University
Medical Center

Clinical Clips

ACUTE MYOCARDIAL INFARCTION (AMI)

- Did the patient receive ASA within 24 hours of hospital arrival?
- Did the patient receive beta-blockers within 24 hours of hospital admission?
- Was onset of chest pain or signs and symptoms ≤ 12 hours prior to arrival?
- Is patient receiving an ACE if EF ≤ 40%?
- Was lipid profile completed?
- Was patient referred to Cardiac Rehabilitation?
- Is there a history of cigarette use within the year of arrival or current use?
- Is there documentation of education / counseling on smoking cessation?
- On discharge did the patient receive a prescription for:
  - ✓ ASA
  - ✓ Beta-Blockers
  - ✓ ACE Inhibitors
- Was education provided on these medications?

COMMUNITY ACQUIRED PNEUMONIA (CAP#1)

- Is pneumonia among the working diagnosis for admission?
- Initiate CAP CareMap® and Teaching Protocol
- **Recommended antibiotics:**

Non-ICU patients:
Beta-lactam + Macrolide
(Cefriaxone + Azithromycin) ***or***
Quinolone (Moxifloxacin)

- *For Critical Care or Intermediate Care Patients:*

Moxifloxacin + Ampicillin-Sulbactam
Moxifloxacin + Clindamycin **if Penicillin allergic**

- *For Critical Care or Intermediate Care patients with pseudomonal risk (e.g. neutropenia):*

Piperacillin-Taxobactam + Moxifloxacin
Aztreonam + Moxifloxacin **if Penicillin allergic**

May also use Tobramycin in combination therapy

- Is there documentation that the patient received their initial antibiotic dose within 4 hours of hospital arrival?
- Is there documentation that blood cultures were collected before administration of initial antibiotic?
- Is there documentation that the patient with pneumonia was screened for and given the pneumococcal vaccine if age 65 years or older and eligible. If patient is immunosuppressed or has a chronic disease obtain a physician's order to vaccinate.
- Is there documentation that the patient with pneumonia has been screened for and given the ifluenza vaccine(October through March), if age 50 years or older and eligible. If patient is immunosuppressed or has a chronic disease obtain a physician's order to vaccinate.
- Is there documentation that patients of **all** ages & parents of patients under 18 presently smoking cigarettes or having quit in the last year have been given smoking cessation advise and/or counseling?
- Was oxygenation assessed and documented by pulse oximetry or arterial blood gases.

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ASTHMA

- Initiate Asthma Teaching Protocol
- Provide Asthma Teaching materials
- Has physician ordered:
  - ✓ Peak Flow Measurement
  - ✓ Spacers for MDI's
  - ✓ Anti-inflammatory medication for discharge (preferably inhaled steroids)
- Has an Asthma Action Plan been discussed with patient for use following discharge

STROKE / TIA

- Avoid sub-lingual Nifedipine
- Has CT/MRI been completed?
- Document date/time patient left and returned from CT/MRI
- Document date/time thrombolytic therapy was administered
- Document on discharge summary if patient was discharged on or plan at discharge for antithrombotic:
  - ✓ Aggrenox
  - ✓ Aspirin
  - ✓ Warfarin/Coumadin
  - ✓ Persantine/Dipyridamole
  - ✓ Plavix/Clopidogrel
  - ✓ Ticlid / Ticlodipine
- Initiate Physical Therapy within 24 hours of admission
- Provide education on Stroke Prevention:
  - ✓ Control Risk Factors
  - ✓ Know signs and symptoms
  - ✓ Call 911 if symptoms occur

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

- Initiate COPD CareMap® and Teaching Protocol
- Have the following been addressed if appropriate:
- Is patient a candidate for "Switch Therapy" for antibiotics or steroids?
  - ✓ Smoking Cessation
  - ✓ Immunizations (Influenza & Pneumococcal)
  - ✓ Pulmonary Rehabilitation
- **COPD Switch Therapy**
  Exacerbation of COPD should include a combination of at least 3 of the following clinical findings: worsening dyspnea, increased sputum purulence and increased cough and volume of sputum.

- **Exclusions:** Patients, who are ***intubated,*** have active ***CHF, Pulmonary Emboli*** or ***Sepsis/Infections*** other than ***Bronchitis*** will **not** be eligible for switch therapy.
- **Antibiotics:** A Macrolide and Beta-lactum, such as Cefriaxone + Azithromycin or a Quinolone, such as Moxifloxacin will be utilized and be switched to a PO equivalent after 24 hours if switch criteria are met.
- **Corticosteroids:** Will be switched to oral Prednisone after 3 days if switch criteria are met.

Criteria for Switch Therapy
1. Absence of fever (>100°F) for 24 hours
2. Improvement in shortness of breath and cough
3. Decrease in amount of sputum production, consistency and purulence
4. Peak flow improving or stable (optional)
5. Adequate gut absorption and adequate oral/enteral intake

Criteria for Discharge
1. Meets above criteria
2. Stable co-morbid conditions
3. Oxygenation stable with or without oxygen.

COMMUNITY ACQUIRED PNEUMONIA (CAP#2)

Has patient met criteria for *Switch Therapy*?
*Patients with **HIV/AIDS, lymphoma, leukemia** or undergoing **systemic chemotherapy** will not be eligible for Switch Therapy.*

Criteria for Switch to oral/enteral antibiotics
1. Absence of fever for 12 hours or Tmax for 24 hours < 100° F
2. Cough and shortness of breath improving.
3. Absence of high risk or resistant pathogen
   (i.e. staph aureus, Pcn-resistant Strep pneumoniae)
4. WBC trending down towards normal
5. Adequate gut absorption and adequate oral/enteral intake

Criteria for early discharge
1. Meets above criteria
2. WBC at < 12,000, or patient's baseline
3. Stable co-morbid conditions
4. Normal oxygenation, i.e. Sat > 90% on room air
5. PaO2 >60mmHg & PaCO2 <45mmHg or baseline

CONGESTIVE HEART FAILURE (CHF#1)

- Does the patient have primary or secondary CHF?
- Has BNP been completed in ETD if c/o shortness of breath?
- Is patient on daily weights & drug regimen (diuretics) consistent with algorithm leading to Euvolemia by Day 3?
- Has the MD documented patient's most recent LVEF, ECHO or Cardiac Cath?
- Is the patient on an ACE Inhibitor unless contraindicated?
- If the ACE is contraindicated or not tolerated use an ARB.
- On discharge, if the LVEF < 40%, did the patient receive a prescription for an ACE Inhibitor?

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ATRIAL FIBRILATION/ ANTICOAGULATION (ANTICOAG#1)

Candidates for anticoagulation therapy receive anticoagulation according to American College of Chest Physicians (ACCP)

High risk patients

- Prior stroke/TIA or systemic embolus, H/O HTN,
- Poor LV systolic function, age > 75 years, rheumatic mitral valve disease,prosthetic valve

Moderate risk patients

- Age 65-75years, diabetes, coronary artery disease with preserved LV systolic dysfunction

Low risk patients

- Age < 65 years without risk factors

Any contraindications to anticoagulation?
Is the patient actively bleeding?
Is the patient at high risk for falls?
Is there a history of ETOH abuse?

Generic Care Standards for Atrial Fibrilation

1. Initiate AFIB Tool Kit for patients with new onset of AFIB
2. New onset of AFIB : -Draw TSH level, -Echo if not done in last year, -Follow up instructions for PT/INR

TIPS FOR WARFARIN (COUMADIN®) DOSING AND MONITORING (ANTICOAG.#3)

- Know the reason the patient is starting on Warfarin and how it relates to clot formation
- Has some form of Heparin (IV Heparin, Low molecular weight Heparin) been started at the time of warfarin therapy initiation?
- A baseline INR, CBC, Chemistry (including LFT, creatinine, serum albumin) is recommended before initiation of oral anticoagulation
- Warfarin should be started at a dose of 5 mg for most patients and 2.5 mg for patients at high bleeding risk. Start with the patient's usual dose of Warfarin if the patient has been on Warfarin in the past
- Know potential drug / drug and food interactions and discuss interactions, including over-the-counter and herbal medications, with your patient.
- The INR should be checked daily while initiating anticoagulation therapy in the hospital. The INR response is variable and highly dependent on the half-lives of the Vitamin K dependent clotting factors
- Certain diseases can influence anticoagulation control:
  - ✓ CHF – can increase INR values by causing hepatic congestion and inhibiting Warfarin metabolism
  - ✓ Thyroid Disorders – Hypothyroidism – decreases the catabolism of Vitamin K clotting factors, a decrease in INR may be seen.
  - ✓ Fever, diarrhea and poor in nutritional intake can result in an increased INR

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CARE OF THE DIABETES PATIENT (DIABETES#1)

- Optimal BG: 70-130 mg/dl ac & 100-140 at hs
- Reportable conditions:
  - ✓ Hypoglycemic episode
  - ✓ BG over 200 mg/dl for two consecutive readings
  - ✓ BG over 200 mg/dl after being treated with a "sliding scale" dose
- Hypoglycemia (BG 70 mg/dl with or without symptoms) Management:
  - ✓ Give 15 mg carbohydrate (such as 4 oz. of juice, 8 oz. of skim milk or 1 tube of glutose gel) if alert or push one and one half of D50 (see protocol)
  - ✓ Recheck the BG in 15 minutes
  - ✓ Repeat if necessary (see protocol)

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ANTICOAGULATION (ANTICOAG.#2)

- The initiation of Warfarin (Coumadin) therapy may begin at the time anticoagulation is begun with Heparin
- Patients receiving concurrent Coumadin and Heparin may be evaluated for self management using LMWH(Lovenox®)
- AF patients receiving Coumadin will have medication profile reviewed for potential drug interactions
- All patients discharged receive verbal and written instructions regarding:
  - ✓ Medication Management
  - ✓ Diet
  - ✓ Emergency Contacts
  - ✓ Follow-up treatment plan
  - ✓ Patient responsibility in this plan
- Are follow-up instructions for PT/INR documented on Patient Discharge summary?

CONGESTIVE HEART FAILURE (CHF#2)

- Has the patient been instructed and the following been documented on the discharge summary?
  - ✓ Diet: Low sodium should be included with any other restrictions appropriate to the individual patient
  - ✓ Activity: As tolerated is appropriate
  - ✓ Weight Monitoring: Instruct patient to weigh themselves daily & report a gain of > 2 lbs. to MD
- Documentation of instruction to patient to call their MD immediately if they have any recurrence of symptoms that brought them to the hospital. Also document to call 911 for chest discomfort or breathing problems
- Medications: All medication should be written out on the discharge summary. It is not acceptable to document any version of the following:
  - ✓ "Continue meds as at home"
  - ✓ "Meds as per Dr. Smith"
  - ✓ "See attached sheet for meds"
- Smoking Cessation information, if applicable

CARE OF THE DIABETES PATIENT (DIABETES#2)

- Teaching questions to ask yourself:
  - ✓ Are they going home on insulin & if so, did teaching begin (obtain Insulin Take Home Kit)?
  - ✓ Do they check their blood sugars at home? If not, why not? Begin teaching with our blood glucose meter
  - ✓ Do they know the s/s of high & low blood glucose and how to manage them?
  - ✓ Do they know what to eat (if not, call dietician)?
  - ✓ Encourage outpatient education (give them brochure for the Diabetes Center)
- Teaching Tools:
  - ✓ Insulin Take Home Kit
  - ✓ Book: "Diabetes First"
  - ✓ Diabetes Education for Nurses Handout
  - ✓ Diabetes Education Instructional Record: Inventory # 5010593
  - ✓ Videotapes on Channel 68

COMMON DRUG INTERACTIONS WITH WARFARIN (Anticoag.#4)

NSAIDS – Celecoxib, (Celebrex), Rofecoxib (Vioxx), Valdecoxib (Bextra) – increase INR

Aspirin – Increase INR with large doses (e.g., 3 / g day)

Acetaminophen – Increase INR with large doses (e.g., 2g / day over 7 days)

ANTIBIOTICS:

Ciprofloxacin (Cipro) – Increase INR

Clarithromycin (Biaxin) – Increase INR

Fluconazole (Diflucan) – Increase INR

Metronidazole (Flagyl) – Increase INR

Rifampin – Decrease INR

Trimethoprim/Sulfamethoxazole (Bactrim) – Increase INR

Levofloxacin (Levaquin) – Increase INR

Cephalosporins i.e., Ceftriaxone (Rocephin) – Increase INR

ANTIARRHYTHMICS:

Amiodarone (Cordarone) – Increase in INR (usually gradual over 7-10 days)

Propafenone (Rythmol) – Increase INR

ANTICONVULSANTS:

Lamotrigine (Lamictal) – Decrease INR

Phenytoin (Dilantin) – Initial decrease in INR, followed by decrease INR 1-2 weeks

OTHER:

Barbiturates – Decrease INR

Enteral Nutritional Supplements – Decrease INR

Reference: Adapted from Hansten, P, Horn, J. The Top 100 Drug Interactions, 2002

Surgical Infection Prophylaxis

Reason: To decrease risk of post-op wound infection and prevent antibiotic resistance. The use of prolonged antibiotics promotes resistance of organisms and subjects patients to increased antibiotic associated morbidity.

1. Antibiotics are administered pre-op within one hour of Surgical incision.
2. The correct antibiotic is administered for the type of operation performed.
3. Post op doses of antibiotics are completed within 24 hours after completion of surgery.

The nurse needs to check the anesthesia records for Surgery end time and ensure that post-operative antibiotics are completed within 24 hours. The first post operative doses most likely will be given in the PACU. Please check the time dose was given in the PACU to schedule subsequent doses on the floor.

GERIATRICS

F	Fluids	Offer each encounter (4-6 oz.) Every member of the interdisciplinary team Use short straw if necessary
E	Eating	Up in chair all meals, Cohort when possible Observe abilities, fill in gaps, OT evaluation Set-up, cue Oral hygiene
A	Ambulate	To tolerance At least length of corridor q2h between 9 a.m. - 9 p.m. PT evaluation
T	Toilet	Every two hours until person's pattern identified Regular time for BM (after breakfast) don't rush Don't wake up at night, toilet, change when awake
S	Sleep	Sleep medications rarely, if ever Start wind-down around 9 p.m. Warm milk, herbal tea Oral hygiene, back rub Night light, noise control

GUIDELINES FOR TELEMETRY (TELEMETRY#2)

Indications for Initial Use and Continued Use after 48°

Syncope:

- ✓ If strong clinical suspicion of arrhythmia involvement

Acute Myocarditis or Pericarditis

Other:

- ✓ Carotid Endarectomy: 24 hours
- ✓ Symptomatic GI Bleed / Anemia: 24 hours unless tachy
- ✓ Drips: Dopamine / Dobutamine: 24 hours

GUIDELINES FOR TELEMETRY (TELEMETRY#4)

Indications for Removal

Syncope:

- ✓ 48° without evidence of cardiac disease or arrhythmia correlation

Acute Myocarditis or Pericarditis:

- ✓ 2 days if clinically stable

Daily Documentation for indication for telemetry is required

GUIDELINES FOR TELEMETRY (TELEMETRY#1)

Indications for Initial Use and Continued Use after 48°

Arrhythmias:

- ✓ Hemodynamic instability (ex: BP drop, dizziness, etc.)
- ✓ Clinically unstable
- ✓ Undergoing cardiac drug titration

Prophylaxis for potentially serious arrhythmias:

- ✓ Toxic or metabolic disturbance
- ✓ Acute MI – with clinical history highly suggestive without diagnostic ECG changes
- ✓ Unstable angina / rule out MI with clinical history highly suggestive without diagnostic ECG changes
- ✓ Chest pain with (-) Troponin 6-8°

Post-Procedures:

- ✓ Temporary transvenous pacemaker
- ✓ Post-permanent pacemaker implantation
- ✓ Post-cardiac catheterization: only for a specific problem (ex: high risk lesions, diffuse disease, unstable during procedure)
- ✓ Post PTCA
- ✓ Post Cardiac Surgery
- ✓ Post Catheter Ablation

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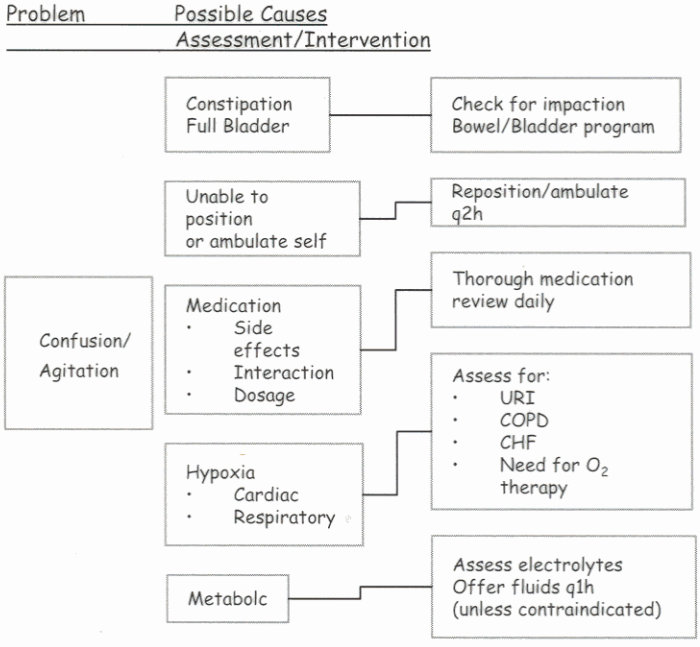
GERIATRICS

Confusion / Agitation Algorithm



PHYSICAL THERAPY #1

How to Safely Transfer a Patient Out of Bed

- ✓ Determine if the patient has one side that is stronger than the other – this is the side that you will be transferring the patient towards
- ✓ Position chair as close as possible to the side of the bed that you will be transferring to
- ✓ Lower both bedrails on the side of the bed that you have positioned the chair
- ✓ If you think you may need help, be sure that you have someone stand-by in case you need them
- ✓ Dangle the patient at the edge of the bed, bend your knees and secure the patient with your arms around their waist
- ✓ Keeping your back straight, bring the patient in to your base of support and stand the patient by straightening your knees

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GUIDELINES FOR TELEMETRY (TELEMETRY#3)

Indications for Removal

Arrhythmias:

- ✓ Supraventricular - stable X 24°
- ✓ Ventricular – stable X 48°

Prophylaxis:

- ✓ Toxic / metabolic - 24° after reversal
- ✓ Acute MI – uncomplicated - 48° post onset
- ✓ Unstable angina – pain free X 48° or negative Troponin 6 – 8° post onset of pain

Post Procedures:

- ✓ Temporary transvenous pacemaker – after removal
- ✓ Post permanent pacemaker - 24° after implantation
- ✓ Post cardiac catheterization - 24° after specific problem is resolved
- ✓ Post PTCA - 24° post procedure
- ✓ Post cardiac surgery – uncomplicated 48° after transfer to 4 W
- ✓ Post catheter ablation - 24° post procedure

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PHYSICAL THERAPY #2

How to Safely Transfer a Patient Out of Bed (cont.)

- ✓ Once the patient is standing, use your knee to block the patient's knee on the weak side to prevent their leg from buckling
- ✓ Continue to keep the patient within your base of support and begin to take small side steps towards the chair
- ✓ Once in front of the chair, lower the patient to the chair by bending your knees and keeping your back straight

PATIENT CARE ROUNDS (NUTRITION#2) TRIGGERS

Food Intake during hospitalization:

- Food intake < 50% usual elimination / avoidance of entire food groups (i.e., dairy, meat)
- Diarrhea > 3 days
- Vomiting > 3 days
- Unintentional weight change (weight gain or loss)

Education Needs: Notify dietician if your patient requires education before discharge.

Please remember to allow 24 hours for consult to be completed!

NORMAL LAB VALUES (LAB#2)

CHEMISTRIES:

Glucose	68 - 122 mg / dl
BUN	5 - 24 mg / dl
Creat.	.3 - 1.5 mg / dl
Na	130 - 146 mEq / L
K	3.2 - 5.1 mEq / L
CL	92 - 105 mEq / L
CO_2	26 - 30 mEq / L
Anion Gap	8 - 16 mEq
CA	8.4 - 10.2 mg / dl
MG	1.8 - 2.4 mg / dl
PO_4	2.7 - 4.3 mg / dl
Tot. Prot.	6 - 7.7 gm / dl

OTHER:

BNP	<100 pg / ml
Amylase	25 - 115 IU / L
Lipase	23 - 300 IU / L
Lactate	0.5 - 2.2 mmol / L
Ammonia	9 - 33 umol / L
ESR	0 - 15 mm / hr
HgA1C	4.2 - 5.9%
Bleeding time	<5.6 min

NORMAL LAB VALUES (LAB#1)

CBC:

WBC	4 – 11 X 10 ^ 3
RBC	4.7 - 6.1 X 10 ^ 6
Hgb	14 - 18 G / dl (men)
	12 - 16 G / dl (women)
Hct	42 - 52% (men)
	37 - 47% (women)
PLT	135 - 430 X 10 ^ 3

DIFFERENTIAL:

Segs	50 - 75%
Bands	0 - 5%

COAGULATION:

PT	11.6 - 14.7 sec.
INR	0 - 2
PTT	26 - 37.9 sec.

CARDIAC ENZYMES:

CK	57 - 374 u / l (male)
	35 - 230 u / l (women)
CK MB	< 6 NG / mL
TROP	0 - 2 NG / mL

THYROID PANEL:

T3 Uptake	24 - 36%
T4	4 - 14 UG / dl
TSH	0.5 - 5 uIU / mL

PATIENT CARE ROUNDS NUTRITION TRIGGERS (NUTRITION#1)

Diagnosis: These are on the Admission Profile Form. Please notify the RD if patient is diagnosed with any of the following while in house:

- Post Bone Marrow or Stem Cell Transplant
- Breast feeding / maternity not on maternity
- Burns – All 3rd degree and 2nd degree > 20% TBSA
- Cachexia / Malnutrition
- Crohn's Disease / Ulcerative Colitis / Celiac Disease
- Dehydration
- Dysphagia
- Eating disorder
- Intestinal fistula
- Liver failure
- Newly diagnosed Diabetes
- Renal failure
- Pressure Ulcer ≥ Stage 2
- Short bowel syndrome
- Cancer:
  - ✓ Pancreatic / Hepatic / GI / Head / Neck

Feeding Modalities: Please notify RD if patients feeding modality changes during hospitalization

- TPN
- Tube feed (i.e., newly placed tube)
- Nutritional supplements

NORMAL LAB VALUES (LAB#3)

LIVER PANEL:

ALT	0 - 55 IU / L (men)
	0 - 45 IU / L (women)
AST	10 - 30 IU / L
Bili (Total)	0.6 - 1.0 mg / dl
Bili (Direct)	0. - 0.4 mg / dl
Albumin	3.5 - 5.6 GM / dl
Alk Phos	43 - 122 IU / L

ABG's:

pH	7.35 - 7.45
pCO_2	35 - 45 MM / Hg
pO_2	80 - 100 MM / Hg
O_2 Sat	95 – 100%
HCO_3	22 - 26 mEq / L

THERAPEUTIC LEVELS:

Digoxin	.5 - 2 NG / mL
Dilantin	10 - 20 ug / mL
Vanco (Trough)	5 - 15 ug / mL
Peak	30 - 40 ug / mL

LIPID PROFILE:

Total Chol.	0 - 200 mg / dl
HDL	35 - 150 mg / dl
LDL	0 - 129 mg / dl
Triglycerides	60 - 160mg / dl

URINE:

Na	40 - 220
K	25 - 125
SpGr	1.010 - 1.025