



*Do calculations
make your
blood pressure go **UP?***



SIMSUITE[®]
MEDICAL SIMULATION CORPORATION

Advanced Hemodynamic Monitoring

Course Objectives

At the end of this course, the participant will be able to:

- Identify and read hemodynamic waveforms using arterial lines, central venous catheters, and pulmonary artery catheters
- Describe accurate monitoring techniques
- Identify abnormal conditions and pressures
- Describe proper pulmonary artery (PA) catheter placement
- Obtain PA catheter measurements
- Understand methods for troubleshooting technical issues
- Understand potential complications related to invasive monitoring

Course Description

This course is designed for healthcare providers who routinely care for patients with invasive monitoring therapies such as arterial lines, central venous lines and pulmonary artery catheters. This course is also suitable for nurses new to the intensive care unit (ICU), post-anesthesia care unit (PACU), or recovery room as well as those nurses working in cardiac step-down units, and may serve as an adjunct to any critical care orientation.

The course includes the following:

- Pre-test
- Basics of Hemodynamic Monitoring
- Pressure Line Management
- Arterial Blood Pressure
- Central Venous Pressure
- Pulmonary Artery Catheter
- Utilization and Management
- Troubleshooting Issues
- Potential Catheter-related Complications
- Hemodynamic Calculations and Normal Values
- Post-test

Benefits

- Online convenience and flexibility: available anytime, anywhere
- Self-paced learning
- Consistent training
- Guideline driven
- Integration into Quality Improvement Program

Clinical Applicability

Arterial and central venous lines are routinely utilized to monitor patients in the intensive care unit, post-anesthesia care unit/recovery room, and in many step-down units. Understanding how to properly manage the use of such invasive lines is important in preventing potential adverse events such as infection, bleeding, thrombus, or embolism. Over the last 30 years, use of pulmonary artery catheters (PAC) in the intensive care and peri-operative setting increased tremendously. However, several recent studies show that the use of pulmonary artery catheters may not provide additional benefits in treatment, diagnosis, and management of the critically-ill patient.^{1, 2} While evidence in the literature argues against the use of pulmonary artery catheters, their use continues in many institutions. According to current estimates, there are more than 1.2 million pulmonary-artery catheters placed annually in the United States, with associated costs of over \$2 billion.³ Understanding the indications for PA catheter insertion will assist the clinician in determining whether or not this type of monitoring is necessary for adequate diagnosis and treatment.

References:

¹Shah, MR, Hasselblad, V, Stevenson, LW, Binanay, C, O'Connor, CM, Sopko, G & Califf, RM. *Impact of the Pulmonary Artery Catheter in Critically-Ill Patients*. JAMA. 2005; 294: 1664-1670.

²ESCAPE Investigators and ESCAPE Study Coordinators. *Evaluation Study of Congestive Heart Failure and Pulmonary Artery Catheterization*. JAMA. 2005; 294: 1625 - 1633.

³Parsons, PE. *Progress in Research on Pulmonary-Artery Catheters*. NEJM. 2003; 348: 66 - 68.

To schedule a training session, contact your SimSuite Clinical Educator:

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