Instructor Guide

Scenario: Gas Failure

Initial Set-Up

Action: **Gas line is disconnected at the blender or oxygenator**

History: **(Read)** ECMO has just been initiated for this infant with meconium aspiration and everyone is starting to clean up after cannulation. You are just starting to catch up with your charting. The second set of gases have returned. **(Hand student blood gas result)**

ECMO Mode: VA or VV

Patient:

Temp	37		
HR	140	100	66
BP	60/40 (47)		36/6 (23)
CVP	4		
Saturation	93%	69%	

CDI 7.27 / 75 / 39 / 18 / BD 4
H/H 39% / 13
SvO2 51%

Available data **(If participant asks this data is available)**

Physical Exam:
Quiet. No spontaneous movements. Mottled. Dusky. BS equal. Heart sounds normal. Abdomen soft. Peripheral refill delayed. Extremities cool

Blood gas - Results handout (see page 3)

Patient:	7.28 / 71 / 47 / 16 / BD 5
Pre Memb:	7.23 / 79 / 32 / 14 / BD 7
Post Memb:	7.29 / 67 / 41 / 18 / BD 4

Pressures	Venous	-5
	Pre-memb	149
	Post-memb	145

Color blood in circuit tubing – same color

CXR: Ordered, but tech is busy in the ER with a code
Chem: Previous labs normal. Sample sent to lab. Results pending.
Heme: Previous labs normal. Sample sent to lab. Results pending.
ACT: 180 sec

Student Assessment and Key Concepts: Gas Failure

Time to accomplish: 120 seconds

Desired Responses

Technical

- ❑ Circuit Check
- ❑ Increases oxygenator FiO2
- ❑ Increases sweep gas
- ❑ Checks oxygenator for clots
- ❑ Check gas lines for kinks
- ❑ Checks gas line for disconnection at source

Cognitive

- ❑ Recognizes increase CO2
- ❑ Recognizes decrease in SaO2 and/or PO2
- ❑ Evaluates CDI (if applicable)
- ❑ Evaluates SVO2

Communication

- ❑ Initiates emergency ventilator settings
- ❑ Calls for help

Discouraged interventions

- ❑ Come off ECMO

COMMENTS

Children's Hospital of Mojo

Baby Boy Rap

Medical Record Number 124-33-59
DOB: 10/03/09

Patient ABG

	10/04/09 1600		10/04/09 0400	
pH	**7.28**	↓	pH	7.42
PCO2	**71**	↑	PCO2	43
PO2	**47**	↓	PO2	75
HCO3	**16**		HCO3	24
BD	**5**		BD	2
Ventilator	**Rest Settings PIP 24 PEEP 12 Rate 10 IT 0.6 sec FiO2 = 0.3**			

Pre-Membrane Blood Gas

	10/04/09 1600		10/04/09 0400	
pH	**7.23**	↓	pH	7.31
PCO2	**79**	↑	PCO2	48
PO2	**32**	↓	PO2	52
HCO3	**14**		HCO3	23
BD	**7**		BD	0

Post-Membrane Blood Gas

	10/04/09 1600		10/04/09 0400	
pH	**7.29**	↓	pH	7.47
PCO2	**67**	↑	PCO2	35
PO2	**41**	↓	PO2	284
HCO3	**18**		HCO3	25
BD	**4**		BE	2
Sweep Gas	**0.45 liters FiO2 = 0.45**		0.45 liters FiO2 = 0.45	