**Supplemental Digital Content 2**

E-mail Group Notification about the Change from Soda Lime to Litholyme

The following email was distributed to all clinical anesthesia staff on May 6, 2014, informing them of the change to Litholyme® and the change in the sevoflurane maintenance fresh gas flow recommendations

Date: 5/16/14 9:15 AM

Subject: Litholyme

As you all hopefully know by now, we recently changed our CO2 absorbent from Sodalime to Litholyme. Litholyme has several advantages over Sodalime: increased CO2 absorbing capacity; permanent color change when exhausted (no recharging); no carbon monoxide generation with any of the inhaled anesthetics; no Compound A generation with Sevoflurane.

Because Compound A is not generated during the interaction of Litholyme and Sevoflurane, we can now safely maintain low fresh gas flow rates ***during the maintenance period of inhalation anesthesia*** when Sevoflurane is used. This should result is a significant cost savings for the use of Sevoflurane which typically costs $5-10/ hour, depending of the vaporizer setting and the FGF rate. You can use higher FGF rates during TIVA since no inhalation agents are being used.

Starting next Monday, May 5th we ask that you maintain a FGF rate of 1L/minute ***during the maintenance phase of inhalation anesthesia*** when using Sevoflurane. We realize that higher flows may be needed when deepening the anesthetic but we do ask that you reduce your FGF rate to 1L/minute when you reach your target anesthetic level. We are hoping that we will see a reduction in our inhalation drug expenditures over time as we all adapt to this change in practice.

One consequence of using lower FGF rates during cases is that more of the exhaled gas containing CO2 will be passing through the absorber so the Litholyme will become exhausted more quickly because it is absorbing more CO2. Deciding when to change the absorbent is a little tricky. Changing it too early will incur an unnecessary cost of using more Litholyme. Changing it too late will incur an unnecessary cost of having to increase FGF rates to keep the inspired CO2 reasonable level (<5 mm Hg). For most operating rooms, changing the Litholyme when the inspired CO2 reaches 5 mm Hg is fine. For the laparoscopic rooms, mostly in the Pavilion area, it is probably makes more sense to change the Litholyme when the inspired CO2 reaches 3 mm Hg. We are monitoring this via our AIMS to see if we can identify the best way to determine when to change the absorbent.

It is best to change the absorbent between cases so that a leak test can be performed on the anesthesia machine after the canister is changed. If you have to change the absorbent during a case, please perform a manual pressure test on the anesthesia circuit after you change the absorbent. You perform this be closing the APL valve to 30 cm H2O, occluding the end of the circuit with your thumb and pressing the flush button until the circuit pressure is 30 cm H2O. If the circuit pressure remains at 30, there is no leak. If the circuit pressure decreases rapidly, there is a leak at the absorbent canister. This should be fixed by reinstalling the absorbent canister. The leak test should then be repeated to confirm there is no leak. Remember that the CO2 absorber is not in the ventilator circuit when the Apollo or Tiro delivers a breath so you may not notice the leak from an improperly installed canister until you attempt to hand ventilate the patient with the breathing bag.