Making the Most of Your Medical Equipment Fleet in Current Economic Conditions

John Schafer, MBA, CHTM

Renovo Solutions

Hunt Regional

Greenville, TX

What do we have to work with?

- 360,000 sq ft hospital
- 187 beds
- 5 urgent care centers
- 4,012 equipment count

• ICU	16 beds
• ER	21 rooms 6 hall beds 5 hold beds
• NICU	Level III, 18 warmers
• L&D	10 rooms

What do we have to work with?

- We have the normal advanced modalities-

- DaVinci Robotic assisted surgery
- Stryker Mako Robotic arm surgery
- Cath lab
- Two imaging centers
- CT, MRI, Nucmed

Rachel Chennault- ISE
Bradely Wong- Lead Tech
Thomas Aguirre- Tech II
John Schafer- Account Manager

So what's the problem?

- To make our days even more interesting, we have almost zero redundancy in our medical equipment inventory. We can't just grab another one off of the shelf if something breaks. There isn't another one, so we have to figure out what to do to get this equipment back online right now.

Current economic conditions

- Economic conditions in the United States right now are unsettled. Healthcare organizations, with a few exceptions, are operating with far less funding for capital purchases this year than was originally planned.

- This is where things can get really challenging for us in the Health Technology Management profession. Medical equipment does not improve with age. Parts cost more, service contracts cost more, you must have a purchase order number before OEMs will help you with tech support to make their own machine function again. Technical expertise is leaving the field due to the aging of our community with many retiring. Parts and accessories are becoming scarce for anything more than 8 years old.
- So with this in mind, I want to share some of my budget stretching methods of making your equipment as good as it can be since you may be owning it longer than you thought.

Imaging

• Some of the major considerations for how much effort and money to put into these units include:

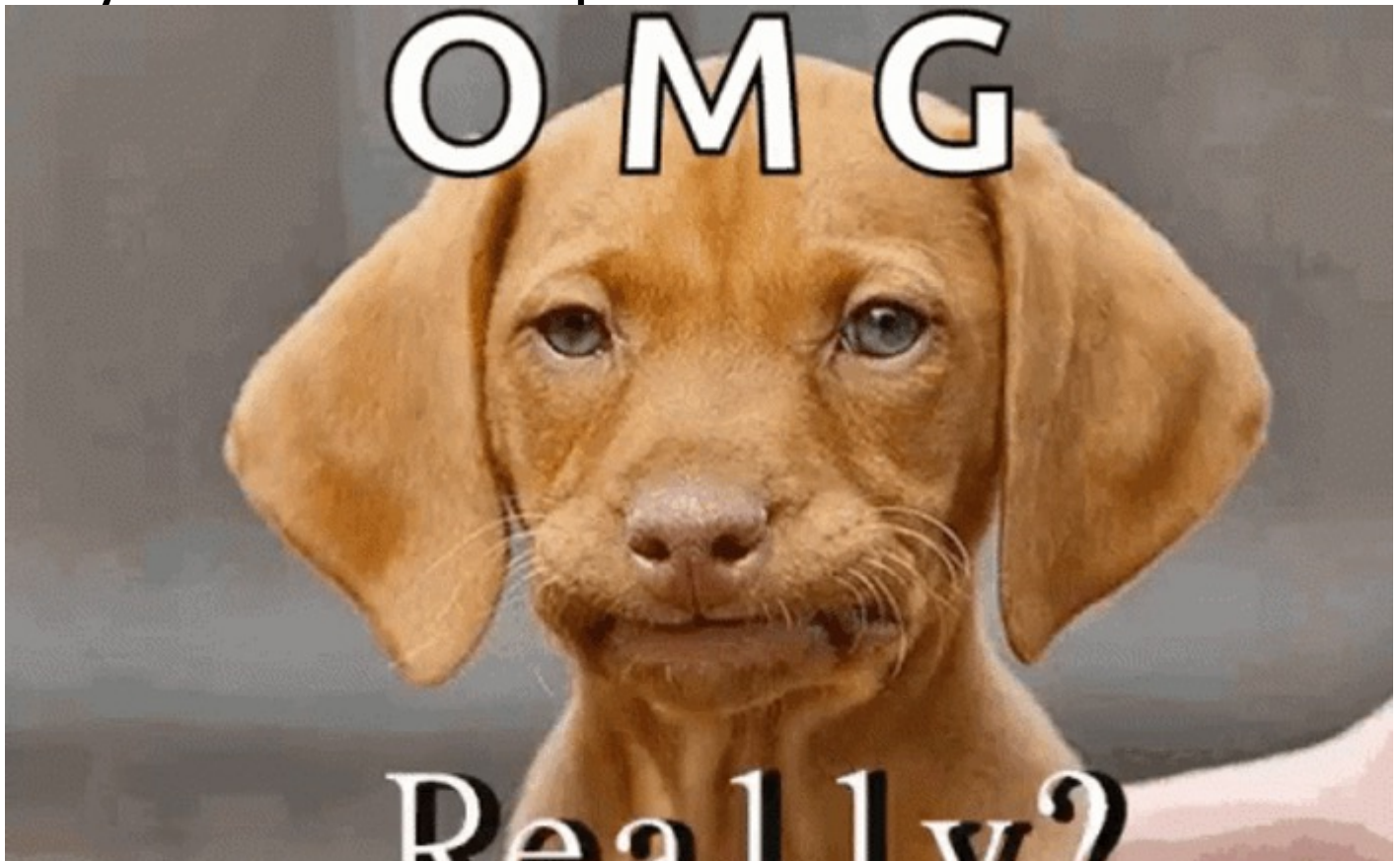
- How many years does this platform have until the end of OEM support? Can we get third party support?
- Can this platform handle current patient throughput?
- Does it have the image resolution needed for the studies being ordered by our healthcare providers?
- Are there any software updates that would improve the system's performance?

- Do not be afraid to look into upgrades for your imaging systems. A new detector plate for a rad only X-ray room can do wonders for image resolution. For example, a golden opportunity for this is a detector gets dropped and with a couple of phone calls to local sales reps we got a complete replacement system of the detector plate and everything else needed for the upgrade. All for over $10,000 less than the cost of the direct replacement of the original plate. It was a huge upgrade in technology as well as image quality. We have done this twice in the last six months, saving money on both upgrades. The upgrades also greatly improved workflow and patient throughput for these rooms.

- One of the biggest “bangs for the buck” for improving imaging system performance, regardless of modality, can actually be system applications training. Are the technicians currently using the latest apps for the studies they are performing? Are new staff using the same techniques as everyone else that has been in the department for a while? Operator error can induce image quality problems especially when trying to use techniques originally developed for a different platform. Software updates and corresponding applications training can give you marked improvements in your imaging quality due to the improved imaging processing capabilities and improved procedures working together.

Ultrasound

- One of the first things to remember about ultrasounds that you have under contract is that many current OEM specifications for ultrasound do not require PMs!



Ultrasound

- Ultrasound image resolution naturally degrades over time. There are a few things you can do to make the most of your systems. One is to do a general PM on your units. Vacuum out dust bunnies to reduce problems caused by heat, make sure circuit boards are securely seated, check connections, and check your cables and probes for insulation and shielding damage. Large ultrasounds are a lot more portable than when I first came into the HTM field somewhere between the dinosaurs and the bubonic plague. I see ultrasounds going to the patient's rooms on a daily basis. Being bumped and bounced in elevators, bumping into walls, etc., can induce problems over time.

Ultrasound

- The next place to look is your ultrasound probes. Has the soft scanning surface of the probe been damaged? Any break in the physical continuity of the probe surface will induce an image artifact. Ultrasound crystals will degrade over time.
- You can QC your probes with a physical inspection and check your image with an ultrasound phantom. Check for image continuity. Look for drop out in your image field, especially while you are moving your probe over the phantom. Watch for what moves and what does not in the image field.

Ultrasound

- Getting ultrasound probes repaired is relatively inexpensive compared to the improvements you will get. There are numerous independent companies servicing imaging, and specifically ultrasound probes.
- Last, but not least, make sure you have current backups on your ultrasound operating system! Nothing will ruin your day as quickly as having to rebuild your ultrasound's operating system.

Ultrasound Upgrades

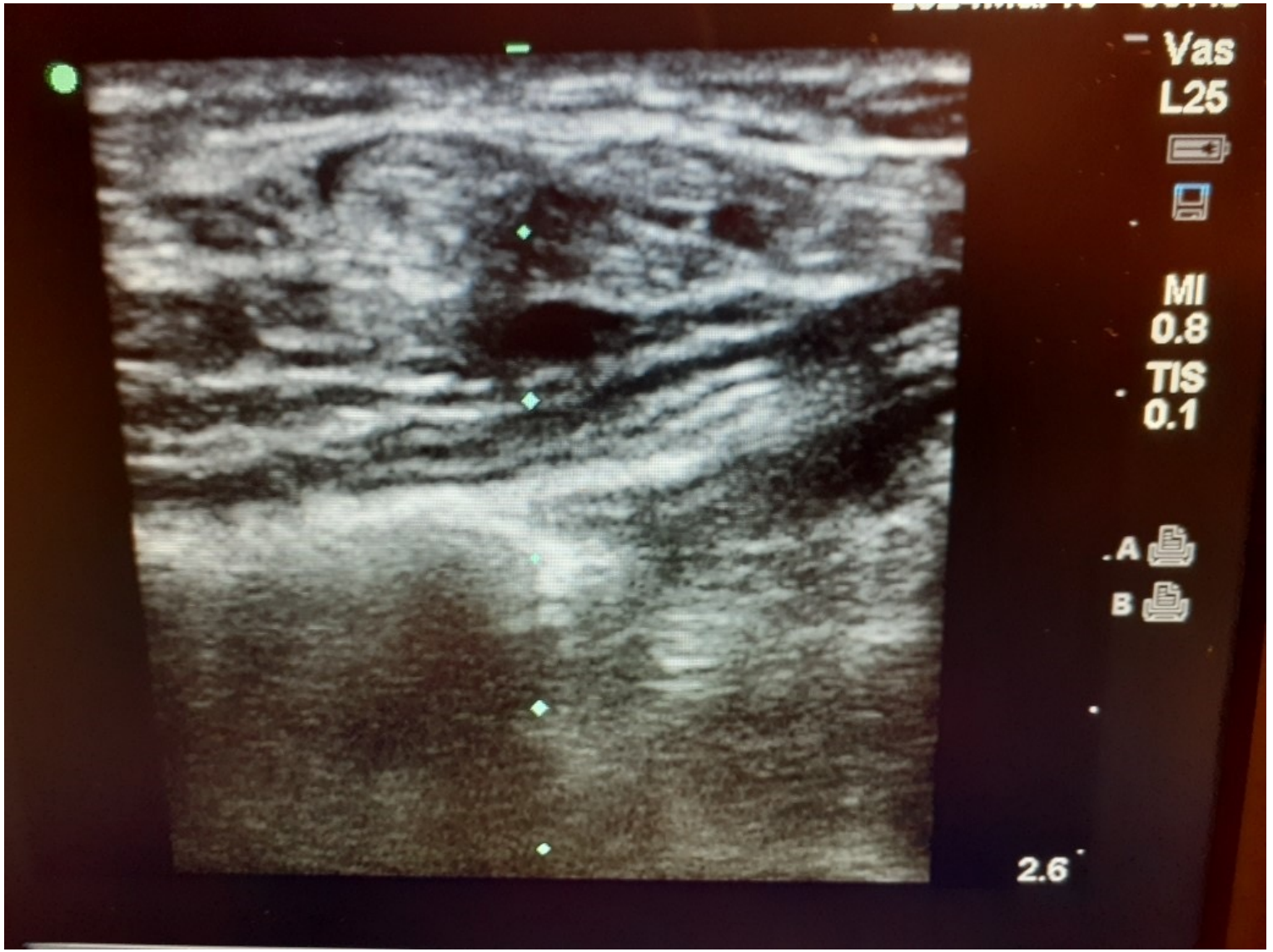
Ultrasound Guided peripheral IV placement

- Our ICU hired a very skilled ICU nurse from Baylor Scott and White. One of the things this new nurse was skilled in is Ultrasound Guided peripheral IV placement. This was demonstrated and became the next big thing to improve patient care.
- Next thing you know someone borrows the ICU Sonosite and puts an IV needle right through the ultrasound probe's acoustic lens!!
- So the project is presented to Biomed- Can you retrofit last year's Sonosite to perform IV placement?

Not as simple as it sounds

No problem right? Just get the other Sonosite and get to work! It was not quite that simple. We had to match the probe array, and get that purchased. Murphy's law #1- The software coming with the probe did not work. OK now what? My tech Rachel was on the phone with Sonosite tech support and it was determined that another software package should drive this probe on this platform.

Then we had that Eureka!! moment



Refurb in place

- In past years I was at a facility that was under contract with a major OEM. The contract covered labor, and they purchased their own parts. Their fleet of 10 operating tables were in very poor condition. There was no funding for replacement. I contacted my leadership with my idea of having these tables refurbished by the local dealer one at a time, and we would be provided with a loaner table at no cost since I was sending him 10 units for service. They agreed. I brought the idea to the surgery department, and they were in full support of the idea, since these tables were still the current model being offered to the healthcare market.

Refurb in place

- They made complete lists to replace the tabletops, many accessories etc. When they received the cost estimates for this (about $15k per table!) their plans were revised to replace what needed to be replaced. Over the next 3 months all tables were serviced and returned one at a time for an average cost of approximately $2800 each. And, they were off the capital equipment list for another 8 years

Refurb your worst IV pumps

- An area that almost every shop can utilize refurbing your own units is IV pumps. If you have a few hundred (at least!) IV pumps there will be some that break constantly. Compare the cost of refurbing the worst of your own existing IV pumps vs. the cost of purchasing used pumps or new from the OEM. Don’t forget that your tech’s labor is not free, and constantly patching troublesome IV pumps together over and over is costing you a lot more than just the cost of parts.

Replace system components

- You also have the option of replacing one or two pieces of a system from the used/third party companies in our industry. Hospitals that would not consider utilizing used or refurbished equipment in the past may soften on their stance due to our economic reality.

Replace system components

- An example I can provide from a previous facility of mine is a fetal monitoring system was not replaced as scheduled. I talked with the staff about the capabilities of the current system and the new one being purchased. The current system worked fine and did everything they needed, but the replacement system had large video screens for better visibility of the patient data. No problem! We can add those to your current system! This upgrade extended the useful life of our current system until that model reached end of OEM support in four years.

Keep the museum pieces going

- You will have to service equipment that is past end of support from the OEM, no question about it. This is the area of servicing equipment where 3 strikes is not out, and age and treachery will overcome youth and exuberance every time. All of us here know that you can still support these units for years by working with 3rd party parts suppliers. However, not everyone may be aware that many of these units are not actually manufactured by the OEM that sold them to you.

Keep the museum pieces going

- You can find original manufacturers with a little time on Google, using the model number or other designators. Also, try to Google the part numbers out of the service manual. If you find numerous parts for that unit all manufactured by the same company that is not the OEM you bought the unit from, you are on the right trail. You can also look inside the unit with the covers off for manufacturer's trademarks, or in the service manual, which will sometimes be the original service manual, with the new OEM logo printed on it.

Conclusion

- Get out and talk to your stakeholders. Find out about what their needs are, and their future desires are. Budgets are tight, but there is no reason not to do what you can to make your conditions as good as they can be. Offer to work with the Capital Request Committee and the COO for what units are coming up on their end of support dates, which units can be supported past the end of support date, and which models have a hard stop in their service life and will need replacement. This sort of information is gold for the decision makers that we support.

Conclusion

- Do not make illegal modifications. Stay within standard practices and procedures. There will be opportunities to pull a rabbit out of a hat one more time to dramatically help your facility or organization maximize their equipment usage and manage expenses.

My Contact Info

- John Schafer
- LinkedIn
- jjschafer81@yahoo.com
- jschafer@renovo1.com