arrington has a great deal of experience in the pharmaceutical industry. Since 2007, he has managed the hospital pharmacy at Lexington Medical Center in Columbia, South Carolina. Although David Arrington is not an anesthesiologist, he applauds the work of his colleagues in the anesthesiology department.

Timothy Flint, Director of Anesthesia, and his team have succeeded in significantly reducing the cost of anesthetic gases over the last several years by using the Dräger Apollo and its Low Flow Wizard. By using the Apollo's unique Low Flow Wizard, the costs for anesthetic gases were reduced by 25 percent.

„This is a major achievement,“ states David Arrington. Additionally, anesthesia drug savings have numerous positive economic impacts to the hospital, because anesthetic gases account for up to ten percent of the overall pharmaceutical costs at Lexington Medical Center: a sum equal to 18 million dollars per year. Because anesthetic gases are very expensive, it is all that much more impressive that Timothy Flint has achieved overwhelmingly positive results with help from Dräger, says David Arrington. This development allowed Lexington Medical Center to reduce its pharmaceutical budget in 2010 and 2011, despite growth and difficult general conditions. David Arrington is well aware that pharmaceutical costs are becoming increasingly important for hospital operations.

„Over the last several years, pharmaceutical purchasing in hospitals has transformed from paper-and-pencil methods to a business driven by technology and computers, and the Dräger Apollo is part of this process.“, says David Arrington

### REDUCING COSTS IS VERY IMPORTANT

The Lexington Medical Center conducts more than 21,000 operations in Columbia, South Carolina. One of the major focuses of the 414-bed emergency hospital is on surgeries. The 22 operating rooms are a strategic part of the growth plan for the hospital, and contribute to the hospital's firm financial standing, says Harriet Horton, Vice President of Operations. Despite the positive economic situation, cost reductions are important. And because the operating rooms in Lexington are now the economic pillars of the hospital, reducing expenditures in this area – and anesthesiology, in particular – is especially important. That's why Harriet Horton also praises the work of Timothy Flint and the Dräger equipment:

At your side in





With the Low Flow Wizard, the patient receives exactly the amount of anesthetic gas he needs.

„The new Dräger machines feature a software platform that allows our CRNAs and anesthesiologists to adjust the flow rate of the anesthetic, which led to a cost savings of more than \$100,000 in the first year in reference to 21 machines.“ Harriet Horton continues: „The fact that the anesthesiology department had the opportunity to implement this was a wonderful development for the hospital.“

#### APOLLO WITH „CLEAR ADVANTAGES“

Dräger's anesthesia systems have been present in the operating rooms of the Lexington Medical Center for many years. When the time came to replace the existing infrastructure in 2006, a selection process was implemented. The anesthesia provider recognized „clear advantages“ in Dräger Apollo compared to other manufacturers, reports Dr Charles Tim Campbell, anesthesiologist and colleague of Timothy Flint.

„We saw the Apollo as advanced technology,“ says the physician. The system allowed the hospital to care for a wide range of patients – from young pediatric patients to geriatric patients.

Charles Tim Campbell states: „The Apollo machine is simply much more advanced than other machines.“

#### 40 APOLLO DEVICES IN USE

Today, 22 Operating rooms, ten additional anesthetic locations, such as urology the catheter laboratory or the gynecology department and eight rooms for outpatient surgery, are equipped with the Dräger Apollo workstation. For anesthesia, the hospital works exclusively with Dräger. This collaboration offers clear advantages from the hospital's perspective:

The ten anesthesiologists and over 50 CRNAs, reports Timothy Flint, do not have to decide which room to bring a patient to. „Surgery can be conducted anywhere because the Apollo can be set to meet a universal patient population.“

Furthermore, clinicians do not need to get used to a different device in every OR; they find themselves in a familiar work environment wherever they go. Apollo also helps to shorten processes in the OR. Performing self tests on previous anesthesia machines used to require the full attention of the personnel conducting the test, says Campbell, but the Apollo can conduct a self-test, allowing the staff to use this time to focus on the patient.

Dr Charles Tim Campbell: „Being able to save a few minutes in patient care, especially when you treat 21,000 cases per year, saves time and allows the surgeon to treat more cases, bringing a clear advantage for everyone involved.“



Timothy Flint, CRNA and Dr Charles Tim Campbell at Lexington Medical Center

### LOW FLOW WIZARD LOWERS COSTS

According to the anesthesia providers at Lexington, one of the Apollo's key benefits is the Low Flow Wizard. The assistance function and its traffic light system optimally support the use of the minimal flow procedure. With the minimal flow technique, the patient will only be provided with the precise amount of anesthetic gas he or she needs. Minimal anesthetic gas will be scavenged off and wasted. With the Apollo's low flow system the patient's temperature can be maintained within the semi-closed system. Dr Charles Tim Campbell: „The use of the low flow procedure has several advantages, and the Low Flow Wizard is very helpful when using this method. It decreases the need to determine the exact settings we need to make in order to use the low flow method to our advantage.“

The Apollo devices were already in use at Lexington when the Low Flow Wizard became the focus of attention following an orientation by Dräger. Today, all anesthesia providers at Lexington Medical Center use the Apollo's Low Flow Wizard during the main phase of the anesthetic, reports Timothy Flint.

The result: the hospital requires less anesthetic gas. This effect was proven in a study conducted by the anesthesiologists at the Lexington Medical Center: the hospital has saved an average of \$8,800 in anesthesia pharmaceutical costs in reference to 21 Apollo devices every month that the Low Flow Wizard has been used – a total savings of more than \$100,000 per year.



Dräger Apollo supports a significant reduction in the amortization period.

### THE QUALITY OF TREATMENT INCREASES

According to Flint, these savings are not achieved by sacrificing quality; they actually improve the medical services. With the Low Flow Wizard, the patient receives exactly the amount of anesthetic gas he needs. Thanks to the large cost margins, Flint and his colleagues are now free to select which anesthetic is the optimal choice for a particular patient.

The patient wakes up more quickly, the recovery is faster, the patient can leave the hospital sooner, and the OR is used more efficiently. Timothy Flint: „More patient throughput, more patient satisfaction.“

The readily understandable visual display of the gas flow in the Low Flow Wizard also helps the user to quickly adjust the required settings during everyday use. Furthermore, digital output of fresh gas flows is an important requirement for clinicians at Lexington when deciding to connect the Apollo devices to additional hospital systems.

At Lexington, mid-term plans are in place to automatically incorporate anesthesia data into electronic patient records.

Another benefit applies to the environment. Lexington Medical Center takes sustainability very seriously. Efforts are made to be one of the most environmentally friendly hospitals in the United States. The topics of recycling and waste prevention are at the top of the agenda and, with lower emissions of climate-damaging anesthetic gases, the hospital is making a significant contribution to climate protection, states Charles Tim Campbell.

### DEVICE DOWNTIMES ARE PROOF TO DRÄGER'S HIGH QUALITY STANDARDS

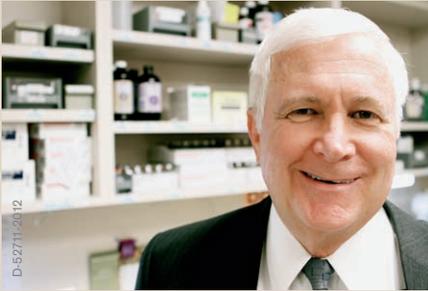
For Timothy Flint, Apollo's downtimes are proof of Dräger's high quality standards. Downtime for the Apollo was „near zero“ over the last several years. When an irregularity occurred on any of the machines, the Dräger trained Bio-Medical department was on site and quick to respond and resolve.

Flint: „We haven't had to cancel any cases, simply because the machine is extremely well designed. In short, the Apollo machine is one step ahead of the market compared to machines I have used in the last several years. The Dräger machine makes it very easy for us to obtain the precision we need to administer anesthesia. It is user friendly, which is a huge advantage, and supports us in the tasks we need to complete in our world every day.“

When it comes to costs, the Apollo receives a 5-star rating from the Lexington team. Although costs play an important role in investment decisions in the hospital, explains Timothy Flint, they are not the only factor. Lexington Medical Center provides itself as „one of the best hospitals on quality and offers its physicians the best technology for patient care.“ This is why the hospital team takes a holistic approach when it comes to proposals and emphasizes the quality of products. Timothy Flint feels that this calculation has paid off well with the Apollo. Sometimes, quality costs more but then you know you are operating within a higher level of patient safety – the investment pays off in the end with more quality patient care across the entire institution.



Anesthesia drug savings have numerous positive economic impacts to the hospital.



David Arrington, Director of the pharmaceutical department

**David Arrington, Director of the pharmaceutical department**, needs to operate on a smaller budget despite the increasing number of cases and higher prices. An active contribution to cost reductions based on technical innovations was just what he needed. David Arrington emphasizes that

pharmaceutical costs increasingly include technological aspects, which is why he commends the approach of the anesthesiologists in his hospital, who have been able to reduce costs with the intelligent implementation of a device: „Tim and his team have done a great job.“

**Timothy Flint, Director of Anesthesia**, supported the purchase of the Dräger Apollo in 2006. „Apollo is one step ahead of the market compared to many machines I have used over the last several years. I find the Apollo anesthesia system and the technology it offers us to be simply remarkable.“ In a study conducted in his hospital, Timothy Flint determined that the use of the low procedure with the Apollo's Low Flow Wizard led to an anesthetic gas savings of an average of \$8,800 dollars per month in reference to 21 Apollo devices. This allowed Timothy Flint to reduce his anesthetic expenses by 25 percent. Dräger Apollo, according to Flint, supports a significant reduction in amortization period and acquisition cost yielding decreased .

**Dr Charles Tim Campbell, Anesthesiologist**, values the medical advantages of Dräger Apollo. The Low Flow Wizard helps maintain the patient's temperature. The patient wakes up more quickly, the recovery is faster, the patient can leave the hospital sooner, and the OR is used more efficiently. Dr Charles Tim Campbell is also impressed by the device's reliability: „The reliability of the Apollo System is exceptional. We haven't had problems with it. It is a well built machine that constantly delivers what we expect from it.“

**Harriet Horton, Vice President of Operations**, underscores the importance of lowering costs in surgery in order to remain financially successful during the era of healthcare reform in the United States. That's why she values devices such as the Dräger Apollo, which not only deliver medical quality, but also contributes to reducing costs: „The Dräger anesthesia machines feature a platform that allows Timothy Flint and his team to adjust the flow rate of the anesthetic, and has provided us with a savings of over \$100,000 in pharmaceutical costs in the first year. The fact the Anesthesia department had the opportunity to implement this technology was a wonderful development for the hospital.“



Timothy Flint, CRNA, Director of Anesthesia



Dr Charles Tim Campbell, Anesthesiologist



Harriet Horton, Vice President of Operations



### Lexington Medical Center

The Lexington Medical Center of South Carolina is a large, 414-bed general hospital located in Columbia, South Carolina. Its departments cover nearly all medical fields in Lexington. With 22 operating rooms in the main building and six branches throughout the state, surgery plays a key role in Lexington Medical Center operations – including from an economic perspective. The hospital is growing – the opening of a cardiovascular surgery department is planned for 2012 and the maternity clinic will soon be expanded.

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