Managing Pulmonary Situations

Better than ever

Program Description:

This innovative, reality based program is designed to involve the learner in real life situations regarding the identification and proper management of normal and abnormal pulmonary situations. The learner has three opportunities for learning material, i.e. classes (video with illustrations), library (animated books) and near virtual reality interactive rooms. The content presented is based on the best available science (evidence based practice), using national or international standards when possible. The program is targeted to the practicing clinicians. It is not designed to create experts, but clinicians who are competent at addressing the major aspects of pulmonary monitoring. References are provided for additional learning opportunity. Capnography has the unique ability to aid clinicians in assessing both ventilation and blood flow. In this program, a review of the physiology that allows exhaled CO2 to monitor ventilation and perfusion is presented. The technology required for measuring exhaled CO2 is presented in order to allow the attendee to identify which devices are best for their clinical practice. Due to the ability to assess both ventilation and perfusion, capnography has been called the "15 second vital sign". The use of capnography is likely to quickly grow throughout the hospital and even into pre hospital settings.

Using research that indicates how learning best takes place, our program is structured to engage the learner, using real life learning skills. Our learners fill whatever learning needs they have in our short, targeted classroom videos or learn on their own in our interactive library. Once the learner feels ready to proceed, they enter our virtual reality hospital. The clinical areas are divided into learning/practicing rooms and testing/evaluation rooms.

The program is web based so learning can occur anytime, anywhere. The learner can complete the class in a given time period, e.g. 2-4 weeks. The specific clinical area the learner is employed can be completed in about 2 hours, including the testing/evaluation phase. Except for the testing section, the learner can enter and leave the program whenever they want. This allows improved use so the learner can learn at their convenience, either at work or at home.

Program Objective:

The objective of this program is to:

Develop the knowledge base of practicing clinicians to recognize and successfully manage patients with normal and abnormal pulmonary situations.

Participant Learning Objectives:

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

1) Recall the relationship between PaCO2 and PetCO2 levels
2) Discuss how the reason why capnography is a rapid assessment of inadequate ventilation
3) Discuss how capnography can reflect a reduction in cardiac output
4) Describe the 4 key applications of capnography in patient monitoring
5) Discuss how pulse oximetry acts as an early warning sign of pulmonary (intrapulmonary shunting) changes
6) Discuss the limitations of oximetry in evaluating ventilation
7) Describe the key errors associated with pulse oximetry
8) Describe how to interpret the 8 most common blood gas disturbances
9) Discuss the management of respiratory and metabolic acidosis
10) Discuss the management of respiratory and metabolic alkalosis

Learning Rooms -The learner enters rooms in each clinical area. Each room has a different problem to solve. As the learner enters a room, they must act as they would in real life. The room is interactive, including the patient. If the learner wants information, they must seek the information. As in real life, no information is given without their effort. The learner must make an assessment and if treatment is indicated, administer that treatment. Treatments can be accessed in real life format, e.g. medication carts. Depending on the treatment selected, the patient may get better. Incorrect answers are identified for the learner and suggestions are made to help learning. The learner must solve the problem before being allowed to advance. However, the learner can leave the room if they want and complete the same room at a later time.

There are 33 learning rooms with 11 for capnography, 10 for pulse oximetry and 12 for blood gas analysis. Each case is designed to teach specific aspects of identifying and treating pulmonary function. The key teaching points in

each room are identification of normal and abnormal situations and applying the correct treatment to optimize the patient.

Testing Rooms – in the evaluation section, the hospital room is identical to the learning rooms. However, in these rooms, once the learner has selected a response, no guidelines are given whether the answer is correct or not. The learner chooses to exit the room at any time. Success will be identified by if the learner has completed all the required steps to ensure the patient was adequately treated.

The testing cases involve four of the most important aspects of pulmonary disturbances and treatment, including potential life threatening situations.

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