

Early Goal Directed Therapy for Sepsis - Guideline

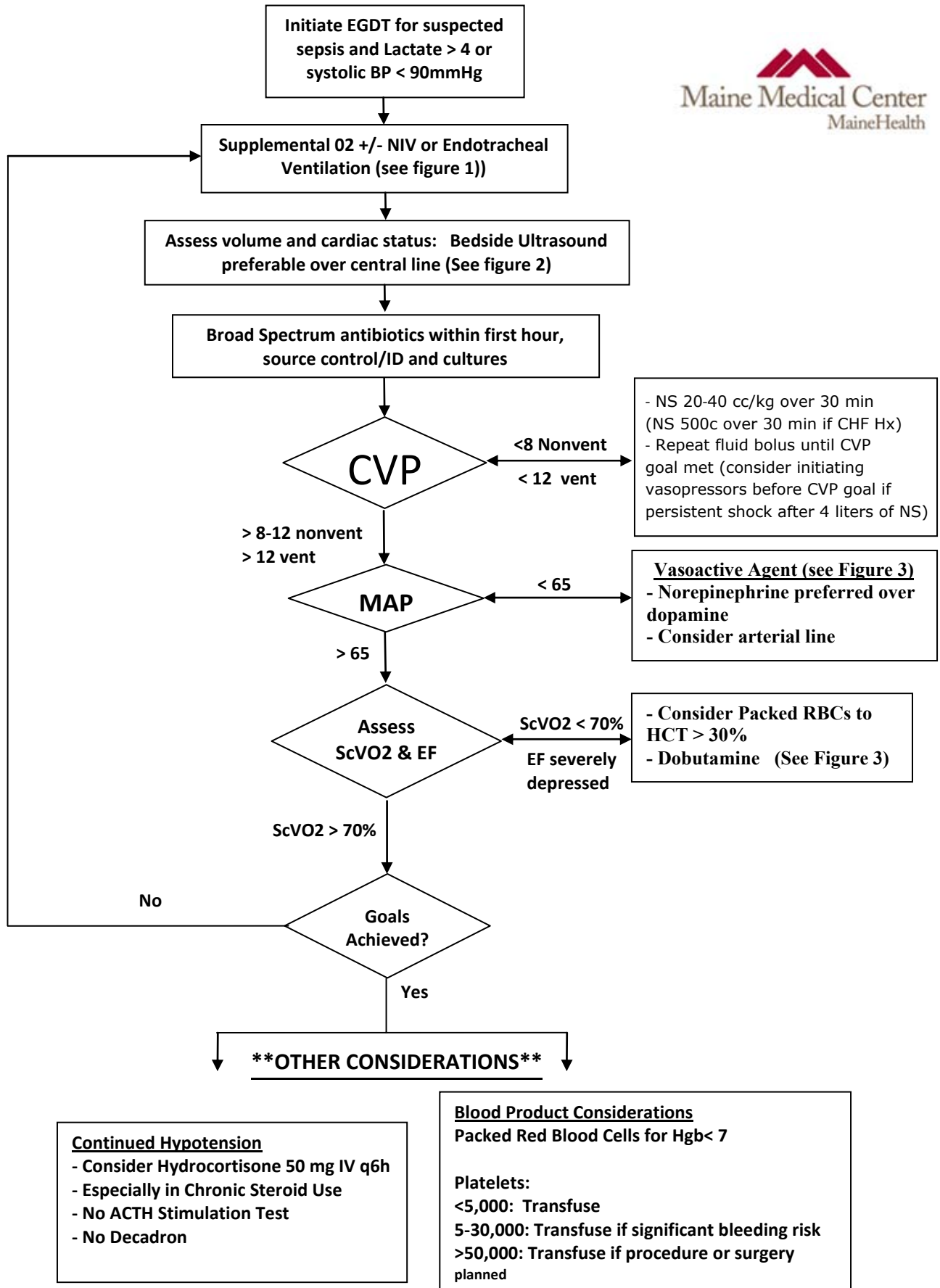


Figure 1. Intubation and Mechanical Ventilation

Decrease O₂ Consumption Through Mechanical Ventilation

- Use PEEP > 5 cm H₂O
- Elevate Head of Bed to 45°
- Sedation
- No Paralysis

Protective Lung Strategy

- Low Tidal Volume (6ml/kg *ideal body weight*)
- Low Inspiratory Plateau Pressure (≤ 30 cm H₂O)

IDEAL BODY WEIGHT TABLE

THE FOLLOWING CHART TABULATES HEIGHT AGAINST IDEAL BODY WEIGHT AND GIVES THE WEIGHT ABOVE WHICH THE PATIENT IS DEFINED AS BEING OBESE.

HEIGHT (CM)	MEN		WOMEN	
	IBW (KG)	OBESE IF >KG	IBW (KG)	OBESE IF >KG
150	50	60	45.5	54.6
152	51.8	62.2	47.3	56.8
154	53.6	64.3	49.1	58.9
156	55.4	66.5	50.9	61.1
158	57.2	68.7	52.7	63.2
160	59	70.8	54.5	65.4
162	60.8	73	56.3	67.6
164	62.6	75.1	58.1	69.7
166	64.4	77.3	59.9	71.9
168	66.2	79.4	61.7	74
170	68	81.6	63.5	76.2
172	69.8	83.7	65.3	78.4
174	71.6	85.9	67.1	80.5
176	73.4	88.1	68.9	82.7
178	75.2	90.2	70.7	84.8
180	77	92.4	72.5	87
182	78.8	94.6	74.3	89.2
184	80.6	96.7	76.1	91.3
186	82.4	98.9	77.9	93.5
188	84.2	101	79.7	95.6
190	86	103.2	81.5	97.8
192	87.8	105.4	83.3	100
194	89.6	107.5	85.1	102.1

Figure 2a. Assess Volume Status with Bedside Ultrasound

IVC Size (cm)	Respiratory Change	RA Pressure (cm)
< 1.5	Total collapse	0–5
1.5–2.5	> 50% collapse	5–10
1.5–2.5	< 50% collapse	11–15
> 2.5	< 50% collapse	16–20
> 2.5	No change	> 20

References: Feissel M, Michard F, Faller JP, et al. The respiratory variation in inferior vena cava diameter as a guide to fluid therapy. *Intensive Care Med* 2004;30:1834-1837.

Nagdev AD, Merchant RC, Tirado-Gonzalez A, et al. Emergency department bedside ultrasonographic measurement of the caval index for noninvasive determination of low central venous pressure. *Ann Emerg Med*. 2010;55:290-295.



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Figure 2b. Assess Cardiac contractility using Mitral Annular Displacement (MAD)

MAD > 0.9 cm	EF 50% (normal)
MAD 0.5 – 0.9 cm	EF 35-50% (moderately depressed)
MAD < 0.5 cm	EF < 35% (severely depressed)

Cardiac Contractility is categorized as being normal, moderately depressed or severely depressed. The left ventricle can be interrogated using all technically available windows, including subcostal, parasternal long and short axis, and apical two- and four-chamber views. Mitral valve annulus displacement (MAD) can be measured during M-mode imaging, using the apical four-chamber window and with special emphasis to avoid foreshortening of the left ventricle.

References: Effect of Bedside Ultrasonography on the Certainty of Physician Clinical Decisionmaking for Septic Patients in the Emergency Department. Haydar SA, Moore ET, Higgins GL 3rd, Irish CB, Owens WB, Strout TD. *Ann Emerg Med*. 2012 May 23(EPub)

DeCara JM, Toledo E, Salgo IS, et al. Evaluation of left ventricular systolic function using automated angle-independent motion tracking of mitral annular displacement. *J Am Soc Echocardiogr*. 2005;18:1266-1269.

Figure 3. Vasopressor/Inotropic Therapy

First Line Vasoactive Agents	Dose
Norepinephrine	- 5 mcg/min initial rate - Titrate 1-2 mcg/kg/min every 5-10 minutes to a mean arterial pressure (MAP) of 65-90 mmHg
Dopamine	- 10 mcg/kg/min initial rate - Titrate by 1-4 mcg/kg/min every 10-30 minutes to a mean arterial pressure (MAP) of 65-90 mmHg

Second Line Vasoactive Agents	Dose
Vasopressin	0.01-0.04 units/min (max 0.1 units/min)
Epinephrine	2-10 mcg/min (max 27 mcg/min)
Phenylephrine	20-200 mcg/min (max 600 mcg/min)
Dobutamine	- 2.5 mcg/kg/min initial rate - Titrate by 1-4 mcg/kg/min every 10-30 minutes to a mean arterial pressure (MAP) of 65-90 mmHg