The VASDHS Heart Failure Performance Improvement Team Creates a New System

Presented by:
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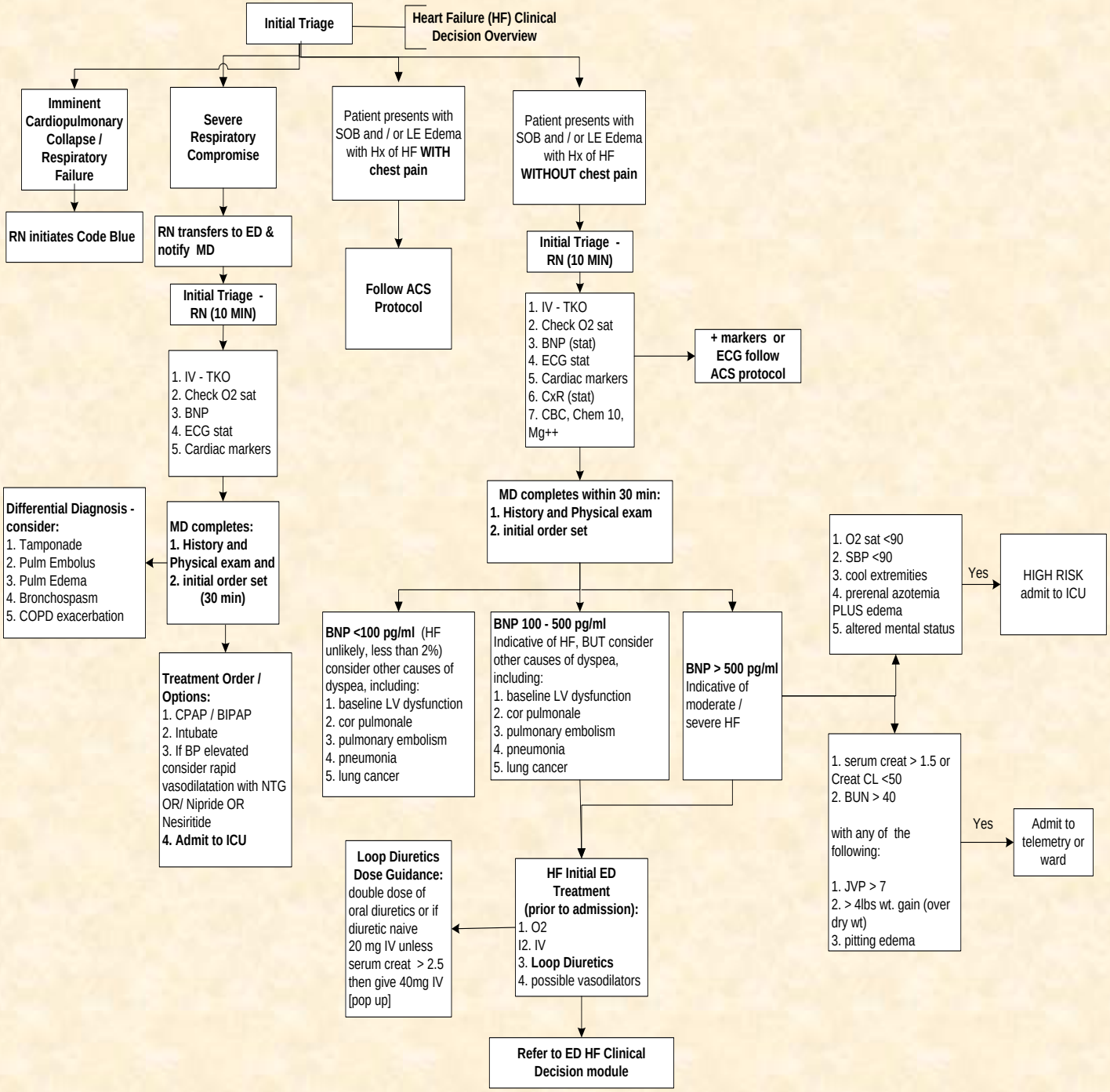
Director, CCU and CHF program San Diego VA Healthcare System

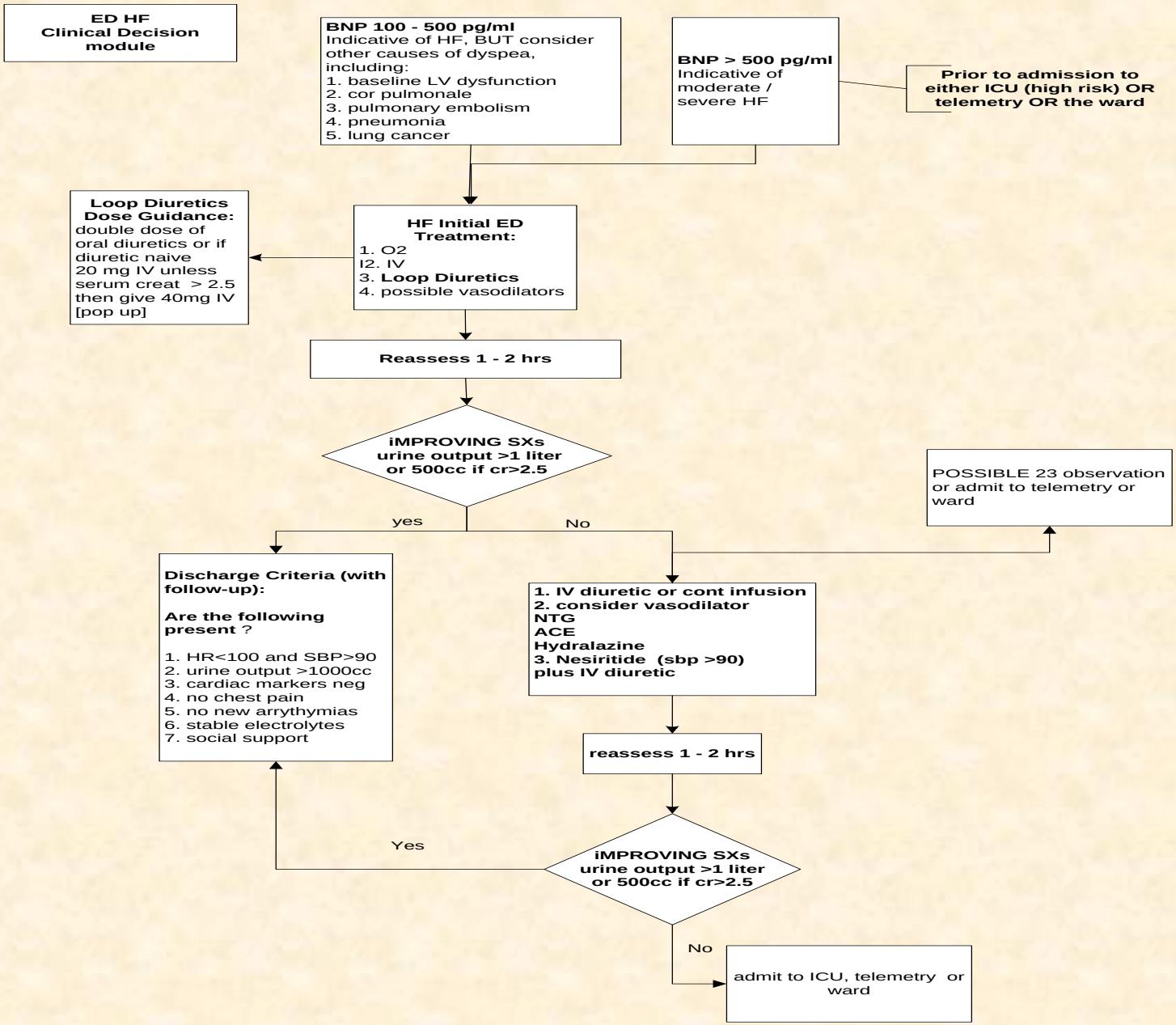
Transforming Performance Measurement In Cardiac Care

A Program to Guide Clinical Decision Making…

Purpose of today's call

- Introduce a new improvement guide to assist in the management of Heart Failure
  - Introduce the improvement guide
  - Focus on the early stages of care in the ED
  - Provide a forum for discussion
    - Questions, suggestions and ideas from participants


Initial Triage
Heart Failure (HF) Clinical Decision Overview
Imminent Cardiopulmonary Collapse / Respiratory Failure
Severe Respiratory Compromise
Patient presents with SOB and / or LE Edema with Hx of HF WITH chest pain
Patient presents with SOB and / or LE Edema with Hx of HF WITHOUT chest pain
RN initiates Code Blue
RN transfers to ED & notify MD
Follow ACS Protocol
Initial Triage - RN (10 MIN)
Initial Triage - RN (10 MIN)
1. IV - TKO
2. Check O2 sat
3. BNP (stat)
4. ECG stat
5. Cardiac markers
6. CxR (stat)
7. CBC, Chem 10, Mg++
+ markers or ECG follow ACS protocol
1. IV - TKO
2. Check O2 sat
3. BNP
4. ECG stat
5. Cardiac markers
Differential Diagnosis - consider:
1. Tamponade
2. Pulm Embolus
3. Pulm Edema
4. Bronchospasm
5. COPD exacerbation
MD completes: 1. History and Physical exam and 2. initial order set (30 min)
MD completes within 30 min:
1. History and Physical exam
2. initial order set
Treatment Order / Options:
1. CPAP / BIPAP
2. Intubate
3. If BP elevated consider rapid vasodilatation with NTG OR/ Nipride OR Nesiritide
4. Admit to ICU
BNP <100 pg/ml (HF unlikely, less than 2%) consider other causes of dyspea, including:
1. baseline LV dysfunction
2. cor pulmonale
3. pulmonary embolism
4. pneumonia
5. lung cancer
BNP 100 - 500 pg/ml
Indicative of HF, BUT consider other causes of dyspea, including:
1. baseline LV dysfunction
2. cor pulmonale
3. pulmonary embolism
4. pneumonia
5. lung cancer
BNP > 500 pg/ml
Indicative of moderate / severe HF
1. O2 sat <90
2. SBP <90
3. cool extremities
4. prerenal azotemia PLUS edema
5. altered mental status
Yes
HIGH RISK admit to ICU
1. serum creat > 1.5 or Creat CL <50
2. BUN > 40
with any of the following:
1. JVP > 7
2. > 4lbs wt. gain (over dry wt)
3. pitting edema
Yes
Admit to telemetry or ward
Loop Diuretics Dose Guidance:
double dose of oral diuretics or if diuretic naive
20 mg IV unless serum creat > 2.5 then give 40mg IV [pop up]
HF Initial ED Treatment (prior to admission):
1. O2
I2. IV
3. Loop Diuretics
4. possible vasodilators
Refer to ED HF Clinical Decision module


ED HF
Clinical Decision module
BNP 100 - 500 pg/ml
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1. baseline LV dysfunction
2. cor pulmonale
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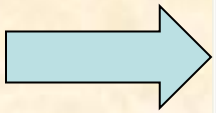
4. pneumonia
5. lung cancer
BNP > 500 pg/ml
Indicative of moderate / severe HF
Prior to admission to either ICU (high risk) OR telemetry OR the ward
Loop Diuretics Dose Guidance:
double dose of oral diuretics or if diuretic naive
20 mg IV unless serum creat > 2.5 then give 40mg IV [pop up]
HF Initial ED Treatment:
1. O2
I2. IV
3. Loop Diuretics
4. possible vasodilators
Reassess 1 - 2 hrs
iMPROVING SXs urine output >1 liter or 500cc if cr>2.5
yes
No
POSSIBLE 23 observation or admit to telemetry or ward
Discharge Criteria (with follow-up):
Are the following present ?
1. HR<100 and SBP>90
2. urine output >1000cc
3. cardiac markers neg
4. no chest pain
5. no new arrythymias
6. stable electrolytes
7. social support
1. IV diuretic or cont infusion
2. consider vasodilator
NTG
ACE
Hydralazine
3. Nesiritide (sbp >90)
plus IV diuretic
reassess 1 - 2 hrs
Yes
iMPROVING SXs urine output >1 liter or 500cc if cr>2.5
No
admit to ICU, telemetry or ward



ED HF Clinical Decision Menu

Done

STEP 1: Shortness of breath Nursing triage orders.

Severe Respiratory Failure

Shortness of breath and/or LE edema "WITHOUT" chest pain

Shortness of breath and/or LE edema "WITH" chest pain

Online Clinical Guidelines (Treatment Pathways)

STEP 2: Clinical Decision Guide: MD Initial Treatment

Severe Respiratory Failure

Shortness of breath WITHOUT chest pain

Shortness of Breath WITH chest pain

STEP 3: Clinical Decision Guide: MD Re-evaluation

(click here)

STEP 4: Clinical Decision Guide: MD final assessment

(click here)

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Individual heart failure orders

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NURSING ORDERS

- ECG stat and w/subsequent chest pain
- Cardiac Monitor
- Place pt on Bedrest
- Saline Lock
- Oxygen
- Vital Signs & O2 Sats
- NPO

IV MEDICATIONS/DRIPS

- IV fluids...
- Heparin IV Drip
- NTG IV Drip
- Morphine IVP
- Metoprolol IVP

OTHER MEDICATIONS

- Aspirin (chewable)
- NTG SL
- NTG Paste
- Metropolol p.o.
- Simvastatin p.o.
- Build your own "non-IV" med

CONSULTS/PROCEDURES/EXAMS

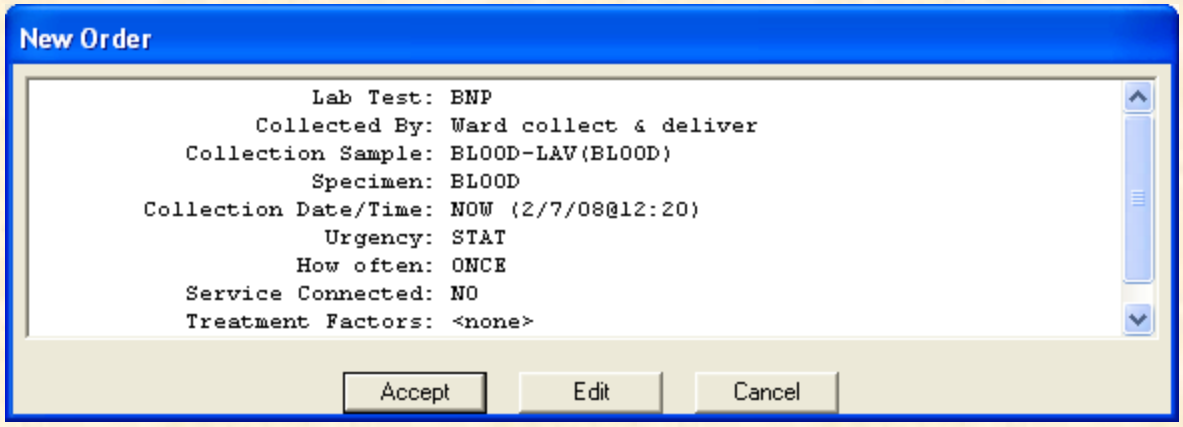
- Chest X-ray (Stat Portable)
- Cardiology (Stat Consult)
- Cardiac Cath (Stat Consult)

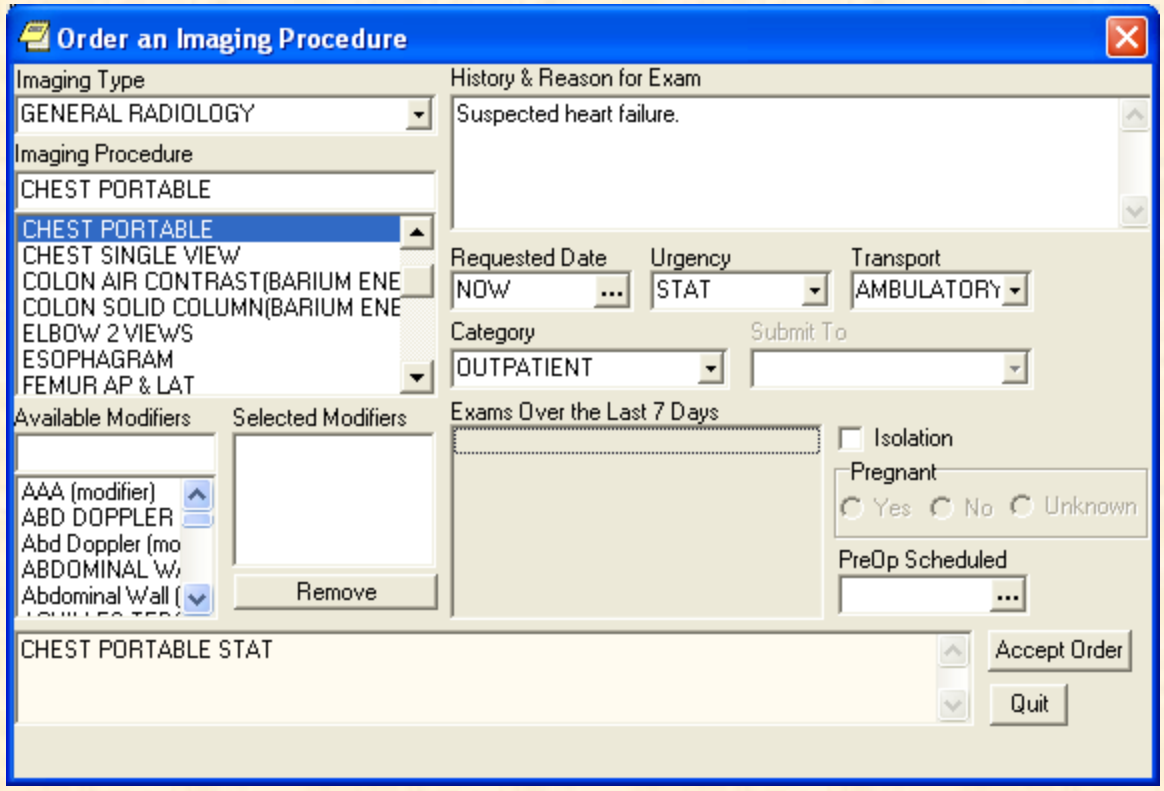
LABS

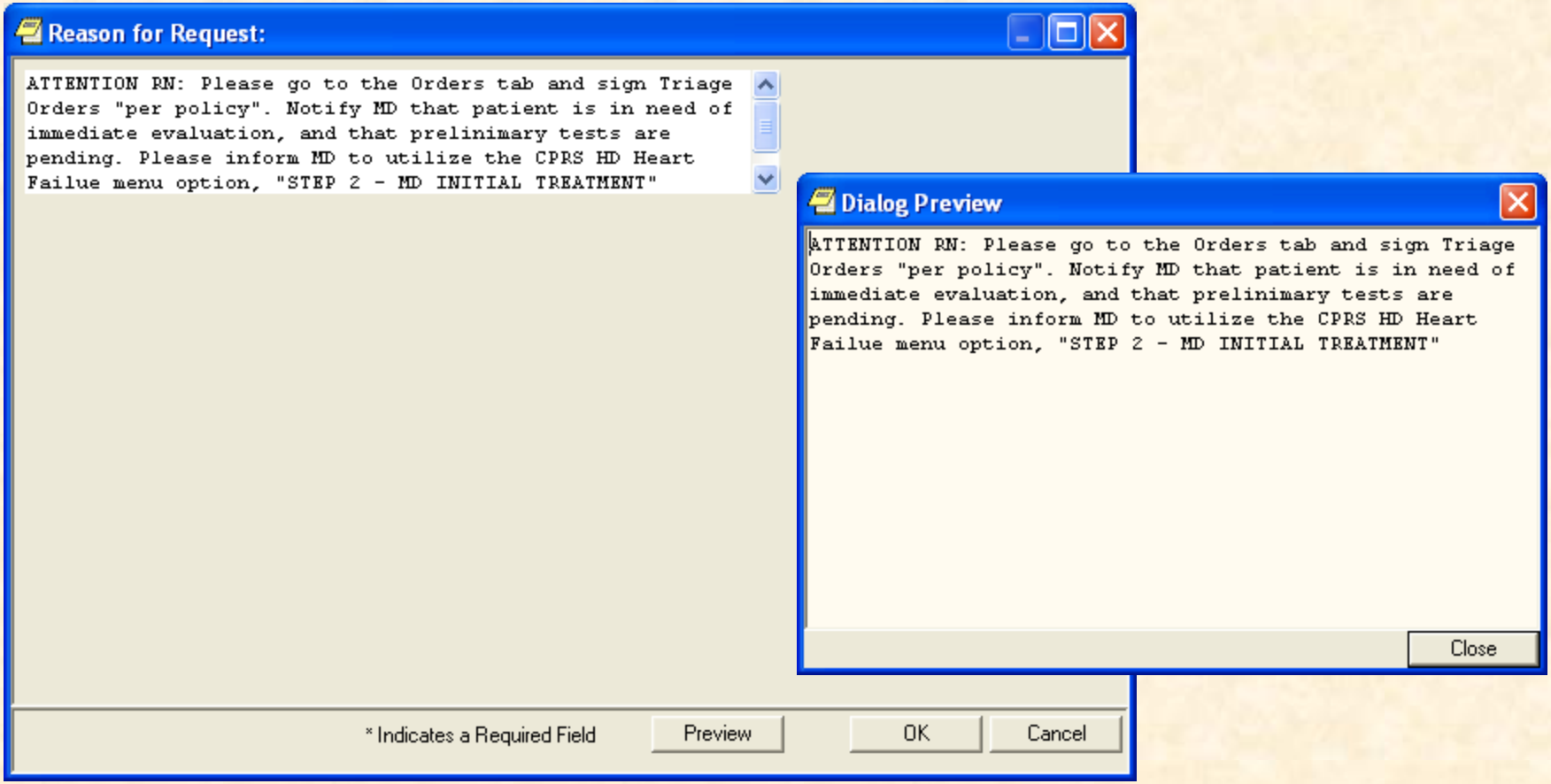
- Cardiac Markers (x1 stat)
- Cardiac Markers (x3 over 90min)
- BNP X1 Now
- Other "Stat" labs...

TRANSFER/ADMIT NOTIFICATION

- Transport to Cath Lab STAT
- From Cath Lab, Transfer to:
- Admit to:


New Order
Lab Test: BNP
Collected By: Ward collect & deliver
Collection Sample: BLOOD-LAV(BLOOD)
Specimen: BLOOD
Collection Date/Time: NOW (2/7/08@12:20)
Urgency: STAT
How often: ONCE
Service Connected: NO
Treatment Factors: <none>
Accept
Edit
Cancel


Order an Imaging Procedure
Imaging Type
GENERAL RADIOLOGY
Imaging Procedure
CHEST PORTABLE
CHEST PORTABLE
CHEST SINGLE VIEW
COLON AIR CONTRAST(BARIUM ENE
COLON SOLID COLUMN(BARIUM ENE
ELBOW 2 VIEWS
ESOPHAGRAM
FEMUR AP & LAT
History & Reason for Exam
Suspected heart failure.
Requested Date
NOW
Urgency
STAT
Transport
AMBULATORY
Category
OUTPATIENT
Submit To
Available Modifiers
AAA (modifier)
ABD DOPPLER
Abd Doppler (mo
ABDOMINAL W
Abdominal Wall (
Selected Modifiers
Remove
Exams Over the Last 7 Days
Isolation
Pregnant
Yes
No
Unknown
PreOp Scheduled
CHEST PORTABLE STAT
Accept Order
Quit


Reason for Request:
ATTENTION RN: Please go to the Orders tab and sign Triage Orders "per policy". Notify MD that patient is in need of immediate evaluation, and that prelinimary tests are pending. Please inform MD to utilize the CPRS HD Heart Failue menu option, "STEP 2 - MD INITIAL TREATMENT"
* Indicates a Required Field
Preview
OK
Cancel
Dialog Preview
ATTENTION RN: Please go to the Orders tab and sign Triage Orders "per policy". Notify MD that patient is in need of immediate evaluation, and that prelinimary tests are pending. Please inform MD to utilize the CPRS HD Heart Failue menu option, "STEP 2 - MD INITIAL TREATMENT"
Close

ED HF Clinical Decision Menu

Done

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(click here)

STEP 4: Clinical Decision Guide: MD final assessment

(click here)

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Individual heart failure orders

****

NURSING ORDERS

↵ ECG stat and w/subsequent chest pain
Cardiac Monitor
↵ Place pt on Bedrest
↵ Saline Lock
↵ Oxygen
↵ Vital Signs & O2 Sats
↵ NPO

IV MEDICATIONS/DRIPS

IV fluids...
Heparin IV Drip
NTG IV Drip
↵ Morphine IVP
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OTHER MEDICATIONS

Aspirin (chewable)
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Cardiology (Stat Consult)
Cardiac Cath (Stat Consult)

LABS

Cardiac Markers (x1 stat)
Cardiac Markers (x3 over 90min)
BNP X1 Now
Other "Stat" labs...

TRANSFER/ADMIT NOTIFICATION

Transport to Cath Lab STAT
From Cath Lab, Transfer to:
Admit to:

SIGNS OF CONGESTION/PERFUSION

Next

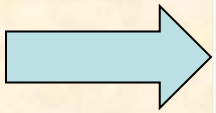
Heart Failure treatment pathways are based upon the patient's BNP level.

Select the range that corresponds to the patient's BNP below.

BNP less than 100 (heart failure unlikely or mild)

BNP 100-500 (indicative of moderate heart failure)

BNP >500 (moderate/severe heart failure likely)



SIGNS OF HEART FAILURE

Next

(Click "NEXT" in upper right
to continue with orders)

BELOW ARE SIGNS OF HEART FAILURE (FOR REFEREN

SIGNS OF CONGESTION (VOLUME EXCESS)

- Shortness of breath
- Orthopnea
- Dyspnea with or without exertion
- Weight gain
- RUQ pain due to passive liver congestion
- Increased JVP
- Hepatojugular reflux
- Rales
- S3 heart sound
- Edema
- O2 Saturation less than 90%

SIGNS OF POOR PERFUSION (LOW CARDIAC OUTPUT)

- Fatigue/malaise
- Decreased exercise tolerance
- Decreased appetite
- Weight loss
- SBP less than 90
- Narrow pulse pressure
- Tachycardia
- Cool Extremities
- Altered mental status
- Pre-renal azotemia
- S3 heart sound
- Cachexia
- Muscle loss

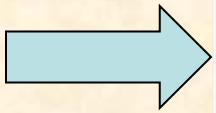
DIFFERENTIAL DIAGNOSIS

Next

ALSO CONSIDER THE FOLLOWING DIFFERENTIAL DIAGNOSES:

1. Tamponade
2. Pulmonary Embolus
3. Pulmonary Edema
4. Bronchospasm
5. COPD Exacerbation

Click "next" to continue with treatment orders.



SIGNS OF CONGESTION/PERFUSION

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Select the range that corresponds to the patient's BNP below.

- BNP less than 100 (heart failure unlikely or mild)
- BNP 100-500 (indicative of moderate heart failure)
- BNP >500 (moderate/severe heart failure likely)

CONSIDER OTHER DIAGNOSIS

Next

Based upon your selection, heart failure is unlikely (a 2% probability).
Consider other diagnoses, including:

- **baseline LV dysfunction**
- **cor pulmonale**
- **pulmonary embolism**
- **pneumonia**
- **lung cancer**

Click on the link below for the main outpatient treatment menu to continue with treatment.

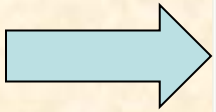
Outpatient treatment menu...

MAIN OUTPATIENT ORDER MENU

Next

		31	Preventive Medicine...	60	Imaging orders...
0	Specialty menus (outpt)...				
		34	Wound Care Supplies	70	Labs...
2	Diagnosis				Blood Bank Orders w/Labs
				79	ECG and Holter Menu
10	New Allergies/ADRs	40	OPT Education Orders...	80	Consults...
11	Vitals/Measurements...				** USE 95 BELOW FOR **
		45	Respiratory Therapy (OP)...	95	Inpatient Add Order ...
12	Activities...				
		50	Medications...	99	Other Text Orders
14	CODE STATUS		Non-Formulary/Prior Authoriztion Rec		
	Restraints/Precautions				
16	Return to Clinic	51	Community Acquired Pneumonia Orde		

CAP review



SIGNS OF CONGESTION/PERFUSION

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Select the range that corresponds to the patient's BNP below.

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BNP >500 (moderate/severe heart failure likely)

ACS SUSPECTED?

Next

Are signs and symptoms of ACS (Acute Coronary syndrome) present?
(ACS signs and symptoms listed below).

Yes (click here for ACS treatment menu)
No

Also consider other causes of dyspnea, including:

- **baseline LV Dysfunction**
- **cor pulmonale**
- **pulmonary embolism**
- **pneumonia**
- **lung cancer**

ACS signs and symptoms:

- **Chest pain (non-traumatic in origin)**
- **Severe epigastric pain (non-traumatic in origin)**
- **Central/substernal compression or crushing chest pain**
- **Chest pressure, tightness, heaviness, cramping, burning or aching**
- **Radiating pain in neck, jaw, shoulders, back, one or both arms**
- **Syncope**

HEART FAILURE SYMPTOMS

Next

Are any of the following present?

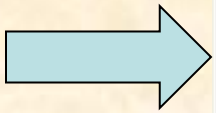
- O2 saturation less than 90
- Systolic BP less than 90
- Cool extremities
- Pre-renal azotemia and edema
- Altered mental status

Yes

No

NOTE: ALSO CONSIDER THE FOLLOWING DIAGNOSES:

- Baseline LV dysfunction
- Cor Pulmonale
- Pulmonary Embolism
- Lung Cancer
- Other...



Next

Based upon your selection, the patient has severe heart failure and requires immediate admission to the ICU and immediate treatment. Call the ICU housestaff for immediate assistance. Click "Next" to place an ICU admission order and to continue with immediate treatment options while awaiting an ICU bed and the arrival of the ICU housestaff.

Continuously monitor patient.

Nursing staff. Provide continuous monitoring. Notify MD immediately for any changes in:
(1) O2 sat, (2) vital signs (TPR & BP), (3) urine output, (4) lab results,

Start Date: T ...

Stop Date: T+1 ...

Nursing staff, Provide continuous monitoring. Notify MD immediately for any changes in:
(1) O2 sat, (2) vital signs (TPR & BP), (3) urine output, (4) lab results,

Accept Order

Quit

ADMIT TO ICU IMMEDIATELY

Admit to ICU immediately.

Start Date: T ...

Stop Date: T+28 ...

Admit to ICU immediately.
Start Date: T

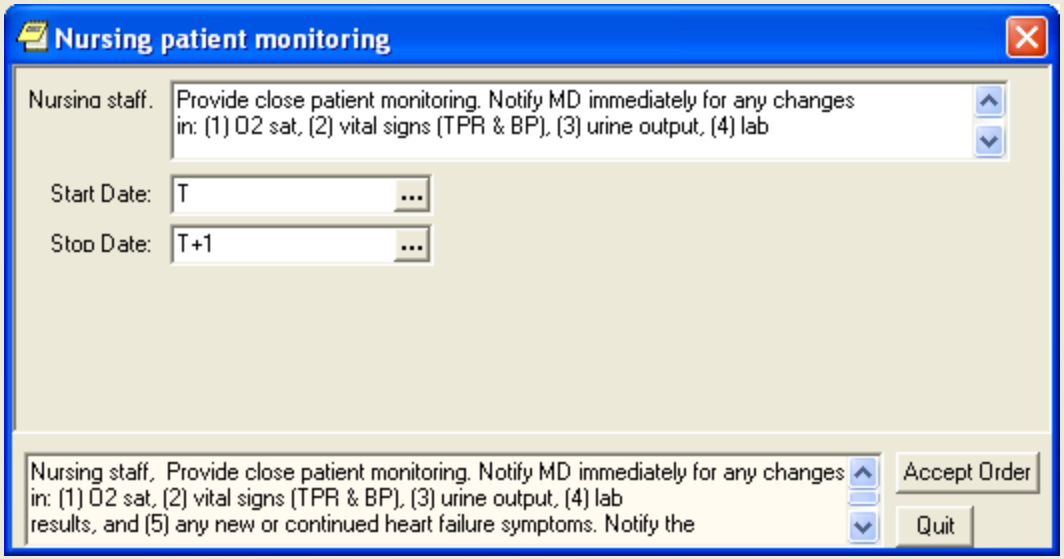
Accept Order

Quit

Next

Call the ICU Housestaff for immediate assistance. Monitor patient closely until ICU housestaff arrive. If patient's condition deteriorates in the ED while awaiting arrival of the ICU housestaff, return to the "CHF Clinical Decision Guide" menu and select the option:

"Step 3: MD reassessment and 2nd trial treatment orders"



TREATMENT FOR SEVERE HF

Next

Vasodialators

NTG 50mg/250ml IV infusion
NTG 100mg/250ml IV infusion (double strength)

Nitroprusside 50mg/250ml IV infusion
Nitroprusside 100mg/250ml IV infusion (double strength)

Nesiritide 1.5mg/250ml IV infusion

Hydralazine 10mg IV push

Labetolol 10mg IV push every 10min x3 (for SBP>180)

Inotropes/Pressors

Dobutamine 250mg/250ml IV infusion

Dopamine 400mg/250ml IV infusion
Dopamine 800mg/250ml IV infusion (double strength)
Dopamine 640mg/100ml IV infusion (quadruple strength)

Phenylephrine (Neosynephrine) 20mg/250ml IV infusion
Phenylephrine (Neosynephrine) 40mg/250ml IV infusion (double
Phenylephrine (Neosynephrine) 80mg/250ml IV infusion (quadr

Diuretics

Furosemide 100mg/50ml IV infusion
Furosemide 100mg/100ml IV infusion
Furosemide 200mg/100ml IV infusion
Furosemide 250mg/250ml IV infusion
Furosemide 500mg/250ml IV infusion
Furosemide 500mg/100ml IV infusion

Bumex 12.5mg/50ml IV infusion
Bumex 25mg/100 IV infusion

Respiratory Orders

Intubate STAT (Page Anesthesia)

Page Respiratory Therapy STAT

CPAP Mask
BIPAP Mask

ICU/DOU CHF MENU

Next

NOTE: PLEASE SEE NOTE TITLE "UCC/ER" FOR MEDS/TREATMENTS ADMINISTERED IN THE UCC/ER.

Online Clinical Guidelines

- ACS Algorithm Link
- "Krames" Pt. Ed. Link

NURSING/GENERAL ORDERS

- Diagnosis
- Change Provider(s)/Team
- Condition
- New Allergy/Adverse Reaction
- Code Status
- Restraints/Safety Precautions...
- Vital Signs/Monitoring...
- Activity...

NUTRITION

- Regular diet
- Cardiac Diet
- NPO
- Clear Liquid Diet
- Other Diet Orders...

PULMONARY/RT ORDERS

- Oxygen Orders...
- PFT Consult
- Pulmonary Consult
- Resp Therapy (inpt)...

COMMON ACS MEDICATIONS

- Inotropes...
- Afterload Reducers...
- Diuretics...
- ACE Inhibitors...
- Aspirin (daily)...
- Nitrates...
- Pain Meds...
- Heparin IV Drip
- IIB IIIA Meds...
- Thrombolysis orders...
- Ace-Inhibitors...
- Beta-Blockers...
- Calcium Channel Blockers
- Antiarrhythmics...
- Diuretics...
- Statins...
- Other General ICU Drips...
- Other Inpatient Meds...

EXAMS/STUDIES

- ECG...
- ECG SPECIFY DATE & TIME
- Chest X-ray (Stat, Portable)
- Other Imaging Orders...

CONSULTS

- Cardio Nurse Case Mgr. *REQUIRED*
- Cardiac Cath Consult
- Cardiac Echo Consult
- Arrhythmia Consult (EPS)
- ETT
- ETT W/MIBI
- Other Consults...

LABORATORY TESTS

- ICU Lab menu...
- Microbiology Menu...
- Blood Products/Transfusion...
- Other (build your own) lab test

PATIENT ED/REHAB/LEGAL

- Cardiac Rehab (Ext Service-Outpatier
- Dietary Consult (InPt)
- Tobacco Cessation Consult
- Social Work Consult
- Diabetes Consult
- End of Life Planning Consult
- Advanced Directive Consult
- "Krames" Pt. Ed. Link

DISCHARGE INSTRUCTIONS

- Discharge Order Set...
- "or"
- Main Discharge Menu...

HEART FAILURE SYMPTOMS

Next

Are any of the following present?

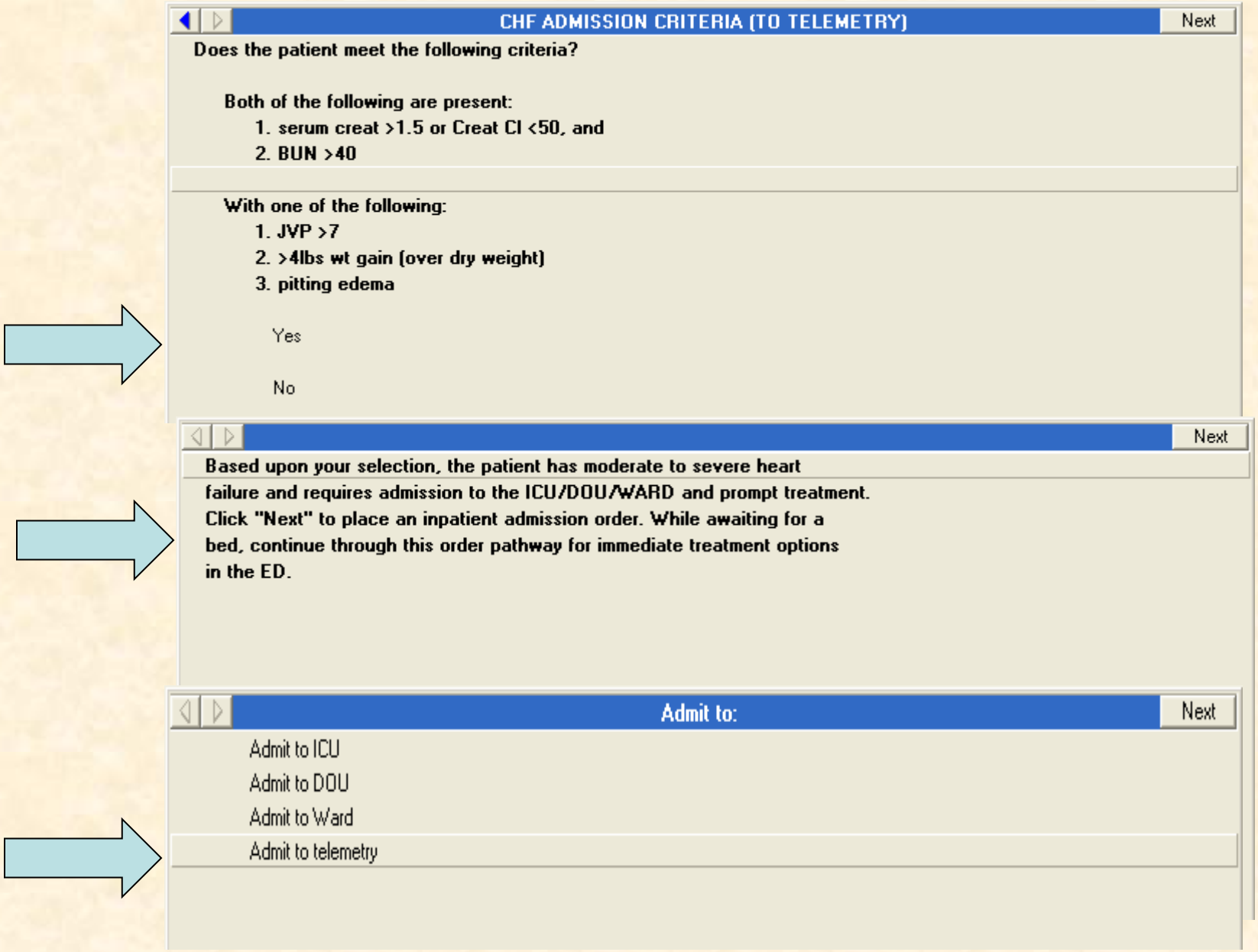
- O2 saturation less than 90
- Systolic BP less than 90
- Cool extremities
- Pre-renal azotemia and edema
- Altered mental status

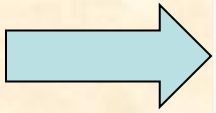
Yes

No

NOTE: ALSO CONSIDER THE FOLLOWING DIAGNOSES:

- Baseline LV dysfunction
- Cor Pulmonale
- Pulmonary Embolism
- Lung Cancer
- Other...


CHF ADMISSION CRITERIA (TO TELEMETRY)
Next
Does the patient meet the following criteria?
Both of the following are present:
1. serum creat >1.5 or Creat Cl <50, and
2. BUN >40
With one of the following:
1. JVP >7
2. >4lbs wt gain (over dry weight)
3. pitting edema
Yes
No
Next
Based upon your selection, the patient has moderate to severe heart failure and requires admission to the ICU/DOU/WARD and prompt treatment. Click "Next" to place an inpatient admission order. While awaiting for a bed, continue through this order pathway for immediate treatment options in the ED.
Admit to:
Next
Admit to ICU
Admit to DOU
Admit to Ward
Admit to telemetry



HEART FAILURE SYMPTOMS — Next

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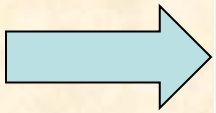

CHF ADMISSION CRITERIA (TO TELEMETRY) — Next

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2. BUN >40

With one of the following:

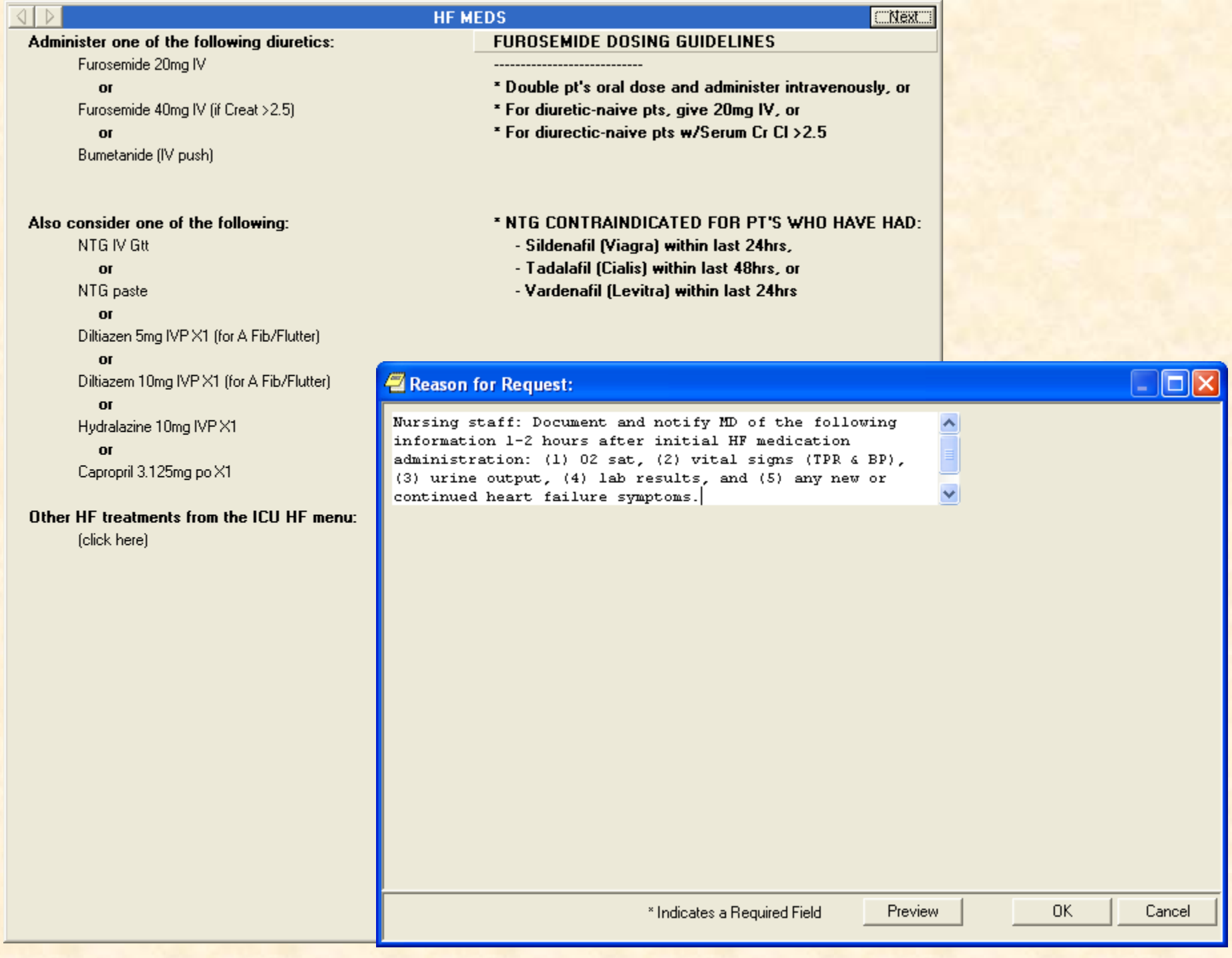
1. JVP >7
2. >4lbs wt gain (over dry weight)
3. pitting edema

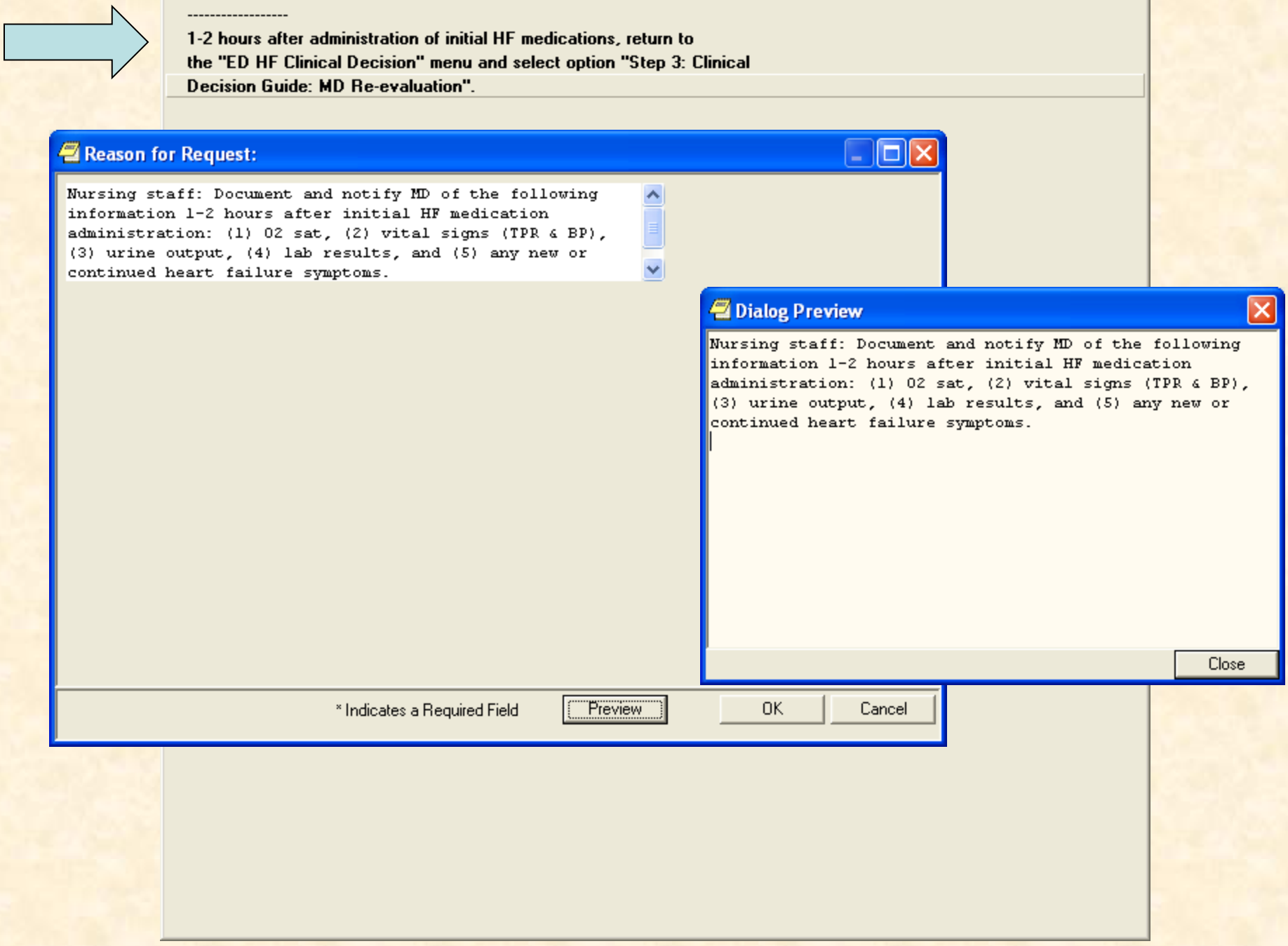
Yes

No

Next

Based upon your selection, it is likely that the patient has moderate heart failure. The patient should recieve heart failure medication treatment and should be reassessed for improvement 1-2 hours after administration of medications. Click "Next" to continue to the heart failure medication treatment menu.


HF MEDS
Next
Administer one of the following diuretics:
Furosemide 20mg IV
or
Furosemide 40mg IV (if Creat >2.5)
or
Bumetanide (IV push)
FUROSEMIDE DOSING GUIDELINES
* Double pt's oral dose and administer intravenously, or
* For diuretic-naive pts, give 20mg IV, or
* For diurectic-naive pts w/Serum Cr Cl >2.5
Also consider one of the following:
NTG IV Gtt
or
NTG paste
or
Diltiazen 5mg IVP X1 (for A Fib/Flutter)
or
Diltiazem 10mg IVP X1 (for A Fib/Flutter)
or
Hydralazine 10mg IVP X1
or
Capropril 3.125mg po X1
* NTG CONTRAINDICATED FOR PT'S WHO HAVE HAD:
- Sildenafil (Viagra) within last 24hrs,
- Tadalafil (Cialis) within last 48hrs, or
- Vardenafil (Levitra) within last 24hrs
Other HF treatments from the ICU HF menu:
(click here)
Reason for Request:
Nursing staff: Document and notify MD of the following information 1-2 hours after initial HF medication administration: (1) O2 sat, (2) vital signs (TPR & BP), (3) urine output, (4) lab results, and (5) any new or continued heart failure symptoms.
* Indicates a Required Field
Preview
OK
Cancel


Next
ATTENTION PROVIDER:

1-2 hours after administration of initial HF medications, return to the "ED HF Clinical Decision" menu and select option "Step 3: Clinical Decision Guide: MD Re-evaluation".
Reason for Request:
Nursing staff: Document and notify MD of the following information 1-2 hours after initial HF medication administration: (1) O2 sat, (2) vital signs (TPR & BP), (3) urine output, (4) lab results, and (5) any new or continued heart failure symptoms.
* Indicates a Required Field
Preview
OK
Cancel
Dialog Preview
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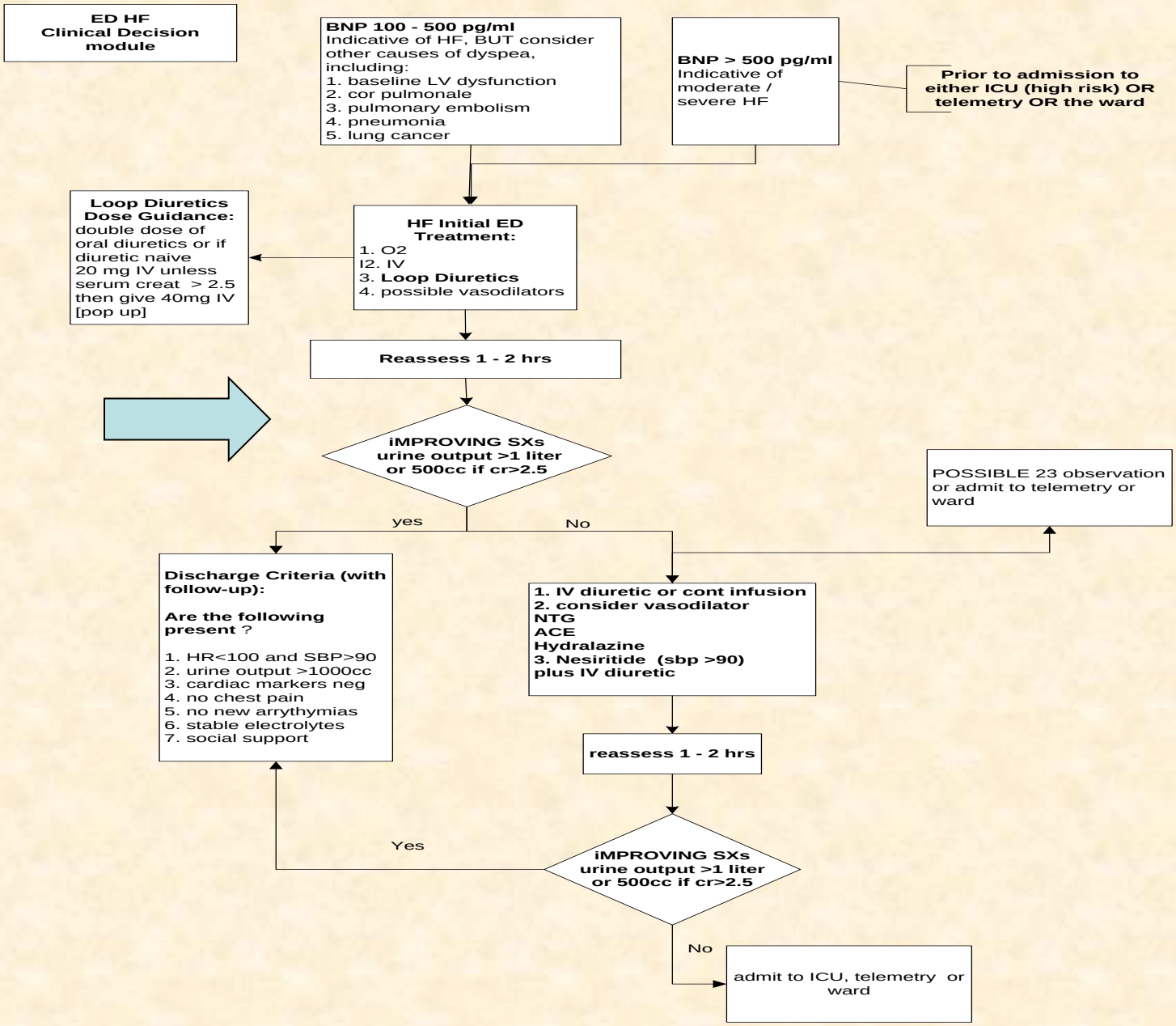
Close


ED HF
Clinical Decision module
BNP 100 - 500 pg/ml
Indicative of HF, BUT consider other causes of dyspea, including:
1. baseline LV dysfunction
2. cor pulmonale
3. pulmonary embolism
4. pneumonia
5. lung cancer
BNP > 500 pg/ml
Indicative of moderate / severe HF
Prior to admission to either ICU (high risk) OR telemetry OR the ward
Loop Diuretics Dose Guidance:
double dose of oral diuretics or if diuretic naive
20 mg IV unless serum creat > 2.5 then give 40mg IV [pop up]
HF Initial ED Treatment:
1. O2
I2. IV
3. Loop Diuretics
4. possible vasodilators
Reassess 1 - 2 hrs
iMPROVING SXs urine output >1 liter or 500cc if cr>2.5
yes
No
POSSIBLE 23 observation or admit to telemetry or ward
Discharge Criteria (with follow-up):
Are the following present ?
1. HR<100 and SBP>90
2. urine output >1000cc
3. cardiac markers neg
4. no chest pain
5. no new arrythymias
6. stable electrolytes
7. social support
1. IV diuretic or cont infusion
2. consider vasodilator
NTG
ACE
Hydralazine
3. Nesiritide (sbp >90)
plus IV diuretic
reassess 1 - 2 hrs
Yes
iMPROVING SXs urine output >1 liter or 500cc if cr>2.5
No
admit to ICU, telemetry or ward

ED HF Clinical Decision Menu

Done

STEP 1: Shortness of breath Nursing triage orders.

Severe Respiratory Failure
Shortness of breath and/or LE edema "WITHOUT" chest pain
Shortness of breath and/or LE edema "WITH" chest pain

Online Clinical Guidelines (Treatment Pathways)

STEP 2: Clinical Decision Guide: MD Initial Treatment

Severe Respiratory Failure
Shortness of breath WITHOUT chest pain
Shortness of Breath WITH chest pain

STEP 3: Clinical Decision Guide: MD Re-evaluation

(click here)

STEP 4: Clinical Decision Guide: MD final assessment

(click here)

****

Individual heart failure orders

****

NURSING ORDERS

↵ ECG stat and w/subsequent chest pain
Cardiac Monitor
↵ Place pt on Bedrest
↵ Saline Lock
↵ Oxygen
↵ Vital Signs & O2 Sats
↵ NPO

IV MEDICATIONS/DRIPS

IV fluids...
Heparin IV Drip
NTG IV Drip
↵ Morphine IVP
Metoprolol IVP

OTHER MEDICATIONS

Aspirin (chewable)
↵ NTG SL
NTG Paste
Metropolol p.o.
Simvastatin p.o.
Build your own "non-IV" med

CONSULTS/PROCEDURES/EXAMS

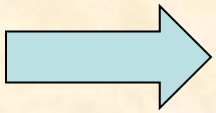
Chest X-ray (Stat Portable)
Cardiology (Stat Consult)
Cardiac Cath (Stat Consult)

LABS

Cardiac Markers (x1 stat)
Cardiac Markers (x3 over 90min)
BNP X1 Now
Other "Stat" labs...

TRANSFER/ADMIT NOTIFICATION

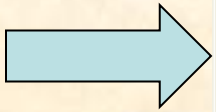
Transport to Cath Lab STAT
From Cath Lab, Transfer to:
Admit to:



Next

ATTENTION PROVIDER:

1-2 hours after administration of initial HF medications, return to the "ED HF Clinical Decision" menu and select option "Step 3: Clinical Decision Guide: MD Re-evaluation".



EVALUATION OF HF SYMPTOMS

Done

It has been 1-2 hours since the initial heart failure treatment.

Are the patient's symptoms improving, and is there increased urine output? (eg. 1L over 1 hr, or output >500ml in 1hr if Cr Cl >2.5)

Yes

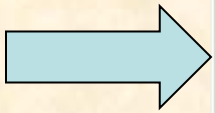
HF DC FROM UCC CRITERIA

Done

Based upon your selection, it appears that the patient's symptoms are improving. Does the patient meet the following discharge critera?

-heart rate <100
-SBP >90
-urine output >1 liter
-cardiac markers negative
-no chest pain
-no new arrythmias
-electrolytes within normal range
-social support available

Yes



HF DC FROM UCC CRITERIA

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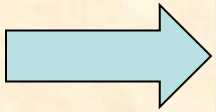
-cardiac markers negative
-no chest pain
-no new arrythmias
-electrolytes within normal range
-social support available

Yes

No



ADMIT OR TREAT IN ER

Done

Based upon your selection, initial duriesis has been inadequate. You can either continue treatment in the ED or admit the patient. Make your selection from below.

Admit to ward/telemetry/DOU

Continue to treat pt. in ED

PHASE 2 HF TREATMENT IN ER

Next

FOR THIS 2ND PHASE OF TREATMENT, CONSIDER AN ORDER FOR NESIRITIDE

Nesiritide IV Gtt (click here)

PLACE AN ORDER FOR ONE OF THE FOLLOWING IV DIURETICS

Furosemide 40mg IV

or

Furosemide IV infusion (100mg/D5W 100ml)

or

Furosemide IV infusion (200mg/D5W 100ml)

or

Bumetanide (IV push)

or

Bumetanide IV infusion

ALSO CONSIDER ADDING ONE OF THE FOLLOWING MEDICATIONS:

Morphine (IV Push)

or

NTG IV Gtt

or

Hydralazone 10mg IV

or

Hydralozine 10mg po X1

or

Captopril 6.25mg po X1

or

Nitroglycerin paste 1 inch

PHASE 2 HF TREATMENT IN ER

Next

FOR THIS 2ND PHASE OF TREATMENT, CONSIDER AN ORDER FOR NESIRITIDE

Nesiritide IV Gtt (click here)

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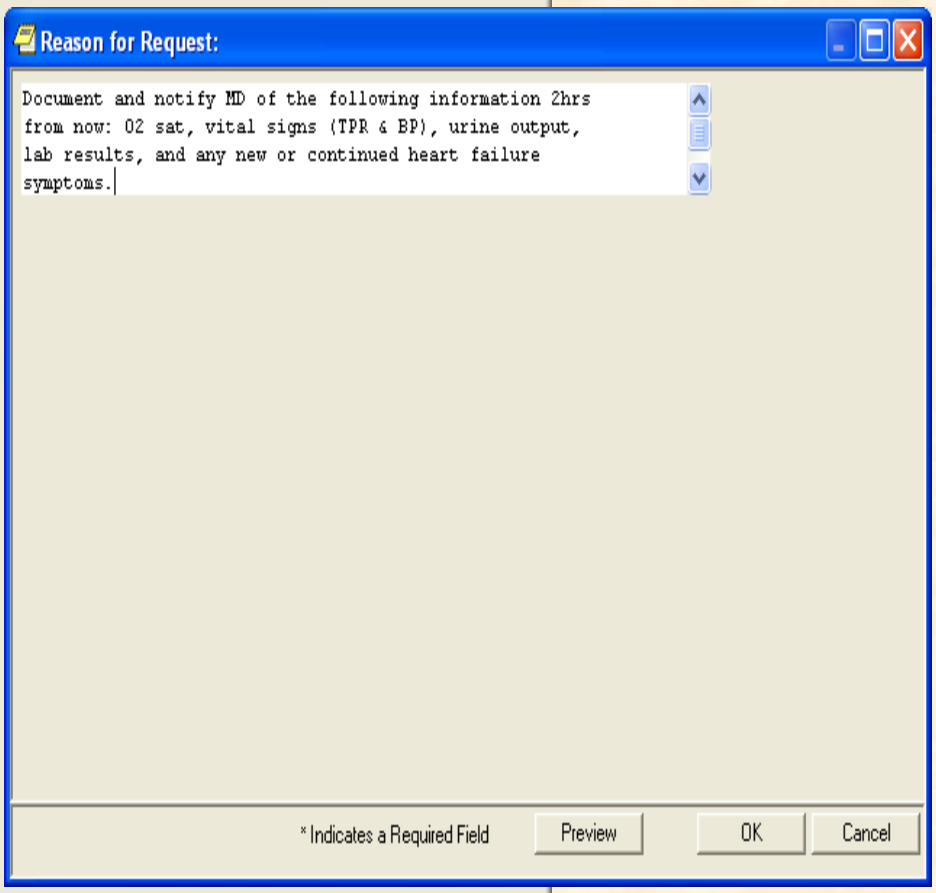

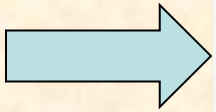

ED HF Clinical Decision Menu

Done

STEP 1: Shortness of breath Nursing triage orders.

Severe Respiratory Failure
Shortness of breath and/or LE edema "WITHOUT" chest pain
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Online Clinical Guidelines (Treatment Pathways)

STEP 2: Clinical Decision Guide: MD Initial Treatment

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Shortness of breath WITHOUT chest pain
Shortness of Breath WITH chest pain

STEP 3: Clinical Decision Guide: MD Re-evaluation

(click here)

STEP 4: Clinical Decision Guide: MD final assessment

(click here)

****

Individual heart failure orders

****

NURSING ORDERS

↵ ECG stat and w/subsequent chest pain
Cardiac Monitor
↵ Place pt on Bedrest
↵ Saline Lock
↵ Oxygen
↵ Vital Signs & O2 Sats
↵ NPO

IV MEDICATIONS/DRIPS

IV fluids...
Heparin IV Drip
NTG IV Drip
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Metoprolol IVP

OTHER MEDICATIONS

Aspirin (chewable)
↵ NTG SL
NTG Paste
Metropolol p.o.
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Build your own "non-IV" med

CONSULTS/PROCEDURES/EXAMS

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BNP X1 Now
Other "Stat" labs...

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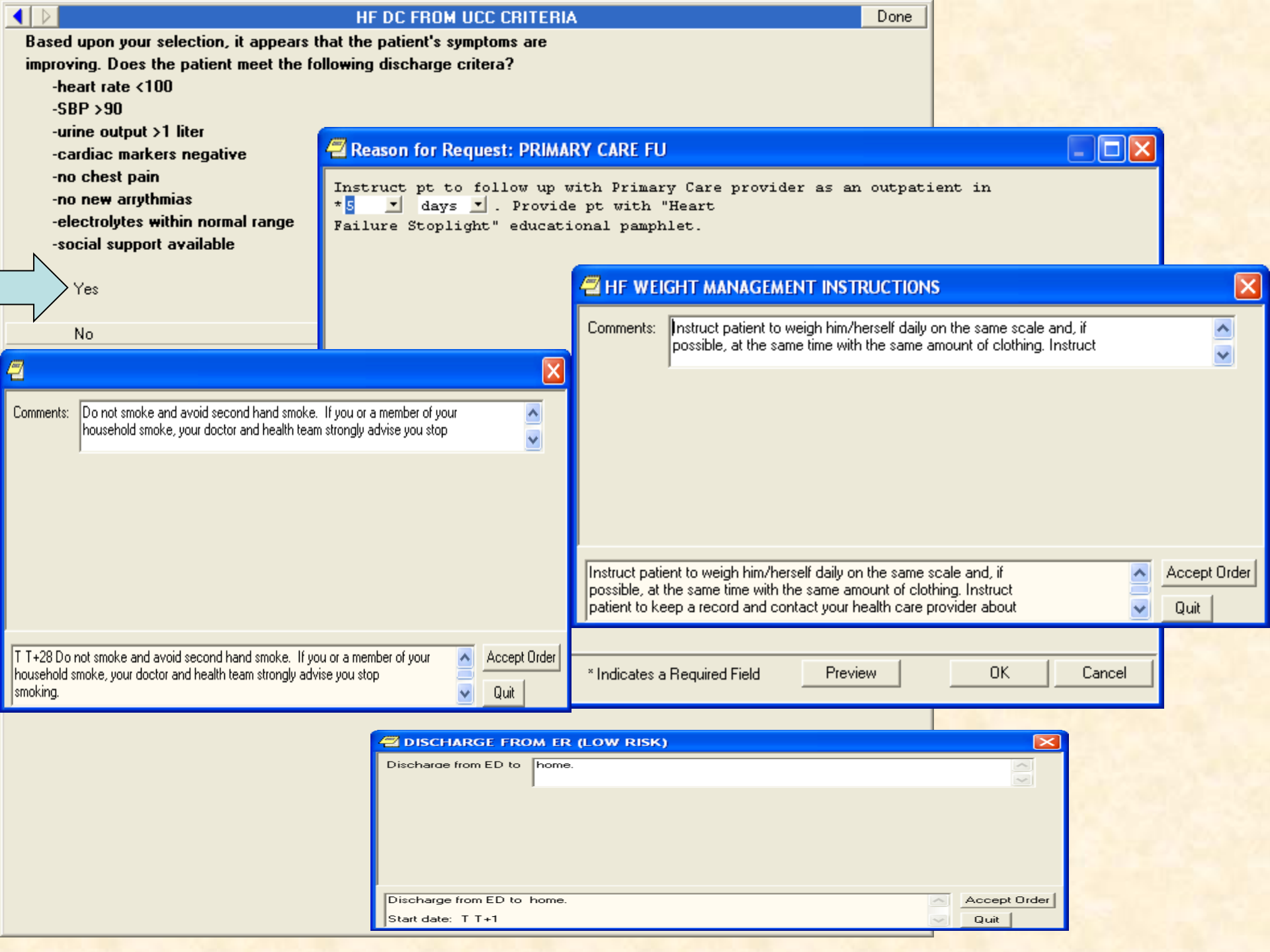
HF DC FROM UCC CRITERIA
Done
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-SBP >90
-urine output >1 liter
-cardiac markers negative
-no chest pain
-no new arrythmias
-electrolytes within normal range
-social support available
Yes
No
Reason for Request: PRIMARY CARE FU
Instruct pt to follow up with Primary Care provider as an outpatient in
*5
days
. Provide pt with "Heart
Failure Stoplight" educational pamphlet.
HF WEIGHT MANAGEMENT INSTRUCTIONS
Comments:
Instruct patient to weigh him/herself daily on the same scale and, if possible, at the same time with the same amount of clothing. Instruct
Instruct patient to weigh him/herself daily on the same scale and, if possible, at the same time with the same amount of clothing. Instruct patient to keep a record and contact your health care provider about
Accept Order
Quit
Comments:
Do not smoke and avoid second hand smoke. If you or a member of your household smoke, your doctor and health team strongly advise you stop
T T+28 Do not smoke and avoid second hand smoke. If you or a member of your household smoke, your doctor and health team strongly advise you stop smoking.
Accept Order
Quit
* Indicates a Required Field
Preview
OK
Cancel
DISCHARGE FROM ER (LOW RISK)
Discharge from ED to
home.
Discharge from ED to home.
Start date: T T+1
Accept Order
Quit

Heart Failure Discharge meds

Next

FOR PT'S WITH A-FIB OR HX OF THROMBOEMBOLISM, CONSIDER THE FOLLOWING:

Warfarin 5mg po QDay

IF PT PRESENTED W/ FLUID OVERLOAD, CONSIDER ONE OF THE FOLLOWING DIURETICS:

Furosemide 40mg po QDay

Bumetanide 1mg po QDay (for pt's w/inadequate response to furosemide)

ONE OF THE FOLLOWING ACE INHIBITORS IS *REQUIRED* FOR PT'S WITH HF, UNLESS ACE INTOLERANT. (SEE ALTERNATIVE ARB MEDICATION CHOICES BELOW):

Lisinopril 20 mg po QDay

Fosinopril 20mg po QDay

Captopril 6.25mg po TID

FOR ACE INHIBITOR INTOLERANT PT'S, CONSIDER ONE OF THE FOLLOWING ARB'S:

Valsartan 40mg po BID

Losartan 50mg po QDay

IF PT HAS A LOW EF, CONSIDER ADDIING ONE OF THE FOLLOWING:

Carvedilol 3.12mg po BID

Metoprolol SA 25mg po QDay

IF PT IS AFRICAN AMERICAN AND ALREADY ON ACE/ARB AND BETA BLOCKER, CONSIDER:

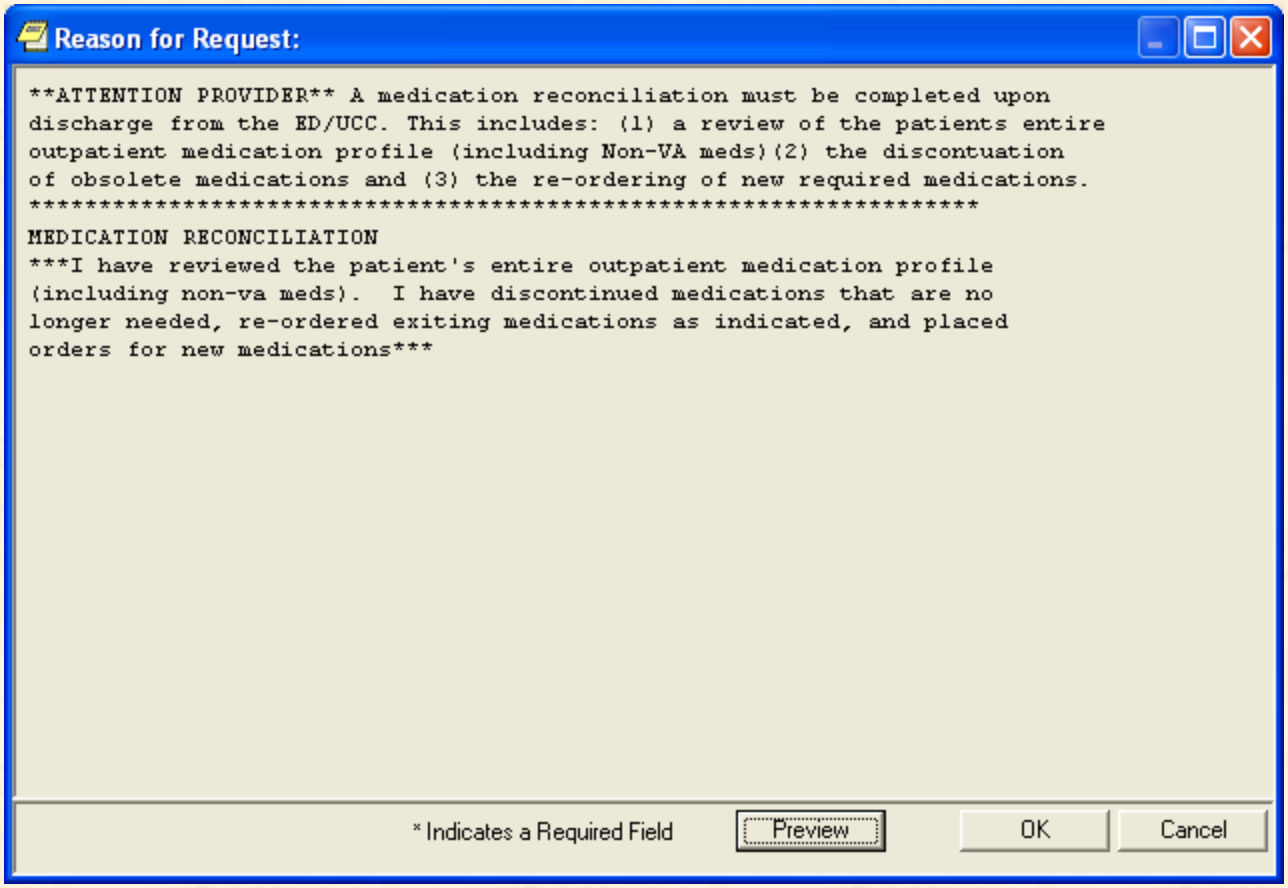
Hydralizine 10mg po BID

Isosorbide Mononitrate 30mg po QDay

IF PT IS NY HEART CLASS III/IV WITH A POTASSIUM LESS THAN 5, CONSIDER AN ALDOSTERONE ANTAGONIST.

Spironolactone 12.5mg po QD (w/renal panel)

Other outpatient medications...


Reason for Request:
ATTENTION PROVIDER A medication reconciliation must be completed upon
discharge from the ED/UCC. This includes: (1) a review of the patients entire
outpatient medication profile (including Non-VA meds)(2) the discontuation
of obsolete medications and (3) the re-ordering of new required medications.
****
MEDICATION RECONCILIATION
***I have reviewed the patient's entire outpatient medication profile
(including non-va meds). I have discontinued medications that are no
longer needed, re-ordered exiting medications as indicated, and placed
orders for new medications***
* Indicates a Required Field
Preview
OK
Cancel