11.1: Oxygen Therapy Introduction

Learning Objectives

- Implement interventions to improve a patient’s oxygenation status
- Correctly apply oxygen equipment
- Set flow rate using fixed and portable equipment
- Survey the environment for potential safety hazards
- Use pulse oximetry
- Assess patient response to oxygen therapy
- Adapt procedures to reflect variations across the life span
- Document actions and observations
- Recognize and report significant deviations from norms

The air we breathe contains 21% oxygen and is crucial for life. Several body systems must work collaboratively during the oxygenation process to take in oxygen from the air, carry it through the bloodstream, and adequately oxygenate tissues. First, the airway must be open and clear. The chest and lungs must mechanically move air in and out of the lungs. The bronchial airways must be open and clear so that air can reach the alveoli, where oxygen is absorbed into the bloodstream and carbon dioxide is released during exhalation. The heart must effectively pump this oxygenated blood to and from the lungs and through the systemic arteries. The hemoglobin in the blood must be in adequate amounts to sufficiently carry the oxygen to the tissues, where it is released and carbon dioxide is absorbed and carried back to the lungs.

Several medical conditions, such as asthma, chronic obstructive pulmonary disease (COPD), pneumonia, heart disease, and anemia can impair a person’s ability to sufficiently complete this oxygenation process, thus requiring the
administration of supplemental oxygen. This chapter will review basic concepts related to oxygenation, provide an overview of oxygenation equipment, and apply the nursing process to the administration of supplemental oxygen. Oxygen is considered a medication and, therefore, requires a prescription and continuous monitoring by the nurse to ensure its safe and effective use.