

## Chapter 01: History of Respiratory Care

### Kacmarek: Egan's Fundamentals of Respiratory Care, 12th Edition

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#### MULTIPLE CHOICE

1. Which of the following is an expected role of a respiratory therapist?
  1. Promoting lung health and wellness
  2. Providing patient education
  3. Assessing the patient's cardiopulmonary health status
  4. Selling oxygen (O<sub>2</sub>) therapy devices to patients
- a. 1 and 3 only
- b. 2 and 4 only
- c. 1, 2, and 3 only
- d. 2, 3, and 4 only

ANS: C

Respiratory care includes the assessment, treatment, management, control, diagnostic evaluation, education, and care of patients with deficiencies and abnormalities of the cardiopulmonary system. Respiratory care is increasingly involved in the prevention of respiratory disease, the management of patients with chronic disease, and promotion of health and wellness.

DIF: Recall OBJ: 1

2. Where are the majority of respiratory therapists employed?
  - a. Skilled nursing facilities
  - b. Diagnostic laboratories
  - c. Hospitals or acute care settings
  - d. Outpatient physician offices

ANS: C

Approximately 75% of all respiratory therapists work in hospitals or other acute care settings.

DIF: Recall OBJ: 1

3. Who is considered to be the "father of medicine"?
  - a. Hippocrates
  - b. Galen
  - c. Erasistratus
  - d. Aristotle

ANS: A

The foundation of modern Western medicine was laid in ancient Greece with the development of the Hippocratic Corpus. This collection of ancient medical writings is attributed to the "father of medicine," Hippocrates, a Greek physician who lived during the fifth and fourth centuries BC.

DIF: Recall OBJ: 2

4. In 1662, a chemist published a book that described the relationship between gas, volume, and pressure. What was the chemist's name?
- Sir Isaac Newton
  - Robert Boyle
  - Anthony van Leeuwenhoek
  - Nicolaus Copernicus

ANS: B

The chemist, Robert Boyle, published what is now known as "Boyle's law," governing the relationship between gas, volume, and pressure.

DIF: Recall OBJ: 2

5. Who discovered O<sub>2</sub> in 1774 and described it as "dephlogisticated air"?
- Robert Boyle
  - Jacque Charles
  - Thomas Beddoes
  - Joseph Priestley

ANS: D

In 1774, Joseph Priestley described his discovery of O<sub>2</sub>, which he called "dephlogisticated air."

DIF: Recall OBJ: 2

6. Who is credited with first describing the law of partial pressures for a gas mixture?
- John Dalton
  - Joseph Prestley
  - Jacque Charles
  - Thomas Young

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ANS: A

John Dalton described his law of partial pressures for a gas mixture in 1801 and his atomic theory in 1808.

DIF: Recall OBJ: 2

7. Who was the first scientist in 1865 to suggest that microorganisms caused many diseases?
- Thomas Young
  - Louis Pasteur
  - Henry Graham
  - Robert Koch

ANS: B

In 1865, Louis Pasteur advanced his "germ theory" of disease, which held that many diseases are caused by microorganisms.

DIF: Recall OBJ: 2

8. Who discovered the x-ray and opened the door for the modern field of radiology?
- John Dalton
  - William Smith

- c. William Roentgen
- d. Thomas Young

ANS: C

In 1895, William Roentgen discovered the x-ray and the modern field of radiologic imaging sciences was born.

DIF: Recall OBJ: 2

9. What was the primary duty of the first inhalation therapists?
- a. Provide airway care.
  - b. Support O<sub>2</sub> therapy.
  - c. Aerosol therapy to patients.
  - d. Maintain patients on mechanical ventilation.

ANS: B

The first inhalation therapists were really just O<sub>2</sub> technicians.

DIF: Recall OBJ: 3

10. When did the designation “respiratory therapist” become standard?
- a. 1954
  - b. 1964
  - c. 1974
  - d. 1984

ANS: C

In 1974, the designation “respiratory therapist” became standard.

DIF: Recall OBJ: 3

11. Who was the first to develop the large-scale production of O<sub>2</sub> in 1907?
- a. Robert Dalton
  - b. David Boyle
  - c. Thomas Anderson
  - d. Karl von Linde

ANS: D

Large-scale production of O<sub>2</sub> was developed by Karl von Linde in 1907.

DIF: Recall OBJ: 4

12. When was the first Venti-mask introduced that allows the precise delivery of 24%, 28%, 35%, and 40% O<sub>2</sub>?
- a. 1945
  - b. 1954
  - c. 1960
  - d. 1972

ANS: C

The Campbell Venti-mask, which allowed the administration of 24%, 28%, 35%, or 40% O<sub>2</sub>, was introduced in 1960.

DIF: Recall OBJ: 4

13. When were aerosolized glucocorticoids for the maintenance of patients with moderate to severe asthma first introduced?
- In the 1950s
  - In the 1960s
  - In the 1970s
  - In the 1980s

ANS: C

The use of aerosolized glucocorticoids for the maintenance of patients with moderate to severe asthma began in the 1970s.

DIF: Recall OBJ: 4

14. Which of the following medications has never been delivered as an aerosol by a respiratory therapist?
- Inotropes
  - Anticholinergic
  - Mucolytic
  - Antibiotic

ANS: A

There has been a proliferation of medications designed for aerosol administration, including bronchodilators, mucolytic, antibiotic, anticholinergic, and antiinflammatory agents.

DIF: Recall OBJ: 4

15. Which two names are linked to the development of the iron lung, which was extensively used to treat the polio epidemic in the 1950s?
- Allison and Smyth
  - Drinker and Emerson
  - Dräger and Bennett
  - Byrd and Tyler

ANS: B

The iron lung was developed by Drinker, an engineer at Harvard University. Jack H. Emerson developed a commercial version of the iron lung that was used extensively during the polio epidemics of the 1930s and 1950s.

DIF: Recall OBJ: 5

16. Which of the following was one of the first positive-pressure ventilators developed?
- MA-1
  - Bird Mark 7
  - Dräger Pulmotor
  - Engstrom

ANS: C

Early positive-pressure ventilators included the Dräger Pulmotor (1911), the Spiropulsator (1934), the Bennett TV-2P (1948), the Mörch Piston Ventilator (1952), and the Bird Mark 7 (1958).

DIF: Recall OBJ: 4

17. When was positive end expiratory pressure (PEEP) first introduced to treat patients with acute respiratory distress syndrome?
- 1935
  - 1946
  - 1958
  - 1967

ANS: D

Positive end expiratory pressure (PEEP) was introduced for use in patients with ARDS in 1967.

DIF: Recall OBJ: 4

18. When was synchronized intermittent mandatory ventilation (SIMV) first introduced?
- 1975
  - 1985
  - 1995
  - 2005

ANS: A

SIMV was introduced in 1975.

DIF: Recall OBJ: 4

19. Who introduced the first laryngoscope, in 1913?

- Thomas Allen
- Chevalier Jackson
- Jack Emerson
- Forrest Bird

ANS: B

In 1913, the laryngoscope was introduced by Chevalier Jackson.

DIF: Recall OBJ: 5

20. Who introduced the use of soft rubber endotracheal tubes around 1930?
- Davidson
  - McGill
  - Haight
  - Murphy

ANS: B

Ivan McGill introduced the use of soft rubber endotracheal tubes.

DIF: Recall OBJ: 5

21. In 1846, who developed a water seal spirometer, which allowed accurate measurement of the patient's vital capacity?
- Hutchinson

- u. Stroni
- c. Tiffeneau
- d. Davis

ANS: A

In 1846, John Hutchinson developed a water seal spirometer, with which he measured the vital capacity.

DIF: Recall OBJ: 5

22. What was the name of the first professional organization for the field of respiratory care?
- a. American Association for Inhalation Therapy
  - b. National Organization for Inhalation Therapy
  - c. Inhalation Therapy Association
  - d. Better Breathers Organization

ANS: C

Founded in 1947 in Chicago, the Inhalational Therapy Association (ITA) was the first professional association for the field of respiratory care.

DIF: Recall OBJ: 7

23. In which year did the respiratory care professional organization American Association for Respiratory Therapy (ARRT) change its name to American Association for Respiratory Care (AARC)?
- a. 1954
  - b. 1966
  - c. 1975
  - d. 1982

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ANS: D

The ITA became the American Association for Inhalation Therapists (AAIT) in 1954, the American Association for Respiratory Therapy (ARRT) in 1973, and the AARC in 1982.

DIF: Recall OBJ: 7

24. What organization has developed an examination to enable respiratory therapists to become licensed?
- a. American Respiratory Care Board
  - b. National Board for Respiratory Care
  - c. American Association for Respiratory Care
  - d. National Organization for Respiratory Therapist

ANS: B

During the 1980s, the AARC began a major push to introduce state licensure for respiratory care practitioners based on the National Board for Respiratory Care (NBRC) credentials.

DIF: Recall OBJ: 6

25. Today, respiratory care educational programs in the United States are accredited by what organization?
- a. National Board for Respiratory Care (NBRC)

- b. American Association for Respiratory Care (AAAC)
- c. Committee on Accreditation for Respiratory Care (CoARC)
- d. Joint Review Committee for Respiratory Therapy Education (JRCRTE)

ANS: C

Today, respiratory care educational programs in the United States are accredited by the CoARC.

DIF: Recall                      OBJ: 6

26. The majority of respiratory care education programs in the United States offer what degree?
- a. Associate's degree
  - b. Bachelor's degree
  - c. Master's degree
  - d. Certificate degree

ANS: A

There are approximately 300 associate, 50 baccalaureate, and 3 graduate-level degree programs in the United States. In addition there are 19 programs in Canada; and a handful of respiratory care educational programs in Mexico, South America, Japan, India, Taiwan, and other countries.

DIF: Recall                      OBJ: 8

27. Which of the following are predicted to be a growing trend in respiratory care for the future?
- 1. Decreased use of respiratory therapy protocols
  - 2. Increased need for patient assessment skills
  - 3. Increased involvement in smoking cessation programs
  - 4. Clinical decisions will increasingly be data-driven
- a. 1 and 4 only
  - b. 2 and 3 only
  - c. 2, 3, and 4 only
  - d. 1, 2, and 3 only

ANS: C

Dr. David Pierson, a prominent pulmonary physician, described the future of respiratory care in 2001. Among other things, he predicted greater use of patient assessment and protocols in disease state management in all clinical settings; a more active role for respiratory therapists in palliative care; increasing emphasis on smoking cessation and prevention; early detection and intervention in COPD; and an increase in the use of respiratory therapists as coordinators and caregivers for homecare. The science of respiratory care will continue to evolve and increase in complexity, and clinical decisions will increasingly be data-driven.

DIF: Recall                      OBJ: 9

28. How is competency to practice Respiratory Care determined?
- a. Achievement of good grades in school and graduating from an approved program.
  - b. Applying for a state license.
  - c. Only by graduating from a CoARC approved program.
  - d. Obtaining a passing grade on a credentialing examination administered by the NBRC after graduation from a CoARC approved program.

ANS: D

State licensing laws set the minimum educational requirements and the method of determining competence to practice.

DIF: Recall OBJ: 6

29. Due to the aging of the majority of the population, which of the following will be the focus of the Respiratory Therapist of the future?
1. Verifying insurance information
  2. Disease management and rehabilitation
  3. Patient and family education
  4. Tobacco education and smoking cessation
- a. 1 and 3 only
  - b. 2 and 4 only
  - c. 2, 3, and 4 only
  - d. 1, 2, and 4 only

ANS: C

In the future, there will be an increase in demand for respiratory care due to advances in treatment and technology, increases in the aging of the population, and increases in the number of people with asthma, COPD, and other cardiopulmonary diseases. Due to this the RT of the future will be focused on patient assessment, care plan development, protocol administration, disease management and rehabilitation, and patient and family education, to include tobacco education and smoking cessation.

DIF: Application OBJ: 9

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**MULTIPLE CHOICE**

1. The quality assurance coordinator evaluates the efficiencies of which of the following?
  1. Clinical staff
  2. Amount billed to patients for care
  3. Value associated with the practice of respiratory care
  4. Quality of care
  - a. 2 and 4 only
  - b. 1 and 3 only
  - c. 1, 3, and 4 only
  - d. 2, 3, and 4 only

ANS: C

The Quality Assurance Coordinator helps not only to evaluate the efficiencies of the clinical staff but also the value associated with the practice of respiratory. In addition, as professionals it is proper to determine the quality of care provided by evaluating the care we provide as well as the associated outcomes.

DIF: Recall OBJ: 5

2. Who is professionally responsible along with the Department Director for the quality of clinical care that is delivered?
  - a. Shift supervisor
  - b. Hospital Chief Operating Officer
  - c. Medical director
  - d. Clinical educator

ANS: C

The Medical Director of respiratory care is professionally responsible along with the Department Director for the quality of clinical care that is delivered (see Box 2.1). The Medical Director is also responsible for assisting and advising the Department Director on the management of the Respiratory Therapy Department.

DIF: Recall OBJ: 5

3. High-quality care is always
  1. safe.
  2. efficient.
  3. inexpensive.
  4. physician administered.
  - a. 1 and 2 only
  - b. 3 only
  - c. 2 and 3 only
  - d. 1, 2, and 3

ANS: A

High-quality care is always safe and efficient.

DIF: Recall

OBJ: 2

4. The medical director of respiratory care is responsible for which of the following?
1. Quality of clinical care that is delivered
  2. Assisting and advising the Department Director
  3. Participation in the selection and promotion of technical staff
  4. Approval of department clinical policies and procedures
- a. 1 only
  - b. 2 and 3 only
  - c. 1, 2, and 4 only
  - d. 2, 3, and 4 only

ANS: C

The Medical Director of respiratory care is professionally responsible along with the Department Director for the quality of clinical care that is delivered (see Box 2.5). The Medical Director is also responsible for assisting and advising the Department Director on the management of the Respiratory Therapy Department.

DIF: Recall

OBJ: 5

5. Respiratory care education programs are reviewed by which committee to ensure quality?
- a. Committee on Accreditation for Respiratory Care
  - b. American Association for Respiratory Care Education
  - c. Joint Review Committee Respiratory Care Education
  - d. Respiratory Care Education Committee

ANS: A

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Respiratory care education programs are reviewed by the Committee on Accreditation for Respiratory Care (CoARC).

DIF: Recall

OBJ: 1

6. The word “credentialing” in general refers to what?
- a. Maintaining minimal competency
  - b. Licensure by a state or national organization
  - c. Successful completion of entry-level board examination
  - d. Voluntary certification by state agency

ANS: A

A profession is often described by its advancing science, technology, and practice; continuous improvement in quality by active participation of its members; maintenance of minimal competency (in our case credentialing); leadership, research, and innovation.

DIF: Recall

OBJ: 6

7. What term is used to describe the process in which a government agency gives an individual permission to practice an occupation?
- a. Certification
  - b. Licensure
  - c. Registry
  - d. Credentialing