BREAST CANCER DETECTION COURSE POST-TEST

EXECUTIVE SUMMARY

1. **The potential for false-positive and false-negative mammography results remains:**

A moderate **B** high **C** low **D** insignificant

2. **The risk of a false-positive mammography result is about 1 in:**

A 10 **B** 12 **C** 8 **D** 7

3. **The United States requires physicians who interpret mammograms to read a minimum of ——— while the UK requires 5000 per year.**

A 480 per year **B** 640 per year **C** 4500 per year **D** 6500

4. **Which of the following are risk factors identified by the "Gail model?"**

A age **B** age at menarche **C** age at first live birth **D** all of the above

5. **What should researchers and technology developers of screening techniques focus their efforts most on?**

A accuray of technology **B** IDing women most likely to benefit from screening **C** precision of technology **D** developing interpretation techniques

6. **Essential clinical studies on new technology assessments are expensive, typically costing ——— of dollars.**

A hundreds of thousands **B** tens of thousands **C** billions **D** millions

7. **Because of the costs involved, considerable attention should be given to avoiding poor study design, eliminating unintentional bias, and:**

A calculating patient risk **B** streamlining procedures **C** standardizing data collection **D** all of the above

CHAPTER ONE: INTRODUCTION

8. **Because of improved treatments and the benefits of mammography screening, breast cancer mortality has decreased steadily since:**

A 1972 **B** 1976 **C** 1985 **D** 1989

9. **As many as ——— percent of cancer cases may go undetected by mammography.**

A 17 percent **B** 9 percent **C** 12 percent **D** 7 percent

10. **Balas and Boren estimated that the interval between discovery and application for innovations has been an average of:**

A 6 years **B** 17 years **C** 12 years **D** 9 years

11. **Women under 40 account for about ——— percent of breast cancer cases.**

A 15 **B** 10 **C** 5 **D** 1

12. **In the mid-1980s, about 100 women per year received high-dose chemotherapy; in 1994, that number grew to more than:**

A 8000 **B** 4000 **C** 2000 **D** 1000

13. **In as many as ——— of presentations at high-profile scientific meetings with mass media coverage, the findings were never published.**

A one in three **B** one in eight **C** one in six **D** one in four

CHAPTER TWO: BENEFITS AND LIMITATIONS OF MAMMOGRAPHY

14. **Mammography specificities generally fall in the range of ——— percent.**

A 75-82 **B** 80-88 **C** 85-92 **D** 90-98

15. **Two studies suggest that among women who receive annual mammograms for 10 years, ——— will have at least one suspicious finding.**

A one quarter **B** one third **C** half **D** two thirds

16. **One way to increase the positive predictive value of a screening test is to target the test to those at high risk of developing the disease.**

A True **B** False

17.   Overall, the evidence indicates that the availability of screening reduces mortality from breast cancer by:

A   10 to 20 percent   B   20 to 30 percent   C   30 to 40 percent   D   40 to 50 percent

18.   Scattered glandular tissue has a glandular density of:

A   50-75%   B   less than 25%   C   more than 75%   D   25-50%

19.   Technologies that are not based on x-rays, such as magnetic resonance imaging and sonography, are less affected by breast density.

A   True   B   False

20.   Obesity is commonly associated with fatty breasts and accounts for more than ——— percent of the variance in breast density.

A   20   B   40   C   30   D   50

21.   Studies indicate the additional costs of evaluating false-positive results can add up to ——— of the total cost of screening for all women.

A   half   B   one quarter   C   one third   D   three quarters

22.   In one study, ——— percent of women said pain would deter them from future screening.

A   12   B   7   C   5   D   20

23.   In one survey, women questioned immediately following screening reported that the part of the procedure they found most stressful was:

A   the hassle of the procedure   B   pre-procedure anxiety   C   pain during the procedure   D   waiting for results

24.   Radiation sensitivity among women drops precipitously after age:

A   30   B   35   C   40   D   45

25.   Among screen-detected breast cancers, ——— percent are DCIS.

A   17   B   14   C   25   D   20

26.   DCIS is believed to precede the development, over time, of:

A   fibroadenoma   B   invasive breast cancers   C   angiosarcoma of the breast   D   phyllodes tumors

27.   LIN is typically detected by:

A   a routine blood test   B   a biopsy performed for another reason   C   microcalcifications on mammogram   D   masses on mammogram

28.   Most DCIS is suspected on the basis of:

A   large, uniform calcifications   B   a mass   C   microcalcifications   D   all of the above

29.   ——— biopsy is recommended and preferred for diagnosis of DCIS.

A   Image-directed open surgical   B   Stereotactic core   C   Ultrasound-guided   D   Fine-needle aspiration

30.   Overall, most cases of DCIS are high grade, regardless of how they were detected.

A   True   B   False   C   D

31.   Treatment guidelines recommend ——— for localized DCIS.

A   RT   B   mastectomy   C   BCS   D   BCS plus RT

32.   What percentage of DCIS recurrences are invasive breast cancer?

A   30   B   60   C   40   D   50

33.   DCIS is now recognized to be very ——— is its clinical behavior.

A   heterogenous   B   homogenous   C   likely invasive   D   harmless

34. It is estimated that only ——— percent of DCIS cases detected during incidence screening would not progress if left untreated.

A   2   **B**   4   **C**   6   **D**   8

CHAPTER THREE: **IMPROVING BREAST CANCER SCREENING SERVICES**

35. In the United States, breast cancer screening starts at age:

A   35   **B**   30   **C**   50   **D**   40

36. What percent of the target population is screened in the United States?

A   76   **B**   78   **C**   55-63   **D**   54

37. Screening programs can be compared according to:

A   breast cancer survival rates   **B**   rates of abnormal mammograms   **C**   rates of false positives   **D**   all of the above

38. A 2003 study reported that the 5-year survival rate for all breast cancers is ——— in the United States.

A   76%   **B**   89%   **C**   93%   **D**   85%

39. Most of the difference in survival rates between the US and Europe was due to the stage at which women were diagnosed.

A   True   **B**   False

40. Cancer detected by physical exam or development of symptoms is more likely to have ——— than cancer detected by screening.

A   caused symptoms   **B**   metastasized   **C**   invaded the lymph nodes   **D**   all of the above

41. ——— has had the greatest reduction in breast cancer mortality for Europe.

A   Sweden   **B**   The United Kingdom   **C**   The Netherlands   **D**   Germany

42. Radiologists in the US are required to read ——— the volume of mammographic interpretations required in Britain.

A   one tenth   **B**   one quarter   **C**   one sixth   **D**   half

43. Overall, women in the United States are called back after screening mammograms about ——— as often as women in Britain

A   half   **B**   four times   **C**   twice   **D**   3.5 times

44. The cancer screening interval in Britain is ——— that of the US, which is likely a contributor to the difference in mortality between the two.

A   twice   **B**   three times   **C**   half   **D**   .25

45. ——— of mammograms are judged to be abnormal at 1st screen compared to 7.4% of those in Britain.

A   12%   **B**   8%   **C**   15%   **D**   3.2%

46. ——— of biopsies are negative in the US, compared to 40% in Britain.

A   57%   **B**   73%   **C**   45%   **D**   64%

47. In the US, ——— of invasive cancers are detected at an early stage, compared to 26% in Britain.

A   41%   **B**   36%   **C**   21%   **D**   47%

48. The mortality rate for all breast cancers per 100,000 in the US is 21.2, compared to ——— in Britain.

A   20.1   **B**   26.8   **C**   30.2   **C**   18.3

49. The ——— led to nationwide improvements in the technical quality of mammography.

A   ACR   **B**   PERFORMS   **C**   IOM   **D**   MQSA

50. Mammographic screening services in the United States are typically ——— treatment, counseling, and other support services.

A   separated from   **B**   more costly than   **C**   more likely covered by insurance than   **D**   combined with

51. ——— is a significant predictor of whether or not a woman will receive a mammogram.

A   biology   B   family history   C   insurance coverage   D   all of the above

52. All women aged 65 and older are eligible for Medicare and ——— percent of them choose the option.

A   94   B   88   C   84   D   81

53. ——— is a prerequisite for reducing the unequal burden of breast cancer.

A   eliminating costs   B   equal access   C   mandatory testing   D   free transportation

54. Mammography is possibly the most heavily ——— medical procedure in history.

A   regulated   B   legislated   C   taxed   D   performed

55. Mammography is unique among radiologic procedures for the requirements that outline every aspect of daily practice.

A   True   B   False

56. In ———, a reauthorization of the MQSA added the requirement that women receive direct notification of their mammography results.

A   1998   B   1996   C   2001   D   2002

57. The MQSA regulations set standards primarily for the ——— quality of mammography.

A   radiation   B   image   C   interpretation   D   technical

58. Standards for ——— of mammography in the MQSA are almost nonexistent.

A   radiation dose   B   image quality   C   interpretation quality D   technical quality

59. A serious limitation of BI-RADS is that the 6-point scale is not ——— and does not provide enough gradations of positive mammograms.

A   continuous   B   accurate   C   precise   D   all of the above

60. A true positive in screening occurs whenever a woman with breast cancer is given a recommendation for additional workups.

A   True   B   False

61. A mammography practice that ——— is likely to have an overall lower sensitivity rating.

A   serves older women   B   serves younger women   C   has more radiologists   D   does more screening

62. False-positive rates have ——— over time in the United States.

A   varied   B   stagnated   C   decreased   D   increased

63. A 2003 study found that ——— percent of inconsistency in interpretation is due to factors other than volume of mammograms read.

A   less than 54   B   more than 97   C   more than 63   D   less than 87

64. According to one study, breast imaging specialists found ——— more cancers per 1000 mammograms than general radiologists.

A   1-2   B   4-5   C   2-3   D   3-4

65. Only ——— percent of radiologists interpreting mammograms are specialists

A   18   B   8   C   20   D   12

66. Only about ——— percent of British practices admitted to being sued over breast cancer, with nearly all cases being dropped.

A   15   B   20   C   25   D   30

67. Radiologists in British Columbia, Canada are required to read an average of ——— mammograms per month.

A   200   B   100   C   300   D   500

68. For most BI-RADS® assessments, community radiologists make consistent recommendations, with an overall concordance of:

A   87   B   89   C   95   D   97

69. Continuing medical education required for radiologists in the United States almost never targets recall or cancer detection rates.

A True   **B** False

70. Digital mammography systems offer better contrast and lower spatial resolution at a(n) ——— radiation dose than traditional screen film.

A much higher   **B** somewhat higher   **C** equivalent   **D** lower

71. In a 2001 study, radiologists found nearly ——— percent more cancers with CAD than they did without.

A 10   **B** 15   **C** 20   **D** 25

72. ——— for this technology may be a key factor in the adoption of CAD.

A reimbursement   **B** training   **C** the use of digital mammography   **D** all of the above

73. In ———, the FDA cleared MRI for use as a diagnostic tool to evaluate breast tissue abnormalities, but not as a screening tool.

A 1987   **B** 1994   **C** 1989   **D** 1991

74. Ultrasound is often used instead of mammography to investigate palpable breast abnormalities in women who are:

A pregnant   **B** under 30   **C** both A and B   **D** none of the above

75. A study using a "double screen" of mammography plus ultrasound detected ——— percent of breast cancers.

A 68   **B** 97   **C** 72   **D** 92

76. While the number of radiologists is growing by an estimated 2 percent per year, their workload is increasing by about ——— annually.

A 6 percent   **B** 3 percent   **C** 5 percent   **D** 8 percent

77. Overall, about ——— percent of physicians in nonsurgical specialties cite research as their primary activity.

A 1   **B** 2   **C** 3   **D** 4

78. At approximately $280 million, the 2003 budget for NIBIB was the ——— of the NIH institutes.

A smallest   **B** second smallest   **C** largest   **D** second largest

79. Nonphysician provider training programs produced ——— as many graduates in 1997 as they did in 1992.

A 1.5 times   **B** half   **C** three times   **D** twice

80. A(n) ——— surveys mammography equipment and oversees quality assurance practices.

A medical physicist   **B** radiologic technologist   **C** interpreting physician   **D** none of the above

CHAPTER FOUR: **UNDERSTANDING BREAST CANCER RISK**

81. ——— of invasive breast cancers are in women over the age 50.

A half   **B** over three quarters   **C** less than sixty percent   **D** one quarter

82. ——— percent of women who develop breast cancer have no family history among their first-degree relatives

A fifty-seven   **B** sixty-five   **C** eighty-nine   **D** eighty-two

83. Approximately ——— percent of women who develop breast cancer have the type of cancer called hormone receptor positive.

A 80   **B** 65   **C** 75   **D** 70

84. A risk factor for developing breast cancer includes a breast that is more than ———% mammographically dense.

A 75   **B** 65   **C** 82   **D** 56

85. Age at menarche being younger than ——— years old increases the risk of developing breast cancer.

A 10   **B** 13   **C** 11   **D** 12

86. The majority of breast cancer cases are due to an accumulation of cellular (somatic) changes that occur during a patient's lifetime.

A   True   B   False

87. Lifetime risks of breast cancer in women in the general population who test positive for BRCA1 could be as low as:

A   40%   B   45%   C   65%   D   55%

88. Lifetime risks of breast cancer in women in the general population who test positive for BRCA2 could be as low as:

A   26%   B   15%   C   31%   D   12%

89. Birth cohort and physical exercise also have been shown to partially mitigate the influence of BRCA1.

A   True   B   False

90. Researchers have detected more than ——— mutations of BRCA1 or BRCA2, but the clinical significance of these is not yet known.

A   1500   B   2000   C   2500   D   3000

91. A test for all of the known mutations in BRCA1 and BRCA2 genes would cost nearly:

A $1000   B $2000   C $3000   D $4000

92. Each polymorphism probably increases or decreases breast cancer risk by only a small amount, perhaps ——— percentage points.

A   2 or 3   B   a few   C   less than 10   D   about 5

93. The odds ratio of the HRAS1 gene is:

A   2.04   B   1.48   C   1.12   D   1.18

94. For every, 1,000 women over age 50 screened, mammograms will reveal approximately ——— cases of invasive cancer or DCIS.

A   1-2   B   3-5   C   2-3   D   4-6

95. One study reported that women in their forties overestimated their probability of dying of breast cancer within 10 years by more than:

A   3-fold   B   12-fold   C   20-fold   D   10-fold

96. Women with BRCA gene mutations estimated their lifetime risk as:

A   25   B   65   C   75   D   80

97. A large body of research has shown that good communication and strong patient-provider relationships are linked to:

A   greater patient satisfaction   B   positive health outcomes   C   both A and B   D   Neither A nor B

98. Current screening strategies rely most heavily on age, followed by:

A   age at first live birth   B   age at menarche   C   genetics   D   a history of breast disease

CHAPTER FIVE: **BIOLOGICALLY BASED TECHNOLOGIES**

99. Biological methods may prove to be advantageous for screening high-risk populations, but are not likely to replace mammography.

A   True   B   False

100. The potential use of the germ-line mutation is:

A   screening   B   a risk indicator   C   diagnosis   D   prognosis

101. The somatic genetic alterations biomarker can potentially be used for:

A   a risk indicator   B   screening   C   diagnosis   D   all of the above

102. Changes in individual serum markers can be used for:

A   a risk indicator   B   prognosis   C   choosing therapy   D   all of the above

103. The angiogenesis biomarker can be used for:

A   a risk indicator   B   prognosis   C   choosing therapy   D   all of the above

104. Elevated ——— levels in breast cancer tissue may be involved in metastasis.

A   CA 19-3   B   CA 17-6   C   CA 15-3   D   CA 13-5

105. A successful bioassay for breast cancer will need to overcome:

A   expression patterns within different histologic types   B   additional patient conditions   C   intrinsic human biochemistry   D   all of the above

106. The Early Detection Research Network consists of which component(s):

A   Biomarker Discovery Labs   B   Biomarker Validation Labs   C   Clinical Epidemiological Centers   D   all of the above

107. The result of Phase 3 of biomarker research is:

A   a "screen positive" rule defined   B   clinical assay detects established disease   C   impact of screening is quantified   D   promising directions identified

108. Until the ———, the search for cancer biomarkers proceeded through the one-by-one investigation of candidate genes and proteins.

A   late 1980s   B   early 1990s   C   mid 1990s   D   early 2000s

109. Additional high-throughput methods focus on cancer-induced changes in protein pathways and populations:

A   within the tumor cell   B   at the tumor host interface   C   both A and B   D   neither A nor B

110. ——— directly examines the relationship between gene expression profiles and a clinically determined variable.

A   unsupervised analysis   B   supervised analysis   C   primary analysis   D   secondary analysis

111. Van't Veer and colleagues determined expression patterns of ——— primary breast tumors using oligonucleotide microarrays of 25k genes.

A   98   B   110   C   77   D   85

112. Mutations in DNA repair genes that normally protect the body against cancer-related mutations often result in chromosome loss.

A   True   B   False

113. A(n) ——— is defined as a variation of a specific nucleotide that is present in over 1 percent of the population.

A   SMP   B   CGH   C   LOH   D   SNP

114. Current protein microarrays can display less than ——— percent of the total cell proteome;

A   8   B   20   C   10   D   30

115. A typical proteomic profile can include more than ——— data points.

A   15,000   B   20,000   C   10,000   D   12,000

116. A serum proteomic test will only reveal certain biological characteristics of a tumor, such as:

A   the size   B   shape   C   location   D   none of the above

117. Even experts in the field disagree on the merits of the various ——— methods employed to bring molecular profiles into focus.

A   technical   B   publishing   C   research   D   statistical

118. Targeted molecular therapies are likely to inhibit cell proliferation rather than kill tumor cells.

A   True   B   False

119. The imaging used agent to target estrogen receptors (ERs) is:

A   FLT   B   fluoroestradiol   C   iodobenzamide   D   FDG

120. The imaging modality used to target Mucin-1 glycoprotein (MUC1) is:

A   MRI **B**   SPECT **C**   PET **D**   NIR Optical

121. The imaging modality used to target Cathepsin D is:

A   MRI **B**   SPECT **C**   PET **D**   NIR Optical

122. The portion of the EM spectrum used for SPECT imaging is:

A   high-energy gamma rays **B**   low-energy gamma rays **C**   radiowaves **D**   high-frequency sound waves

123. Functional MRI was introduced as an imaging technique in the ———, but was not widely used to detect breast cancer until the late 1990s.

A   1970s **B**   1980s **C**   early 1960s **D**   late 1960s

124. Fluorescent probes that emit in the near IR have ——— tissue penetration and minimal background fluorescence.

A   minimal **B**   moderate **C**   maximal **D**   deep

CHAPTER SIX: THE NECESSARY ENVIRONMENT FOR RESEARCH AND DEVELOPMENT

125. Once a technology reaches the prototype stage, it is typically tested in small clinical studies, usually involving fewer than ——— subjects.

A   40 **B**   50 **C**   60 **D**   70

126. According to their website, NCI supports 2,932 breast cancer projects and ——— clinical trials.

A   112 **B**   183 **C**   88 **D**   154

127. In 2002, lung cancer received 5.65% of the NCI cancer budget, whereas breast cancer received:

A   9.8% **B**   18.2% **C**   15.9% **D**   12.73%

128. This is the focal point for evidence-based assessments of medical practice on behalf of the medical community and the public:

A   MCAC **B**   OMAR **C**   AHRQ **D**   CMS

129. No federal agency in the United States has both the mandate and power to support a comprehensive approach to technology assessment.

A   True **B**   False

130. Which of the following was created in 1972?

A   National Center for Healthcare Technology **B**   NIH Consensus Development program **C**   OTA **D**   OMAR

131. Intense debate over the value of AHRQ happened in which year?

A   2003 **B**   2005 **C**   1997 **D**   1999

132. ——— has the potential to contribute to rational decision making by providing estimates of the magnitude of costs and health outcomes.

A   cost-benefit analysis **B**   clinical analysis **C**   technology analysis **D**   cost-effectiveness analysis

133. Common reasons for failures in clinical trials include:

A   bias **B**   too narrow a patient population **C**   poorly described patient populations **D**   all of the above

134. In 2001 AHRQ reviewed 500 studies involving more than 30,000 women, but all factors except ——— were excluded due to poor methods.

A   weight **B**   family history **C**   age **D**   genes

135. ——— is the term used for the time interval from diagnosis to death from cancer, in patients who contract the disease.

A   duration **B**   survival **C**   incidence **D**   span

136. Primary prevention is the control of cancer through reduction in the ——— of the disease.

A   duration **B**   mortality **C**   incidence **D**   span

137. The evaluation of any screening test can be affected by two profound sampling biases, length-biased sampling and:

A   survivorship   B   non-response   C   self-selection   D   lead-time bias

138. ——— occurs when the survival experience of a group of screen-detected cases is compared with a complete sample of incidence cases.

A   survivorship-biased   B   length-biased sampling C   self-selection bias   D   lead-time bias
     sampling

139. The only accepted study design for evaluating a new screening test is a randomized trial of individuals at risk of cancer, the endpoint being:

A   cancer mortality   B   recurrence   C   incidence   D   duration

140. The trials described above generally require in excess of ——— years of follow-up.

A   15   B   20   C   10   D   5

141. In general, studies of diagnostic accuracy should be conducted on samples from the population from which the test will be used.

A   True   B   False

142. The DMIST design includes a follow-up testing at ——— following the initial screen to account for potential false negatives.

A   12-18 months   B   8-12 months   C   3-6 months   D   10-15 months

143. A screening tool based on a blood test offers a potentially much ——— option than radiologic approaches.

A   faster   B   cheaper   C   more accessible   D   none of the above

144. Approximately ——— percent of the total NIH budget goes toward clinical trials, although NCI invests relatively more.

A   5   B   20   C   12   D   10

145. It often takes ——— years to enroll enough subjects for a scientifically meaningful and statistically valid clinical trial.

A   3-6 months   B   3-5 years   C   6-12 months   D   2-3 years

146. Only ——— percent of cancer patients participate in a clinical trial.

A   5-6   B   1-2   C   2-3   D   3-5

147. Cancer detection studies require ——— of subjects.

A   thousands   B   hundreds   C   hundreds of thousands   D   millions

148. ——— is the first biologic therapy ever approved for the treatment of breast cancer.

A   Perjeta®   B   Herceptin®   C   Phesgo®   D   Margenza®

149. The Health Insurance Portability and Accountability Act was adopted in which year?

A   1992   B   1994   C   1996   D   2003

150. Which of the following is an example of personal health information under HIPAA?

A   URLs   B   zip codes   C   vehicle identifiers   D   all of the above

151. Obtaining PHI with deidentification has limited research value.

A   True   B   False

152. Variations in interpreting the HIPAA Privacy Rule are contributing to high levels of uncertainty and confusion that have already resulted in:

A   unreliable data   B   lower participation   C   less funding   D   delays in research

153. ——— has begun a project to monitor and document the effects of HIPAA on research.

A   The FDA   B   The AAMC   C   NIH   D   The AMA

154. The role of ——— is to evaluate manufacturers' claims.

A   The FDA   B   The AAMC   C   NIH   D   The AMA

155. An example of a Class I low risk product would be:

A   CAD   B   wheelchairs   C   crutches   D   all of the above

156. An example of a Class II medium risk product would be:

A   band-aids   B   syringes   C   pacemakers   D   breast implants

157. Only about ——— of devices are approved on the basis of clinical evidence of safety and effectiveness.

A   10 percent   B   5 percent   C   15 percent   D   20 percent

158. The T-Scan 2000 was approved in:

A   1998   B   1999   C   2000   D   2001

159. The blood test Truquant® BRTM RIA by Biomira, Inc. was approved in ——— to monitor the recurrence of Stage II or II breast cancer.

A   2003   B   2000   C   1998   D   1996

160. The FDA Modernization Act of 1997 requires the agency to make a written record of meetings with manufacturers.

A   True   B   False

161. In January ———, the FDA launched an initiative designed to accel- erate the development of new technologies.

A   2002   B   2003   C   2001   D   2000

162. When a guidance document exists for a Class II product, the manufacturer has about a(n) ——— percent chance of getting it approved.

A   85   B   90   C   65   D   75

163. Because most clinical trials exclude participants older than ——— years, most trials do not have adequate numbers of elderly patients.

A   55   B   60   C   65   D   70

164. Congress has mandated ——— reimbursements for digital mammography.

A   higher   B   lower   C   fewer   D   more

165. Once coverage has been granted for a medical procedure or treatment, it can be ——— to rescind it.

A   somewhat easy   B   slightly difficult C   very difficult   D   extremely easy

166. CPT codes were historically updated once each year and CMS often took ——— to issue the codes, creating barriers to patient access.

A   3-6 months   B   2-4 years   C   6-12 months   D   1-2 years

167. ——— are a set of temporary codes intended for tracking emerging technologies.

A   Category II   B   Category III   C   Category IV   D   Category V

168. ——— is an organization of institutions, funded by the NCI, which manages clinical trials of cancer-related imaging technologies.

A   caBIG   B   NCICB   C   ACRIN   D   AHRQ

169. The ICBIO was established in ——— to bring together technology devel- opers and representatives from the federal government.

A   1999   B   1997   C   2000   D   2002

170. ——— is exploring development of regional translational research centers.

A   The AAMC   B   NIH   C   The AMA   D   The FDA

171. During the first 3 years of the project, researchers enrolled about 10 patients per day, uploading their mammography data to:

A   the FDA database B   NAMI   C   the NIH database   D   the NDMA

172. Currently, very few clinical trials are funded to determine whether new technologies may improve detection/diagnosis of breast cancer.

A   True   B   False

173. ——— refers to the likelihood that a particular intervention will benefit patients when used under optimal experimental conditions.

A   Adequacy   B   Usefulness   C   Effectiveness   D   Efficacy

174. Without ———, patients are subject to ineffective, or even harmful, medical treatments.

A   evaluation   B   deployment   C   assessment   D   monitoring

175. Technology ——— is the surveillance of patient outcomes after the introduction of new technology.

A   evaluation   B   deployment   C   assessment   D   monitoring

176. Ideally, issues related to technology use, such as "ease of use," are integrated into technology:

A   design   B   deployment   C   evaluation   D   monitoring

177. The complexity of technology adoption is likely to be further increased by the reduction in:

A   amount of funding   B   size of patient populations   C   amount of willing participants   D   number of trials being conducted

178. The fastest individuals or groups to adopt new technologies are the:

A   early majority   B   early adopters   C   innovators   D   traditionalists

179. Generally, simple technologies are adopted faster than complicated ones.

A   True   B   False

180. ——— percent of the potential BRCA1 mutations are tested by Myriad, and their testing has missed mutations.

A   1-2   B   10-20   C   3-5   D   over 50

181. Even without clear evidence and without widespread coverage, digital mammography generated about ——— in revenues.

A $40 million   B $70 million   C $110 million   D $230 million

182. In the mid-1980s a few studies indicated that HDC/BMT might be beneficial, and belief spread like wildfire, despite a ——— of mortality.

A   10 percent risk   B   20 percent risk   C   5 percent risk   D   15 percent

183. BRCA testing and protein profiling based on microarray analysis are both examples of:

A   improved technologies   B   traditional technologies   C   void-filling technologies   D   innovative technologies

184. Many of the important new technologies in breast cancer detection and diagnosis rely on improvements in:

A   screening   B   imaging   C   procedure   D   information handling

185. Technology ——— is integral to recognizing the need for improvement, as well as for achieving improvement.

A   design   B   assessment   C   evaluation   D   monitoring

CHAPTER EIGHT: **RECOMMENDATIONS**

186. An example of a category from the committee's recommendations for strategies to reduce the toll of breast cancer is:

A   improve current technology   B   improve implementation of new technologies   C   adequate testing   D   all of the above

187. Experience with the ——— demonstrates that a national quality assurance program could be successful in the United States.

A   ACR   B   PERFORMS   C   MQSA   D   Colorado Mammography Project

188. The addition of CAD is unlikely to improve the accuracy of all breast imagers.

A   True   B   False

189. The supply of radiologists (and therefore of breast imagers) is ——— to grow as quickly as demand for their expertise.

A   very likely   B   poised   C   unlikely   D   somewhat likely

190. ——— screening strategies, the committee believes, are essential to improving the early detection of breast cancer.

A More widespread   **B** Risk-based   **C** Earlier   **D** Heredity-based

191. Mammography screening guidelines already take into account two of the most significant breast cancer risk factors:

A age and weight   **B** gender and age   **C** gender and weight   **D** age and family history

192. The likelihood that a woman will adhere to screening recommendations depends, in part, on her ——— of developing breast cancer.

A likelihood   **B** risk   **C** hereditary risk   **D** perceived risk

BREAST CANCER DETECTION COURSE POST-TEST ANSWER SHEET

(Page 1 of 2)

Fill in each blank. There are two options to submit the post-test.   (812) 250-9729

> Option 1: Submit the post-test answers online at radunits.com on the course page for instant grading and emailed CE certificate. A password is required, which is found in your email receipt.

> Option 2: Fax this answer sheet to us at 866-386-0472, or you may instead email a phone pic of the answer sheet to clark@radunits.com. Allow 2 days for grading, and we will email the CE certificate.

First name:

Last name:

Email:

ARRT license number:

Florida techs only - enter state license number. All others enter N/A.

Telephone: Date:

When part of a group order or if the post-test is purchased under another name – enter the order number or purchasing name:

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