

Course Name: [Improving Breast Imaging Quality Std - ARRT 21.5 Cat A](#)

Download free eBook: [Click here](#)(use "Download as guest" option)

Give online test: [Click here](#) (check your email for test access ecode)

Test Questions

(hint: print questions & circle answers before starting online test)

Chapter 1

1. Which of the following is the primary modality for detecting breast cancer at an early stage?
 - A. Radiography
 - B. Mammography
 - C. MRI
 - D. CT

2. According to the article, screening mammography can reduce breast cancer specific mortality by approximately ____ to ____ percent.
 - A. 5, 10
 - B. 10, 15
 - C. 15, 20
 - D. 20, 30

3. Which of the following factors contribute to the quality of mammography?
 - A. Equipment used in mammography
 - B. Knowledge and skills of the technologists
 - C. Facility customer services
 - D. All of the above

4. Factors that contribute the quality of mammography are regulated by FDA under _____.
 - A. Mammography Quality Standards Act (MQSA)
 - B. Quality Control (QA)
 - C. Quality Assurance (QA)
 - D. Radiology Assurance

5. To resolve the problem of poor mammography quality, the American College of Radiology (ACR) established the Mammography Accreditation Program in _____, at the request of the American Cancer Society.
 - A. 1985
 - B. 1986
 - C. 1987
 - D. 1988

6. _____ was granted authority by the Secretary of Health and Human Services (HHS) in June 1993 to implement and regulate the MQSA provisions.
 - A. EPA
 - B. FDA
 - C. ARRT
 - D. CDC

7. By which of the following year MQSA required all mammography facilities to comply with the regulations?
 - A. October 1, 1994
 - B. October 1, 1995
 - C. October 1, 1996
 - D. October 1, 1997

8. On October 28, _____, FDA published MQSA final regulations, which became effective in April 1999.
 - A. 1994
 - B. 1995
 - C. 1996
 - D. 1997

9. FDA requires which of the following personnel to meet initial education, continuing education and clinical experience requirements?
 - A. Radiologic technologists
 - B. Mammography personnel
 - C. Interpreting physicians and Medical physicists
 - D. All of the above

10. FDA approved accreditation bodies like ACR or states review clinical and phantom images from every facility once every _____ years to check compliance with quality standards.
 - A. 1

- B. 2
- C. 3
- D. 4

11. According to the article, currently about _____ percent of facilities pass MQSA inspection with no violations, and generally only about 2 percent of issued citations are for the most serious level of violations.

- A. 40
- B. 50
- C. 60
- D. 70

12. The second MQSA reauthorization took place in which of the following year?

- A. 2004
- B. 2005
- C. 2006
- D. 2007

13. Which of the following tasks the committee examined before the reauthorization of MQSA in 2007?

- A. Different ways to improve physicians and interpretations of mammograms
- B. Changes that could be made in MQSA to improve mammography quality
- C. Different ways to ensure that sufficient numbers of adequately trained personnel at all levels are recruited and retained to provide quality mammography services
- D. All of the above

Chapter 2

14. "Mammography, however, is not a perfect test, due to the complex architecture of the breast tissue being imaged, the variability of the cancers that may be present, and the technical limitations of the equipment and processing".

- A. TRUE
- B. FALSE

15. Which of the following components of current MQSA regulations applied to interpretive performance?

- A. Requirements related to training, including initial training and Continuing Medical Education (CME)
- B. Interpretive volume
- C. Medical audit
- D. All of the above

16. _____ is a measure of how often a test correctly identifies women with breast cancer $[\frac{TP}{(TP+FN)}]$.

- A. Sensitivity
- B. Medical audit
- C. Interpretive volume
- D. None of the above

17. Sensitivity is affected by which of the following factors?

- A. Whether it is a first mammogram or subsequent mammogram
- B. The distribution of patient ages and tumor sizes in the population of women being screened by the interpreting doctors
- C. The length of time since prior mammograms
- D. All of the above

18. According to the article, under current MQSA regulations, a single interpreting physician must interpret _____ mammograms over 2 years to maintain accreditation.

- A. 100
- B. 578
- C. 960
- D. 1590

19. _____ is the ability of the test to determine that a disease is absent when a patient is disease-free.

- A. Sensitivity
- B. Specificity
- C. Interpretive volume
- D. Medical audit

20. Which of the following is a measure of accuracy for a screening or diagnostic test?

- A. PPV
- B. TP
- C. FP1
- D. FP3

21. Which of the following describes the proportion of all women biopsied due to the interpreting physician's recommendation who are diagnosed with cancer at the time of biopsy?

- A. PPV
- B. PPV1

- C. PPV2
- D. PPV3

22. Which of the following defines the proportion of all women with a negative result who are actually free of the disease?

- A. PPV
- B. TP
- C. NPV
- D. FP3

23. Cancer detection rate is the number of women found to have breast cancer per _____ women examined.

- A. 10
- B. 100
- C. 1,000
- D. 10,000

24. Which of the following term is used when women undergoing screening mammography who are given a positive interpretation that requires additional examinations?

- A. Recall rate
- B. Specificity
- C. Interpretive volume
- D. Medical audit

25. Which of the following is performed after a cancer is diagnosed and generally derived from pathology reports?

- A. Cancer outcome
- B. Cancer status
- C. Cancer detection rate
- D. Cancer staging

26. Tumor size is the physical dimensions of a tumor, which may be determined based on which of the following?

- A. Palpation
- B. Imaging
- C. Pathology
- D. All of the above

27. "The presence or absence of cancer cells in the axillary lymph nodes is one of the most important predictors of patient outcome."

- A. TRUE
- B. FALSE

Definitions:

28. Which of the following term is used when patient is having no signs or symptoms of disease?

- A. Amnesia
- B. Aphasia
- C. Anorexia
- D. Asymptomatic

29. Which of the following is considered as standard points of reference for performance measurements by which interpretive performance can be evaluated or compared?

- A. Statistics
- B. Imaging Curve
- C. Benchmarks
- D. Data

30. _____ is a non-cancerous growth that do not spread to tissues around them or to other parts of the body.

- A. Benign
- B. Cancerous
- C. Malignant
- D. Acute

31. Which of the following term refers to a procedure that involves obtaining a breast tissue specimen for microscopic analysis to establish a diagnosis?

- A. Sensitivity
- B. Breast biopsy
- C. Interpretive volume
- D. Specificity

32. _____ device is used to control size and shape of x-ray beam in mammography equipment.

- A. Collimator
- B. Grid
- C. Step wedge filter
- D. All of the above

Chapter 2

33. When the digital mammogram analyzed by computer software and flags areas of concern is called what?
- A. Positive predictive value (PPV)
 - B. Negative predictive value (NPV)
 - C. Full field digital mammography (FFDM)
 - D. Computer-aided detection (CAD)
34. Which of the following forms define double reading?
- A. Independent double reading
 - B. Consensus double reading
 - C. Third party reading
 - D. Both A and B
35. Which of the following are important factor/s that affect breast cancer detection?
- A. Interpretive volume
 - B. Interpreting physician's levels of experience
 - C. Length of time interpreting mammography
 - D. All of the above
36. MQSA requires that physicians must have received as initial training a minimum of _____ hours of documented medical education in mammography, and have interpreted at least _____ mammograms under the direct supervision of an interpreting physician.
- A. 30, 150
 - B. 50, 350
 - C. 60, 240
 - D. 75, 400
37. CME is a time-based system that awards credits when health professionals attend which of the following?
- A. Educational conferences
 - B. Workshops
 - C. Lectures relevant to medical practice
 - D. All of the above
38. MQSA requires all physicians who interpret mammograms to teach or complete at least _____ CME hours in mammography every _____ years.
- A. 15, 3
 - B. 24, 2
 - C. 32, 3
 - D. 24, 3
39. According to research, CME programs improve which of the following?
- A. The knowledge, skills and attitudes
 - B. Behavior of health professionals
 - C. Patient health outcomes
 - D. All of the above
40. In Australia, participating radiologists are required to read _____ screening mammograms a year, and their performance is measured against a set of standards for cancer detection, early-stage cancer detection, and recall rates.
- A. 1,000
 - B. 2,000
 - C. 3,000
 - D. 3,500
41. Which of the following have developed self-assessment programs for the interpretation of mammograms?
- A. The American College of Radiology (ACR)
 - B. The United Kingdom's National Health Service Breast Screening Programme (NHSBSP)
 - C. The Screening Mammography Program of British Columbia (SMP-BC)
 - D. All of the above
42. "Mammography programs in Canada, the United Kingdom, and other European countries have the benefit of national or regional surveillance data systems in which a centralized data repository is used to capture accurate data and feed it back to radiologists and facilities".
- A. TRUE
 - B. FALSE
43. In the United States, which of the following data cannot be collected unless periodic connection to data in a regional tumor registry can occur, making impossible to use by the vast majority of mammography facilities.
- A. Sensitivity
 - B. Specificity
 - C. Demographic
 - D. Both A and B

44. In 1994, which of the following regional area is not the part of The NCI sponsored Breast Cancer Surveillance Consortium (BCSC) that was linked to screening mammogram data with population-based cancer registries?
- A. North Carolina
 - B. Colorado
 - C. Texas
 - D. New Hampshire
45. Which of the following are important factors that helps to improve outcomes of any medical facility?
- A. Sensitivity of data
 - B. Regular quality assessments
 - C. appropriate feedback following audits
 - D. Both B and C
46. HIPAA Privacy Rule offers extensive safeguards to ensure the confidentiality of medical information, but it allows to collect information that is strictly used for which of the following purposes?
- A. Conducting quality assurance and quality improvement
 - B. Outcomes evaluation
 - C. Development of clinical guidelines to improve the operations of a specific organization rather than for research
 - D. All of the above
47. Which of the following safeguards is used to prevent inappropriate access to electronic data of patients?
- A. Passwords and firewalls
 - B. Proper disposal of sensitive printed information
 - C. Data encrypting techniques and paper shredding
 - D. All of the above
48. Hospital-based and medical center programs typically have which of the following affiliated departments for patient's diagnostic testing and treatments?
- A. Surgery
 - B. Pathology
 - C. Oncology
 - D. All of the above
49. "Patients who receive mammograms at facilities that are affiliated with a hospital are often diagnosed and treated within the same institution."
- A. TRUE
 - B. FALSE
50. Which of the following is considered as interpretation mode for screening mammography?
- A. Online
 - B. Verbal
 - C. Batch
 - D. Both A and C
51. Which of the following factors are important for the interpreting physicians to focus their attention on subtle lesions in mammogram?
- A. Quieter environment
 - B. Fewer distractions
 - C. Less ambient light
 - D. All of these are important factors
52. _____ can offer women patients the same day resolution of their mammogram because additional diagnostic imaging or tissue sampling can be done immediately after the initial interpretation of the image.
- A. Batch reading
 - B. Online reading
 - C. Verbal reading
 - D. None of the above
53. In 2002 what percentage of community-based mammography facilities were batch interpreting screening mammograms?
- A. 25
 - B. 55
 - C. 84
 - D. 90
54. Mobile mammography programs use which of the following types of vehicle to carry its equipment?
- A. A recreational vehicle/coach
 - B. A standard passenger van (portable unit)
 - C. Mobile van
 - D. All of the above
55. Which of the following are recommendation of the committee to improve basic MQSA-required medical audit of mammography?

- A. PPV2
 - B. Cancer detection rate per 1,000 women
 - C. Abnormal interpretation rate
 - D. All of the above
56. To encourage physicians and facilities to achieve an even higher level of performance, the Committee also recommends which of the following?
- A. Obtaining breast pathology reports for tumor size and grade
 - B. Lymph node status
 - C. Collecting data on patient characteristics
 - D. All of the above
57. The Breast Imaging Centers of Excellence should have and test which of the following attribute/s?
- A. Double reading
 - B. Patient reminder systems
 - C. High-volume mammogram interpretation
 - D. All of the above
58. The Breast Imaging Centers of Excellence should incorporate which of the following modality to enhance breast cancer diagnosis?
- A. MRI
 - B. CT
 - C. Ultrasound
 - D. Both A and C
59. The clinic based organizations have which of the following goal/s?
- A. Decrease morbidity, mortality, and anxiety associated with breast cancer detection and treatment
 - B. Increase coordination and communication among patients, multiple professionals, departments, and health care facilities
 - C. Define, measure, and monitor quality managements
 - D. All of the above
60. The communication between radiologists and pathologists is very important when using interdisciplinary breast cancer care for the patient in mammography.
- A. TRUE
 - B. FALSE
61. According to the article it is essential to provide positive incentives to which of the following to aim for the highest level of quality assurance?
- A. Facilities
 - B. Insurance companies
 - C. Individual interpreting physicians
 - D. Both A and C
62. One strong incentive would be paying for quality. A number of large health insurers have recently initiated which of the following program?
- A. Quality Assurance (QA)
 - B. Pay for quality (PFQ)
 - C. Quality Control (QC)
 - D. None of the above
63. Which of the following is/are core principle/s that guide/s PFQ programs?
- A. A common set of metrics used to assess performance
 - B. Funding to support performance improvement
 - C. Number of patients in the facilities
 - D. A and B only
64. According to the article implementing electronic record systems can be expensive, with some estimates of _____ per physician per year.
- A. 5,000 to 10,000
 - B. 9,000 to 15,000
 - C. 10,000 to 20,000
 - D. 25,000 to 40,000
65. Which of the following state offers the most advanced PFQ program to date that includes clinical measures, patient satisfaction, and information technology/infrastructure investment?
- A. California
 - B. Colorado
 - C. Texas
 - D. New Hampshire

Chapter 3

66. Congress passed the Mammography Quality Standards Act of 1992 to provide a general framework for ensuring national quality standards in facilities performing screening mammography.

- A. TRUE
- B. FALSE

67. Failure to meet a key MQSA requirement that may seriously compromise mammography quality falls in which of the following level category?

- A. Level 1
- B. Level 2
- C. Level 3
- D. Level 4

68. Which of the following Advisory Committee was mandated by MQSA?

- A. ACR
- B. NMQAAC
- C. HIPPA
- D. ARRT

69. Under MQSA regulations accredited facilities are eligible for certification and certificates are valid for _____ years and are renewable.

- A. 1
- B. 2
- C. 3
- D. 4

70. The committee suggested which of the following changes to FDA regarding current regulations?

- A. Delete obsolete language
- B. Reduce redundancy
- C. Improve overall clarity
- D. All of the above

71. FDA should apply more strict policy to which type of mammography units?

- A. Old mammography equipment
- B. Digital mammography equipment
- C. New mammography equipment
- D. All of the above

72. The committee suggested that FDA should require viewboxes used for interpreting mammograms produce a luminance of at least _____ candela per square meter to improve reading.

- A. 1,000
- B. 2,000
- C. 3,000
- D. 4,000

73. Committee agrees that strong communication between radiologists and _____ is an important factor in maintaining mammography quality.

- A. Technologists
- B. Patients
- C. Insurance companies
- D. None of the above

74. FDA accepts qualified interpreting physicians for mammogram under MQSA from which of the following country only?

- A. Mexico
- B. Canada
- C. Australia
- D. China

75. To hire a quality personnel, the employer should require which of the following from interpreting physicians and radiologic technologists?

- A. Documentation of employment history
- B. Radiology board qualifications prior to hiring
- C. Past financial history
- D. A and B only

76. To ensure the technical quality, older three-phase generators should still be tested every _____ along with any new unit or equipment recently undergoing any major repairs.

- A. year
- B. two years
- C. three years
- D. four years

77. Facilities should be required to separate screening and diagnostic medical audit data because it will make it easier to compare facility/practice performance with current literature or established databases.

- A. TRUE
- B. FALSE

78. Which of the following should be included in FDA final regulation instead of an alternative standard?
A. Probably Benign- Finding Initial. Short-Term Follow-up Suggested
B. Suspicious Abnormality Biopsy
C. Known Biopsy- Proven Malignancy. Appropriate Action Should Be Taken
D. None of the above
79. FDA guidance should be modified to require a patient letter/notification only when images are _____ and _____, even if there is no change in interpretation findings.
A. Reviewed
B. Reinterpreted
C. Archived
D. A and B only
80. Which of the following interventional procedure/s are performed under standard mammography equipment?
A. Myelogram
B. Preoperative wire needle localization
C. Ductograms
D. B and C only
81. In which of the following year the ACR and the American College of Surgery (ACoS) developed a joint set of qualifications for physicians performing stereotactic breast biopsy procedures, which included requirements for CME training and continuing experience.
A. 1994
B. 1995
C. 1996
D. 1997
82. The number of facilities offering Full Field Digital Mammography (FFDM) rose from approximately 320 in October, 2003 to just over _____ in October 2004.
A. 500
B. 800
C. 1,000
D. 1,200
83. Which of the following software is applied to FFDM or digitized film images after the images have been acquired to aid the diagnosis?
A. Histogram
B. Computer-aided detection (CAD)
C. Pre-processing
D. All of the above
84. The ACR has reported that between April 2001 and October 2004, approximately _____ percentage of their accredited mammography facilities have closed because of financial reasons, movement to a sister site, equipment problems or staffing shortages.
A. 10
B. 15
C. 19
D. 25
85. The committee recommends that if mammography facilities are unable to notify patients due to the bankruptcy, _____ should notify patients and referring physicians on that facility's behalf.
A. FDA
B. Radiologist
C. Mammographer
D. All of the above
86. Radiation dose in mammography is currently measured by the accrediting body and annually by the _____, and measurements rarely fail to meet MQSA regulation.
A. FDA
B. Radiologist
C. Mammographer
D. Medical physicist
87. Under what Section FDA can fully revoke a facility's certificate?
A. 900.11
B. 900.12
C. 900.13
D. 900.14
88. "MQSA was designed to foster uniform, high-quality mammography throughout the country by providing national standards that would eliminate the need for the patchwork of state regulations governing mammography standards".
A. TRUE

B. FALSE

89. Currently, which of the following accreditation bodies for MQSA have been approved by FDA?

- A. The American College of Radiology
- B. Texas and Iowa
- C. Arkansas
- D. All of the above

90. Which of the following statement explains inconsistencies in regulations across states?

- A. Many states continue to impose regulations beyond those currently required by FDA
- B. Physicians and Technologists do not require qualifications
- C. State facilities do not need FDA approval
- D. None of the above

91. According to ACR self-reported cost data collected from 37 facilities, the estimated cost of MQSA compliance was _____ per mammogram.

- A. \$20-\$25
- B. \$14-\$15.70
- C. \$11-\$12.75
- D. \$10-\$13.50

92. According to the Committee recommendation inspection data have demonstrated that several quality control tests are unnecessary due to redundancy and exceptionally low rates of citation, and therefore could be removed.

- A. TRUE
- B. FALSE

93. The recommendation from the committee requires lot of amount of work for FDA. The regulation revision process requires which of the following steps?

- A. Solicitation of input from outside scientific and medical experts as well as mammography facilities and practitioners
- B. Public hearings
- C. A public comment period.
- D. All of the above

94. According to the article, revision of the current FDA regulations is necessary to ensure which of the following?

- A. Adequate enforcement of quality standards continues
- B. To streamline the inspection process
- C. To reduce the burden of inspections on facilities without reducing mammography quality
- D. All of the above

Chapter 4

95. According to the recent media report in the article, shortages of which of the following have contributed to the closure of some mammography facilities?

- A. Mammography equipment
- B. Radiologic Technologists (RTs)
- C. Interpreting physicians or Radiologists
- D. B and C only

96. The Committee in this article relied on which of the following bodies to get the information on current mammography workforce?

- A. FDA
- B. ACR
- C. SBI and ASRT
- D. All of the above

97. Which of the following is/are important part of the mammography workforce?

- A. Interpreting physician and Radiologist assistant (RA)
- B. Radiologic technologist (RT) and Breast imaging specialist
- C. Medical physicist
- D. All of the above

98. Radiologic technologist (RT) must obtain _____ continuing education units every 36 months as required by MQSA.

- A. 10
- B. 20
- C. 15
- D. 24

99. According to the Committee, which of the following factors that could limit the future supply of interpreting physicians in mammography when compared with other areas of radiology?

- A. It is less lucrative,
- B. It is more regulated
- C. It carries greater medico-legal risk
- D. All of the above

100. In 2003 to 2004, approximately how many percent of all radiologists interpreted mammograms?
A. 15
B. 50
C. 62
D. 80
101. According to ASRT data, in 2004 there were approximately _____ full-time RTs workers primarily in mammography in the United States.
A. 10,000
B. 26,000
C. 35,000
D. 45,000
102. In the SBI's October 2003 survey, _____ percent of nearly _____ breast imaging practices reported unfilled positions for physicians.
A. 29, 570
B. 20, 780
C. 15, 670
D. 24, 500
103. ARRT data indicated a steady and substantial decline in examinees for certification in mammography between _____ and _____.
A. 1998, 2000
B. 2001, 2004
C. 1997, 2003
D. 1996, 2000
104. According to the article, a key barrier to filling RT positions in mammography is their _____ in comparison to RT positions in other subspecialties or modalities.
A. low pay
B. qualifications
C. clinical experience
D. None of the above
105. According to ASRT, on an average hourly wage basis, mammography RTs earned significantly less than those working primarily in nuclear medicine (26 percent), magnetic resonance imaging (MRI) (12 percent), sonography (10 percent), and computerized tomography (CT) (6 percent).
A. TRUE
B. FALSE
106. A national survey of 9,908 mammogram facilities that was conducted in 1999 to 2000 concluded that 64 percent could schedule a patient for a screening mammogram within _____ days.
A. 1
B. 5
C. 7
D. 10
107. According to many studies there is a link between _____ factors and limited access to mammography.
A. Demographic
B. Socioeconomic
C. Psychological
D. Physical
108. Which of the following modalities offer breast imaging besides mammography?
A. Ultrasound
B. MRI
C. Bone densitometry
D. Both A and B
109. According to the SBI survey, _____ percent of breast imaging practices offered MRI screening, and _____ percent offered diagnostic MR.
A. 15, 60
B. 12, 51
C. 20, 60
D. 30, 50
110. Which of the following are outcomes of screening mammogram pyramid?
A. Screens and call backs
B. Short-term follow-up
C. Biopsy and Cancer
D. All of the above
111. Which of the following ways can help to increase an access to screening

mammography in remote or otherwise underserved communities?

- A. Telemammography
- B. Mobile mammography facilities
- C. Centralized interpretation of mammograms
- D. All of the above

112. As per the article, breast imaging specialists generally consider their chosen field to be challenging, diverse, and interesting, but they interpret less than ____ percent of mammograms in the United States; most are read by general radiologists

- A. 12
- B. 25
- C. 30
- D. 35

113. Generally the non-radiologists who read mammograms are breast surgeons or OB/GYNs.

- A. TRUE
- B. FALSE

114. Mammograms are among the most challenging images to interpret because which of the following reason/s?

- A. Abnormalities can be very subtle
- B. A missed cancer in a screening mammogram of an asymptomatic woman may not be clinically evident for several years
- C. It takes long to interpret an image
- D. A and B only

115. According to the American Heart Association found that women incorrectly perceive their risk of dying from heart disease to be greater than their risk of dying from breast cancer.

- A. TRUE
- B. FALSE

116. National data indicate that the costs of settlements and judgments in mammography lawsuits cases nearly doubled between 1995 and 2002, to reach an average of _____.

- A. \$346,000
- B. \$500,000
- C. \$780,000
- D. \$987,000

117. Which of the following strategies could be used to ensure an adequate breast imaging workforce?

- A. Increasing the number of new entrants to the field
- B. Retaining the current workforce
- C. Increasing the productivity of new and existing practitioners
- D. All of the above

118. Which of the following key element/s could increase successful breast cancer screening programs in United States?

- A. Centralized expert interpretation of all breast imaging modalities
- B. Quality assurance process
- C. Limiting the breast imaging workforce
- D. A and B only

119. Radiologic Technologists and interpreting physicians can maximize their productivity and focus if they eliminate which of the following task?

- A. image interpretation
- B. performing interventional breast imaging procedures
- C. administrative tasks
- D. All of the above

120. Which of the following should be routinely collected and analyzed in order to determine the status quo and to plan for the future in Mammography facilities?

- A. Data on the national mammography workforce
- B. Volume of services
- C. Capacity
- D. All of the above