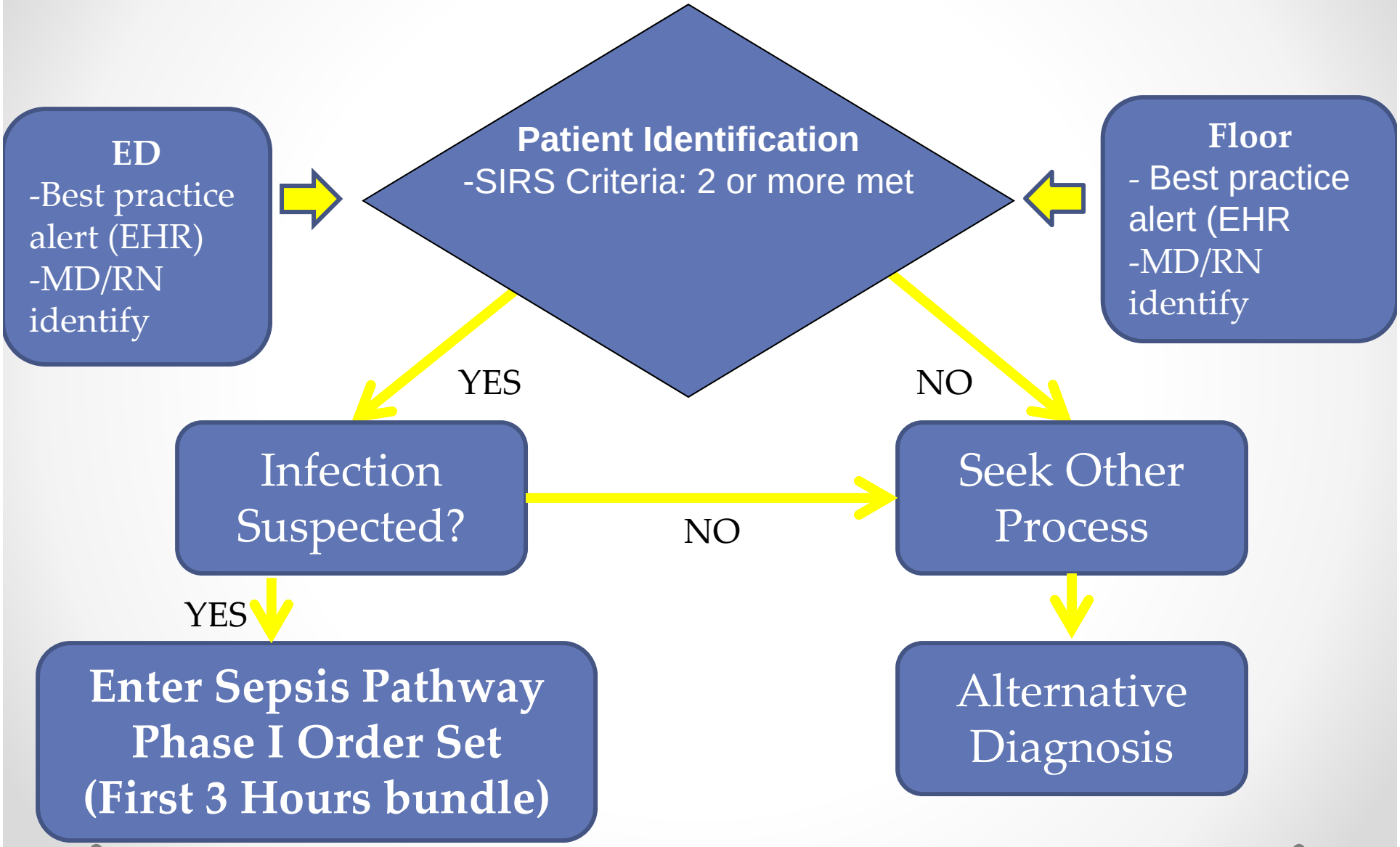
Sepsis Algorithm

Phase I


ED
-Best practice alert (EHR)
-MD/RN identify
Patient Identification
-SIRS Criteria: 2 or more met
Floor
- Best practice alert (EHR
-MD/RN identify
YES
NO
Infection Suspected?
NO
Seek Other Process
YES
Enter Sepsis Pathway
Phase I Order Set
(First 3 Hours bundle)
Alternative Diagnosis

3 Hour Bundle

Phase I

Simultaneously

Diagnostic Work Up

-Labs: CBC, CMP, INR, Lactate, UA
*Repeat 3 hr lactate if initial level > 2.5

Plus

Source ID

-Cultures: Blood, Urine, Sputum, Obvious Site (before Abx when able)
-Diagnostic Imaging: CXR, US, CT

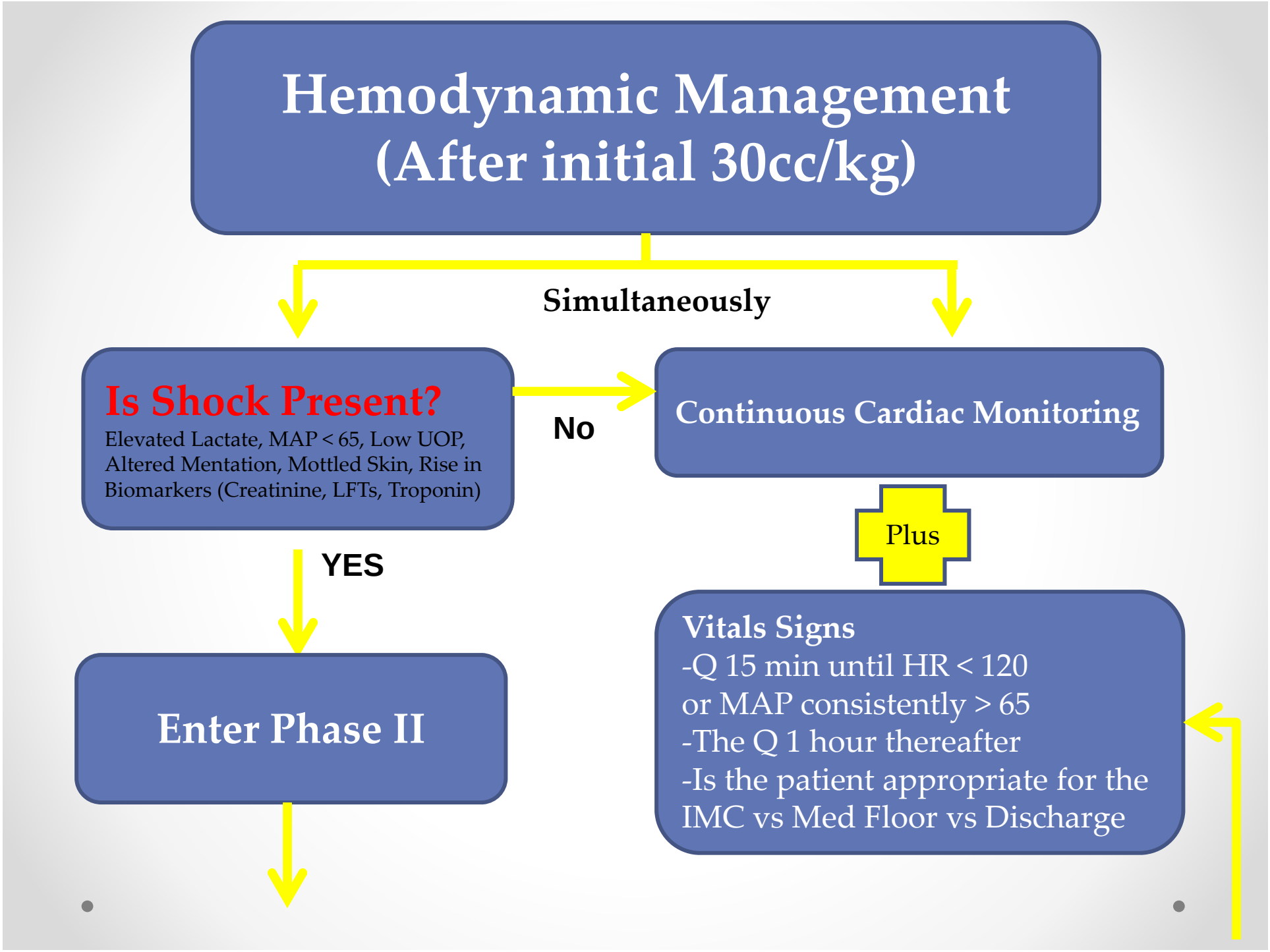
IV Fluid Administration

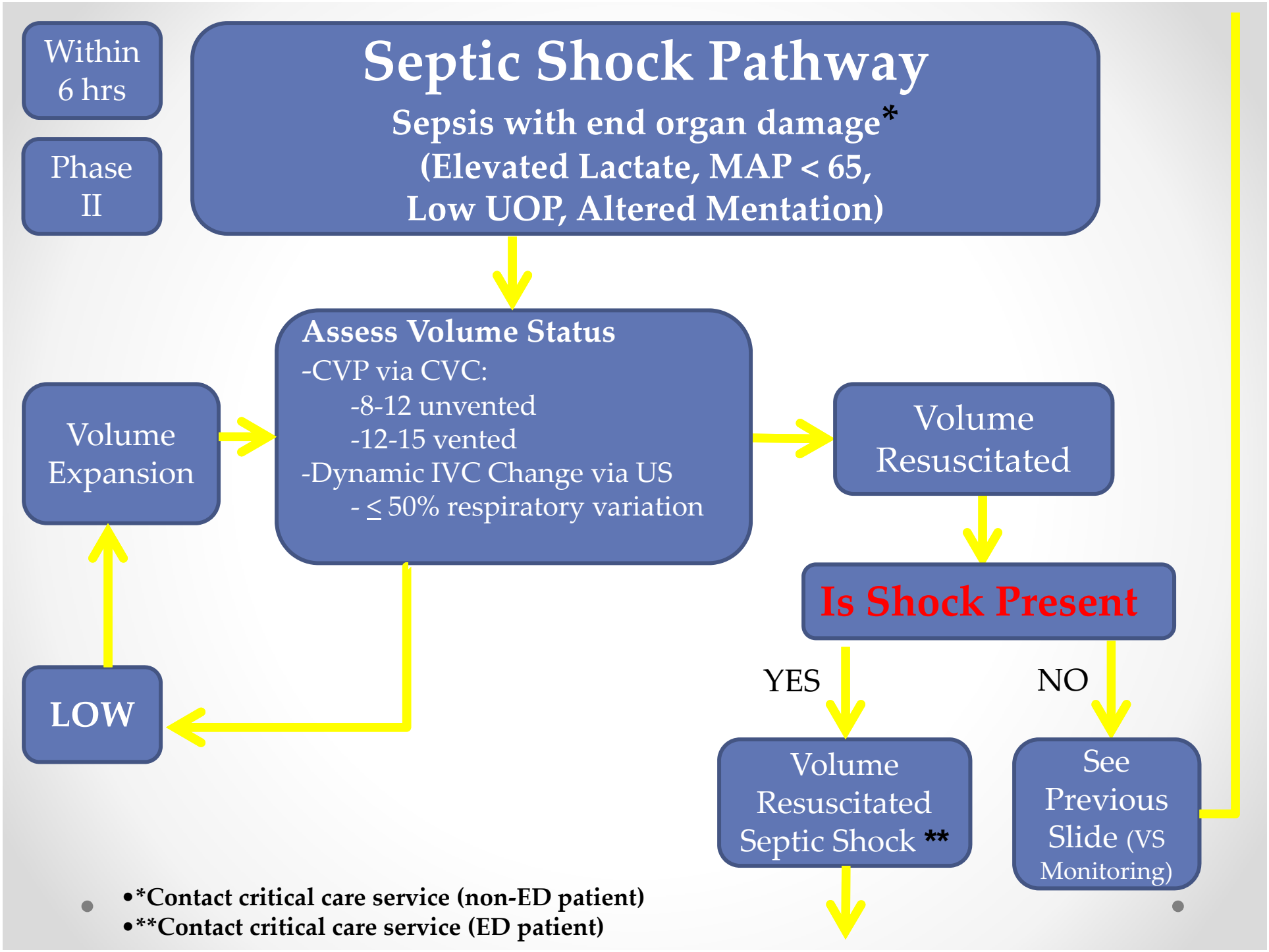
-30 cc/kg Bolus (use care in CHF)
-Lactated Ringers Preferred

Plus

Antibiotic Initiation

-Administer < 60 min from order set activation (do not wait for Cx)
-Initiate Appropriate Abx Regimen in Order Set
-Antibiotic Stewardship Consult


Hemodynamic Management
(After initial 30cc/kg)
Simultaneously
Is Shock Present?
Elevated Lactate, MAP < 65, Low UOP, Altered Mentation, Mottled Skin, Rise in Biomarkers (Creatinine, LFTs, Troponin)
No
Continuous Cardiac Monitoring
Plus
YES
Enter Phase II
Vitals Signs
-Q 15 min until HR < 120
or MAP consistently > 65
-The Q 1 hour thereafter
-Is the patient appropriate for the IMC vs Med Floor vs Discharge


Within 6 hrs
Phase II
Septic Shock Pathway
Sepsis with end organ damage*
(Elevated Lactate, MAP < 65,
Low UOP, Altered Mentation)
Assess Volume Status
-CVP via CVC:
-8-12 unvented
-12-15 vented
-Dynamic IVC Change via US
- ≤ 50% respiratory variation
Volume Expansion
LOW
Volume Resuscitated
Is Shock Present
YES
NO
Volume Resuscitated Septic Shock **
See Previous Slide (VS Monitoring)
•*Contact critical care service (non-ED patient)
•**Contact critical care service (ED patient)

Volume Resuscitated Septic Shock

(As Assessed By CVP or US)

Still Evidence of Shock

Simultaneously

Vasoactive Medications

- -Norepinephrine #1
- -Vasopressin #2
- -Epinephrine #3
- -Dopamine Considered
- -Phenylephrine Not Recommended

CVC Placement

Arterial Line Placement

- -Maintain Adequate Volume Status
- -Target MAP ≥ 65 (consider higher)
- -Target ScVO2 of 70%*
- -Consider Evaluation by ECHO
- -Target UOP >0.5ml/kg/hr
- -Source Control and Abx
- -Frequent Patient Assessments and Serial Lactate Monitoring
- -If On High Doses of Pressors, Stress Dose Steroids are Recommended**

*If the target of a MAP ≥ 65 is met with a markedly reduced ScVO2 or rising lactate, consider inotropic support (Dobutamine/Milrinone) as well as the potential effects of anemia.

**High doses or pressors = the use of 2 or more pressors. Recommending Hydrocortisone 50 mg IV Q 6 hrs. Once pressors are off for 24 hours, discontinued use of steroids is recommended.

Once Shock Is Resolved

With Pressors

-Routine Volume Assessment; Maintain Euvolemia
-Lactate Q 6 hrs; Target < 4.0
-ScVO2; Target 70%
-Other Assessment of End Organ Damage
-Tailor Abx Regimen to Cx Data

Considerations
-Need for Intubation*
-Hemodynamic (eg FloTrac) Monitoring
-Ensure Contact with Next of Kin
-Anti-Microbial Stewardship
-Rehabilitation Consult
-Palliative Care Consultation

Without Pressors

-Lactate Q 6 hrs; Target < 4.0
-Tailor Abx Regimen to Cx Data
-Maintain Euvolemia

Disposition Criteria

* If a patient requires mechanical ventilation and meets the definition of ARDS, lung protective ventilation is recommended

Disposition Guidelines

ICU Admission:
-Volume resuscitated septic shock
-Intubation
-Pressors
-Persistent hemodynamic instability
-Impending intubation
-Higher level of nursing care (ie. 1:1 care)

Intermediate Care Unit Admission:
-MAP >65 w/o pressors
-Shock present initially, now resolved
-Improving hemodynamic profile
-No foreseen respiratory failure
-No need for 1:1 nursing

Hospital Floor Status or D/C:
-Shock never present
-pH> 7.3
-Lactate normal
-Urine output >.5cc/kg
-Hemodynamic stability
-Airway stability
-Higher level of care (ie. ICU) exceeds goals of care (ie palliative care)