ER Charting
What is a good balance?

ED Rounds
June 10, 2013
Outline

• What makes a good ER chart?
• Types of chart systems
• Review of EMR productivity
• Medical student charting
• Atlantic Colleges Medical Peer Review
• “A focused history and physical exam”
• Best way to describe an ER chart is somewhere between a full H&P (the 5 page internal medicine encyclopedia) and a SOAP note.
Is a good ER chart important?

• Provides a vital link in physician communication.
• Provides an accurate recording of the patient visit.
• Serves as a platform to support billing codes in a fee for service environment.
• Is the only defense you have in a legal issue / complaint.
A Pause for Reflection.

• 1. The best part of my chart is________
• 2. The first thing I would change about the way I chart is ________.
• 3. The main reason I don’t do a better job of charting is ________.
• 4. My ED department could better support my charting by ________.
• 5. If I could choose 1 thing to change in my colleagues chart it would be ________.
    • The ideal type of charting for me is ________. (Ie. EMR, T-chart, form chart, dictation, scribed, ect.)
Barriers to Good Charting.

• TIME ... or perceived lack of same.
• Bad habits
• Chart layout
• Method of charting (scribes, EMR, dictation, typing, handwritten)
• Perceived lack of value.
What makes a good chart?

- The demographic data is already collected on our charts when we get them (PPRN, Name, Age, Gender, method of arrival, Patient’s GP, contact info, substitute decision maker)
- Universally, all ER charts should have the following:
  - Chief complaint
    - 1 liner about presenting complaint.
  - HPI
    - Always document source of information and any difficulty obtaining same.
    - Details depend upon complexity of case.
      - P – position
      - Q - quality
      - R - radiation
      - S - severity
      - T – timing (onset, duration)
      - A – aggravating
      - A – alleviating
      - A – associated events.
      - Δ – what has changed today
  - Allergies
    - Both substance and reaction
  - Past medical / surgical history
  - Medications
    - Not just what they are prescribed but inquire to compliance.
  - Assessment/Plan
    - Should include reasoning and differential.
  - Discharge instructions.
    - Document on chart and offer clearly written instructions in complicated discharges
    - Clearly document any follow up appointments and patients understanding of same.
    - Avoid the use of medical jargon “F/U in 2 weeks” may not go over well with the patient.
Review of Systems.

- Constitutional
- Eyes
- ENT
- CV
- Resp
- GI
- GU
- Musculoskeletal
- Skin
- Neuro
- Psych
- Endocrine
- Lymphatic/Hematologic
- Allergic/Immunologic
Physical Exam

- Constitutional-well developed well nourished **WDWN**
- Psych-oriented x 3 with good recall for recent/remote
- Eyes-pupils conjunctiva or sclera
- ENT and Mouth-tm intact or good dentition
- Resp-CTA B
- CV-heart or jvd or arterial exam
- GI-must include palpation, percussion and/or auscultation. Must include either deep palpation noting masses or auscultation
- GU-can either be external exam of urethra and bladder or internal pelvic. For male either meatus and bladder or scrotum/penis/testes
- Integumentary/Skin
- Neuro: must have CN and DTRS or sens or motor
- Musculoskeletal-must document rom in addition to tenderness/swelling
- Hematologic/lymphatic/immunologic
<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Example</th>
<th>History</th>
<th>Exam Elements</th>
<th>Medical Decision Making</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>99281</td>
<td>Low complexity patients requiring no interventions - cellulitis re-check</td>
<td>1-3 HPI</td>
<td>1 organ system</td>
<td>Straight forward</td>
<td>$127</td>
</tr>
<tr>
<td>&quot;Level 1&quot;</td>
<td></td>
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<tr>
<td>99282</td>
<td>Low complexity patients requiring one intervention - abscess recheck with repacking</td>
<td>1-3 HPI 1 ROS system</td>
<td>2-4 organ systems</td>
<td>Low</td>
<td>$170</td>
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<tr>
<td>&quot;Level 2&quot;</td>
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<tr>
<td>99283</td>
<td>Moderate complex patient requiring 2-3 interventions - sprain, fracture ruled out by x-ray</td>
<td>1-3 HPI 1 ROS system</td>
<td>2-4 organ systems</td>
<td>Moderate</td>
<td>$256</td>
</tr>
<tr>
<td>&quot;Level 3&quot;</td>
<td></td>
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<tr>
<td>99284</td>
<td>Requires multiple interventions - abdominal pain with a CT, a couple of labs and a med or 2</td>
<td>4+ HPI 2-9 ROS system PMH, FH or SOC</td>
<td>5-7 organ systems</td>
<td>Moderate</td>
<td>$383</td>
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<tr>
<td>&quot;Level 4&quot;</td>
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<tr>
<td>99285</td>
<td>Complicated patients requiring life-saving interventions - septic patient admitted to ICU</td>
<td>4+ HPI 10 ROS system PMH, FH &amp; SOC</td>
<td>8+ organ systems</td>
<td>High</td>
<td>$571</td>
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<tr>
<td>&quot;Level 5&quot;</td>
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<tr>
<td>Level 1</td>
<td>Abdominal pain, suspected foreign body or surgical incision, w/ or w/o fever, or requiring IV.</td>
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<tr>
<td>Level 2</td>
<td>Conjunctivitis, no pain or suspected foreign body</td>
<td></td>
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<tr>
<td></td>
<td>Eye pain, no foreign body, no slit lamp exam</td>
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<td></td>
<td>Impetigo, localized to face</td>
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<td></td>
<td>Insect bite/w/ mild edema &amp; warmth, no fever</td>
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<td></td>
<td>Laceration/simple, not sutured, closed w/ ster-strips</td>
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<tr>
<td></td>
<td>Minor trauma w/ localized pain, swelling, bruising, contusion &amp;/or abrasion (simple laceration repair), no x-ray</td>
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<td></td>
<td>Otitis media/otitis media, no fever, no prescription (child)</td>
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<td></td>
<td>Rash localized to extremities, no fever, no prescription (child)</td>
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<td></td>
<td>Sunburn w/ blister formation</td>
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</tr>
<tr>
<td>Level 3</td>
<td>Ankle injury non-weight bearing</td>
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<tr>
<td></td>
<td>Bronchitis, no breathing symptoms</td>
<td></td>
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<tr>
<td></td>
<td>Cystitis, acute symptoms, no fever, abdominal or back pain, no pain exam</td>
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<td></td>
<td>Detox screening, otherwise asymptomatic</td>
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**Critical Care**

- Anaphylactic shock
- Angina, unstable
- Atrial fibrillation w/tachycardia
- COPD, CHF
- Severe exacerbation
- Glasgow Coma Scale below 13
- Head injury, severe, unresponsive
- Major injury, stab or gunshot wound to vital area
- Performance of endotracheal or rapid sequence intubation
- CPR, thrombolytic therapy
- TPA/abc/abc, streptokinase/carboprost, defibrillation, thoracotomy or cricothyrotomy

**Pneumothorax**

- Pulmonary embolism
- Rapid heart rate requiring intensive IV therapy and observation in ED
- Seizure w/disorder, sos, multiple drug regimen
- Sepsis
- Severe bleeding w/transfusion
- Shock, unresponsive patient

**Status Asthmaticus**

- Status Epilepticus

**Suicidal ideation with immediate attempt, requires restraint**

**Toxic patient, sepsis**

- Trauma, multiple, altered consciousness, tachycardia, life of limb threatened

**Unstable vital signs w/aggressive treatment**

*Table adapted from [CPT levels](https://www.cptlevels.com) (not to be used for actual CPT levels).*
The Softer Stuff.

• Always document any procedures / interventions.
• Time of orders should be included.
• Always document time of first interaction with patient (ie note time on ecg when you sign it). (researchers love this...so do lawyers)
• Vital signs should be clearly identified and updated. (nursing notes OK but check to make sure they are done)
• Re-assess times should be documented.
• Document any communication on the patients behalf (family, consultants, old charts, call to nursing home, repeated calls to expedite testing / lab results, patient handover, ect.)
• Document special signs
  – Appendicitis often not positive - psoas, Rovsing's, or obturator sign, but looks bad if not documented

• Explain abnormal vitals. (BP 180/95, pt forgot bp med this am).

• Briefly document important info in phone conversation with consultants, (ie advised troponin was 900)

• Address all inconsistencies “historic alternans”
  – If the patient reported chest pain because he thought he would be seen sooner, make it crystal clear in your notation that he had no chest pain despite such complaint to the triage nurse.”
  – Must also include resident/student histories. (READ THEM)

• Document interaction with resident/student patients. (discussed with resident. Patient examined and history confirmed).
EVOLUTION OF HANDWRITING

COLLEGE:
The quick brown fox jumps over the lazy dog.

MEDICAL SCHOOL:
The quick brown fox jumps over the lazy dog.

RESIDENCY:
The quick brown fox jumps over the lazy dog.

ATTENDING:

See resident note.
THE 7 TYPES OF PHYSICIAN HANDWRITING

5 YEAR OLD HANDWRITING:
Patient seen and examined

IMMACULATE, ILLEGIBLE SCRIPT:
Allergy and medications

SANSKRIT:
श्लोक १ तल २ तल

EVERY 4TH WORD LEGIBLE:
Uncritical admission STAT!

EVERY WORD MUST TOUCH LINE MARGINS:
Patient is alert
But oriented × 4

TEENY TINY:
Patient has history of hypertension and diabetes

HAD 30 SECONDS TO WRITE NOTE:
[Signature]
"Just show me the applications with bad handwriting."
CC: right-upper quadrant abdominal pain
HPI: 42 year-old female with 2-days of intermittent right-upper quadrant abdominal pain. She describes it as sharp, radiates around the flank to the back, lasts about 20 minutes each time, brought on by eating fatty foods, spontaneously resolves but cannot think of anything that makes it better (no relief with tylenol). She's had pain like this intermittently in the past, but came today because now it is associated with vomiting. No fever or cough. No dysuria, urinary frequency. No spicy food, caffeine intolerance. No back pain. No vaginal bleeding or discharge.
PMH: HTN, DM, asthma
PSH: appendectomy (1992)
Soc Hx: no alcohol, tobacco or illicit drug usage, here with husband
Fam Hx: father died of MI, mom alive but has HTN
ROS:
CONSTITUTIONAL - no fever, no diaphoresis;
EYES - no eye pain, blurred vision;
EARS - no change in hearing, no pain;
RESPIRATORY - no shortness of breath, no cough;
CARDIAC - no chest pain, palpitations;
ABDOMINAL - vomiting, no diarrhea;
GENITO-URINARY - no vaginal bleeding, discharge, no dysuria;
MUSCULOSKELETAL - no joint pain;
NEUROLOGIC - no headache, no slurred speech, no paresthesias;
SKIN - no rash
Vitals: 130/80, 90, 20, 98.6F, 98%

Physical:
GEN - no acute distress;
HEENT - mucous membranes are moist;
PULMONARY - lungs clear without wheezes, symmetric breath sounds;
CARDIAC - regular rate and rhythm;
ABDOMEN - Murphy's tenderness in right-upper quadrant, no RLQ pain, no rebound or guarding;
BACK & EXTREMITIES - no CVA tenderness, symmetric pulses;
PELVIC - no discharge, cervical motion tenderness or adnexal masses/tenderness;
SKIN - no rash or bruising

Assessment & Plan: This is a 42-year-old female with 2-days of right-upper quadrant pain consistent with biliary colic vs. cholecystitis. Will place an IV and check CBC, LFT's and a right-upper quadrant ultrasound, and consult surgery if needed. Toradol for pain. No McBurney's tenderness to suggest appendicitis. No shortness of breath or basilar crackles to suggest a lower lobe pneumonia, however will get a CXR to assess for this. Will check a lipase for potential pancreatitis.
3 pm patient's pain improved with toradol. Abdomen remains soft.
3:40 pm ultrasound consistent with cholecystitis (gall bladder wall thickening, pericholecystic fluid). Surgery paged.
4:02 pm surgery here to see patient, Dr. Cutter's service.
4:08 pm antibiotics hung, ancef per surgeon's recommendations. Talked to patient's husband about surgical options vs refusing surgery. He initially didn't want his wife to get the operation, now on board with plan.
4:15 pm patient transported to OR
Avoid using your own acronyms

• **AGA** - Acute Gravity Attack (fell over)
• **AHF** - Acute Hissy Fit
• **ALS** - Absolute Loss of Sanity
• **ATS** - Acute Thespian Syndrome: faking illness
• **BIT** - burp in transit (gas seen in the stomach on an abdominal film)
• **BSS** - Bilateral Samsonite Syndrome: patient admitted with both their bags packed in preparation
• **COPD** - Chronic Old Persons Disease (unwell, no specific cause)

• **CROACC** - Cannot Rule Out Anything, Correlate Clinically
• **DENTIST** - Doesn't Even Need Treatment - It's Sorted, Truly
• **DWPA** - Death/Dying With Paramedic Assistance
• **SOCMOB** - Standing On Corner Minding Own Business (when inexplicably injured)
• **UDI** - Unidentified Drinking Injury
Chart Bloopers

• She stated that she had been constipated for most of her life until 1989 when she got a divorce.

• On the second day the knee was better and on the third day it had completely disappeared.

• Healthy-appearing, decrepit 69 year old male, mentally alert but forgetful.

• The patient is a 79-year-old widow who no longer lives with her husband.

• The patient left the hospital feeling much better except for her original complaints.

• Rectal exam revealed a normal size thyroid.
Types of ER charting

• Handwritten
• Dictation
• Scribe
• Template
• Electronic Medical Record
Handwritten Charts

Advantages
• Cheap - essentially no cost up front
• Quick (even faster when incomplete)
• Only limited by thought and artistic ability.

Disadvantages
• High risk of inadequate documentation leading to:
  – Lower quality of care
  – Increased malpractice exposure
  – Lower reimbursement
• Slow charting (if done properly)-poor physician productivity
• Often illegible and leads to:
  – Poor medical staff relations
  – High risk of poor continuity of care
  – Sloppy appearing charts
  – Poor risk management>
Dictation

Advantages
• Very legible
• Medical staff loves them
• Preference by pt safety organizations.
• EMR compatibility - text can be searched improving QI integration
• Speech recognition software making it cheaper

Disadvantages
• High cost
• Often unavailable
• Requires transcription
  – Delaying availability
  – Potential for poor continuity of care
  – Potential risk management issues
• Very slow - poor productivity
• High risk of inadequate documentation
• Requires quiet area to dictate
• Any bedside work (notes) must be redone
• Not able to diagram
• Verbal illegibility- heavy accents, quick talkers, word slurrers.
Templates

**Advantages**

- Variable costs - some are low
- Substantial increased productivity
- Rapid attention to billing requirements
- Can incorporate risk management coaching
- Can incorporate QI adherence directives

**Disadvantages**

- Variable cost - some present significant cost considerations
- Often poorly accepted by medical staff as cluttered appearance makes key info hard to see
- Steep learning curve. The higher the number of templates and the more cluttered the template, the worse the problem.
- Often offer little ability to individualize chart to address specific needs of a patient or case
- Template selection bias. (wrong CC entered = wrong template and poor history)
- Unexpectedly high complexity visits may be undercoded as template not designed to capture the higher level of required elements. Lost revenue.
CVS
- regular rate, rhythm
- heart sounds normal
- full/equal pulses
- on monitor

irregularly irregular rhythm
- tachycardia/bradycardia
- JVD present/gallop (S3/S4)
- murmur grade 2/6 syst/dias
- decreased pulse(s)
- R carotid ✓ fem ✓ dors ped ✓
- L carotid ✓ fem ✓ dors ped ✓

AF/CHF/AC
- R: 90-110

N/CH/CH/O

Repeat exam
PM: no change.

| T = tenderness |
| G = guarding |
| R = rebound |
| m = mild |
| mod = moderate |
| s = severe |
| Exc. = severe tenderness |

ABDOMEN
- soft
- non-tender
- ✓ no organomegaly
- ✓ nml bowel sounds
- ✓ no pulsatile mass
- ✓ no abdominal bruit

distention/tenderness/guarding/rebound
hepatomegaly/splenomegaly/mass
abnormal bowel sounds
increased/decreased/absent/tympanic
prominent aortic pulsations
McBurney’s point tenderness
psosas/Rovsing’s sign/oburator sign

PELVIC EXAM
- external exam nml
- speculum exam nml
- bimanual exam nml
- deferred

vaginal bleeding/discharge
- cervical motion tenderness
- adnexal tenderness (R/L)
- enlarged/tender uterus
- adnexal mass (R/L)
- tenderness/swelling
testicular/inguinal

MALE GENITAL
- normal inspection

RECTAL
- ✓ non-tender
- ✓ heme neg stool
  (nml) control: ✓ pos ✓ neg
- black/bloody/heme-pos. stool
- tenderness
- fecal impaction
- no abscess/no lymph
- no cellulitis/no excoriation
EMR

Advantages
• Improved communication
• Improved patient safety
• Seamless sharing of data
• Reduction of medical errors in order entry
• More efficient billing
• Efficient for research.
• Shown to decrease patient length of stay

Disadvantages
• High learning curve
• Requires some technical literacy
• Often not user friendly as hospitals buy network wide systems that do not accommodate ED operational processes.
• Data entry errors
• Flexibility limited –diagrams, pictures.
• Re-populating historical data/ bringing forward to new system, consistent usage.
• Its electronic
  – Pt privacy and firewalls
  – Server reliability
  – Computer availability
  – Compatibility with other programs.
EMRs Good/bad.

- After some rooting around on the part of the conscientious, helpful ER doc, it turned out that the only way their brand-spanking new EMR system would send me a nifty new easy-to-read report was if all of the following things happened:
  - If I was in their system (I am)
  - If the system had my correct contact information (it does)
  - If the doctor clicked on my name from a pick list while he was writing the discharge instructions.

Note: Not before (ie, the information wasn't carried over from the sign-in process when patients are asked who their doctors are); not during the visit (while the doctor was in the process of diagnosing and treating the patient), but SPECIFICALLY while the doctor was typing the discharge instructions.

- "So I'll just keep trying to remember to click on your name when your patients come in. I'll also make sure the other docs try to remember to do it too."

And isn't that EXACTLY what we want ER docs to be thinking about while they're making life and death decisions.

Medicine is often compared unfavorably to the airline industry in its failure to use checklists to avoid mistakes. Well, I'm pretty sure there's no checklist that requires a pilot during take-off to go into the cabin and ask who ordered the fruit plate.

But the forces that run modern medicine (including our professional societies) feel that there is no administrative task too trivial that it should not be allowed to interfere with the doctor's interaction with his patients. This trend is only exacerbated by making an EMR the focus of the physician's concentration.

Basic point: anything that reduces the time and mental energy a physician has to bring to direct, one-on-one patient contact is BAD.
Scribes

**Advantages**
- Highly efficient which increases productivity
- Increased billing - Both due to increased efficiency and better charting
- Provides another body in the room
  - help with procedural set up
  - Chaperone
  - Gopher (NL Go’fer) rounding up labs and test results.
  - Cross training to provide services like ECG tech, vitals and blood draw.

**Disadvantages**
- Cost in non business model ER’s
- Quality and training of scribes
- Reliance on another person.
- Pt confidentiality
- Limited by chart type being used.
How bad can it be?

- 4000 Clicks: a productivity analysis of electronic medical records in a community hospital ED
- Robert G. Hill Jr, et al,

2009 US Government initiated Recovery and Reinvestment act included 19 Billion in incentives for employing EMR’s

Study evaluated productivity in community ER using electronic medical records.

Each study participant tracked for 30 hours

Recorded time spent in 4 Categories : patient contact, data entry, order entry, consultation and discussion.

System used was McKesson Horizon Emergency care v.10.3

Option to use Dragon dictation instead of free typing.

Study included residents, NP/PA’s and physicians.
The numbers

Table 1
Quantity of mouse clicks for selected EMR tasks
Order a 325-mg aspirin 6
Order a chest x-ray PA and lateral 8
View a test result in old records 11
View and interpret a chest x-ray post anterior and lateral 13
Write and print a single prescription 15
Create and print discharge instructions 20
Document physical examination of a hand-and-wrist injury 40
Document physical examination of back pain 47
Completed EMR right upper quadrant abdominal pain (discharged) 227
Completed EMR palpitations (discharged) 181
Completed EMR chest pain (admitted) 187
Average over selected cases and chief complaints 160
Mouse Madness

- 2 patients per hour = 320 clicks/h = 3200 /day
- 2.12 = 339/h = 3390 per 10 h shift
- 2.5 pts/h = 400 clicks / h = 4000 per day.

- Interestingly, use of dictation software vs free typing did not lead to improvements.
What do we do all day?

- Data entry: 44%
- Patient Contact: 28%
- Review: 12%
- Discussion: 13%
- Other: 3%
What do we need to change?

- Brings into question training programs
- mental fatigue from repeatedly clicking mouse boxes leading to errors.
- Workplace ergonomics / repetitive strain injuries
- Environmental design.
  - Where are the computers
  - Is there a charting / dictating room?
  - Are interruptions minimized during charting/order entry.
"I don't know what's worse - trying to read a doctor's handwriting in charts or their typing errors in the EMR."
Do we let medical students write on the charts?

• Is there a medical legal risk?
• Is there value in it?
  – Students are expected to be able to chart properly
  – Communicate effectively with colleagues
  – Helps students feel part of the team.
  – Students often take more time to chart than staff.
Friedman et al Academic Medicine vol85 no.9 Sept 2010

– Surveyed 126 medical school deans in US and Canada
– 79 responded.
– 96% of respondents felt 4th year student notes should be in paper charts with a slightly lower number for 3rd year charts
– Teaching hospitals were more restrictive with allowing access to the EMR.
APMPR
Atlantic Provinces Medical Peer Review

• Pulled 20 charts over several days..
• Assessed for numerous items on a qualitative scale
• Is the patient clearly identified
• is a record system which allows for easy retrieval of an individual patient's file
• Is there a system in place to ensure that the physician does not miss abnormal test results?
• Is the record legible and the date recorded?
Patient Care

• Is investigation appropriate to the complaint or condition?
• Is the diagnosis supported by the history, physical findings and investigation?
• Is the management plan suitable to the condition?
• Is medication prescribed appropriate to the condition?
• Is follow-up on acute conditions appropriate?
• Is follow-up on chronic conditions appropriate?
• Are other community resources used appropriately?
• Are referrals to other physicians appropriate?
• Are emergency problems dealt with promptly and effectively?
• Is discharge advice clearly documented?
Chart excerpts

- nonverbal, noncommunicative and offers no complaints
- Reason for leaving AMA – “pt wants to live”
- denies any rectal breeding
- MD @ bedside attempted to urinate
- pt expired and was dc’d home
- This is a 981 YO female with a host of medical problems
- She is to wear STD stockings
- nonaudible wheezing noted
- No clubbing, cyanois, or extremities
What now?

• Look back at your answers to the earlier questions.
• What can we do to simplify our charting here?
• Can we make changes to our environment / ergonomics to improve things?
• Do we NEED a charting room?

• "Doctors at a hospital in Brooklyn, New York have gone on strike. Hospital officials say they will find out what the Doctors' demands are as soon as they can get a pharmacist over there to read the picket signs!"