

Chapter 1: Patient Evaluation

Problem 1:

- A. Acceptable chief complaint: “For how long has this been?”
- B. Acceptable chief complaint: “For how long?” or else “Tell me about the headache.” or else “What provokes or relieves the pain?”
- C. Not acceptable: “Can you explain what you mean by that?” or any clarifying question.
- D. Not acceptable: “What seems to be wrong with him?” or some other clarifying question.
- E. Acceptable: “How long has that been?” or “What kind of pain is it?” or “Did you injure it?”
- F. Acceptable: “Tell me about the diarrhea—how long have you had this?”
- G. Not acceptable: “How does that make you feel?” or some other clarifying question. “How long has this been?” is not appropriate since that implies an acceptable chief complaint.
- H. Marginally acceptable: “What do you mean by this—that your abdomen is swollen or you haven’t had any periods, or you feel movement?”

Problem 2:

- A. This 5 year old national male presents with the chief complaint of pain in his right arm for the past two days after an accidental fall from a tree.
- B. This 39 year old national female presents with the chief complaint of fever, chills, and inordinate fatigue for the past month; she thinks she has malaria.”
- C. This 8 year old expatriate male presents with the chief complaint of abdominal pain for the past 3 days and vomiting for the past hour.

Problem 3

Patient	Pulse	Respiration	Oximeter	Temperature	BP
5 y.o. MK	110	22	99%	oral 37.0C	
1 day nat	110	32	97%	rectal 100. OF	
3 mo MK	105	45	98%	rectal 98.OF	
adult expat	160*	42*	96%	oral 38.5C	90/60
adult nat	60	12	92%	oral 99.2F	<u>80/50</u>
adult expat	60*	14	85%*	oral 41.8C*	140/90
8 y.o. MK	70	20	93%	oral 100.OF	

Problem 4:

- D is least sick
- A is second
- C is third
- B is sickest

Problem 5:

- A: Expected with diarrhea.
- B. This could be pneumonia or heart failure.
- C. This is a heart murmur, normal in late pregnancy.

- D. Arthritis or muscle strain.
- E. Possibly meningitis, encephalitis, or cerebral malaria if the patient is ill.
- F. Possibly an ear infection, the large lymph nodes being a consequence of the infection.
- G. Normal
- H. Normal
- I. Shock or going into shock.
- J. Probably due to diet.
- K. Probably malaria.
- L. Dehydrated from the diarrhea.
- M. Jaundice from a liver or blood problem.
- N. Possibly from diet or genetic.
- O. May be normal.
- P. Anemia
- Q. False test.
- R. Diabetes going out of control if it is a lot.
- S. Tonsillitis
- T. Hungry
- U. An infection, the large lymph nodes being because of the arm infection.
- V. Normal consequence of pushing on the abdomen.
- W. Kidney stone.
- X. Liver problem.
- Y. Cold or bronchitis.

Problem 6:

Problem list:

- Vomiting
- Fevers
- Sleeping too much
- Rapid respiration
- Yellow whites of the eyes
- Buttock ulcer

Chapter 2:

Problem 7:

- a. Neither; hepatitis is a virus.
- b. Gram positive antibiotic
- c. Gram positive and gram negative
- d. Gram positive antibiotic
- e. Neither; chicken pox is a virus.
- f. Neither, a cold is caused by a virus.
- g. Gram positive and gram negative
- h. Gram negative
- i. Gram positive since it is a skin infection

Problem 8:

The most important problem is malnutrition. The next most important problems are AIDS, hookworm, and diarrhea. These three may also contribute to malnutrition, as may other factors such as rainfall, garden pests, and an ineffective police force.

Chapter 3:

Problem 9:

- A. Sodium nitropruside
- B. Piperazine citrate
- C. Sodium penicillin V
- D. Quinine sulfate
- E. Chloroquine phosphate
- F. Sodium heparin

Problem 10:

300 mg; 450 mg; 600 mg.

Problem 11:

Ampicillin: A. yes; B. no; C. yes; D. no

Diphenhydramine: E. yes; F. no; G. yes

Metronidazole: H. no; I. yes; J. yes

Problem 12:

A. 15 mg which equals 0.3 ml of the drug at 50 mg/ml.

B. A 23 kg child is about half the weight of a 50 kg adult. A 50 kg adult would get 4 tablets initially, so you would give the child 2 whole tablets initially, then one tablet 4 times a day.

C. Since there are 40,000 units per ml, you will need 0.25 ml. You should inject this small quantity into the arm, not the buttock.

D. Your patient weighs 51 kg which is quite close to 50 kg. She will need 3 ml of the globulin preparation. You will inject it into the buttocks.

E. Your patient needs 80×20 mg which is 1600 mg. With 325 mg in each ml, 5 ml even would be 1625 mg which is close enough. If your patient is unconscious, you would give it by stomach tube or else by rectum. Quinine should not be given IM.

Problem 13.

A. $20 \text{ lb} = 9 \text{ kg}$. 20 mg/kg 3 x daily is 180 mg 3 x daily for one day.

B. $11 \text{ lb} = 5 \text{ kg}$. 75 mg/kg or 375 mg daily for 6 days.

C. 25 kg implies half of the adult dose. 300 mg daily.

D. 45 mg three times daily.

E. $5 \text{ lb} = 2.25 \text{ kg}$. $4 \text{ mg/kg} = 9 \text{ mg}$ every 6 hours.

F. $100 \text{ lb} = 45 \text{ kg}$. $25 \text{ mg/kg} = 1125 \text{ mg}$ every 6 hours.

G. $159 \text{ lb} = 62 \text{ kg}$. 2.4 million units of Benzathine penicillin in a single injection.

14. Flagyl = metronidazole.
Compazine = prochlorperazine
Dilantin = phenytoin sodium
Droncit = praziquantel

You are missing diphenhydramine.

15. 5 grams thiabendazole in 100 ml of honey. 70 kg adult gets $25 \text{ mg/kg} \times 70 \text{ kg}$ per dose which is 1750 mg but the maximum is 1500 mg per dose. 5000 mg in 100 ml implies 50 mg/ml. The man gets 30 ml.

16. You throw out tetracycline and paraldehyde.

17. A. None; the child is underweight.
B. 33 kg, 2.5-5 mg every 6 hours.
C. None; allergic to the drug.
D. $20 \text{ kg} \times 2.5 \text{ mg/kg} = 50 \text{ mg}$ single dose
E. $80 \text{ kg} \times 20 \text{ mg/kg} = 1600 \text{ mg}$ 3 times in a single day.
F. None, the drug is contraindicated.
G. $50 \text{ kg} \times 20 \text{ mg/kg} = 1000 \text{ mg}$ three times in a single day.
H. 250 mg every 6 hours.
I. 250 mg every 6 hours for 3 weeks.
J. None; too young.

18. A. Either
B. Disease
C. Either
D. Drug
E. Drug
F. Drug
G. Disease

CHAPTER 3 REMEDIAL PROBLEMS:

A. $7\text{-}13 \text{ mg/kg}$ 15 kg child. $7 \times 15 = 105 \text{ mg}$; $13 \times 15 = 195 \text{ mg}$. At 50 mg/ml, 105 mg is a bit over 2 ml. 195 mg is a bit under 4 ml.

B. $45 \text{ kg} \times 20 \text{ mg/kg} = 900 \text{ mg/dose}$ This is 1.5 tablets per dose. Hence the whole treatment needs 4.5 tablets so you presumably would have to buy 5 tablets.

C. 80 mg/ml, 1 ml per syringe. Patient needs 20 mg per dose so you can get 4 doses out of each syringe. You need 30 doses (3/day x 10 days). If you buy 8 syringes, you will have 32 doses which is about as close as you can get.

D. Estimated number of women is 1500. Estimated number of children is 1000. The women get 2 tablets apiece weekly which means 3000 tablets given out weekly or 26 x 3000 for 6 months. This is 78 tins for the women alone. The average child gets $\frac{1}{4}$ of the adult dose, so 1000 children would get the same total amount as 250 adults. 250 adults, getting 2 tablets per week would be 500 tablets per week or 13 tins for a half-year. Hence for the whole lot of them you would need 78 + 13 tins which is 91 tins. You should buy 92 because with dividing the chloroquine there is bound to be some wastage.

E. 800,000 units per 500 mg capsule means that 2.4 million units would be about 3 capsules.

F. The 71 kg person requires 1 gram daily for 10 days. The 49 kg person requires 750 mg daily for 10 days or 7.5 grams. The two of them together require 17.5 grams. The 24 kg person requires 500 mg daily or 5 grams, so adding that in would mean 22.5 grams. The 15 kg person requires 250 mg daily ($\frac{1}{3}$ of 750 mg for a 45 kg person). This means another 2.5 grams so you would need 25 grams in all. Buy some extra because there is bound to be some wastage.

G. Severe dehydration is the loss of 10% of the body weight in water. Therefore a 4 kg baby needs 400 ml to replace his losses. He also needs 400 ml of maintenance fluid for the first day, a total of 800 ml. You get 300 ml of this into him so you are behind by 500 ml at the end of the first day. Additionally, he lost 100 ml in diarrhea so you are behind 600 ml because of that. He also needs 400 ml maintenance fluid for the second day.

H. $25 \text{ kg} \times 5 \text{ mg/kg} = 125 \text{ mg}$. This is $\frac{5}{8}$ of a 200 mg tablet. Mix a crushed in 80 ml of honey and then give him 50 ml to consume. You can mix 5 crushed tablets in 400 ml of honey and this will be an even 8 doses.

I. If he were 60 kg, he would need 300 ml of 100 proof. (300 ml is half-way between 80 proof (360 ml) and 120 proof (240 ml) for someone weighing 60 kg.) However, he's 80 kg so you need to add another third, so he'll need 400 ml.

J. Divide the child's weight by 3. 7 kg divided by 3 is 2.3 ml.

K. $0.12 \times 15 = 1.8 \text{ ml}$ per child. 1000 ml (in a liter) divided by 1.8 = 555 children.

L. Penicillin (oral, injectable), chloramphenicol, cotrimoxazole, ORS, doxycycline, chloroquine, erythromycin, metronidazole, ciprofloxacin, cephalosporin (injectable 3rd generation) rifampin, isoniazid, ethambutol, pyrazinamide. Answers may vary.

CHAPTER 4

19. He probably has a broken neck and will become paraplegic or quadriplegic very quickly if you don't handle him correctly. Tell him to keep holding his head and hold it tight. Find a stretcher or a flat board. Put it behind him and then tilt both the board and him backward very gingerly. Transport him very carefully after securing his head and neck the very best that you can.
20. Grab epinephrine and a syringe, maybe an airway, bag-and-mask- and a scalpel blade and run to the child's location.
21. Rinse out his eyes with huge amounts of the nearest water, regardless of cleanliness. Then find some clean water to rinse out the (presumably) dirty water.
22. Cut the jeans off. Then splint his knee and transport him to a hospital.
23. Have the patient himself put direct pressure on the bleeding cut until it stops bleeding. Then keep pressure on for another 10 minutes or so, until it stays stopped even when he lets off.
24. Give him one hard punch on his breastbone and then, if he doesn't respond, prepare for a funeral.
25. She is hyperventilating. Have her breathe into a paper bag or into her (or your) cupped hands over her mouth and nose.
26. She has an allergic reaction to the ant bites. She needs an epinephrine injection.
27. Pull the foot directly out from the leg and then over so it is approximately in line with the leg like the other side is. Splint it in that position.
28. Just watch him until the seizure runs its course. Then give him some diazepam or some other seizure medication until he can get his usual medication renewed.
29. She is having heat stroke. Cool her however you can, and do it fast.
30. She is in shock. She needs IV fluids and probably a surgeon. Shock is a dire emergency. Get her out however you can.
31. Seal up the hole with Saran Wrap, taping it on 3 sides so that the plastic pulls tight against the hole when he breathes in, but the air escapes from his chest when he breathes out.
32. Give him an injection of epinephrine, about 0.25 ml which is half of the usual adult dose.

REPRODUCTION

1. You should listen to her lungs as well as those of her husband. Possibly they both have tuberculosis and you can save the whole family by treating them. Her stool is probably positive for blood because she coughs up bloody sputum and then swallows it. If you can send them for a chest x-ray and/or a sputum smear, that would be good.
2. Barbara has round ligament pain. This is normal in pregnancy, due to the uterus stretching the ligaments that hold it. Something mild for pain would be suitable.
3. Sharon may have a tubal pregnancy or appendicitis or some other major abdominal catastrophe going on. She needs to be sent to a surgeon pronto.
4. Penny has candida vaginitis because the ampicillin killed off the normal vaginal bacteria. She needs to be treated with nystatin and/or yogurt.
5. Julie is dehydrated because of vomiting. She needs fluids by mouth or rectal preferably.
6. Marcie has hepatitis. Whether the vomiting is due to pregnancy or hepatitis is uncertain. In either case she needs fluids, just like Julie.
7. For the immediate crisis she needs epinephrine, about 0.5 ml subcutaneously. Quinine causes abortions rarely but malaria causes abortions commonly. It's worth the risk. If there is nothing else for chloroquine-resistant malaria, then use quinine. If you have Coartem or something of the sort, that's preferable. You need to be defensive. You must have their consent before using quinine, or they will never forgive you if they lose the baby.
8. Lou has bacterial vaginitis. She needs to be treated with a sulfa drug or else with metronidazole.
9. Joyce has toxemia. The heart murmur is normal at 7 months pregnancy. She needs bedrest and something to bring her blood pressure down.
10. Sheri is anemic because of excessive menstruation. Put her on birth control pills for a few months and give her iron and vitamins so she can restore her lost blood.
11. Michelle is having a miscarriage. Keep her near you to be sure that the bleeding stops.
12. Darlene has trichomonas vaginitis. She needs metronidazole or clotrimazole.
13. Sheila has a pelvic infection. She needs to be sent out with her husband because whoever treats her will have to deal with possible unfaithfulness.

14. Diana might have placenta abruption. It is a dire emergency to get her to care where she can have IV's and transfusions. Otherwise she and the baby may both die.

15. Question her about her sexual relationship and her menstrual history. Try to distinguish between never-pregnant and early habitual abortion. Check her urine for abnormalities. She may have an infection. Do a pelvic exam to see if her uterus is normal size and shape. Check her hemoglobin to see if she's anemic. Put her on malaria prevention if it is a malarious area. Put her on iodine if she has a goiter. See if there is any history of sexually transmitted diseases and treat for those if necessary. If her area has schistosomiasis, that also can contribute to infertility.

16. Ellen has a major heart murmur and probably will not survive the pregnancy. She needs to be sent for higher-level care.

17. Try to turn the baby so he is facing the mother's back. Then put a finger in his mouth and use gentle force to deliver the head. Try to hold the back wall of the vagina down so that he can get a little air in case he tries to start breathing.

18. Stop the seizure with diazepam, and then treat the toxemia.

19. Send the patient out if you can. If you can't, cut the cord off short, put the patient on antibiotics, and let the placenta take care of itself. The patient will smell awful, like rotten meat, for a matter of months, but she will live. If you pull on the cord to deliver the placenta, the patient will bleed heavily and will probably die.

INJURIES SECTION

Chapters 8 and 9: Pain and Soft Tissue Injuries

1. A: Aspirin, acetaminophen, or ibuprofen.
B: Ibuprofen
C: Bandage the cuts; aspirin, acetaminophen, ibuprofen.
D: Elevate the hand higher than the level of the heart.
E: Put the hip in traction; use pain medication.
F: Put the bones back in place with a regional block, splint.
G: Finger block anesthesia.
H: Diazepam or alcohol.

2. Front of the right thigh is 4.5% and this is third degree. The entire front of her left leg is 9% and the front of her right lower leg is another 4.5%. Altogether she has an 18% body surface area burn. The burns need to be cleaned and have dressings put on them. Her fluid requirement will be $18 \times 60 \times .25 \text{ ml} = 270 \text{ ml}$ per hour for the first 8 hours. This is 2160 ml for this time. For the next 24 hours give 135 ml per hour $\times 24 \text{ hours} = 3240 \text{ ml}$. Since she refuses to stay near you, send this amount of fluid home with her, stressing that she MUST drink it all within the next 32 hours and return to see you.

3. The burns need to be cleaned and redressed. Check her for dehydration since more than likely she didn't drink all she was supposed to drink. Try again to get her to stay nearby so you can keep the burns clean and dressed. The third-degree areas should be soaked in saline so that the white part will separate and come off. She will need skin grafting, either by your hands, or elsewhere.

4. This is a dire emergency. Elevate the whole arm as high as you can get it and arrange transport out. He will likely lose the arm and he may die without proper care. Give him pain medication.

5. Do not soak the foot. Shave the toenail over top of the splinter until you have uncovered enough to grab.

6. Send him out immediately. Meanwhile elevate the leg, give him pain medication, and notify the receiving facility of the situation.

7. Tell her that it might be serious. They should transport him to a hospital, giving large amounts of fluid with baking soda in it. If possible, they should check his urine pH and keep it between 8 and 9.

8. The entire arm is 10% of his body surface area. He is between 1 year old and 5 years old, so a whole leg would be 16%. Half of that is 8%. His burned surface area is 18% total. For the first 8 hours, his hourly fluid requirements are $15 \times 18 \times .25 = 67.5 \text{ ml}$ per hour. After that his hourly rate is 34 ml per hour. If the burn on the right arm is third

degree all the way around, you may have to cut the scar. Put on dressings and give pain medication.

9. Drown the cockroach with oil. Get his body out if you can. Otherwise wait until he starts to move out and can be easily grabbed.

10. You had better be worried enough not to go into the water.

11. He probably scratched the cornea. Dilate his pupil and put in antibiotic eye ointment. See how he does for a day; then send him out if necessary.

12. Tim had a concussion. Watch him closely but he'll probably be fine.

13. Mike has a major catastrophe going on in his head. He needs to be evacuated as soon as possible by whatever means are possible. If it's no big deal to send Tim along with him, do so. It would be embarrassing to have Tim develop something an hour after the air-evacuation plane left with Mike.

14. Tell Sharon, "If you want to grow up ugly with a big black scar on your cheek, go right ahead. Unless you settle down, I won't touch you." Be defensive with the situation. Try to get the parents involved.

15. He had best not fly but if he insists, then a decongestant is essential.

16. If you can't send him out, have him sit up, sedated, with both eyes patched, until this resolves.

17. He has corneal burns. Dilate his eyes and put in antibiotic eye ointment.

Lacerations:

18. Clean all the lacerations. Suture the one that needs suturing. Then put big cotton fluffs in front of and behind the ear and bandage tightly to prevent bleeding between skin and cartilage.

19. Clean both lacerations and suture them.

20. He needs to be sent out; watch his vital signs for an hour or two; if they are stable, you can delay his departure. Cut the arrow short but do not pull it out. Bandage around the arrow so the part inside his chest does not move.

21. Tell the pilot to cancel the government official. There is no question but this guy will lose his arm if the pilot does not.

22. You probably have a little abscess forming. You can take some antibiotic or you can just wait until the abscess forms all the way and drains.

23. Take the sutures out. Then treat it like a dirty wound, which it is. He will need antibiotics so the infection doesn't spread through his body.
24. Use a sterile gloved finger to see if you can feel the bottom of the wound along its entire length. If you cannot, then anesthetize the area and extend the wound far enough so you can see the bottom of it. If it goes all the way into the abdominal cavity, she really should be sent out. If it does not go all the way in, then just suture it closed.
25. Tell the mother she will have more scar from the sutures than from the cut. Don't touch it.
26. Don't stitch it. It's a dirty cut. Treat it as such.
27. Clean the cut and bandage it now. Suture it after you sleep.
28. Keep the bowel moist. Give him fluids but not by mouth. By rectum is fine, or IV or, since the abdomen is wide open, you can pour sterile fluids into it.
29. He probably has a cut tendon. It needs to be sutured by a surgeon but it's not a within-the-hour emergency.

Bone and Joint Injuries:

30. Splint the end joint (and just the end joint) in a bent-back position. Keep it that way.
31. Shove the knee cap back where it should be and splint the leg. Send him out with the next kid.
32. His entire knee is dislocated. He has no circulation to his lower leg and foot. You need to find a couple strong men to put traction on the lower leg and try to move it back into position. You will need anesthesia for this because it will be terribly painful. Ketamine will do. Then send him out.
33. He has a broken collar bone. Put him in a strap.
34. She had a broken radial head. Force her hand into a palm-up position and splint it that way. She should go for an x-ray and casting when she is able, preferably within 10 days.
35. He has a navicular fracture. Splint the thumb, wrist, and elbow as directed in the book. Be sure that when this is done he cannot move the thumb. Tell him that it may not heal. He should go to a hospital.
36. Push (don't pull) the joint back into place while someone else holds the finger back. Then splint it.

37. Put him in traction until the curve is straight and he says the pain is better. Send him out by plane in 10 days, not by bumpy road in 8 hours. He probably needs IV fluids because of blood loss within the leg.

38. He has a fracture in his upper arm. Straighten and splint it. Use a sling with a weight on his forearm. Clean the laceration real well and put him on antibiotics. If the wound doesn't get infected and if the circulation to the hand stays good, you may be able to avoid an evacuation.

39. He has a fracture of the side bone of the lower leg. If it's not moved out of place, just splint it and wait for it to heal.

40. He has an ankle sprain. He needs to be splinted.

41. He has a fracture on the side of his foot. It will heal in 3 weeks with a splint and staying off of it, in 3 months if he walks with sturdy tie shoes.

42. He has a dislocated shoulder. You need to put it back in place according to the directions in the book. Eight hours is too long to let it wait.