ON THE WARDS

Your Practical Survival Guide to Surgical Internship

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There is a lot of anxiety in medical school regarding internship, especially surgical internship. Internship is your introduction to medical responsibility. After four years of developing your interview and examination skills, as well as increasing your fund of medical knowledge, you are ready for real patients. Internship is easy if you are diligent and reliable. The anxiety over internship results from translating theoretical knowledge into practical skill, while “doing no harm.” Do not fear. It is not as hard as you think. Some sage words from my general surgery chief the day before internship sum it up: “Do what you are told; anticipate what you will be told; and, if you find yourself thinking ‘independently,’ call someone.” You know a lot as an intern! Use the team and the hospital to your advantage and your transition to responsibility will be easy. Maybe with these ten tips and tricks I found useful during my internship in your pocket, you can get some sleep as well.

GET TO KNOW YOUR SURROUNDINGS AND YOUR TEAM.

Nothing will save you more time and effort than knowing where to go and whom to call. Spend a few hours the day before your internship begins wandering the hospital, trying to find the Emergency department, the Radiology department (CT scanner, MRI, and X-Ray), the pharmacy, the telemetry floors, the cafeteria, the call room, a shower, and several bathrooms near each. I would also recommend calling your Chief—and perhaps all of the senior residents on your team—to get to know how the chain of command should work and to whom you should address questions. Do not forget to call the junior resident and get sign-outs on the patients you will be taking care of so you hit the ground running when you show up for prerounds that first day.

KNOW THE SEVEN Ps.

Make sure you ask the patient, a nurse, or the post-call team—or read the chart—and know the seven Ps for each of your patients: Problems, Progress, Pain, PO (oral intake), Pee-Pee, Poop, and Physical condition. “Problems” refers to the problem list you are addressing for the patient (i.e., why and how the patient came to be under your care) and what you are doing for each with respect to either diagnosis or treatment. “Progress” refers to the events in the past twenty-four hours that have happened positively or negatively to your patient. Progress is what the team will want to hear about every day. Assess your patient’s pain and adjust medications so the patient is reasonably comfortable. Know how your patient is getting nutrition and how far you can advance his or her diet. Patients should be NPO (taking nothing by mouth) post-surgery until they have bowel sounds; then clear liquids may be started, and continued until the patients pass flatus, when solids may be tried. Do not be afraid to go slowly or take a step back. If a patient is not taking food by mouth, note the nutritional route or the reason for withholding oral nutrition; if he or she is eating, know the type of diet (e.g., clear liquid, dysphagia ground, diabetic, low salt, regular). Know your patients’ urine output and if it is adequate (i.e., at least 30 mL/hour; perhaps less for children and the elderly) and the route (i.e., via catheter or naturally). If a patient is off a patient-controlled analgesic (PCA) or other, more-invasive pain control (e.g., an epidural catheter) as well as able to sit on a bedpan or use a urinal, get that Foley catheter out. When removing a Foley catheter, be sure to write for bladder scan after six hours if the patient has not urinated, and to replace the Foley catheter if the bladder scan is more than 350 mL. Assess the number of days since the patient’s last bowel movement so you know how to adjust bowel care. Finally, understand the patient’s physical condition and progress with physical, occupational, and speech therapy as well as all other consults required to aid in the management of the patient’s case.

TELL THE TRUTH.

Nothing makes you look worse than reporting incorrect overnight events, physical examination findings, or imaging and laboratory results. It is better to say “I did not have time,” “I did not check,” “I forgot,” or even “I do not know” than to say you did or to make something up. You will get caught. It is better to be perceived as lazy and irresponsible than as deceptive and unreliable. The difference is that one is responsive to training, while the other undermines every aspect of team communication and function. The latter violates your oath as a physician and places patients in danger as a result of your obfuscation. At the end of the day, you are building respect as a physician and gaining trust in your decision-making from your peers. Do not sacrifice respect for yourself, your team, or your patients by taking the easy road. Simply learn to be more efficient or spend more time on the details; let your lack of information guide you about where you need to make improvements and become a better physician in the process.

WHEN ON CALL, AVOID DISASTER, AND THEN WORK IT UP.

You are going to get called about everything. Do not blow off even the simplest matter, or act out of reflex;
Instead, try to think. Investigate and, when in doubt, see the patient. Say you get a call regarding a patient with a fever on postoperative day one and you know this is probably atelectasis, because you remember the six Ws (wind – atelectasis – day one; water – urinary tract infection – day three; walk – deep venous thrombosis – day five; wound – day seven; where – abscess – day ten; weird drugs – day ten). You could reflexively recommend encouraging incentive spirometry every hour and indicate that you will see the patient in the morning, but if you did, you would miss a rare and devastating presentation of Clostridium wound infection, which presents with cloudy discharge from the wound and fever. So look at the wound on postoperative day one and order blood cultures times three, line cultures, a urine analysis with culture, a chest X-ray, and a duplex ultrasound of bilateral lower extremities if the fever is after postoperative day one.

Say you get a call regarding a patient with hypotension immediately postoperatively in the post-anesthesia care unit; you think it must be hypovolemia. You reflexively order a liter of normal saline bolus without asking about the heart rate or urine output, and thus miss a myocardial infarction. Hypotension can be due to a failure in preload, the pump, or afterload, and you must consider each possibility each time. Do not just assume hypovolemia (i.e., failure of adequate preload). Or consider a call about a confused, bedridden, elderly woman who is trying to get out of bed. Sure, you can put her in a restraints, but the major issue is why she is acting like this. Take a second to think about the differential, including delirium, dementia, stroke, myocardial infarction, pulmonary embolism, infection, electrolyte abnormality, psychosis, or toxicity. Now it is easy, instead of overwhelming. Simply order oxygen and pulse oximetry; collect a basic metabolic panel, calcium, magnesium, phosphorous, arterial blood gas, cardiac markers, vitamin B12, folate, urine analysis with culture, blood cultures times three, line cultures, and urine toxicity screen; give a full dose of aspirin (unless contraindicated); and get a chest X-ray, head CT without contrast, CT of the pulmonary artery, and electrocardiogram. With those tests, you will be ready to call the appropriate consulting service (neurology, cardiology, or psychiatry), to tell the team your findings in the morning, and to begin the necessary intervention. You get the idea. I have one attending who says, “The enemy is everywhere, even within.” Resist the temptation to react, and instead, think. On a similar note, I must reinforce the value of advanced cardiac life support. Read it and know it. Do not blow it off, as I know many interns do. Do not plan on the code team just being there. These are your patients and you should know how to manage bradyarrhythmias and tachyarrhythmias as well as pulselessness until the code team gets there to help. I carry a cheat sheet in my pocket for each of these, because they are things you cannot just look up or think about when they come up, unlike almost every other call you will get. Trust me!

**REPLACE THE ELECTROLYTES.**

Avoiding arrhythmias is worth it. Use the “2–3–4–9” rule to remember the desired levels of magnesium, phosphorous, potassium, and calcium, respectively. Keep potassium over 4.0 mEq/L. Add 20 mEq/L to intravenous (IV) fluids unless the patient has renal issues; then reconsider fluids altogether. Remember that PO potassium works faster than IV potassium, so use PO if possible, and if you must use IV add lidocaine unless the patient has a central line, because potassium chloride burns. Use potassium chloride 10–60 mEq PO once or potassium chloride 10 mEq IV one to six times with or without 1 mL of lidocaine, and remember that every 10 mEq PO/IV increases the potassium by 0.1 mEq/L, so calculate accordingly. Keep magnesium over 2.0 mg/dL. Giving magnesium oxide 400 mg PO once or magnesium sulfate 1 g IV once each will raise the magnesium level by 0.2 mg/dL. Keep phosphorous above 3.0 mg/dL. Give Neutra-Phos® 2 packets PO q8h (every eight hours) (8 mmol per packet) or Kphos 2 tablets PO q8h (8 mmol per tablet). Sodium or potassium phosphate 15–30 mmol IV once every six hours can be used for faster repletion. Keep calcium above 9.0 mg/dL. Give calcium carbonate 1,250 mg PO BID (twice a day) or calcium chloride 1 g IV once for faster repletion. Remember always to recheck a basic metabolic panel with calcium, magnesium, and phosphorous after electrolyte repletion to reassess and adjust therapy.

**THE REGULAR INSULIN SLIDING SCALE IS YOUR BEST FRIEND.**

Every diabetic patient should have such a scale to monitor his or her glucose control. This way you can report the patient’s use of regular insulin, so the team can adjust NPH qAC (with each meal) or daily Lantus®. Memorize Table 1; enough said. Every diabetic patient needs finger-stick measurements qAC and qHS (nightly) if eating

**TABLE 1. REGULAR INSULIN SLIDING SCALE**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Units of Regular Insulin SQ</th>
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<tbody>
<tr>
<td>Finger-Stick Glucose</td>
<td>1 or Order</td>
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</table>

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Units</th>
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<tbody>
<tr>
<td>0–60</td>
<td>Give ½ amp D50 and call HO</td>
</tr>
<tr>
<td>61–120</td>
<td>0 Units</td>
</tr>
<tr>
<td>121–150</td>
<td>2 Units</td>
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<td>151–200</td>
<td>4 Units</td>
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<tr>
<td>201–250</td>
<td>6 Units</td>
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<td>251–300</td>
<td>8 Units</td>
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<tr>
<td>301–350</td>
<td>10 Units</td>
</tr>
<tr>
<td>&gt;351</td>
<td>12 Units and call HO</td>
</tr>
</tbody>
</table>

Abbreviations: SQ, subcutaneous; amp, ampoule; D50, 50% dextrose solution; HO, house officer
and q6h (every six hours) if NPO. Also, remember to hold or halve any scheduled insulin if the patient is not eating prior to surgery. By the way, since we are on the topic of the operating room (OR), be sure to check the consent or get the patient’s consent yourself; hold anticoagulation if appropriate; order preoperative antibiotics (e.g., Kefzol 1 g IV on call to the OR), and make your patient NPO at midnight except for medication if he or she is on call to the OR (OCTOR) the next day.

**GIVE THE PATIENT THEIR VITAMINS.**

Everyone should get a multivitamin PO daily, but there are special patients—alcoholics and poor wound healers—who need a bit more help. Every alcoholic should get folic acid 1 mg PO daily and thiamine 100 mg PO daily as well as Ativan® 2 mg IM (intramuscular) or IV q2h (every two hours) PRN (as needed), for agitation. Poor healers need zinc sulfate 220 mg PO daily, vitamin C 500 mg PO BID, and vitamin A 20,000 units PO daily to facilitate the synthesis of collagen.

**ADDRESS YOUR PATIENT’S PAIN BEFORE IT STARTS.**

This topic is complicated, but some basics are critical. Every patient needs to have a baseline medication, preferably PO. I prefer Percocet 5/325 mg 1-2 tabs PO q4h (every four hours) PRN pain or Vicodin 5/500 mg 1-2 tabs PO q6h PRN pain. (Be careful with Vicodin, as it has 500 mg of Tylenol and can lead to Tylenol® toxicity if more than 4 g of Tylenol is consumed daily.) If your patient has a nasogastric tube or cannot take solid food, Loratab elixir 7.5 mg per 15 mL PO q4h PRN pain is the way to go. After a basal medication is on board, add an IV medication for breakthrough pain (BTP), such as morphine 1-4 mg IV q2h PRN BTP or Dilaudid 0.2 – 0.8 mg IV q2h PRN BTP. You can increase the dose range for BTP pain medications, but it is probably better to address the patient’s baseline pain needs. Do not be afraid to ask for help here from the team or a pain consult. Another way to address basal pain is to offer patient-controlled anesthesia (PCA). This will allow the patient to determine the dose of his or her own medication. It is ordered using either morphine or Dilaudid (or, rarely, Fentanyl), and given as an incremental dose every 6, 10, or 25 minutes. The patient can dose himself or herself by using a button without having to ask for nurse assistance. Beware the basal rate of administration with a PCA; do not use this as an intern without asking the team, as this is how patients die using a PCA: they stop breathing. Remember the side effects of narcotics, including respiratory depression, constipation, itching, and nausea. Therefore, every IV narcotic must be accompanied by an order to HOLD narcotics if the patient is unresponsive or somnolent, or has a respiratory rate less than six. Be sure also to order other PRN medications, such as bowel care, Benadryl, and Zofran, to cover narcotic side effects. Nonsteroidal anti-inflammatory drugs such as Motrin 600 mg PO q8h around the clock and Toradol® 30 mg IV once followed by 15mg IV q8h for 48 hours can also be great adjuvant analgesics if your patient does not have bleeding or renal issues. Finally, some pain is caused by muscle spasms, so watch for intermittent achy, cramplike pains in the extremities or back, with poor relief from narcotic medications—Valium 5 mg PO q8h PRN spasm will usually do the trick.

**BOWEL CARE IS KING.**

Especially since almost everyone is on narcotics for pain control. Colace 100 mg PO BID and Senna® 2 tabs PO qHS are essential. Be sure to add a HOLD order for loose stools as well. The problem arises when Colace and Senna are not doing the trick; this is where PRN bowel care will help you and the nursing staff out. I always dose with milk of magnesia 30 cc PO PRN constipation. If that does not work, I move on to Dulcolax 10 mg PO/PR (per rectum) daily PRN no bowel movement. The last resort, to my mind, is lactulose 30 mL PO q4h until bowel movement, or a “pink lady” enema once; these will usually get things moving.

**PRN MEDICATIONS HELP YOU SLEEP.**

They help your patients sleep, too. Most are designed to control the side effects of narcotics (e.g., itching, nausea/vomiting) and of the hospital itself (e.g., insomnia). Use Benadryl 50 mg PO/IV q6h PRN itching/insomnia, and you can add Ambien 10 mg PO qHS PRN insomnia if that is not sufficient. Use Zofran 4 mg IV q12h (every 12 hours) PRN nausea/vomiting, and you can add Reglan 10 mg IV q6h PRN nausea/vomiting if that is not sufficient, but always give antiemetic IV as patients may not be able to take PO medications with nausea/vomiting. Hypertension control can be difficult, but metoprolol 12.5 mg PO BID HOLD for systolic blood pressure less than 100 or heart rate less than 60 and hydralazine 10 mg IV q4h PRN SBP greater than 160 is a good start, and can be titrated by the team or cardiology as appropriate. Flomax 0.4 mg PO daily is useful for patients with elevated postvoid residual volumes. Pepcid 20 mg PO/IV BID or Nexium 40 mg PO/IV daily are staples for intensive-care-unit patients and great for daily dyspepsia control for floor patients as well. Others that are useful in a pinch are Maalox 30 mL PO q6h PRN dyspepsia, Imodium 2mg PO q6h PRN diarrhea, Robitussin® 400 mg PO q4h PRN cough and congestion or Hygocan 3 mL PO q6h PRN cough, Thorazine 25 mg PO q8h PRN hiccups, and Cepecol 1 tab PO q2h PRN sore throat or Chloraseptic 1–2 spray q2h PRN sore throat.
A NOTE TO REMEMBER

Remember, “Interns do not die on start day, patients do!” Communicate with your team, pay attention to detail, and know your patients. You will do fine. Always remember to check and double-check allergies when writing prescriptions for medications and adjust accordingly. You will have to be resourceful, be thoughtful, and read the published literature. This, I hope, is enough to make you a bit more relaxed and comfortable on that fateful day when the theory of medical school becomes very real. Good luck!

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