

The monitoring of patients in the operating room has expanded of late to include more routine surgical candidates in addition to the Grade IV folks that have previously been singularly honored by the application of electrodes, probes and cannulae. With the vast amount of routine monitoring that is being done these days, more personnel are needed to operate this specialized equipment than now exist as qualified, well-trained individuals. As Madison Avenue would say, this is a burgeoning allied health occupation.

But, until the days arrive in which there are sufficient numbers of highly qualified people to operate this equipment and effectively interface between the patient, the machine and the doctor, modern solid-state technology has so simplified most pieces of monitoring paraphernalia that most anyone can make it work, even you! After all, you need only know two things:

- 1) how to plug the unit in and
- 2) how to turn it on.

Beyond these points, with sufficient trial-and-error, you should be able to get the particular machine in question to do something. It may not be collecting accurate data, but then, how many doctors can really tell the difference between fact and artifact?

What you get is not as important as how you conduct yourself and what you say. The rule of thumb is this: Never, NEVER, let anyone suspect you haven't the faintest idea of what you're doing! You must always appear self-confident and be in total control of the situation. You should begin developing this impression the very moment you wheel the machine, whatever it may be, into the operating room. It should be done with great fanfare and heraldry—you might proclaim to one and all, "I'm here everybody. You can relax now!"

The machine should be plugged in and turned on with swift, sure moves—the same poetry-in-motion displayed by a race driver leading the pack at Le Mans or a quarterback whose team leads by four touchdowns in the Super Bowl. After all, confidence inspires confidence. It is considered bad form to stumble over the power cord or to hunt for the off-on switch.

As the machine is warming up and you begin your preparations for its application to the patient, the time has come to begin planting the seeds of suspicion, the suspicion that the unit may not be in good operating condition. Remember, as you plant so shall you reap—this is a most important step! While you spin the knobs and connect the electrodes, probes, transducers, cannulae, etc., glance frequently at the machine, deeply furrow your brow, and say, "Hmmmmm!" After this has been done several times, you are secure. Now whatever happens during your clumsy attempts to operate this contraption, you can always fall back on the excuse that the machine is not working—you have created your "back door".

Once your preliminary preparations are complete, you must begin the check-out and fine-tuning procedures which include zeroing and calibrating. ALL electronic data-gathering gadgets require zeroing as well as some kind of sensitivity and calibration adjustments. You will probably want to look at the instruction manual. This brings up our second rule-of-thumb: Never, NEVER, bring the instruction manual into the operating room nor let anyone ever see you reading it!

"How, then," you ask, "can I get to see it?" Very simple. First, you must introduce an excuse to leave

A Case Report:

Medical Upmanship

Patient Monitoring In The O.R.

the room. Say something like, "I need a screwdriver to adjust the capacitance." You now have the opportunity to sneak a peek at the manual but take it into a broom closet or the washroom. If it becomes necessary to get another look at it, you might mention the need to obtain a different size screwdriver or some other tool. It is *very* bad form to return to the operating room *without* the tool you went to retrieve.

If standard techniques don't get the unit operating sufficiently well and you are unable to understand the handy trouble-shooting hints in the manual, it becomes necessary to find a scapegoat(s) upon whom the blame may be conveniently hung. Electrical interference is a most credible complication and many people in the O.R. may be blamed:

- 1) the anesthesiologist - "Your gas machine isn't properly grounded."
- 2) the O.R. circulating nurse - "Your electro-cautery machine is lousing up my signal."
- 3) the intern or resident - "The static electricity from your long hair is obliterating the picture on my screen."

These people are now thoroughly cowed and on the defensive. They are too busy trying to eliminate the problems they have supposedly caused to detect the fact that you are really an idiotic bungler.

In addition, you might also blame the ECG electrodes, the electrode paste, the patient cable, the pressure transducers, flow probes, preamplifier, cathode ray tube, or the stylus on the direct-writer. The items these terms signify may not be on the particular piece of equipment with which you are presently concerned but such term-dropping is often helpful and is bound to command respect from everyone in the room.

Meanwhile, during which you have changed electrodes, cables, or what-have-you, valuable time has been gained during which you might have stumbled accidentally upon the cause of your inability to obtain data. You may have even stolen the opportunity to steal another look at the instruction book or make a quick phone call to a colleague who may be able to help you. In this latter case, choose wisely the colleague to whom you place that important call. He must, first of all, know that you are not that bright and, secondly, he must know more about the equipment in question than you - these qualifying factors will most probably eliminate 9 out of 10 possible individuals.



By this time, no doubt, the surgeon is getting impatient. It is necessary to prevent him from gaining an offensive position. Thus the third rule-of-thumb: Always, ALWAYS, keep the surgeon on the defensive. Keep him busy flushing his cannulae, rinsing his probes, or whatever.

If need be, question his overall technique. It may help to say something like, "This isn't the way _____ does it." You must use the nickname of some famous surgeon, preferably one he abhors. Most surgeons, though appearing quite egotistical, are basically insecure. While he busies himself with a long harangue in which he justifies his procedure, technique, rationale, and most of his training, you will have gained more time. Your greatest mistake, at this point, is in stopping to listen to what the doctor is saying—it will be of absolutely no importance nor help with your problems at hand.

If, at this stage of the game, you are still unable to collect any data, whether real or artifactual, it will be quite obvious to you that you are never going to make

it with this machine. It becomes necessary to employ face-saving techniques because you certainly don't want this fact known to the others in the room. It is time to use the back-door you so effectively prepared earlier in the case. Call the hospital electronics technician to "repair" the unit.

He may be able (again, your chances are about one in ten!) to straighten out the delicate adjustments that you have so hopelessly fouled up. At the very least, he can take the machine to his shop for a thorough check-up. This is, of course, the last resort—but, it does get the unit, and you, out of the O.R. and finishes your helpful participation in the treatment of that particular patient. Better luck next time!

Unfortunately, this is NOT just a funny story—there are paramedical personnel who practice in just this manner. And how many of you have pulled similar "tricks" just to get off the hook so you would not have to admit you did not know? Your responsibility is to LEARN—not only know but know WELL what you are supposed to know and to admit honestly what you do not know!

NEW PRODUCT NEWS

The Sartorius Balances Division of Brinkmann Instruments has just released a newly designed micro balance that utilizes push-button operation. This is the only micro balance with push-button operation. To facilitate weighing procedures, the pan moves sideways out of the weighing chamber through a window which opens automatically when the pan-extractor is used. Operation has been simplified by color coding the weight knobs and respective weight counters. Digits to be read on the optical scale appear in a clear window while adjacent values are visible through a green filter glass. The micro-meter digits appear large and clearly legible. For more information, circle Number 37 on the Reader Service Card.

You may not be totally familiar with NARCO BIO-SYSTEMS. Like Air Shields and the Pilling Company, they are part of Narco Scientific Industries. Until the recent introduction of the flowmeter, we manufactured instruments exclusively for research and teaching.

The flowmeter has several features of interest.

1. Direct digital flow display (optional—shown in the photograph).
2. True non-occlusive zero.
3. Potential leakage is below 10 microamps.
4. No calculations are necessary when using the remote digital display.
5. Can check null mode without altering either chart recording or digital readout of actual flow rate.

Circle Number 38 on the Reader Service Card.

