



EDUCATIONAL & TRAINING
DATA COLLECTION SYSTEM

Breast

Education & Training Team
Collaborative Stage Data Collection System
Version 2

Learning Objectives

- Understand rationale behind changes and updates
- Understand changes to current codes and SSFs
- Understand use of new codes and SSFs
- Understand finding specific documentation
 - SSFs
 - Coding rules

2



Outline

- Breast Cancer Facts
- Anatomy
- Changes to Current Data Items
- New Site-Specific Factors
- Questions

3



Breast Cancer Facts

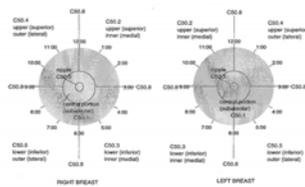
- #1 cancer in women worldwide
 - Accounts for more cancers in women than #s 2 and 3 combined
 - Approximately 30% of female caseload (15% of the total caseload) in most hospital-based registries
 - About 1% of cases occur in men
- 4 1,910 out of 194,280 in US in 2009



Breast Anatomy

- For ICD-O – breast divided into quadrants
- May have lesions in multiple quadrants
- Use multiple primary/histology rules

"Clock" Positions, Quadrants and ICD-O Codes of the Breast



Used by permission: April Fritz:
A Fritz and Associates, LLC



5

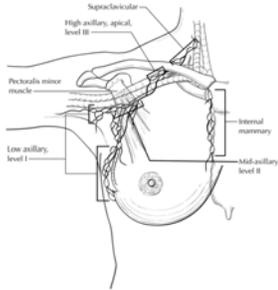
Breast Anatomy

- 2 Excellent Anatomic Drawings (not reproduced here) SEER Multiple Primary/Histology Manual
- General Instructions – pages 52 and 53
- Forward spread – dermal lymphatics, skin
- Backward spread – pectoralis muscle, pectoral fascia, chest wall



6

Breast – Regional Lymph Nodes



Credit line: Breast. In: Greene, F.L., Compton, C.C., Fritz, A.G., et al., editors. AJCC Cancer Staging Atlas. New York: Springer, 2006: 219-233. ©American Joint Committee on Cancer.

7



Changes To Current Data Items

8



Size, Extension, Evaluation

- Necessary elements to derive the T category of TNM

9



CS Tumor Size

- No new codes
- Priority rules for size (see Part I)
 - Pathology
 - Surgery
 - Imaging
 - Physical exam
- Take largest size found from multiple imaging reports

10



CS Tumor Size

- Special codes
 - 990 Microinvasion, microscopic focus or foci only*
 - 996 Mammographic diagnosis only, no size given
 - 997 Paget's disease of nipple, no demonstrable tumor
 - 998 Diffuse

11



CS Tumor Size

- New instruction when only information is T category
- Example: Stated as T1c with no other information on size – code as 992 rather than 999

12



CS Extension

- Notes renumbered
- Note 7 – new % for inflammatory carcinoma
- All codes now 3 digits
- New codes added
 - T NOS categories
 - Inflammatory carcinoma

13



New CS Extension Codes

Code	Description
------	-------------

- 170 Stated as **T1 [NOS]** with no other information on extension or size
- 180 Stated as **T2 [NOS]** with no other information on extension or size
- 190 Stated as **T3 [NOS]** with no other information on extension or size

14



New CS Extension Codes

Code	Description
------	-------------

- 380 Stated as **T4 [NOS]** with no other information on extension
- 390 Stated as **T4a** with no other information on extension

15



New CS Extension Codes

Code	Description
• 590	Stated as T4b with no other information on extension
• 680	Stated as T4c with no other information on extension
• 780	Stated as T4d with no other information on extension

16 

New CS Extension Codes

Code	Description
• 515	Extensive skin involvement, including: Satellite nodule(s) in skin of primary breast Ulceration of skin of breast
• 520	Any of the following conditions described as involving not more than one-third (33%) of the breast WITHOUT a stated diagnosis of inflammatory carcinoma: Edema of skin En cuirasse Erythema Inflammation of skin Peau d'orange ("pigskin")
• 525	(520) + (515)

17 

New CS Extension Codes

Code	Description
• 530	Any of the following conditions described as involving between one third (33%) and half (50%) of the breast WITHOUT a stated diagnosis of inflammatory carcinoma: Edema of skin En cuirasse Erythema Inflammation of skin Peau d'orange ("pigskin")
535	(530) + (515)

18 

New CS Extension Codes

Code	Description
• 570	Any of the following conditions described as involving more than 50% of the breast WITHOUT a stated diagnosis of inflammatory carcinoma: Edema of skin En cuirasse Erythema Inflammation of skin Peau d'orange ("pigskin")
• 575	(570) + (515)

19 

New CS Extension Codes

Code	Description
• 580	Any of the following conditions with amount or percent of breast involvement not stated and WITHOUT a stated diagnosis of inflammatory carcinoma: Edema of skin En cuirasse Erythema Inflammation of skin Peau d'orange ("pigskin")
• 585	(580) + (515)

20 

New CS Extension Codes

Code	Description
• 612	Any of (515-535) + (400)
• 615	Any of (570 – 585) + (400)
•	Allows for combinations of chest wall and skin involvement

21 

New CS Extension Codes

Code	Description
• 715	Diagnosis of inflammatory carcinoma WITH a clinical description of inflammation, erythema, edema, peau d'orange, etc., involving not more than one-third (33%) of the skin of the breast, WITH or WITHOUT dermal lymphatic infiltration

22 

New CS Extension Codes

Code	Description
• 725	Diagnosis of inflammatory carcinoma WITH a clinical description of inflammation, erythema, edema, peau d'orange, etc., involving one-third (33%) or more but less than half (50%) of the skin of the breast , WITH or WITHOUT dermal lymphatic infiltration

23 

New CS Extension Codes

Code	Description
• 750	Diagnosis of inflammatory carcinoma WITH a clinical description of inflammation, erythema, edema, peau d'orange, etc., but percent of involvement not stated , WITH or WITHOUT dermal lymphatic infiltration. If percentage is known, code to 715, 725, or 730.
	Inflammatory carcinoma, NOS 

24

Obsolete CS Extension Codes

Code	Description
• 710	OBSOLETE: Diagnosis of inflammatory carcinoma WITH a clinical description of inflammation, erythema, edema, peau d'orange, etc., involving not more than 50% of the skin of the breast, or percent involvement not stated WITH or WITHOUT dermal lymphatic infiltration

25



Extension Codes

- Code 730 Remains unchanged – more than 50% of the breast
- Codes 715, 725 combined to maintain comparability with TNM 6th Edition

26



2 Scenarios

- Single lesion
- Multiple lesions counted as single primary as determined by multiple primary rules
 - Size of largest lesion
 - Farthest extension of any lesion
 - May be from different lesions

27



CS Tumor Size/Extension Evaluation

- No coding changes from CSv1.04 (Standard Table)
- Further explanations added

28



CS Regional Lymph Nodes and Evaluation

Necessary elements to derive the N field of TNM

- All lymph node codes now 3-digit
- New code added for clinical assessment
- Some descriptions expanded/clarified

29



New CS Lymph Nodes Code

Code Description

- 255 Clinically movable axillary lymph node(s), ipsilateral, positive (clinical assessment because of neoadjuvant therapy or no pathology)

Note: Unless nodes are described as fixed or matted, assume moveable

30



CS Lymph Node Evaluation

- No new codes added
- Explanations of codes 3, 5, 6 modified
 - Pre-surgical systemic treatment or radiation changed to neoadjuvant therapy

31



CS Metastasis

- CS Mets code 99, if used, mapped to M0
- New code added
 - 05 No clinical or radiographic evidence of distant metastasis, but deposits of molecularly or microscopically detected tumor cells in circulating blood, bone marrow or other non-regional nodal tissue that are < 0.2 mm in a patient without symptoms or signs of metastasis

Code 05 will still map to M0 but will be labeled as M0(i+)

32



MX Eliminated

- MX has been eliminated from 7th Edition
 - Clinical M0
 - Unless clinical or pathologic evidence of mets
- cM only requires history and physical
- Infer cM0 unless known cM1

33



CS Metastasis Evaluation

- No change from Version 1.04 (Standard Table)
- Further explanations added

34



Mets at Dx-Metastatic Sites

- 4 new fields
 - Bone excluding marrow
 - Lung excluding pleura and pleural fluid
 - Brain excluding spinal cord and other CNS
 - Liver
- Code 0 when CS Mets at Dx is 00
- Code structure
 - 0 – No
 - 1 – Yes
 - 8 – Not applicable
 - 9 – Unknown

35



CS Site-Specific Factors (SSF)

- CS Factors 1-6 – same factors as in version 1
- CS Factors 7-24 – new
 - Bloom-Richardson Score
 - HER2
 - Circulating Tumor Cells (CTC)
 - Distributed Tumor Cells (DTC)
 - Assessment of Axillary Lymph Nodes
 - Assessment of Positive Distant Metastasis
 - Response to Neoadjuvant Therapy
 - Genetic Testing
 - Paget Disease

36



CS Site Specific Factors 1-6

- SSF 1 – Estrogen Receptor Assay (ERA)
- SSF2 – Progesterone Receptor Assay (PRA)
- Code 996 added – test ordered, results not interpretable
- Borderline/equivocal results rarely to be used

37

CS Site-Specific Factors 1 and 2

- ER positive patients may receive multigene analysis
- If OncotypeDX is administered, ER/PR will be repeated.
- Do not take ER/PR results from OncotypeDX report
- Use only ER/PR testing prior to multigene analysis

38

Example of IHC Test Report for ER/PR(PGR)

ESTROGEN RECEPTOR / PROGESTERONE RECEPTOR
Cancer Prognostic Panel
Imunohistochemistry with ChromaVision ACIS
Quantitation Image Analysis

Test Name	Staining Intensity	Percent Positive	Result
Estrogen Receptor	3+	72	Positive
Progesterone Receptor	3+	57	Positive

39

SS Factor 3

- SSF3 – Number of Positive **Level I-II** Ipsilateral Regional Axillary Lymph Nodes (needed to assess/derive correct “N” category of TNM)
- Lymph Nodes to be included in the count
 - Levels I and II axillary nodes but **NOT** Level III
 - Intramammary nodes
 - **NOT** internal mammary or supraclavicular
- Codes unchanged

40



CS Factors 4-6

- SSF 4 – Isolated Tumor Cells (ITC) detected by (IHC) Immunohistochemistry
 - Definition of code 009 expanded
 - “Stated as N0(i+) with no further information” added
- SSF 5 – Isolated Tumor Cells (ITC) detected by molecular studies (RT-PCR) Reverse Transcriptase Polymerase Chain Reaction
 - No change

41



SS Factors 4-6

- SSF6 – Size of Tumor – Invasive Component
 - No change from version 1.04
- NOTE: SS Factors 3, 4, and 5 are REQUIRED for AJCC 7th Edition Staging

42



New Site Specific Factors

43 

WARNING!

- Numbering of the Site-Specific Factors may change
- Mapping team will decide – probably after September 30th

STILL



44 

**CS Site-Specific Factor 7
Nottingham or Bloom-Richardson (BR)
Score/Grade**

- May be called:
 - Modified Bloom-Richardson
 - Scarff-Bloom-Richardson
 - Elston-Ellis modification
 - Nottingham modification
- Score based on:
 - Degree of tubule formation (histologic grade)
 - Mitotic activity
 - Nuclear pleomorphism (nuclear grade)

45 

CS Site-Specific Factor 7
Nottingham or Bloom-Richardson (BR)
Score/Grade

- Scores for each of the three factors range from 1-3
- Total score ranges from 3-9
- Record total score if given
- If any of the factors are described as “low,” “intermediate” or “high,” do not translate to a number

46 © 2009, 2008, 2007, 2006, 2005, 2004, 2003, 2002, 2001, 2000, 1999, 1998, 1997, 1996, 1995, 1994, 1993, 1992, 1991, 1990, 1989, 1988, 1987, 1986, 1985, 1984, 1983, 1982, 1981, 1980, 1979, 1978, 1977, 1976, 1975, 1974, 1973, 1972, 1971, 1970, 1969, 1968, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1959, 1958, 1957, 1956, 1955, 1954, 1953, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1943, 1942, 1941, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1922, 1921, 1920, 1919, 1918, 1917, 1916, 1915, 1914, 1913, 1912, 1911, 1910, 1909, 1908, 1907, 1906, 1905, 1904, 1903, 1902, 1901, 1900, 1899, 1898, 1897, 1896, 1895, 1894, 1893, 1892, 1891, 1890, 1889, 1888, 1887, 1886, 1885, 1884, 1883, 1882, 1881, 1880, 1879, 1878, 1877, 1876, 1875, 1874, 1873, 1872, 1871, 1870, 1869, 1868, 1867, 1866, 1865, 1864, 1863, 1862, 1861, 1860, 1859, 1858, 1857, 1856, 1855, 1854, 1853, 1852, 1851, 1850, 1849, 1848, 1847, 1846, 1845, 1844, 1843, 1842, 1841, 1840, 1839, 1838, 1837, 1836, 1835, 1834, 1833, 1832, 1831, 1830, 1829, 1828, 1827, 1826, 1825, 1824, 1823, 1822, 1821, 1820, 1819, 1818, 1817, 1816, 1815, 1814, 1813, 1812, 1811, 1810, 1809, 1808, 1807, 1806, 1805, 1804, 1803, 1802, 1801, 1800, 1799, 1798, 1797, 1796, 1795, 1794, 1793, 1792, 1791, 1790, 1789, 1788, 1787, 1786, 1785, 1784, 1783, 1782, 1781, 1780, 1779, 1778, 1777, 1776, 1775, 1774, 1773, 1772, 1771, 1770, 1769, 1768, 1767, 1766, 1765, 1764, 1763, 1762, 1761, 1760, 1759, 1758, 1757, 1756, 1755, 1754, 1753, 1752, 1751, 1750, 1749, 1748, 1747, 1746, 1745, 1744, 1743, 1742, 1741, 1740, 1739, 1738, 1737, 1736, 1735, 1734, 1733, 1732, 1731, 1730, 1729, 1728, 1727, 1726, 1725, 1724, 1723, 1722, 1721, 1720, 1719, 1718, 1717, 1716, 1715, 1714, 1713, 1712, 1711, 1710, 1709, 1708, 1707, 1706, 1705, 1704, 1703, 1702, 1701, 1700, 1699, 1698, 1697, 1696, 1695, 1694, 1693, 1692, 1691, 1690, 1689, 1688, 1687, 1686, 1685, 1684, 1683, 1682, 1681, 1680, 1679, 1678, 1677, 1676, 1675, 1674, 1673, 1672, 1671, 1670, 1669, 1668, 1667, 1666, 1665, 1664, 1663, 1662, 1661, 1660, 1659, 1658, 1657, 1656, 1655, 1654, 1653, 1652, 1651, 1650, 1649, 1648, 1647, 1646, 1645, 1644, 1643, 1642, 1641, 1640, 1639, 1638, 1637, 1636, 1635, 1634, 1633, 1632, 1631, 1630, 1629, 1628, 1627, 1626, 1625, 1624, 1623, 1622, 1621, 1620, 1619, 1618, 1617, 1616, 1615, 1614, 1613, 1612, 1611, 1610, 1609, 1608, 1607, 1606, 1605, 1604, 1603, 1602, 1601, 1600, 1599, 1598, 1597, 1596, 1595, 1594, 1593, 1592, 1591, 1590, 1589, 1588, 1587, 1586, 1585, 1584, 1583, 1582, 1581, 1580, 1579, 1578, 1577, 1576, 1575, 1574, 1573, 1572, 1571, 1570, 1569, 1568, 1567, 1566, 1565, 1564, 1563, 1562, 1561, 1560, 1559, 1558, 1557, 1556, 1555, 1554, 1553, 1552, 1551, 1550, 1549, 1548, 1547, 1546, 1545, 1544, 1543, 1542, 1541, 1540, 1539, 1538, 1537, 1536, 1535, 1534, 1533, 1532, 1531, 1530, 1529, 1528, 1527, 1526, 1525, 1524, 1523, 1522, 1521, 1520, 1519, 1518, 1517, 1516, 1515, 1514, 1513, 1512, 1511, 1510, 1509, 1508, 1507, 1506, 1505, 1504, 1503, 1502, 1501, 1500, 1499, 1498, 1497, 1496, 1495, 1494, 1493, 1492, 1491, 1490, 1489, 1488, 1487, 1486, 1485, 1484, 1483, 1482, 1481, 1480, 1479, 1478, 1477, 1476, 1475, 1474, 1473, 1472, 1471, 1470, 1469, 1468, 1467, 1466, 1465, 1464, 1463, 1462, 1461, 1460, 1459, 1458, 1457, 1456, 1455, 1454, 1453, 1452, 1451, 1450, 1449, 1448, 1447, 1446, 1445, 1444, 1443, 1442, 1441, 1440, 1439, 1438, 1437, 1436, 1435, 1434, 1433, 1432, 1431, 1430, 1429, 1428, 1427, 1426, 1425, 1424, 1423, 1422, 1421, 1420, 1419, 1418, 1417, 1416, 1415, 1414, 1413, 1412, 1411, 1410, 1409, 1408, 1407, 1406, 1405, 1404, 1403, 1402, 1401, 1400, 1399, 1398, 1397, 1396, 1395, 1394, 1393, 1392, 1391, 1390, 1389, 1388, 1387, 1386, 1385, 1384, 1383, 1382, 1381, 1380, 1379, 1378, 1377, 1376, 1375, 1374, 1373, 1372, 1371, 1370, 1369, 1368, 1367, 1366, 1365, 1364, 1363, 1362, 1361, 1360, 1359, 1358, 1357, 1356, 1355, 1354, 1353, 1352, 1351, 1350, 1349, 1348, 1347, 1346, 1345, 1344, 1343, 1342, 1341, 1340, 1339, 1338, 1337, 1336, 1335, 1334, 1333, 1332, 1331, 1330, 1329, 1328, 1327, 1326, 1325, 1324, 1323, 1322, 1321, 1320, 1319, 1318, 1317, 1316, 1315, 1314, 1313, 1312, 1311, 1310, 1309, 1308, 1307, 1306, 1305, 1304, 1303, 1302, 1301, 1300, 1299, 1298, 1297, 1296, 1295, 1294, 1293, 1292, 1291, 1290, 1289, 1288, 1287, 1286, 1285, 1284, 1283, 1282, 1281, 1280, 1279, 1278, 1277, 1276, 1275, 1274, 1273, 1272, 1271, 1270, 1269, 1268, 1267, 1266, 1265, 1264, 1263, 1262, 1261, 1260, 1259, 1258, 1257, 1256, 1255, 1254, 1253, 1252, 1251, 1250, 1249, 1248, 1247, 1246, 1245, 1244, 1243, 1242, 1241, 1240, 1239, 1238, 1237, 1236, 1235, 1234, 1233, 1232, 1231, 1230, 1229, 1228, 1227, 1226, 1225, 1224, 1223, 1222, 1221, 1220, 1219, 1218, 1217, 1216, 1215, 1214, 1213, 1212, 1211, 1210, 1209, 1208, 1207, 1206, 1205, 1204, 1203, 1202, 1201, 1200, 1199, 1198, 1197, 1196, 1195, 1194, 1193, 1192, 1191, 1190, 1189, 1188, 1187, 1186, 1185, 1184, 1183, 1182, 1181, 1180, 1179, 1178, 1177, 1176, 1175, 1174, 1173, 1172, 1171, 1170, 1169, 1168, 1167, 1166, 1165, 1164, 1163, 1162, 1161, 1160, 1159, 1158, 1157, 1156, 1155, 1154, 1153, 1152, 1151, 1150, 1149, 1148, 1147, 1146, 1145, 1144, 1143, 1142, 1141, 1140, 1139, 1138, 1137, 1136, 1135, 1134, 1133, 1132, 1131, 1130, 1129, 1128, 1127, 1126, 1125, 1124, 1123, 1122, 1121, 1120, 1119, 1118, 1117, 1116, 1115, 1114, 1113, 1112, 1111, 1110, 1109, 1108, 1107, 1106, 1105, 1104, 1103, 1102, 1101, 1100, 1099, 1098, 1097, 1096, 1095, 1094, 1093, 1092, 1091, 1090, 1089, 1088, 1087, 1086, 1085, 1084, 1083, 1082, 1081, 1080, 1079, 1078, 1077, 1076, 1075, 1074, 1073, 1072, 1071, 1070, 1069, 1068, 1067, 1066, 1065, 1064, 1063, 1062, 1061, 1060, 1059, 1058, 1057, 1056, 1055, 1054, 1053, 1052, 1051, 1050, 1049, 1048, 1047, 1046, 1045, 1044, 1043, 1042, 1041, 1040, 1039, 1038, 1037, 1036, 1035, 1034, 1033, 1032, 1031, 1030, 1029, 1028, 1027, 1026, 1025, 1024, 1023, 1022, 1021, 1020, 1019, 1018, 1017, 1016, 1015, 1014, 1013, 1012, 1011, 1010, 1009, 1008, 1007, 1006, 1005, 1004, 1003, 1002, 1001, 1000, 999, 998, 997, 996, 995, 994, 993, 992, 991, 990, 989, 988, 987, 986, 985, 984, 983, 982, 981, 980, 979, 978, 977, 976, 975, 974, 973, 972, 971, 970, 969, 968, 967, 966, 965, 964, 963, 962, 961, 960, 959, 958, 957, 956, 955, 954, 953, 952, 951, 950, 949, 948, 947, 946, 945, 944, 943, 942, 941, 940, 939, 938, 937, 936, 935, 934, 933, 932, 931, 930, 929, 928, 927, 926, 925, 924, 923, 922, 921, 920, 919, 918, 917, 916, 915, 914, 913, 912, 911, 910, 909, 908, 907, 906, 905, 904, 903, 902, 901, 900, 899, 898, 897, 896, 895, 894, 893, 892, 891, 890, 889, 888, 887, 886, 885, 884, 883, 882, 881, 880, 879, 878, 877, 876, 875, 874, 873, 872, 871, 870, 869, 868, 867, 866, 865, 864, 863, 862, 861, 860, 859, 858, 857, 856, 855, 854, 853, 852, 851, 850, 849, 848, 847, 846, 845, 844, 843, 842, 841, 840, 839, 838, 837, 836, 835, 834, 833, 832, 831, 830, 829, 828, 827, 826, 825, 824, 823, 822, 821, 820, 819, 818, 817, 816, 815, 814, 813, 812, 811, 810, 809, 808, 807, 806, 805, 804, 803, 802, 801, 800, 799, 798, 797, 796, 795, 794, 793, 792, 791, 790, 789, 788, 787, 786, 785, 784, 783, 782, 781, 780, 779, 778, 777, 776, 775, 774, 773, 772, 771, 770, 769, 768, 767, 766, 765, 764, 763, 762, 761, 760, 759, 758, 757, 756, 755, 754, 753, 752, 751, 750, 749, 748, 747, 746, 745, 744, 743, 742, 741, 740, 739, 738, 737, 736, 735, 734, 733, 732, 731, 730, 729, 728, 727, 726, 725, 724, 723, 722, 721, 720, 719, 718, 717, 716, 715, 714, 713, 712, 711, 710, 709, 708, 707, 706, 705, 704, 703, 702, 701, 700, 699, 698, 697, 696, 695, 694, 693, 692, 691, 690, 689, 688, 687, 686, 685, 684, 683, 682, 681, 680, 679, 678, 677, 676, 675, 674, 673, 672, 671, 670, 669, 668, 667, 666, 665, 664, 663, 662, 661, 660, 659, 658, 657, 656, 655, 654, 653, 652, 651, 650, 649, 648, 647, 646, 645, 644, 643, 642, 641, 640, 639, 638, 637, 636, 635, 634, 633, 632, 631, 630, 629, 628, 627, 626, 625, 624, 623, 622, 621, 620, 619, 618, 617, 616, 615, 614, 613, 612, 611, 610, 609, 608, 607, 606, 605, 604, 603, 602, 601, 600, 599, 598, 597, 596, 595, 594, 593, 592, 591, 590, 589, 588, 587, 586, 585, 584, 583, 582, 581, 580, 579, 578, 577, 576, 575, 574, 573, 572, 571, 570, 569, 568, 567, 566, 565, 564, 563, 562, 561, 560, 559, 558, 557, 556, 555, 554, 553, 552, 551, 550, 549, 548, 547, 546, 545, 544, 543, 542, 541, 540, 539, 538, 537, 536, 535, 534, 533, 532, 531, 530, 529, 528, 527, 526, 525, 524, 523, 522, 521, 520, 519, 518, 517, 516, 515, 514, 513, 512, 511, 510, 509, 508, 507, 506, 505, 504, 503, 502, 501, 500, 499, 498, 497, 496, 495, 494, 493, 492, 491, 490, 489, 488, 487, 486, 485, 484, 483, 482, 481, 480, 479, 478, 477, 476, 475, 474, 473, 472, 471, 470, 469, 468, 467, 466, 465, 464, 463, 462, 461, 460, 459, 458, 457, 456, 455, 454, 453, 452, 451, 450, 449, 448, 447, 446, 445, 444, 443, 442, 441, 440, 439, 438, 437, 436, 435, 434, 433, 432, 431, 430, 429, 428, 427, 426, 425, 424, 423, 422, 421, 420, 419, 418, 417, 416, 415, 414, 413, 412, 411, 410, 409, 408, 407, 406, 405, 404, 403, 402, 401, 400, 399, 398, 397, 396, 395, 394, 393, 392, 391, 390, 389, 388, 387, 386, 385, 384, 383, 382, 381, 380, 379, 378, 377, 376, 375, 374, 373, 372, 371, 370, 369, 368, 367, 366, 365, 364, 363, 362, 361, 360, 359, 358, 357, 356, 355, 354, 353, 352, 351, 350, 349, 348, 347, 346, 345, 344, 343, 342, 341, 340, 339, 338, 337, 336, 335, 334, 333, 332, 331, 330, 329, 328, 327, 326, 325, 324, 323, 322, 321, 320, 319, 318, 317, 316, 315, 314, 313, 312, 311, 310, 309, 308, 307, 306, 305, 304, 303, 302, 301, 300, 299, 298, 297, 296, 295, 294, 293, 292, 291, 290, 289, 288, 287, 286, 285, 284, 283, 282, 281, 280, 279, 278, 277, 276, 275, 274, 273, 272, 271, 270, 269, 268, 267, 266, 265, 264, 263, 262, 261, 260, 259, 258, 257, 256, 255, 254, 253, 252, 251, 250, 249, 248, 247, 246, 245, 244, 243, 242, 241, 240, 239, 238, 237, 236, 235, 234, 233, 232, 231, 230, 229, 228, 227, 226, 225, 224, 223, 222, 221, 220, 219, 218, 217, 216, 215, 214, 213, 212, 211, 210, 209, 208, 207, 206, 205, 204, 203, 202, 201, 200, 199, 198, 197, 196, 195, 194, 193, 192, 191, 190, 189, 188, 187, 186, 185, 184, 183, 182, 181, 180, 179, 178, 177, 176, 175, 174, 173, 172, 171, 170, 169, 168, 167, 166, 165, 164, 163, 162, 161, 160, 159, 158, 157, 156, 155, 154, 153, 152, 151, 150, 149, 148, 147, 146, 145, 144, 143, 142, 141, 140, 139, 138, 137, 136, 135, 134, 133, 132, 131, 130, 129, 128, 127, 126, 125, 124, 123, 122, 121, 120, 119, 118, 117, 116, 115, 114, 113, 112, 111, 110, 109, 108, 107, 106, 105, 104, 103, 102, 101, 100, 99, 98, 97, 96, 95, 94, 93, 92, 91, 90, 89, 88, 87, 86, 85, 84, 83, 82, 81, 80, 79, 78, 77, 76, 75, 74, 73, 72, 71, 70, 69, 68, 67, 66, 65, 64, 63, 62, 61, 60, 59, 58, 57, 56, 55, 54, 53, 52, 51, 50, 49, 48, 47, 46, 45, 44, 43, 42, 41, 40, 39, 38, 37, 36, 35, 34, 33, 32, 31, 30, 29, 28, 27, 26, 25, 24, 23, 22, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1

CS Site-Specific Factor 7
Nottingham or Bloom-Richardson (BR)
Score/Grade

- If BR score not given – look for BR grade, Nottingham grade, or Nottingham-Tenovus grade
- Grades are expressed as:
 - Low grade (scores 3-5)
 - Intermediate grade (scores 6,7)
 - High grade (scores 8,9)
- If only grade is stated, record grade
- Not necessary to repeat this information in Grade Path System and Grade Path Value

47 © 2009, 2008, 2007, 2006, 2005, 2004, 2003, 2002, 2001, 2000, 1999, 1998, 1997, 1996, 1995, 1994, 1993, 1992, 1991, 1990, 1889, 1888, 1887, 1886, 1885, 1884, 1883, 1882, 1881, 1880, 1879, 1878, 1877, 1876, 1875, 1874, 1873, 1872, 1871, 1870, 1869, 1868, 1867, 1866, 1865, 1864, 1863, 1862, 1861, 1860, 1859, 1858, 1857, 1856, 1855, 1854, 1853, 1852, 1851, 1850, 1849, 1848, 1847, 1846, 1845, 1844, 1843, 1842, 1841, 1840, 1839, 1838, 1837, 1836, 1835, 1834, 1833, 1832, 1831, 1830, 1829, 1828, 1827, 1826, 1825, 1824, 1823, 1822, 1821, 1820, 1819, 1818, 1817, 1816, 1815, 1814, 1813, 1812, 1811, 1810, 1809, 1808, 1807, 1806, 1805, 1804, 1803, 1802, 1801, 1800, 1799, 1798, 1797, 1796, 1795, 1794, 1793, 1792, 1791, 1790, 1789, 1788, 1787, 1786, 1785, 1784, 1783, 1782, 1781, 1780, 1779, 1778, 1777, 1776, 1775, 1774, 1773, 1772, 1771, 1770, 1769, 1768, 1767, 1766, 1765, 1764, 1763, 1762, 1761, 1760, 1759, 1

CS Site-Specific Factor 7
Nottingham or Bloom-Richardson (BR)
Score/Grade

Code	Description
• 110	Low Grade , score not given
• 120	Medium Grade , score not given
• 130	High Grade , score not given
• 998	No histologic examination of primary site
• 999	Neither BR grade nor BR score given Unknown or no information Not documented in patient record

49 

CS Site-Specific Factor 8 -15
HER2 Test Lab Values and Interpretations

- SS Factors 8-9: HER2 IHC Test
- SS Factors 10-11: HER2 FISH Test
- SS Factors 12-13: HER2 CISH Test
- SS Factor 14: Other HER2 Test
- SS Factor 15: Her2 Summary Results

50 

CS Site-Specific Factors 8-15
HER2 Testing

- Human Epidermal growth factor Receptor 2
- May be referred to as:
 - HER2, HER2neu, erbB2, c-neu
- Usually only one test will be performed
 - Immunohistochemical (IHC)
 - Fluorescence In Situ Hybridization (FISH)
 - Chromogenic In Situ Hybridization (CISH)

51 

CS Site-Specific Factors 8-15 HER2 Testing

- Four known HER proteins: HER1, 2, 3, and 4
- Testing for overexpression of HER2
- HER2 overexpression and/or dysregulation may lead to
 - increased/uncontrolled proliferation
 - decreased apoptosis (programmed cell death)
 - enhanced tumor cell motility
 - angiogenesis

52



Interpretation of Test Results

- Results of many tumor markers and laboratory tests vary according to laboratory conducting test
- In priority order:
- Code the clinician's/pathologist's interpretation of the lab test
 - In the absence of a doctor's interpretation, if the reference range for the lab is listed on test report, use that information to assign the appropriate code

53



Interpretation of Test Results

If there is no clinician/pathologist interpretation of the lab test

AND

no description of the reference range in the medical record

Do not attempt to interpret the results – code as unknown

54



**CS Site-Specific Factor 10, 11
HER2: IHC Test**

- Determines whether there are additional copies of the HER2/neugene in the tumor cells compared to control
- Results reported as a **SCORE**
- If results are “equivocal,” FISH test may be performed
- HerceptTest common IHC test

55



**CS Site-Specific Factor 8
HER2: IHC Test Lab Value**

Code	Description
• 000	Score 0
• 001	Score 1+
• 002	Score 2+
• 003	Score 3+

56



**CS Site-Specific Factor 8
HER2: IHC Test Lab Value**

Code	Description
• 997	Test ordered, results not in chart
• 998	Test not done (test was not ordered and was not performed)
• 999	Unknown or no information Not documented in patient record

Note: these codes will be standard for all new Site-Specific Factors

57



CS Site-Specific Factor 9
HER2: IHC Test Interpretation

Code **Description**

- 010 **Positive**/elevated
- 020 **Negative**/normal; within normal limits
- 030 **Borderline**; equivocal; undetermined whether positive or negative
- 997, 998, 999 Standard codes

58



CS Site-Specific Factor 10, 11
HER2: FISH Test

- Determines whether there are additional copies of the HER2 receptor protein in the tumor cells compared to the normal number
- Results are reported as a **RATIO** between the number of copies of the HER2 receptors and the control
- If the test is equivocal, an IHC test may be ordered

59



Example of FISH Report For HER2

FLUORESCENCE IN SITU HYBRIDIZATION

SPECIMEN: Breast mass, left.

CLINICAL HISTORY/REFERRING DIAGNOSIS: Ductal adenocarcinoma

GROSS DESCRIPTION: Block 1A.

TEST PERFORMED/PROBES USED:

HER-2/neu gene locus specific probe (17q11.2-q12)

Chromosome 17 alpha satellite DNA specific probe (17p11.1- q11.1)

RESULTS:

The ratio of HER2 fluorescent signals to chromosome 17 centromere signals was 1.4 which does not indicate amplification of HER2neu gene. Negative for HER-2/neu gene amplification.

nuc ish 17p11.1-q11.1(D17Z1 x 2.2),17q11.2-q12(HER2 x 3.1)[30/30]

60



CS Site-Specific Factor 10
HER2: FISH Test Lab Value

Code	Description
• 100-986	Ratio of 1.00 to 9.86 (enter exact ratio to two decimal places)
• 987	Ratio of 9.87 or greater

61 

CS Site-Specific Factor 11
HER2: FISH Test Interpretation

Code	Description
• 010	Positive /elevated
• 020	Negative /normal; within normal limits
• 030	Borderline ; equivocal; undetermined whether positive or negative

62 

CS Site-Specific Factor 12, 13
HER2: CISH Test

- Chromogenic in-situ hybridization (CISH)
- Only recently (spring 2009) licensed by the FDA
- Less expensive
- Unlike fluorescence, does not fade over time

63 

Example of CISH Report For HER2

CHROMOGENIC IN SITU HYBRIDIZATION

HER-2/neu gene (SPOT-Light Her2 probe)
Number of tumor cell nuclei counted: 60
Number of HER-2/neu gene copies: 253
Mean HER-2/neu gene copy number: 4.22

CONCLUSION

Negative: No HER 2/neu gene amplification
Note: Borderline negative result (within borderline 4-6 gene copy range)

Analytic Test Information

Zymed Laboratories SPOT-Light CISH Her-2 neu gene probe, CEP17 probe and detection kits are employed in this laboratory.

64



CS Site-Specific Factor 12 HER2: CISH Lab Test Value

- | Code | Description |
|-----------|--|
| • 100-986 | Mean of 1.00 to 9.86 (enter exact mean to two decimal places) |
| • 987 | Mean of 9.87 or greater |

65



CS Site-Specific Factor 13 HER 2: CISH Test Interpretation

- 010 **Positive**/elevated
- 020 **Negative**/normal; within normal limits
- 030 **Borderline**; equivocal; undetermined whether positive or negative

66



CS Site-Specific Factor 14
HER2: Interpretation Of Other Or Unknown Test

- Silver in-situ hybridization (SISH)
- "Patient is HER2 negative" – no other information

67 

CS Site-Specific Factor 14
HER2: Interpretation of Other or Unknown Test

Code	Description
• 010	Positive /elevated
• 020	Negative /normal; within normal limits
• 030	Borderline ; equivocal; undetermined whether positive or negative

68 

CS Site-Specific Factor 15
HER2: Summary Result of Testing

- If multiple HER2 tests are given, gene-amplification (molecular) test should take precedence
- If IHC is given to clarify the results of a borderline/equivocal gene-amplification test, take IHC results

69 

**CS Site-Specific Factor 15
HER2: Summary Result of Testing**

Code Description

- 010 **Positive**/elevated; amplified

- 020 **Negative**/normal; within normal limits, not amplified

- 030 **Borderline**; equivocal; undetermined whether positive or negative

70



**CS Site-Specific Factor 16
HER2: Combinations of ER, PR, HER2**

Code Description

- 000 **Negative ER, Negative PR, Negative HER2**
- 001 Negative ER, Negative PR, Positive HER2
- 010 Negative ER, Positive PR, Negative HER2
- 011 Negative ER, Positive PR, Positive HER2
- 100 Positive ER, Negative PR, Negative HER2
- 101 Positive ER, Negative PR, Positive HER2
- 110 Positive ER, Positive PR, Negative HER2

71



**Site-Specific Factor 16
HER2: Combinations of ER, PR, HER2**

Code Description

- 111 Positive ER, Positive PR, Positive HER2
- 999 One or more tests unknown if performed
One or more tests unknown or borderline
Not documented in patient record

• **Note: can be derived from CS Site-Specific Factors 1,2, and 15**

72



**CS Site-Specific Factor 17
Circulating Tumor Cells (CTC) and
method of detection**

- | Code | Description |
|-------------|---|
| • 010 | Negative/normal, RT-PCR test |
| • 020 | Negative/normal, immunomagnetic separation (IMS) test |
| • 030 | Negative/normal, other test type |
| • 040 | Negative/normal, unknown test type |

73



**CS Site-Specific Factor 17
Circulating Tumor Cells (CTC) and
Method of Detection**

- | Code | Description |
|-----------------|--|
| • 110 | Positive, RT-PCR test |
| • 120 | Positive, immunomagnetic separation test (IMS) |
| • 130 | Positive, other test type |
| • 140 | Positive, unknown test type |
| • 997, 998, 999 | – Standard codes |

74



**CS Site-Specific Factor 18
Disseminated Tumor Cells (DTC)
and Method of Detection**

- | Code | Description |
|-------------|---|
| • 010 | Negative/normal, RT-PCR test |
| • 020 | Negative/normal, immunohistochemical test |
| • 030 | Negative/normal, other test type |
| • 040 | Negative/normal, unknown test type |

75



**CS Site-Specific Factor 18
Disseminated Tumor Cells (DTC)
and Method of Detection**

Code Description

- 110 Positive, RT-PCR test
- 120 Positive, immunohistochemical test
- 130 Positive, other test type
- 140 Positive, unknown test type
- 997, 998, 999 Standard codes

76



**CS Site-Specific Factor 19
Assessment of Level I-II and
Intramammary Ipsilateral Axillary Nodes**

Code Description

- 000 No nodes were assessed
- 010 Clinical assessment
- 020 Fine Needle Aspiration (FNA)
- 030 Core biopsy: incisional
- 040 Core biopsy: excisional
- 050 Core biopsy: type not specified

77



**CS Site-Specific Factor 19
Assessment of Level I-II and
Intramammary Ipsilateral Axillary Nodes**

Code Description

- 110 **No** sentinel node(s) biopsy(ies) AND
 no lymph node dissection
- 120 **No** sentinel node(s) biopsy(ies) AND
 negative lymph node dissection
- 130 **No** sentinel node(s) biopsy(ies) AND
 positive lymph node dissection

78



**CS Site-Specific Factor 19
Assessment of Level I-II and
Intramammary Ipsilateral Axillary Nodes**

Code Description

- 140 **No** sentinel node(s) biopsy(ies) AND lymph node dissection, **unknown if positive or negative**
- 150 **No** sentinel node(s) biopsy(ies) AND **unknown if lymph node dissection**

79



**CS Site-Specific Factor 19
Assessment of Level I-II and
Intramammary Ipsilateral Axillary
Nodes**

- 210 Sentinel node(s) biopsy(ies) **negative** AND **no** lymph node dissection
- 220 Sentinel node(s) biopsy(ies) **negative** AND **negative** lymph node dissection
- 230 Sentinel node(s) biopsy(ies) **negative** AND **positive** lymph node dissection

80



**CS Site-Specific Factor 19
Assessment of Level I-II and
Intramammary Ipsilateral Axillary
Nodes**

- 240 Sentinel node(s) biopsy(ies) **negative** AND lymph node dissection, **unknown if positive or negative**
- 250 Sentinel node(s) biopsy(ies) **negative** AND **unknown if lymph node dissection**

81



**CS Site-Specific Factor 19
Assessment of Level I-II and
Intramammary Ipsilateral Axillary Nodes**

Code	Description
• 310	Sentinel node(s) biopsy(ies) positive AND no lymph node dissection
• 320	Sentinel node(s) biopsy(ies) positive AND negative lymph node dissection
• 330	Sentinel node(s) biopsy(ies) positive AND positive lymph node dissection

82 

**CS Site-Specific Factor 19
Assessment of Level I-II and
Intramammary Ipsilateral Axillary Nodes**

Code	Description
• 340	Sentinel node(s) biopsy(ies) positive AND lymph node dissection, unknown if positive or negative
• 350	Sentinel node(s) biopsy(ies) positive AND unknown if lymph node dissection

83 

**CS Site-Specific Factor 19
Assessment of Level I-II Ipsilateral
Axillary Nodes**

Code	Description
• 410	Sentinel node(s) biopsy(ies) unknown if positive or negative AND no lymph node dissection
• 410	Sentinel node(s) biopsy(ies) unknown if positive or negative AND negative lymph node dissection
• 420	Sentinel node(s) biopsy(ies) unknown if positive or negative AND positive lymph node dissection

84 

**Site-Specific Factor 19
Assessment of Level I-II Ipsilateral
Axillary Nodes**

- | Code | Description |
|-------------|--|
| • 440 | Sentinel node(s) biopsy(ies) unknown if positive or negative AND lymph node dissection unknown if positive or negative |
| • 450 | Sentinel node(s) biopsy(ies) unknown if positive or negative AND unknown if lymph node dissection |
| • 999 | Unknown or no information
Not documented in patient record |

85



**CS Site-Specific Factor 20
Assessment of Positive Distant
Metastases**

- | Code | Description |
|-------------|---|
| • 000 | No positive metastases were identified |
| • 010 | Clinical assessment |
| • 020 | Radiography; Imaging (US, CT, MRI, PET) |
| • 030 | Incisional biopsy, FNA |
| • 040 | Excisional biopsy or resection with microscopic confirmation other than by biopsy |
| 86 • 999 | Unknown, Not documented |

86



**CS Site-Specific Factor 21
Response to Neoadjuvant Therapy**

- | Code | Description |
|-------------|--|
| • 010 | Complete Response (CR) |
| • 020 | Partial Response (PR) |
| • 030 | No Response (NR) |
| • 998 | No neoadjuvant therapy |
| • 999 | Unknown if response
Unknown, Not documented |

87



**CS Site-Specific Factor 22
Multigene Signature Score/Result**

- Multiple tests
 - IHC- based Multigene Predictors
 - FISH-based Predictors
 - RT-PCR-based Multigene Predictors
 - Genomic Microarray-based Multigene Predictors
 - Oncotype Dx
 - MammaPrint

88



**CS Site-Specific Factor 22
Multigene Signature Score/Result**

- Usually done on patients who are
 - Node negative
 - ER positive
- Purpose is to
 - Plan treatment
 - Predict recurrence

89



**CS Site-Specific Factor 23
Multigene Signature Method**

- | Code | Description |
|-------------|-------------------------|
| • 000 | No multigene test |
| • 010 | Oncotype DX |
| • 020 | Mamma Print |
| • 030 | Other |
| • 999 | Unknown, Not documented |

90



CS Site-Specific Factor 23 Multigene Signature Score/Result

- | Code | Description |
|-----------|---|
| • 000 | No multigene tests performed |
| • 001-099 | Actual score |
| • 100 | 100+ |
| • 200 | Low risk of recurrence (good prognosis) |
| • 205 | High risk of recurrence (poor prognosis) |
| 91 • 999 | Unknown, Not documented  |

Example of an OncotypeDx Report



92



Example of an MammaPrint Report

mammaprint		
Customer	Specimen	Patient
	Collection Date 06-Aug-2008 Test Request Date 06-Aug-2008 Accession Date 08-Aug-2008 Report Date 19-Aug-2008	Name Date of Birth Patient ID Gender Requisition # 00011636
Results		
Pathology findings, H&E staining	Sample contains an average of 45% tumor, see picture	
The sample is classified as:	LOW RISK	
Analysis Description		
The breast cancer tissue sample submitted was analyzed by MammaPrint®, a gene expression analysis of 70 prognostic genes that has been validated to correlate with high or low outcome risk for distant metastasis in women with breast cancer.		
Interpretation		

93



CS Site-Specific Factor 24 Paget Disease

Code Description

- 000 Paget disease absent
- 010 Paget disease present
- 999 Unknown, Not documented

94





In Conclusion

- All looks Greek at the moment
- Will become clearer with use and over time
- Lots of changes and new information
- Ultimately – for the patient

96



Inquiry & Response System

- Submit questions to Inquiry & Response System
 - Allows tracking for educational purposes
 - Provides information for all



- <http://web.facs.org/coc/default.htm>

97



Questions



98



American Joint Committee on Cancer Contact Information

Karen A. Pollitt – Manager

email: kpollitt@facs.org
phone: 312-202-5313

Donna M. Gress, RHIT, CTR – Technical Specialist

email: dgress@facs.org
phone: 312-202-5410

General Inquiries can be directed to AJCC@facs.org

AJCC Web Site

99

www.cancerstaging.org