

Drugs – Real World Outcomes

Supplementary Material

Real-world patient characteristics, utilization patterns, and outcomes of US patients with HR+, HER2- metastatic breast cancer treated with abemaciclib.

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Supplementary Table 1. Codes used to define HER2- medications.

Description	HCPCS code	NDC code
Ado-trastuzumab emtansine		
Injection, ado-trastuzumab emtansine, 1 mg	C9131	
Injection, ado-trastuzumab emtansine, 1 mg	J9354	
Kadcyla		50242008701
Kadcyla		50242008801
Trastuzumab		
Injection, trastuzumab, excludes biosimilar, 10 mg	J9355	
Injection, trastuzumab, 10 mg and hyaluronidase-oysk	J9356	
Injection, trastuzumab-dttb, biosimilar, (ontruzant), 10 mg	Q5112	
Injection, trastuzumab-pkrb, biosimilar, (herzuma), 10 mg	Q5113	
Injection, trastuzumab-dkst, biosimilar, (ogivri), 10 mg	Q5114	
Injection, trastuzumab-qyyp, biosimilar, (trazimera), 10 mg	Q5116	
Injection, trastuzumab-anns, biosimilar, (kanjinti), 10 mg	Q5117	
		05024213460
		50242005656
Herceptin Hylecta		50242007701
Herceptin		50242013201
Herceptin		50242013210
Herceptin		50242013460
Herceptin		50242013468
		50242033301
Kanjinti		55513013201
Kanjinti		55513014101
		63459030547
		63552047001
Enhertu		65597040601
		67457084550
Ogivri		67457084744
Ogivri		67457099115
Pertuzumab		
Injection, pertuzumab, 10 mg	C9292	
Injection, pertuzumab, 1 mg	J9306	
Perjeta		50242014501
Lapatinib		
Tykerb		00078067119
Tykerb		00173075200
		51947075200
		51947075201
		51947075202
		51947075203
Neratinib		
Nerlynx		70437024018
		70437024026

Supplementary Table 2. ICD-9 and ICD-10 codes used to define primary breast cancer and secondary neoplasms

Description	Code
HR positive related ICD10CM [ICD-10 Diagnosis]	
Estrogen receptor positive status [ER+]	Z17.0
Long term (current) use of aromatase inhibitors	Z79.811
HR positive related ICD9CM [ICD-9 Diagnosis]	
Use of aromatase inhibitors	Z17.0
Estrogen receptor positive status [ER+]	Z79.811
Breast cancer ICD10CM [ICD-10 Diagnosis]	
Malignant neoplasm of nipple and areola, right female breast	C50.011
Malignant neoplasm of nipple and areola, left female breast	C50.012
Malignant neoplasm of nipple and areola, unspecified female breast	C50.019
Malignant neoplasm of nipple and areola, right male breast	C50.021
Malignant neoplasm of nipple and areola, left male breast	C50.022
Malignant neoplasm of nipple and areola, unspecified male breast	C50.029
Malignant neoplasm of central portion of right female breast	C50.111
Malignant neoplasm of central portion of left female breast	C50.112
Malignant neoplasm of central portion of unspecified female breast	C50.119
Malignant neoplasm of central portion of right male breast	C50.121
Malignant neoplasm of central portion of left male breast	C50.122
Malignant neoplasm of central portion of unspecified male breast	C50.129
Malignant neoplasm of upper-inner quadrant of right female breast	C50.211
Malignant neoplasm of upper-inner quadrant of left female breast	C50.212
Malignant neoplasm of upper-inner quadrant of unspecified female breast	C50.219
Malignant neoplasm of upper-inner quadrant of right male breast	C50.221
Malignant neoplasm of upper-inner quadrant of left male breast	C50.222
Malignant neoplasm of upper-inner quadrant of unspecified male breast	C50.229
Malignant neoplasm of lower-inner quadrant of right female breast	C50.311
Malignant neoplasm of lower-inner quadrant of left female breast	C50.312
Malignant neoplasm of lower-inner quadrant of unspecified female breast	C50.319
Malignant neoplasm of lower-inner quadrant of right male breast	C50.321
Malignant neoplasm of lower-inner quadrant of left male breast	C50.322
Malignant neoplasm of lower-inner quadrant of unspecified male breast	C50.329
Malignant neoplasm of upper-outer quadrant of right female breast	C50.411
Malignant neoplasm of upper-outer quadrant of left female breast	C50.412
Malignant neoplasm of upper-outer quadrant of unspecified female breast	C50.419
Malignant neoplasm of upper-outer quadrant of right male breast	C50.421
Malignant neoplasm of upper-outer quadrant of left male breast	C50.422
Malignant neoplasm of upper-outer quadrant of unspecified male breast	C50.429
Malignant neoplasm of lower-outer quadrant of right female breast	C50.511
Malignant neoplasm of lower-outer quadrant of left female breast	C50.512
Malignant neoplasm of lower-outer quadrant of unspecified female breast	C50.519
Malignant neoplasm of lower-outer quadrant of right male breast	C50.521
Malignant neoplasm of lower-outer quadrant of left male breast	C50.522
Malignant neoplasm of lower-outer quadrant of unspecified male breast	C50.529
Malignant neoplasm of axillary tail of right female breast	C50.611
Malignant neoplasm of axillary tail of left female breast	C50.612
Malignant neoplasm of axillary tail of unspecified female breast	C50.619
Malignant neoplasm of axillary tail of right male breast	C50.621
Malignant neoplasm of axillary tail of left male breast	C50.622
Malignant neoplasm of axillary tail of unspecified male breast	C50.629
Malignant neoplasm of overlapping sites of right female breast	C50.811
Malignant neoplasm of overlapping sites of left female breast	C50.812
Malignant neoplasm of overlapping sites of unspecified female breast	C50.819

Malignant neoplasm of overlapping sites of right male breast	C50.821
Malignant neoplasm of overlapping sites of left male breast	C50.822
Malignant neoplasm of overlapping sites of unspecified male breast	C50.829
Malignant neoplasm of unspecified site of right female breast	C50.911
Malignant neoplasm of unspecified site of left female breast	C50.912
Malignant neoplasm of unspecified site of unspecified female breast	C50.919
Malignant neoplasm of unspecified site of right male breast	C50.921
Malignant neoplasm of unspecified site of left male breast	C50.922
Malignant neoplasm of unspecified site of unspecified male breast	C50.929
Breast cancer ICD9CM [ICD-9 Diagnosis]	
Malignant neoplasm of nipple and areola of female breast	174.0
Malignant neoplasm of central portion of female breast	174.1
Malignant neoplasm of upper-inner quadrant of female breast	174.2
Malignant neoplasm of lower-inner quadrant of female breast	174.3
Malignant neoplasm of upper-outer quadrant of female breast	174.4
Malignant neoplasm of lower-outer quadrant of female breast	174.5
Malignant neoplasm of axillary tail of female breast	174.6
Malignant neoplasm of other specified sites of female breast	174.8
Malignant neoplasm of breast (female), unspecified	174.9
Malignant neoplasm of nipple and areola of male breast	175.0
Malignant neoplasm of other and unspecified sites of male breast	175.9
Liver metastases ICD10CM [ICD-10 Diagnosis]	
Secondary malignant neoplasm of liver and intrahepatic bile duct	C78.7
Liver metastases ICD9CM [ICD-9 Diagnosis]	
Malignant neoplasm of liver, secondary	197.7
Lung metastases ICD10CM [ICD-10 Diagnosis]	
Secondary malignant neoplasm of unspecified lung	C78.00
Secondary malignant neoplasm of right lung	C78.01
Secondary malignant neoplasm of left lung	C78.02
Lung metastases ICD9CM [ICD-9 Diagnosis]	
Secondary malignant neoplasm of lung	197
Metastases other than bone or breast or upper axillary LN ICD10CM [ICD-10 Diagnosis]	
Secondary and unspecified malignant neoplasm of lymph nodes of head, face and neck	C77.0
Secondary and unspecified malignant neoplasm of intrathoracic lymph nodes	C77.1
Secondary and unspecified malignant neoplasm of intra-abdominal lymph nodes	C77.2
Secondary and unspecified malignant neoplasm of inguinal and lower limb lymph nodes	C77.4
Secondary and unspecified malignant neoplasm of intrapelvic lymph nodes	C77.5
Secondary and unspecified malignant neoplasm of lymph nodes of multiple regions	C77.8
Secondary and unspecified malignant neoplasm of lymph node, unspecified	C77.9
Secondary malignant neoplasm of unspecified lung	C78.00
Secondary malignant neoplasm of right lung	C78.01
Secondary malignant neoplasm of left lung	C78.02
Secondary malignant neoplasm of mediastinum	C78.1
Secondary malignant neoplasm of pleura	C78.2
Secondary malignant neoplasm of unspecified respiratory organ	C78.30
Secondary malignant neoplasm of other respiratory organs	C78.39
Secondary malignant neoplasm of small intestine	C78.4
Secondary malignant neoplasm of large intestine and rectum	C78.5
Secondary malignant neoplasm of retroperitoneum and peritoneum	C78.6
Secondary malignant neoplasm of liver and intrahepatic bile duct	C78.7
Secondary malignant neoplasm of unspecified digestive organ	C78.80
Secondary malignant neoplasm of other digestive organs	C78.89
Secondary malignant neoplasm of unspecified kidney and renal pelvis	C79.00
Secondary malignant neoplasm of right kidney and renal pelvis	C79.01
Secondary malignant neoplasm of left kidney and renal pelvis	C79.02
Secondary malignant neoplasm of unspecified urinary organs	C79.10
Secondary malignant neoplasm of bladder	C79.11
Secondary malignant neoplasm of other urinary organs	C79.19

Secondary malignant neoplasm of skin	C79.2
Secondary malignant neoplasm of brain	C79.31
Secondary malignant neoplasm of cerebral meninges	C79.32
Secondary malignant neoplasm of unspecified part of nervous system	C79.40
Secondary malignant neoplasm of other parts of nervous system	C79.49
Secondary malignant neoplasm of bone marrow	C79.52
Secondary malignant neoplasm of unspecified ovary	C79.60
Secondary malignant neoplasm of right ovary	C79.61
Secondary malignant neoplasm of left ovary	C79.62
Secondary malignant neoplasm of unspecified adrenal gland	C79.70
Secondary malignant neoplasm of right adrenal gland	C79.71
Secondary malignant neoplasm of left adrenal gland	C79.72
Secondary malignant neoplasm of genital organs	C79.82
Secondary malignant neoplasm of other specified sites	C79.89
Secondary malignant neoplasm of unspecified site	C79.9
Disseminated malignant neoplasm, unspecified	C80.0
Metastases other than bone or breast or upper axillary LN ICD9CM [ICD-9 Diagnosis]	
Secondary and unspecified malignant neoplasm of lymph nodes of head, face, and neck	196.0
Secondary and unspecified malignant neoplasm of intrathoracic lymph nodes	196.1
Secondary and unspecified malignant neoplasm of intra-abdominal lymph nodes	196.2
Secondary and unspecified malignant neoplasm of lymph nodes of inguinal region and lower limb	196.5
Secondary and unspecified malignant neoplasm of intrapelvic lymph nodes	196.6
Secondary and unspecified malignant neoplasm of lymph nodes of multiple sites	196.8
Secondary and unspecified malignant neoplasm of lymph nodes, site unspecified	196.9
Secondary malignant neoplasm of lung	197.0
Secondary malignant neoplasm of mediastinum	197.1
Secondary malignant neoplasm of pleura	197.2
Secondary malignant neoplasm of other respiratory organs	197.3
Secondary malignant neoplasm of small intestine including duodenum	197.4
Secondary malignant neoplasm of large intestine and rectum	197.5
Secondary malignant neoplasm of retroperitoneum and peritoneum	197.6
Malignant neoplasm of liver, secondary	197.7
Secondary malignant neoplasm of other digestive organs and spleen	197.8
Secondary malignant neoplasm of kidney	198.0
Secondary malignant neoplasm of other urinary organs	198.1
Secondary malignant neoplasm of skin	198.2
Secondary malignant neoplasm of brain and spinal cord	198.3
Secondary malignant neoplasm of other parts of nervous system	198.4
Secondary malignant neoplasm of ovary	198.6
Secondary malignant neoplasm of adrenal gland	198.7
Secondary malignant neoplasm of genital organs	198.82
Secondary malignant neoplasm of other specified sites	198.89
Disseminated malignant neoplasm without specification of site	199.0

Supplementary Table 3. ICD-9 and ICD-10 codes used to define clinical characteristics

Description	Code
Osteoporosis ICD9CM [ICD-9 Diagnosis]	
Osteoporosis, unspecified	733.00
Senile osteoporosis	733.01
Idiopathic osteoporosis	733.02
Disuse osteoporosis	733.03
Other osteoporosis	733.09
Osteoporosis ICD10CM codes [ICD-10]	
Age-related osteoporosis without current pathological fracture	M81.0
Localized osteoporosis [Lequesne]	M81.6
Other osteoporosis without current pathological fracture	M81.8
Age-related osteoporosis with current pathological fracture, unspecified site, initial encounter for fracture	M80.00XA
Age-related osteoporosis with current pathological fracture, unspecified site, subsequent encounter for fracture with routine healing	M80.00XD
Age-related osteoporosis with current pathological fracture, unspecified site, subsequent encounter for fracture with delayed healing	M80.00XG
Age-related osteoporosis with current pathological fracture, unspecified site, subsequent encounter for fracture with nonunion	M80.00XK
Age-related osteoporosis with current pathological fracture, unspecified site, subsequent encounter for fracture with malunion	M80.00XP
Age-related osteoporosis with current pathological fracture, unspecified site, sequela	M80.00XS
Age-related osteoporosis with current pathological fracture, right shoulder, initial encounter for fracture	M80.011A
Age-related osteoporosis with current pathological fracture, right shoulder, subsequent encounter for fracture with routine healing	M80.011D
Age-related osteoporosis with current pathological fracture, right shoulder, subsequent encounter for fracture with delayed healing	M80.011G
Age-related osteoporosis with current pathological fracture, right shoulder, subsequent encounter for fracture with nonunion	M80.011K
Age-related osteoporosis with current pathological fracture, right shoulder, subsequent encounter for fracture with malunion	M80.011P
Age-related osteoporosis with current pathological fracture, right shoulder, sequela	M80.011S
Age-related osteoporosis with current pathological fracture, left shoulder, initial encounter for fracture	M80.012A
Age-related osteoporosis with current pathological fracture, left shoulder, subsequent encounter for fracture with routine healing	M80.012D
Age-related osteoporosis with current pathological fracture, left shoulder, subsequent encounter for fracture with delayed healing	M80.012G
Age-related osteoporosis with current pathological fracture, left shoulder, subsequent encounter for fracture with nonunion	M80.012K
Age-related osteoporosis with current pathological fracture, left shoulder, subsequent encounter for fracture with malunion	M80.012P
Age-related osteoporosis with current pathological fracture, left shoulder, sequela	M80.012S
Age-related osteoporosis with current pathological fracture, unspecified shoulder, initial encounter for fracture	M80.019A
Age-related osteoporosis with current pathological fracture, unspecified shoulder, subsequent encounter for fracture with routine healing	M80.019D
Age-related osteoporosis with current pathological fracture, unspecified shoulder, subsequent encounter for fracture with delayed healing	M80.019G
Age-related osteoporosis with current pathological fracture, unspecified shoulder, subsequent encounter for fracture with nonunion	M80.019K
Age-related osteoporosis with current pathological fracture, unspecified shoulder, subsequent encounter for fracture with malunion	M80.019P
Age-related osteoporosis with current pathological fracture, unspecified shoulder, sequela	M80.019S

[illegible]

Age-related osteoporosis with current pathological fracture, unspecified forearm, subsequent encounter for fracture with delayed healing	M80.039G
Age-related osteoporosis with current pathological fracture, unspecified forearm, subsequent encounter for fracture with nonunion	M80.039K
Age-related osteoporosis with current pathological fracture, unspecified forearm, subsequent encounter for fracture with malunion	M80.039P
Age-related osteoporosis with current pathological fracture, unspecified forearm, sequela	M80.039S
Age-related osteoporosis with current pathological fracture, right hand, initial encounter for fracture	M80.041A
Age-related osteoporosis with current pathological fracture, right hand, subsequent encounter for fracture with routine healing	M80.041D
Age-related osteoporosis with current pathological fracture, right hand, subsequent encounter for fracture with delayed healing	M80.041G
Age-related osteoporosis with current pathological fracture, right hand, subsequent encounter for fracture with nonunion	M80.041K
Age-related osteoporosis with current pathological fracture, right hand, subsequent encounter for fracture with malunion	M80.041P
Age-related osteoporosis with current pathological fracture, right hand, sequela	M80.041S
Age-related osteoporosis with current pathological fracture, left hand, initial encounter for fracture	M80.042A
Age-related osteoporosis with current pathological fracture, left hand, subsequent encounter for fracture with routine healing	M80.042D
Age-related osteoporosis with current pathological fracture, left hand, subsequent encounter for fracture with delayed healing	M80.042G
Age-related osteoporosis with current pathological fracture, left hand, subsequent encounter for fracture with nonunion	M80.042K
Age-related osteoporosis with current pathological fracture, left hand, subsequent encounter for fracture with malunion	M80.042P
Age-related osteoporosis with current pathological fracture, left hand, sequela	M80.042S
Age-related osteoporosis with current pathological fracture, unspecified hand, initial encounter for fracture	M80.049A
Age-related osteoporosis with current pathological fracture, unspecified hand, subsequent encounter for fracture with routine healing	M80.049D
Age-related osteoporosis with current pathological fracture, unspecified hand, subsequent encounter for fracture with delayed healing	M80.049G
Age-related osteoporosis with current pathological fracture, unspecified hand, subsequent encounter for fracture with nonunion	M80.049K
Age-related osteoporosis with current pathological fracture, unspecified hand, subsequent encounter for fracture with malunion	M80.049P
Age-related osteoporosis with current pathological fracture, unspecified hand, sequela	M80.049S
Age-related osteoporosis with current pathological fracture, right femur, initial encounter for fracture	M80.051A
Age-related osteoporosis with current pathological fracture, right femur, subsequent encounter for fracture with routine healing	M80.051D
Age-related osteoporosis with current pathological fracture, right femur, subsequent encounter for fracture with delayed healing	M80.051G
Age-related osteoporosis with current pathological fracture, right femur, subsequent encounter for fracture with nonunion	M80.051K
Age-related osteoporosis with current pathological fracture, right femur, subsequent encounter for fracture with malunion	M80.051P
Age-related osteoporosis with current pathological fracture, right femur, sequela	M80.051S
Age-related osteoporosis with current pathological fracture, left femur, initial encounter for fracture	M80.052A
Age-related osteoporosis with current pathological fracture, left femur, subsequent encounter for fracture with routine healing	M80.052D
Age-related osteoporosis with current pathological fracture, left femur, subsequent encounter for fracture with delayed healing	M80.052G
Age-related osteoporosis with current pathological fracture, left femur, subsequent encounter for fracture with nonunion	M80.052K

Age-related osteoporosis with current pathological fracture, left femur, subsequent encounter for fracture with malunion	M80.052P
Age-related osteoporosis with current pathological fracture, left femur, sequela	M80.052S
Age-related osteoporosis with current pathological fracture, unspecified femur, initial encounter for fracture	M80.059A
Age-related osteoporosis with current pathological fracture, unspecified femur, subsequent encounter for fracture with routine healing	M80.059D
Age-related osteoporosis with current pathological fracture, unspecified femur, subsequent encounter for fracture with delayed healing	M80.059G
Age-related osteoporosis with current pathological fracture, unspecified femur, subsequent encounter for fracture with nonunion	M80.059K
Age-related osteoporosis with current pathological fracture, unspecified femur, subsequent encounter for fracture with malunion	M80.059P
Age-related osteoporosis with current pathological fracture, unspecified femur, sequela	M80.059S
Age-related osteoporosis with current pathological fracture, right lower leg, initial encounter for fracture	M80.061A
Age-related osteoporosis with current pathological fracture, right lower leg, subsequent encounter for fracture with routine healing	M80.061D
Age-related osteoporosis with current pathological fracture, right lower leg, subsequent encounter for fracture with delayed healing	M80.061G
Age-related osteoporosis with current pathological fracture, right lower leg, subsequent encounter for fracture with nonunion	M80.061K
Age-related osteoporosis with current pathological fracture, right lower leg, subsequent encounter for fracture with malunion	M80.061P
Age-related osteoporosis with current pathological fracture, right lower leg, sequela	M80.061S
Age-related osteoporosis with current pathological fracture, left lower leg, initial encounter for fracture	M80.062A
Age-related osteoporosis with current pathological fracture, left lower leg, subsequent encounter for fracture with routine healing	M80.062D
Age-related osteoporosis with current pathological fracture, left lower leg, subsequent encounter for fracture with delayed healing	M80.062G
Age-related osteoporosis with current pathological fracture, left lower leg, subsequent encounter for fracture with nonunion	M80.062K
Age-related osteoporosis with current pathological fracture, left lower leg, subsequent encounter for fracture with malunion	M80.062P
Age-related osteoporosis with current pathological fracture, left lower leg, sequela	M80.062S
Age-related osteoporosis with current pathological fracture, unspecified lower leg, initial encounter for fracture	M80.069A
Age-related osteoporosis with current pathological fracture, unspecified lower leg, subsequent encounter for fracture with routine healing	M80.069D
Age-related osteoporosis with current pathological fracture, unspecified lower leg, subsequent encounter for fracture with delayed healing	M80.069G
Age-related osteoporosis with current pathological fracture, unspecified lower leg, subsequent encounter for fracture with nonunion	M80.069K
Age-related osteoporosis with current pathological fracture, unspecified lower leg, subsequent encounter for fracture with malunion	M80.069P
Age-related osteoporosis with current pathological fracture, unspecified lower leg, sequela	M80.069S
Age-related osteoporosis with current pathological fracture, right ankle and foot, initial encounter for fracture	M80.071A
Age-related osteoporosis with current pathological fracture, right ankle and foot, subsequent encounter for fracture with routine healing	M80.071D
Age-related osteoporosis with current pathological fracture, right ankle and foot, subsequent encounter for fracture with delayed healing	M80.071G
Age-related osteoporosis with current pathological fracture, right ankle and foot, subsequent encounter for fracture with nonunion	M80.071K
Age-related osteoporosis with current pathological fracture, right ankle and foot, subsequent encounter for fracture with malunion	M80.071P
Age-related osteoporosis with current pathological fracture, right ankle and foot, sequela	M80.071S

Age-related osteoporosis with current pathological fracture, left ankle and foot, initial encounter for fracture	M80.072A
Age-related osteoporosis with current pathological fracture, left ankle and foot, subsequent encounter for fracture with routine healing	M80.072D
Age-related osteoporosis with current pathological fracture, left ankle and foot, subsequent encounter for fracture with delayed healing	M80.072G
Age-related osteoporosis with current pathological fracture, left ankle and foot, subsequent encounter for fracture with nonunion	M80.072K
Age-related osteoporosis with current pathological fracture, left ankle and foot, subsequent encounter for fracture with malunion	M80.072P
Age-related osteoporosis with current pathological fracture, left ankle and foot, sequela	M80.072S
Age-related osteoporosis with current pathological fracture, unspecified ankle and foot, initial encounter for fracture	M80.079A
Age-related osteoporosis with current pathological fracture, unspecified ankle and foot, subsequent encounter for fracture with routine healing	M80.079D
Age-related osteoporosis with current pathological fracture, unspecified ankle and foot, subsequent encounter for fracture with delayed healing	M80.079G
Age-related osteoporosis with current pathological fracture, unspecified ankle and foot, subsequent encounter for fracture with nonunion	M80.079K
Age-related osteoporosis with current pathological fracture, unspecified ankle and foot, subsequent encounter for fracture with malunion	M80.079P
Age-related osteoporosis with current pathological fracture, unspecified ankle and foot, sequela	M80.079S
Age-related osteoporosis with current pathological fracture, vertebra(e), initial encounter for fracture	M80.08XA
Age-related osteoporosis with current pathological fracture, vertebra(e), subsequent encounter for fracture with routine healing	M80.08XD
Age-related osteoporosis with current pathological fracture, vertebra(e), subsequent encounter for fracture with delayed healing	M80.08XG
Age-related osteoporosis with current pathological fracture, vertebra(e), subsequent encounter for fracture with nonunion	M80.08XK
Age-related osteoporosis with current pathological fracture, vertebra(e), subsequent encounter for fracture with malunion	M80.08XP
Age-related osteoporosis with current pathological fracture, vertebra(e), sequela	M80.08XS
Other osteoporosis with current pathological fracture, unspecified site, initial encounter for fracture	M80.80XA
Other osteoporosis with current pathological fracture, unspecified site, subsequent encounter for fracture with routine healing	M80.80XD
Other osteoporosis with current pathological fracture, unspecified site, subsequent encounter for fracture with delayed healing	M80.80XG
Other osteoporosis with current pathological fracture, unspecified site, subsequent encounter for fracture with nonunion	M80.80XK
Other osteoporosis with current pathological fracture, unspecified site, subsequent encounter for fracture with malunion	M80.80XP
Other osteoporosis with current pathological fracture, unspecified site, sequela	M80.80XS
Other osteoporosis with current pathological fracture, right shoulder, initial encounter for fracture	M80.811A
Other osteoporosis with current pathological fracture, right shoulder, subsequent encounter for fracture with routine healing	M80.811D
Other osteoporosis with current pathological fracture, right shoulder, subsequent encounter for fracture with delayed healing	M80.811G
Other osteoporosis with current pathological fracture, right shoulder, subsequent encounter for fracture with nonunion	M80.811K
Other osteoporosis with current pathological fracture, right shoulder, subsequent encounter for fracture with malunion	M80.811P
Other osteoporosis with current pathological fracture, right shoulder, sequela	M80.811S
Other osteoporosis with current pathological fracture, left shoulder, initial encounter for fracture	M80.812A
Other osteoporosis with current pathological fracture, left shoulder, subsequent encounter for fracture with routine healing	M80.812D

Other osteoporosis with current pathological fracture, left shoulder, subsequent encounter for fracture with delayed healing	M80.812G
Other osteoporosis with current pathological fracture, left shoulder, subsequent encounter for fracture with nonunion	M80.812K
Other osteoporosis with current pathological fracture, left shoulder, subsequent encounter for fracture with malunion	M80.812P
Other osteoporosis with current pathological fracture, left shoulder, sequela	M80.812S
Other osteoporosis with current pathological fracture, unspecified shoulder, initial encounter for fracture	M80.819A
Other osteoporosis with current pathological fracture, unspecified shoulder, subsequent encounter for fracture with routine healing	M80.819D
Other osteoporosis with current pathological fracture, unspecified shoulder, subsequent encounter for fracture with delayed healing	M80.819G
Other osteoporosis with current pathological fracture, unspecified shoulder, subsequent encounter for fracture with nonunion	M80.819K
Other osteoporosis with current pathological fracture, unspecified shoulder, subsequent encounter for fracture with malunion	M80.819P
Other osteoporosis with current pathological fracture, unspecified shoulder, sequela	M80.819S
Other osteoporosis with current pathological fracture, right humerus, initial encounter for fracture	M80.821A
Other osteoporosis with current pathological fracture, right humerus, subsequent encounter for fracture with routine healing	M80.821D
Other osteoporosis with current pathological fracture, right humerus, subsequent encounter for fracture with delayed healing	M80.821G
Other osteoporosis with current pathological fracture, right humerus, subsequent encounter for fracture with nonunion	M80.821K
Other osteoporosis with current pathological fracture, right humerus, subsequent encounter for fracture with malunion	M80.821P
Other osteoporosis with current pathological fracture, right humerus, sequela	M80.821S
Other osteoporosis with current pathological fracture, left humerus, initial encounter for fracture	M80.822A
Other osteoporosis with current pathological fracture, left humerus, subsequent encounter for fracture with routine healing	M80.822D
Other osteoporosis with current pathological fracture, left humerus, subsequent encounter for fracture with delayed healing	M80.822G
Other osteoporosis with current pathological fracture, left humerus, subsequent encounter for fracture with nonunion	M80.822K
Other osteoporosis with current pathological fracture, left humerus, subsequent encounter for fracture with malunion	M80.822P
Other osteoporosis with current pathological fracture, left humerus, sequela	M80.822S
Other osteoporosis with current pathological fracture, unspecified humerus, initial encounter for fracture	M80.829A
Other osteoporosis with current pathological fracture, unspecified humerus, subsequent encounter for fracture with routine healing	M80.829D
Other osteoporosis with current pathological fracture, unspecified humerus, subsequent encounter for fracture with delayed healing	M80.829G
Other osteoporosis with current pathological fracture, unspecified humerus, subsequent encounter for fracture with nonunion	M80.829K
Other osteoporosis with current pathological fracture, unspecified humerus, subsequent encounter for fracture with malunion	M80.829P
Other osteoporosis with current pathological fracture, unspecified humerus, sequela	M80.829S
Other osteoporosis with current pathological fracture, right forearm, initial encounter for fracture	M80.831A
Other osteoporosis with current pathological fracture, right forearm, subsequent encounter for fracture with routine healing	M80.831D
Other osteoporosis with current pathological fracture, right forearm, subsequent encounter for fracture with delayed healing	M80.831G
Other osteoporosis with current pathological fracture, right forearm, subsequent encounter for fracture with nonunion	M80.831K

Other osteoporosis with current pathological fracture, right forearm, subsequent encounter for fracture with malunion	M80.831P
Other osteoporosis with current pathological fracture, right forearm, sequela	M80.831S
Other osteoporosis with current pathological fracture, left forearm, initial encounter for fracture	M80.832A
Other osteoporosis with current pathological fracture, left forearm, subsequent encounter for fracture with routine healing	M80.832D
Other osteoporosis with current pathological fracture, left forearm, subsequent encounter for fracture with delayed healing	M80.832G
Other osteoporosis with current pathological fracture, left forearm, subsequent encounter for fracture with nonunion	M80.832K
Other osteoporosis with current pathological fracture, left forearm, subsequent encounter for fracture with malunion	M80.832P
Other osteoporosis with current pathological fracture, left forearm, sequela	M80.832S
Other osteoporosis with current pathological fracture, unspecified forearm, initial encounter for fracture	M80.839A
Other osteoporosis with current pathological fracture, unspecified forearm, subsequent encounter for fracture with routine healing	M80.839D
Other osteoporosis with current pathological fracture, unspecified forearm, subsequent encounter for fracture with delayed healing	M80.839G
Other osteoporosis with current pathological fracture, unspecified forearm, subsequent encounter for fracture with nonunion	M80.839K
Other osteoporosis with current pathological fracture, unspecified forearm, subsequent encounter for fracture with malunion	M80.839P
Other osteoporosis with current pathological fracture, unspecified forearm, sequela	M80.839S
Other osteoporosis with current pathological fracture, right hand, initial encounter for fracture	M80.841A
Other osteoporosis with current pathological fracture, right hand, subsequent encounter for fracture with routine healing	M80.841D
Other osteoporosis with current pathological fracture, right hand, subsequent encounter for fracture with delayed healing	M80.841G
Other osteoporosis with current pathological fracture, right hand, subsequent encounter for fracture with nonunion	M80.841K
Other osteoporosis with current pathological fracture, right hand, subsequent encounter for fracture with malunion	M80.841P
Other osteoporosis with current pathological fracture, right hand, sequela	M80.841S
Other osteoporosis with current pathological fracture, left hand, initial encounter for fracture	M80.842A
Other osteoporosis with current pathological fracture, left hand, subsequent encounter for fracture with routine healing	M80.842D
Other osteoporosis with current pathological fracture, left hand, subsequent encounter for fracture with delayed healing	M80.842G
Other osteoporosis with current pathological fracture, left hand, subsequent encounter for fracture with nonunion	M80.842K
Other osteoporosis with current pathological fracture, left hand, subsequent encounter for fracture with malunion	M80.842P
Other osteoporosis with current pathological fracture, left hand, sequela	M80.842S
Other osteoporosis with current pathological fracture, unspecified hand, initial encounter for fracture	M80.849A
Other osteoporosis with current pathological fracture, unspecified hand, subsequent encounter for fracture with routine healing	M80.849D
Other osteoporosis with current pathological fracture, unspecified hand, subsequent encounter for fracture with delayed healing	M80.849G
Other osteoporosis with current pathological fracture, unspecified hand, subsequent encounter for fracture with nonunion	M80.849K
Other osteoporosis with current pathological fracture, unspecified hand, subsequent encounter for fracture with malunion	M80.849P
Other osteoporosis with current pathological fracture, unspecified hand, sequela	M80.849S
Other osteoporosis with current pathological fracture, right femur, initial encounter for fracture	M80.851A
Other osteoporosis with current pathological fracture, right femur, subsequent encounter for fracture with routine healing	M80.851D

Other osteoporosis with current pathological fracture, right femur, subsequent encounter for fracture with delayed healing	M80.851G
Other osteoporosis with current pathological fracture, right femur, subsequent encounter for fracture with nonunion	M80.851K
Other osteoporosis with current pathological fracture, right femur, subsequent encounter for fracture with malunion	M80.851P
Other osteoporosis with current pathological fracture, right femur, sequela	M80.851S
Other osteoporosis with current pathological fracture, left femur, initial encounter for fracture	M80.852A
Other osteoporosis with current pathological fracture, left femur, subsequent encounter for fracture with routine healing	M80.852D
Other osteoporosis with current pathological fracture, left femur, subsequent encounter for fracture with delayed healing	M80.852G
Other osteoporosis with current pathological fracture, left femur, subsequent encounter for fracture with nonunion	M80.852K
Other osteoporosis with current pathological fracture, left femur, subsequent encounter for fracture with malunion	M80.852P
Other osteoporosis with current pathological fracture, left femur, sequela	M80.852S
Other osteoporosis with current pathological fracture, unspecified femur, initial encounter for fracture	M80.859A
Other osteoporosis with current pathological fracture, unspecified femur, subsequent encounter for fracture with routine healing	M80.859D
Other osteoporosis with current pathological fracture, unspecified femur, subsequent encounter for fracture with delayed healing	M80.859G
Other osteoporosis with current pathological fracture, unspecified femur, subsequent encounter for fracture with nonunion	M80.859K
Other osteoporosis with current pathological fracture, unspecified femur, subsequent encounter for fracture with malunion	M80.859P
Other osteoporosis with current pathological fracture, unspecified femur, sequela	M80.859S
Other osteoporosis with current pathological fracture, right lower leg, initial encounter for fracture	M80.861A
Other osteoporosis with current pathological fracture, right lower leg, subsequent encounter for fracture with routine healing	M80.861D
Other osteoporosis with current pathological fracture, right lower leg, subsequent encounter for fracture with delayed healing	M80.861G
Other osteoporosis with current pathological fracture, right lower leg, subsequent encounter for fracture with nonunion	M80.861K
Other osteoporosis with current pathological fracture, right lower leg, subsequent encounter for fracture with malunion	M80.861P
Other osteoporosis with current pathological fracture, right lower leg, sequela	M80.861S
Other osteoporosis with current pathological fracture, left lower leg, initial encounter for fracture	M80.862A
Other osteoporosis with current pathological fracture, left lower leg, subsequent encounter for fracture with routine healing	M80.862D
Other osteoporosis with current pathological fracture, left lower leg, subsequent encounter for fracture with delayed healing	M80.862G
Other osteoporosis with current pathological fracture, left lower leg, subsequent encounter for fracture with nonunion	M80.862K
Other osteoporosis with current pathological fracture, left lower leg, subsequent encounter for fracture with malunion	M80.862P
Other osteoporosis with current pathological fracture, left lower leg, sequela	M80.862S
Other osteoporosis with current pathological fracture, unspecified lower leg, initial encounter for fracture	M80.869A
Other osteoporosis with current pathological fracture, unspecified lower leg, subsequent encounter for fracture with routine healing	M80.869D
Other osteoporosis with current pathological fracture, unspecified lower leg, subsequent encounter for fracture with delayed healing	M80.869G
Other osteoporosis with current pathological fracture, unspecified lower leg, subsequent encounter for fracture with nonunion	M80.869K

Other osteoporosis with current pathological fracture, unspecified lower leg, subsequent encounter for fracture with malunion	M80.869P
Other osteoporosis with current pathological fracture, unspecified lower leg, sequela	M80.869S
Other osteoporosis with current pathological fracture, right ankle and foot, initial encounter for fracture	M80.871A
Other osteoporosis with current pathological fracture, right ankle and foot, subsequent encounter for fracture with routine healing	M80.871D
Other osteoporosis with current pathological fracture, right ankle and foot, subsequent encounter for fracture with delayed healing	M80.871G
Other osteoporosis with current pathological fracture, right ankle and foot, subsequent encounter for fracture with nonunion	M80.871K
Other osteoporosis with current pathological fracture, right ankle and foot, subsequent encounter for fracture with malunion	M80.871P
Other osteoporosis with current pathological fracture, right ankle and foot, sequela	M80.871S
Other osteoporosis with current pathological fracture, left ankle and foot, initial encounter for fracture	M80.872A
Other osteoporosis with current pathological fracture, left ankle and foot, subsequent encounter for fracture with routine healing	M80.872D
Other osteoporosis with current pathological fracture, left ankle and foot, subsequent encounter for fracture with delayed healing	M80.872G
Other osteoporosis with current pathological fracture, left ankle and foot, subsequent encounter for fracture with nonunion	M80.872K
Other osteoporosis with current pathological fracture, left ankle and foot, subsequent encounter for fracture with malunion	M80.872P
Other osteoporosis with current pathological fracture, left ankle and foot, sequela	M80.872S
Other osteoporosis with current pathological fracture, unspecified ankle and foot, initial encounter for fracture	M80.879A
Other osteoporosis with current pathological fracture, unspecified ankle and foot, subsequent encounter for fracture with routine healing	M80.879D
Other osteoporosis with current pathological fracture, unspecified ankle and foot, subsequent encounter for fracture with delayed healing	M80.879G
Other osteoporosis with current pathological fracture, unspecified ankle and foot, subsequent encounter for fracture with nonunion	M80.879K
Other osteoporosis with current pathological fracture, unspecified ankle and foot, subsequent encounter for fracture with malunion	M80.879P
Other osteoporosis with current pathological fracture, unspecified ankle and foot, sequela	M80.879S
Other osteoporosis with current pathological fracture, vertebra(e), initial encounter for fracture	M80.88XA
Other osteoporosis with current pathological fracture, vertebra(e), subsequent encounter for fracture with routine healing	M80.88XD
Other osteoporosis with current pathological fracture, vertebra(e), subsequent encounter for fracture with delayed healing	M80.88XG
Other osteoporosis with current pathological fracture, vertebra(e), subsequent encounter for fracture with nonunion	M80.88XK
Other osteoporosis with current pathological fracture, vertebra(e), subsequent encounter for fracture with malunion	M80.88XP
Other osteoporosis with current pathological fracture, vertebra(e), sequela	M80.88XS
Depression comorbidity ICD9CM [ICD-9 Diagnosis]	
Bipolar I disorder, single manic episode, unspecified	296.00
Bipolar I disorder, single manic episode, mild	296.01
Bipolar I disorder, single manic episode, moderate	296.02
Bipolar I disorder, single manic episode, severe, without mention of psychotic behavior	296.03
Bipolar I disorder, single manic episode, severe, specified as with psychotic behavior	296.04
Bipolar I disorder, single manic episode, in partial or unspecified remission	296.05
Bipolar I disorder, single manic episode, in full remission	296.06
Manic affective disorder, recurrent episode, unspecified	296.10
Manic affective disorder, recurrent episode, mild	296.11
Manic affective disorder, recurrent episode, moderate	296.12
Manic affective disorder, recurrent episode, severe, without mention of psychotic behavior	296.13

Manic affective disorder, recurrent episode, severe, specified as with psychotic behavior	296.14
Manic affective disorder, recurrent episode, in partial or unspecified remission	296.15
Manic affective disorder, recurrent episode, in full remission	296.16
Major depressive affective disorder, single episode, unspecified	296.20
Major depressive affective disorder, single episode, mild	296.21
Major depressive affective disorder, single episode, moderate	296.22
Major depressive affective disorder, single episode, severe, without mention of psychotic behavior	296.23
Major depressive affective disorder, single episode, severe, specified as with psychotic behavior	296.24
Major depressive affective disorder, single episode, in partial or unspecified remission	296.25
Major depressive affective disorder, single episode, in full remission	296.26
Major depressive affective disorder, recurrent episode, unspecified	296.30
Major depressive affective disorder, recurrent episode, mild	296.31
Major depressive affective disorder, recurrent episode, moderate	296.32
Major depressive affective disorder, recurrent episode, severe, without mention of psychotic behavior	296.33
Major depressive affective disorder, recurrent episode, severe, specified as with psychotic behavior	296.34
Major depressive affective disorder, recurrent episode, in partial or unspecified remission	296.35
Major depressive affective disorder, recurrent episode, in full remission	296.36
Bipolar I disorder, most recent episode (or current) manic, unspecified	296.40
Bipolar I disorder, most recent episode (or current) manic, mild	296.41
Bipolar I disorder, most recent episode (or current) manic, moderate	296.42
Bipolar I disorder, most recent episode (or current) manic, severe, without mention of psychotic behavior	296.43
Bipolar I disorder, most recent episode (or current) manic, severe, specified as with psychotic behavior	296.44
Bipolar I disorder, most recent episode (or current) manic, in partial or unspecified remission	296.45
Bipolar I disorder, most recent episode (or current) manic, in full remission	296.46
Bipolar I disorder, most recent episode (or current) depressed, unspecified	296.50
Bipolar I disorder, most recent episode (or current) depressed, mild	296.51
Bipolar I disorder, most recent episode (or current) depressed, moderate	296.52
Bipolar I disorder, most recent episode (or current) depressed, severe, without mention of psychotic behavior	296.53
Bipolar I disorder, most recent episode (or current) depressed, severe, specified as with psychotic behavior	296.54
Bipolar I disorder, most recent episode (or current) depressed, in partial or unspecified remission	296.55
Bipolar I disorder, most recent episode (or current) depressed, in full remission	296.56
Bipolar I disorder, most recent episode (or current) mixed, unspecified	296.60
Bipolar I disorder, most recent episode (or current) mixed, mild	296.61
Bipolar I disorder, most recent episode (or current) mixed, moderate	296.62
Bipolar I disorder, most recent episode (or current) mixed, severe, without mention of psychotic behavior	296.63
Bipolar I disorder, most recent episode (or current) mixed, severe, specified as with psychotic behavior	296.64
Bipolar I disorder, most recent episode (or current) mixed, in partial or unspecified remission	296.65
Bipolar I disorder, most recent episode (or current) mixed, in full remission	296.66
Bipolar I disorder, most recent episode (or current) unspecified	296.7
Bipolar disorder, unspecified	296.80
Atypical manic disorder	296.81
Atypical depressive disorder	296.82
Other bipolar disorders	296.89
Unspecified episodic mood disorder	296.90
Other specified episodic mood disorder	296.99
Depressive type psychosis	298.0
Dysthymic disorder	300.4

Adjustment disorder with depressed mood	309.0
Prolonged depressive reaction	309.1
Adjustment disorder with mixed anxiety and depressed mood	309.28
Depressive disorder, not elsewhere classified	311
Depression comorbidity ICD10CM [ICD-10 Diagnosis]	
Manic episode without psychotic symptoms, unspecified	F30.10
Manic episode without psychotic symptoms, mild	F30.11
Manic episode without psychotic symptoms, moderate	F30.12
Manic episode, severe, without psychotic symptoms	F30.13
Manic episode, severe with psychotic symptoms	F30.2
Manic episode in partial remission	F30.3
Manic episode in full remission	F30.4
Other manic episodes	F30.8
Manic episode, unspecified	F30.9
Bipolar disorder, current episode hypomanic	F31.0
Bipolar disorder, current episode manic without psychotic features, unspecified	F31.10
Bipolar disorder, current episode manic without psychotic features, mild	F31.11
Bipolar disorder, current episode manic without psychotic features, moderate	F31.12
Bipolar disorder, current episode manic without psychotic features, severe	F31.13
Bipolar disorder, current episode manic severe with psychotic features	F31.2
Bipolar disorder, current episode depressed, mild or moderate severity, unspecified	F31.30
Bipolar disorder, current episode depressed, mild	F31.31
Bipolar disorder, current episode depressed, moderate	F31.32
Bipolar disorder, current episode depressed, severe, without psychotic features	F31.4
Bipolar disorder, current episode depressed, severe, with psychotic features	F31.5
Bipolar disorder, current episode mixed, unspecified	F31.60
Bipolar disorder, current episode mixed, mild	F31.61
Bipolar disorder, current episode mixed, moderate	F31.62
Bipolar disorder, current episode mixed, severe, without psychotic features	F31.63
Bipolar disorder, current episode mixed, severe, with psychotic features	F31.64
Bipolar disorder, currently in remission, most recent episode unspecified	F31.70
Bipolar disorder, in partial remission, most recent episode hypomanic	F31.71
Bipolar disorder, in full remission, most recent episode hypomanic	F31.72
Bipolar disorder, in partial remission, most recent episode manic	F31.73
Bipolar disorder, in full remission, most recent episode manic	F31.74
Bipolar disorder, in partial remission, most recent episode depressed	F31.75
Bipolar disorder, in full remission, most recent episode depressed	F31.76
Bipolar disorder, in partial remission, most recent episode mixed	F31.77
Bipolar disorder, in full remission, most recent episode mixed	F31.78
Bipolar II disorder	F31.81
Other bipolar disorder	F31.89
Bipolar disorder, unspecified	F31.9
Major depressive disorder, single episode, mild	F32.0
Major depressive disorder, single episode, moderate	F32.1
Major depressive disorder, single episode, severe without psychotic features	F32.2
Major depressive disorder, single episode, severe with psychotic features	F32.3
Major depressive disorder, single episode, in partial remission	F32.4
Major depressive disorder, single episode, in full remission	F32.5
Other specified depressive episodes	F32.89
Major depressive disorder, single episode, unspecified	F32.9
Major depressive disorder, recurrent, mild	F33.0
Major depressive disorder, recurrent, moderate	F33.1
Major depressive disorder, recurrent severe without psychotic features	F33.2
Major depressive disorder, recurrent, severe with psychotic symptoms	F33.3
Major depressive disorder, recurrent, in remission, unspecified	F33.40
Major depressive disorder, recurrent, in partial remission	F33.41
Major depressive disorder, recurrent, in full remission	F33.42
Other recurrent depressive disorders	F33.8

Major depressive disorder, recurrent, unspecified	F33.9
Dysthymic disorder	F34.1
Other specified persistent mood disorders	F34.89
Persistent mood [affective] disorder, unspecified	F34.9
Unspecified mood [affective] disorder	F39
Adjustment disorder with depressed mood	F43.21
Adjustment disorder with mixed anxiety and depressed mood	F43.23
Anxiety comorbidity ICD9CM [ICD-9 Diagnosis]	
Anxiety state, unspecified	300.00
Panic disorder without agoraphobia	300.01
Generalized anxiety disorder	300.02
Other anxiety states	300.09
Hysteria, unspecified	300.10
Phobia, unspecified	300.20
Agoraphobia with panic disorder	300.21
Agoraphobia without mention of panic attacks	300.22
Social phobia	300.23
Other isolated or specific phobias	300.29
Obsessive-compulsive disorders	300.3
Predominant disturbance of emotions	308.0
Predominant disturbance of consciousness	308.1
Predominant psychomotor disturbance	308.2
Other acute reactions to stress	308.3
Mixed disorders as reaction to stress	308.4
Unspecified acute reaction to stress	308.9
Separation anxiety disorder	309.21
Adjustment disorder with anxiety	309.24
Adjustment disorder with mixed anxiety and depressed mood	309.28
Posttraumatic stress disorder	309.81
Anxiety comorbidity ICD10CM [ICD-10 Diagnosis]	
Agoraphobia with panic disorder	F40.01
Social phobia, unspecified	F40.10
Social phobia, generalized	F40.11
Other phobic anxiety disorders	F40.8
Phobic anxiety disorder, unspecified	F40.9
Panic disorder [episodic paroxysmal anxiety]	F41.0
Generalized anxiety disorder	F41.1
Other mixed anxiety disorders	F41.3
Other specified anxiety disorders	F41.8
Anxiety disorder, unspecified	F41.9
Mixed obsessional thoughts and acts	F42.2
Other obsessive-compulsive disorder	F42.8
Obsessive-compulsive disorder, unspecified	F42.9
Acute stress reaction	F43.0
Post-traumatic stress disorder, unspecified	F43.10
Post-traumatic stress disorder, acute	F43.11
Post-traumatic stress disorder, chronic	F43.12
Adjustment disorder with anxiety	F43.22
Adjustment disorder with mixed anxiety and depressed mood	F43.23
Separation anxiety disorder of childhood	F93.0
Postmenopausal status codes [ICD-9 Diagnosis]	
Postablative ovarian failure	256.2
Premature menopause	256.31
Postmenopausal bleeding	627.1
Postmenopausal atrophic vaginitis	627.3
Symptomatic states associated with artificial menopause	627.4
Other specified menopausal and postmenopausal disorders	627.8
Unspecified menopausal and postmenopausal disorder	627.9

Postmenopausal status ICD10CM [ICD-10 Diagnosis]	
Symptomatic premature menopause	E28.310
Asymptomatic premature menopause	E28.319
Asymptomatic postprocedural ovarian failure	E89.40
Symptomatic postprocedural ovarian failure	E89.41
Postmenopausal bleeding	N95.0
Postmenopausal atrophic vaginitis	N95.2
Visceral metastases ICD9CM [ICD-9 Diagnosis]	
Secondary malignant neoplasm of lung	197.0
Secondary malignant neoplasm of pleura	197.2
Secondary malignant neoplasm of retroperitoneum and peritoneum	197.6
Malignant neoplasm of liver, secondary	197.7
Secondary malignant neoplasm of adrenal gland	198.7
Visceral metastases ICD10CM [ICD-10 Diagnosis]	
Secondary malignant neoplasm of unspecified lung	C78.00
Secondary malignant neoplasm of right lung	C78.01
Secondary malignant neoplasm of left lung	C78.02
Secondary malignant neoplasm of pleura	C78.2
Secondary malignant neoplasm of retroperitoneum and peritoneum	C78.6
Secondary malignant neoplasm of liver and intrahepatic bile duct	C78.7
Secondary malignant neoplasm of unspecified adrenal gland	C79.70
Secondary malignant neoplasm of right adrenal gland	C79.71
Secondary malignant neoplasm of left adrenal gland	C79.72
Liver metastases ICD9CM [ICD-9 Diagnosis]	
Malignant neoplasm of liver, secondary	197.7
Liver metastases ICD10CM [ICD-10 Diagnosis]	
Secondary malignant neoplasm of liver and intrahepatic bile duct	C78.7
Lung metastases ICD9CM [ICD-9 Diagnosis]	
Secondary malignant neoplasm of lung	197.0
Lung metastases ICD10CM [ICD-10 Diagnosis]	
Secondary malignant neoplasm of unspecified lung	C78.00
Secondary malignant neoplasm of right lung	C78.01
Secondary malignant neoplasm of left lung	C78.02
Brain metastases ICD9CM [ICD-9 Diagnosis]	
Secondary malignant neoplasm of brain and spinal cord	198.3
Brain metastases ICD10CM [ICD-10 Diagnosis]	
Secondary malignant neoplasm of brain	C79.31
Bone metastases ICD9CM [ICD-9 Diagnosis]	
Secondary malignant neoplasm of bone and bone marrow	198.5
Bone metastases ICD10CM [ICD-10 Diagnosis]	
Secondary malignant neoplasm of bone	C79.51

Supplementary Table 4. Codes used to define use of anticancer agents

Description	HCPCS code	NDC code
Aromatase inhibitors		
Anastrozole, oral, 1 mg	S0170	
Anastrozole		00054016413
Anastrozole		00093753656
		00115126101
		00115126103
		00115126108
		00115126110
		00179006870
		00179188970
		00179188971
		00179188972
		00310020114
Arimidex		00310020130
Arimidex		00310020137
		00310020140
		00310020150
		00310020166
		00310020195
		00310020197
Anastrozole		00378603405
Anastrozole		00378603477
Anastrozole		00378603493
Anastrozole		00781535631
Anastrozole		00904619546
Anastrozole		00904622961
		12280034630
Anastrozole		16571042103
Anastrozole		16729003510
Anastrozole		16729003515
Anastrozole		16729003516
		16729003517
		21695099030
		26053000601
		33261095700
		33261095730
		33261095760
		33261095790
Arimidex		35356027030
Anastrozole		38779227403
Anastrozole		38779227404
Anastrozole		38779227406
		38779255503
		38779255504
		38779255506
Anastrozole		42043018003
		42254016130
Anastrozole		42291010530
Anastrozole		43063038306
		43063038315
		46144020001
		46144020005
		50090119300
		50090191800

		50090200500
		50090211800
		50090245300
		50268007511
Anastrozole		50268007515
		51079032301
Anastrozole		51079032306
		51079032330
		51129112201
		51655063853
		51927443500
Anastrozole		51991062010
Anastrozole		51991062033
		54569573100
Anastrozole		54569619800
Arimidex		54868500000
		54868613000
		54868613001
Anastrozole		55111064730
		55175550503
		58597808001
		58597808002
		58597808004
Anastrozole		60258086603
Anastrozole		60429028630
		60429028660
Anastrozole		60429028690
Anastrozole		60505298503
		60687011211
Anastrozole		60687011221
		60763037606
		62033037606
		62175071032
Arimidex		62559067030
Anastrozole		62756025013
		62756025018
Anastrozole		62756025083
		62756025088
		63187008030
		63275993001
		63275993002
		63275993003
		63275993004
		63275993005
Anastrozole		63323012930
		63629526901
		63629526902
		63629526903
		63672001500
		65841074306
		65841074310
		66336053330
		66336053390
		66435041530
Anastrozole		67877017110
Anastrozole		67877017130
Anastrozole		68001015504
Anastrozole		68001015508

		68071168203
		68071403803
		68084044811
Anastrozole		68084044821
		68258903501
Anastrozole		68382020906
Anastrozole		68382020910
		68788677403
		68788677406
		68788677409
Anastrozole		69117000301
		69189003501
		71335002301
		71335002302
		71335002303
Anastrozole		72789000815
		76418001301
Exemestane, 25 mg	S0156	
		00009520601
Aromasin		00009766304
		00009766306
Exemestane		00054008013
		00378500101
		00378500105
		00378500177
Exemestane		00378500193
Exemestane		00832059530
		10829766304
		10829766306
Exemestane		47781010830
Aromasin		49999098630
Aromasin		54569573200
Aromasin		54868526100
Exemestane		59762285801
		60687013211
Exemestane		60687013221
Aromasin		63629126201
Exemestane		68084013221
Exemestane		68382038306
Exemestane		69097031602
Letrozole		00054026913
Femara		00078024915
		00078088150
Letrozole		00093762056
		00179016970
		00179165770
		00179165771
		00179165772
Letrozole		00378207105
Letrozole		00378207193
		00527171230
Letrozole		00603418016
		16729003401
Letrozole		16729003410
Letrozole		16729003415
		16729003416
		16729003417
		16729003443

		17088100401
		24535080101
		24724003001
		24724003003
		35356040930
		42254024330
		42291037390
Letrozole		42291037490
		46144070101
		50268047611
Letrozole		50268047615
Letrozole		51991075910
Letrozole		51991075933
		53217010830
		54569571400
Femara		54868415100
		54868625200
Letrozole		55111064630
		55111064678
		55111064679
		57884202101
Letrozole		59651018030
Letrozole		59651018090
		60505325501
Letrozole		60505325503
Letrozole		60505325508
		62175088832
		62756051108
		62756051118
Letrozole		62756051183
		62756051188
Letrozole		63323077230
		68084080311
Letrozole		68084080321
		68258595503
Letrozole		69117000401
		69189762001
Everolimus		
Everolimus, oral, 0.25 mg	J7527	
Everolimus, oral, 0.25 mg	J8561	
Afinitor		00078056651
Afinitor		00078056661
Afinitor		00078056751
Afinitor		00078056761
Afinitor		00078059451
Afinitor		00078059461
Afinitor		00078062051
Afinitor		00078062061
Afinitor Disperz		00078062651
Afinitor Disperz		00078062661
Afinitor Disperz		00078062751
Afinitor Disperz		00078062761
Afinitor Disperz		00078062851
Afinitor Disperz		00078062861
		17088011301
		17088011401
Fulvestrant		
	C9120	

Injection, fulvestrant, 25 mg	J9395	
Faslodex		00310072010
Faslodex		00310072025
Faslodex		00310072050
Fulvestrant		00310772010
Fulvestrant		00591501902
		00591501911
		00781307901
Fulvestrant		00781307912
Fulvestrant		25021046274
		62195030525
		62195030550
		63323071501
Fulvestrant		63323071505
		67457031100
Fulvestrant		67457031105
Fulvestrant		68462031732
Fulvestrant		70121146302
Olaparib		
Lynparza		00310065758
Lynparza		00310066812
Lynparza		00310066860
Lynparza		00310067912
Lynparza		00310067960
		00310067995
Tamoxifen		
Tamoxifen citrate, oral, 10 mg	S0187	
		00017565760
		00017565770
		00038060025
		00038060060
Tamoxifen Citrate		00054483121
Tamoxifen Citrate		00054483126
		00054483132
Tamoxifen Citrate		00054483413
Tamoxifen Citrate		00054483422
Tamoxifen Citrate		00054483425
		00054483473
Tamoxifen Citrate		00054883125
Tamoxifen Citrate		00054883425
Tamoxifen Citrate		00093078201
Tamoxifen Citrate		00093078205
Tamoxifen Citrate		00093078210
Tamoxifen Citrate		00093078256
Tamoxifen Citrate		00093078405
Tamoxifen Citrate		00093078406
Tamoxifen Citrate		00093078410
Tamoxifen Citrate		00093078486
Tamoxifen Citrate		00172565649
Tamoxifen Citrate		00172565658
Tamoxifen Citrate		00172565670
Tamoxifen Citrate		00172565680
Tamoxifen Citrate		00172565746
		00172565755
Tamoxifen Citrate		00172565760
Tamoxifen Citrate		00172565770
		00172565780
		00179022401

		00179102801
		00179102860
		00179129901
		00179195201
		00179195230
		00179195250
		00179195260
		00179195290
Tamoxifen Citrate		00247085960
		00310044603
		00310044609
Nolvadex		00310060018
Nolvadex		00310060025
Nolvadex		00310060060
Nolvadex		00310060075
		00310060092
Nolvadex		00310060412
Nolvadex		00310060430
Nolvadex		00310060490
Tamoxifen Citrate		00310073060
Tamoxifen Citrate		00310073130
		00310090401
		00310090414
		00310090464
Tamoxifen Citrate		00378014405
Tamoxifen Citrate		00378014491
Tamoxifen Citrate		00378027401
		00378027425
Tamoxifen Citrate		00378027493
		00403150571
		00440845030
		00440845060
		00440845092
		00440845130
		00440845160
		00440845192
		00480078201
		00480078205
		00480078210
		00480078256
		00480078405
		00480078406
		00480078410
		00480078486
Tamoxifen Citrate		00555044603
Tamoxifen Citrate		00555044605
Tamoxifen Citrate		00555044609
		00555044612
Tamoxifen Citrate		00555044663
Tamoxifen Citrate		00555090401
Tamoxifen Citrate		00555090405
Tamoxifen Citrate		00555090414
		00555090464
Tamoxifen Citrate		00591223218
Tamoxifen Citrate		00591223260
Tamoxifen Citrate		00591223319
Tamoxifen Citrate		00591223330
Tamoxifen Citrate		00591247218

Tamoxifen Citrate		00591247260
Tamoxifen Citrate		00591247319
Tamoxifen Citrate		00591247330
		12581060000
Soltamox		13632012301
		26053004401
		37803200403
		38779034101
		38779034103
		38779034104
		38779034105
		38779034108
		38779034110
		38779034130
		38779034140
		38779034150
		38779034180
		42254034390
		48581622101
		48581622102
		48581622103
		48581622104
		48581622201
		48581622202
		48581622203
		48817014101
Tamoxifen Citrate		49452757101
Tamoxifen Citrate		49452757102
Tamoxifen Citrate		49452757103
		49452757104
Tamoxifen Citrate		49452757105
Tamoxifen Citrate		49452757106
		49452775301
		49452775302
		49452775303
		49452775304
		49452775305
		50090048501
		50090094200
		50090199801
		50090253301
		51129195201
		51129262201
		51129421801
		51129421802
		51129466201
		51129466202
		51552083802
Tamoxifen Citrate		51862044601
Tamoxifen Citrate		51862044605
Tamoxifen Citrate		51862044610
Tamoxifen Citrate		51862044630
Tamoxifen Citrate		51862044705
Tamoxifen Citrate		51862044710
Tamoxifen Citrate		51862044718
Tamoxifen Citrate		51862044760
Tamoxifen Citrate		51862044918
Tamoxifen Citrate		51862044960

Tamoxifen Citrate		51862045030
Tamoxifen Citrate		51862045090
		51927297600
		52372075601
		52372075602
		52372075603
		52728037907
		52728038010
		53002103203
		53002103206
		53002103230
		53978008621
		54569038200
		54569038201
		54569038202
		54569038232
		54569038252
Tamoxifen Citrate		54569376500
Tamoxifen Citrate		54569376501
		54569571600
Tamoxifen Citrate		54569585700
Nolvadex		54569853100
Tamoxifen Citrate		54569860200
		54868300400
Tamoxifen Citrate		54868300401
Tamoxifen Citrate		54868300402
Tamoxifen Citrate		54868300403
		54868300404
		54868300405
		54868428700
		54868428701
		54868428702
		54868428703
		54868428704
		55045270300
		55045270309
		55160014901
		55160014905
		55160015001
		55160015005
		55175550006
Nolvadex		55289058530
		55812033901
		55812033902
Tamoxifen Citrate		55887087201
Tamoxifen Citrate		55887087290
Nolvadex		57866661501
Nolvadex		57866661801
Nolvadex		58016065760
		59564014401
		59564014407
		60346004832
		60346090060
Tamoxifen Citrate		60429090960
Tamoxifen Citrate		60429091030
		60505303503
		60505303505
		60505303506

	60505303507
	60505303601
	60505303603
	60505303607
	62037096418
	62037096425
	62037096460
	62037096512
	62037096530
	62037096590
	62540565600
	62540565602
	62540565603
	62540565609
	62540565701
	62540565702
	62584060008
Tamoxifen Citrate	62991115101
Tamoxifen Citrate	62991115102
	62991115103
	62991115104
	63187097630
	63187097660
	63187097690
Tamoxifen Citrate	63304060028
Tamoxifen Citrate	63304060060
Tamoxifen Citrate	63304060130
Tamoxifen Citrate	63304060190
	63307047001
	63307047005
	63370025110
	63370025115
	63370025125
	63370025135
	63629441301
	63629441302
	63629441303
	63629441304
	63739026901
Tamoxifen Citrate	63739026910
Tamoxifen Citrate	63739026915
Tamoxifen Citrate	63739026942
	66105083201
	66105083203
	66105083206
	66105083209
	66105083210
	66267087360
	68084092411
Tamoxifen Citrate	68084092421
	68084093511
Tamoxifen Citrate	68084093521
	68258596006
	68382082601
	68382082605
	68382082606
Tamoxifen Citrate	68382082614
	68382082616

		68382082630
		68382082677
Tamoxifen Citrate		68382082701
		68382082705
Tamoxifen Citrate		68382082706
		68382082714
		68382082716
		68382082730
		68382082777
		69167048305
		70771118401
		70771118402
		70771118403
		70771118404
		70771118405
		70771118406
		70771118409
		70771118501
		70771118502
		70771118503
		70771118504
		70771118505
		70771118506
		70771118509
		71335023701
		71335023702
		71335023703
		71335023704
		71335023705
		71335023706
		71335066201
		71335066202
		71335066203
		71335066204
		71335066205
		71335066206
Tamoxifen Citrate		75840011001
Soltamox		89141012301

Supplementary Table 4. Codes used to define chemotherapy treatment.

Description	HCPCS code	NDC code
Doxorubicin		
DOXORUBICIN HCL, BRAND NAME, 10 MG	C9415	
Injection, doxorubicin hydrochloride, 10 mg	J9000	
Injection, doxorubicin hydrochloride, all lipid formulations, 10 mg	J9001	
Doxil		00338006301
Doxil		00338006701
		00338008001
		00338008601
DOXOrubicin Liposomal		16714074201
DOXOrubicin Liposomal		16714085601
Doxil		17314960001
Doxil		17314960002
DOXOrubicin Liposomal		43598028335
DOXOrubicin Liposomal		43598054125
DOXOrubicin Liposomal		43598068235
DOXOrubicin Liposomal		43598068325
DOXOrubicin Liposomal		47335004940
DOXOrubicin Liposomal		47335005040
Lipodox		47335008250
Lipodox 50		47335008350
Doxil		59676096001
Doxil		59676096002
DOXOrubicin Liposomal		59676096601
DOXOrubicin Liposomal		59676096602
Doxil		61471029512
DOXOrubicin Liposomal		68001034526
DOXOrubicin Liposomal		68001034536
		68083024901
DOXOrubicin Liposomal		72603010301
DOXOrubicin Liposomal		72603020001
Doxorubicin hcl liposomal		
Injection, doxorubicin hydrochloride, liposomal, doxil, 10 mg	J9002	
Injection, doxorubicin hydrochloride, liposomal, doxil, 10 mg	Q2048	
Injection, doxorubicin hydrochloride, liposomal, imported lipodox, 10 mg	Q2049	
Injection, doxorubicin hydrochloride, liposomal, not otherwise specified, 10 mg	Q2050	
Doxil		00338006301
Doxil		00338006701
		00338008001
		00338008601
DOXOrubicin Liposomal		16714074201
DOXOrubicin Liposomal		16714085601
Doxil		17314960001
Doxil		17314960002
DOXOrubicin Liposomal		43598028335
DOXOrubicin Liposomal		43598054125
DOXOrubicin Liposomal		43598068235
DOXOrubicin Liposomal		43598068325
DOXOrubicin Liposomal		47335004940
DOXOrubicin Liposomal		47335005040
Lipodox		47335008250

Lipodox 50		47335008350
Doxil		59676096001
Doxil		59676096002
DOXOrubicin Liposomal		59676096601
DOXOrubicin Liposomal		59676096602
Doxil		61471029512
DOXOrubicin Liposomal		68001034526
DOXOrubicin Liposomal		68001034536
		68083024901
DOXOrubicin Liposomal		72603010301
DOXOrubicin Liposomal		72603020001
Paclitaxel		
PACLITAXEL, BRAND NAME, 30 MG	C9431	
Injection, paclitaxel, 30 mg	J9265	
Injection, paclitaxel, 1 mg	J9267	
INJECTION, PACLITAXEL PROTEIN-BOUND PARTICLES, PER 1 MG	C9127	
Injection, paclitaxel protein-bound particles, 1 mg	J9264	
Taxol		00015345620
Taxol		00015345699
Taxol		00015347520
Taxol		00015347527
Taxol		00015347529
Taxol		00015347530
Taxol		00015347620
Taxol		00015347627
Taxol		00015347630
Taxol		00015347911
		00044495301
Paclitaxel		00069007601
Paclitaxel		00069007801
Paclitaxel		00069007901
Paclitaxel		00074433501
Paclitaxel		00074433502
Paclitaxel		00074433504
Onxol		00172375377
Onxol		00172375396
Onxol		00172375473
Onxol		00172375494
Onxol		00172375531
Onxol		00172375675
Onxol		00172375695
		00409337107
		00409337108
		00409337109
Paclitaxel		00555198414
Paclitaxel		00555198514
Paclitaxel		00703476401
Paclitaxel		00703476481
Paclitaxel		00703476601
Paclitaxel		00703476681
Paclitaxel		00703476701
Paclitaxel		00703476801
Paclitaxel		00703476881
		10130011105
		10130011120
		10130011150
Paclitaxel		10518010207

Paclitaxel		10518010208
Paclitaxel		10518010209
		16364009805
		16364009811
		16364009831
		16729009805
		16729009811
		16729009831
		17101347603
Paclitaxel		25021021305
Paclitaxel		25021021317
Paclitaxel		25021021350
		44567050401
Paclitaxel		44567050501
Paclitaxel		44567050601
Paclitaxel		45963061353
Paclitaxel		45963061356
Paclitaxel		45963061359
Paclitaxel		45963061383
Paclitaxel		45963061386
Paclitaxel		45963061389
		47351000905
		47351000916
		47351000950
Paclitaxel		47781059307
Paclitaxel		47781059407
Paclitaxel		47781059507
Paclitaxel		51079096101
Paclitaxel		51079096201
Paclitaxel		51079096301
		51305037577
		51305047520
		51305047530
		51305047620
		51305047630
		51305047911
		51305057576
		51305075396
		51305075494
		51305075531
Paclitaxel		51991093698
Paclitaxel		51991093798
Paclitaxel		51991093898
		52818000260
		54087034209
		54087034222
		54087034250
		54087043351
		54087043352
		54087043354
		54087075377
		54087075396
		54087075473
		54087075494
		54087075675
		54087075677
		54087075695
Paclitaxel		55390011405

Paclitaxel		55390011420
Paclitaxel		55390011450
Paclitaxel		55390030405
Paclitaxel		55390030420
Paclitaxel		55390030450
Paclitaxel		55390031405
Paclitaxel		55390031420
Paclitaxel		55390031450
Paclitaxel		55390051405
Paclitaxel		55390051420
Paclitaxel		55390051450
		57527076401
		57527076601
		57527076701
		57527076801
		58364198404
		58364198414
Paclitaxel		61703034209
Paclitaxel		61703034222
Paclitaxel		61703034250
		63323013450
Paclitaxel		63323076305
Paclitaxel		63323076306
Paclitaxel		63323076316
Paclitaxel		63323076317
Paclitaxel		63323076350
Paclitaxel		63323076352
Paclitaxel		66758004301
Paclitaxel		66758004302
Paclitaxel		66758004303
Paclitaxel		67457043451
Paclitaxel		67457044917
Paclitaxel		67457047152
		68083017801
		68083017901
		68083018001
Abraxane		68817013450
		68842004301
		68842004302
		68842004303
Paclitaxel		70860020005
Paclitaxel		70860020017
Paclitaxel		70860020050
		70860021568
Cyclophosphamide		
CYCLOPHOSPHAMIDE, BRAND NAME, 100 MG	C9420	
CYCLOPHOSPHAMIDE, LYOPHILIZED, BRAND NAME, 100 MG	C9421	
Cyclophosphamide; oral, 25 mg	J8530	
Cyclophosphamide, 100 mg	J9070	
Cyclophosphamide, 200 mg	J9080	
Cyclophosphamide, 500 mg	J9090	
Cyclophosphamide, 1.0 gram	J9091	
Cyclophosphamide, 2.0 gram	J9092	
Cyclophosphamide, lyophilized, 100 mg	J9093	
Cyclophosphamide, lyophilized, 200 mg	J9094	
Cyclophosphamide, lyophilized, 500 mg	J9095	

Cyclophosphamide, lyophilized, 1.0 gram	J9096	
Cyclophosphamide, lyophilized, 2.0 gram	J9097	
Neosar		00013560693
Neosar		00013561693
Neosar		00013562693
Neosar		00013563670
		00013563673
Neosar		00013564670
Cytosan		00015050041
Cytosan		00015050141
Cytosan		00015050241
Cytosan		00015050301
Cytosan		00015050302
Cytosan		00015050303
		00015050348
Cytosan		00015050401
Cytosan		00015050541
Cytosan		00015050641
Cytosan Lyophilized		00015053941
Cytosan Lyophilized		00015054641
Cytosan Lyophilized		00015054712
Cytosan Lyophilized		00015054741
Cytosan Lyophilized		00015054812
Cytosan Lyophilized		00015054841
Cytosan Lyophilized		00015054912
Cytosan Lyophilized		00015054941
		00054038213
Cyclophosphamide		00054038225
		00054038313
Cyclophosphamide		00054038325
Cyclophosphamide		00054412925
Cyclophosphamide		00054413025
Cyclophosphamide		00054808925
Cyclophosphamide		00054813025
		00087050001
		00087050041
		00087050101
		00087050141
		00087050201
		00087050241
		00087050301
		00087050302
		00087050303
		00087050401
		00087050541
		00087050641
		00087054741
		00179165270
		00179165271
		00179165272
		00641226241
		00641226341
		00641226441
		00641226541
Cyclophosphamide		00781323394
Cyclophosphamide		00781324494
Cyclophosphamide		00781325594
Cyclophosphamide		10019093501

	10019093525
Cyclophosphamide	10019093601
	10019093650
Cyclophosphamide	10019093701
	10019093710
Cyclophosphamide	10019093801
	10019093825
Cyclophosphamide	10019093901
	10019093950
Cyclophosphamide	10019094201
	10019094210
Cyclophosphamide	10019094301
Cyclophosphamide	10019094325
Cyclophosphamide	10019094401
	10019094450
Cyclophosphamide	10019094501
	10019094510
Cyclophosphamide	10019095501
	10019095550
Cyclophosphamide	10019095601
	10019095616
Cyclophosphamide	10019095701
	10019095711
	10019098801
	10019098901
	10019099001
Cyclophosphamide	16714085701
Cyclophosphamide	16714085801
Cyclophosphamide	16714085901
	17101050301
	17101050302
	17101050401
	19458035001
	38779050603
	38779050604
	38779050605
Cyclophosphamide	43975030710
Cyclophosphamide	43975030810
	51927442100
	51927487100
	52953005201
	53978008521
	54569037500
	54569037501
	54569037502
	54569140000
	54569571200
	54569571300
Cyclophosphamide	54868500500
Cyclophosphamide	54868500501
Cyclophosphamide	54868521800
Cyclophosphamide	54868521801
Cyclophosphamide	54868521802
Cyclophosphamide	54879002101
Cyclophosphamide	54879002201
	60491017001
	60491017028
	68001037024

Cyclophosphamide		68001037027
Cyclophosphamide		68001037132
		68001037133
Cyclophosphamide		68001037232
		68001037233
Cyclophosphamide		69097051607
Cyclophosphamide		69097051707
		69189038201
		69189038301
Cyclophosphamide		70121123801
Cyclophosphamide		70121123901
Cyclophosphamide		70121124001
Carboplatin		
Injection, carboplatin, 50 mg	J9045	
		00015231330
Paraplatin		00015321030
		00015321076
Paraplatin		00015321130
Paraplatin		00015321176
Paraplatin		00015321230
		00015321276
Paraplatin		00015321329
Paraplatin		00015321330
Paraplatin		00015321429
Paraplatin		00015321430
Paraplatin		00015321529
Paraplatin		00015321530
Paraplatin		00015321630
Paraplatin		00015323011
Paraplatin		00015323111
Paraplatin		00015323211
Paraplatin		00015323311
Carboplatin		00409112910
Carboplatin		00409112911
Carboplatin		00409112912
Carboplatin		00591221911
Carboplatin		00591222011
Carboplatin		00591333626
Carboplatin		00591333712
Carboplatin		00591333889
Carboplatin		00591345460
Carboplatin		00591368711
		00591368811
		00591368911
Carboplatin		00703324411
Carboplatin		00703324611
Carboplatin		00703324811
Carboplatin		00703324911
Carboplatin		00703326401
Carboplatin		00703326601
Carboplatin		00703326801
Carboplatin		00703326871
Carboplatin		00703327401
Carboplatin		00703327601
Carboplatin		00703327801
Carboplatin		00703423901
Carboplatin		00703423981
Carboplatin		00703424401

Carboplatin		00703424481
Carboplatin		00703424601
Carboplatin		00703424681
Carboplatin		00703424801
Carboplatin		00703424881
Carboplatin		00703424891
Carboplatin		10019091201
Carboplatin		10019091202
Carboplatin		10019091203
		10019091215
		10019091216
		10019091279
Carboplatin		10019091501
		10019091579
Carboplatin		10019091601
		10019091615
Carboplatin		10019091701
		10019091716
		10130014901
		10130015101
		10130015201
		10130015301
		10130015401
		10130015501
		10130015601
Carboplatin		10139006005
Carboplatin		10139006015
Carboplatin		10139006045
Carboplatin		10518010110
Carboplatin		10518010111
Carboplatin		10518010112
Carboplatin		15210006112
Carboplatin		15210006312
Carboplatin		15210006612
Carboplatin		15210006712
		16364008331
		16364008333
		16364008334
Carboplatin		16729029512
Carboplatin		16729029531
Carboplatin		16729029533
Carboplatin		16729029534
		17101321303
		17101321403
		17101321503
		17101326401
		17101326601
		17101326801
Carboplatin		25021020205
Carboplatin		25021020215
Carboplatin		25021020245
Carboplatin		25021020251
		41616015040
		41616015140
		41616028440
		41616030040
		42049001201
		42049001301

	42049001313
	42049001414
Carboplatin	47335015040
Carboplatin	47335015140
Carboplatin	47335028440
Carboplatin	47335030040
Carboplatin	47781060320
Carboplatin	47781060427
Carboplatin	47781060594
Carboplatin	47781060694
Carboplatin	50111096576
Carboplatin	50111096676
Carboplatin	50111096776
Carboplatin	50742044505
Carboplatin	50742044615
Carboplatin	50742044745
Carboplatin	50742044860
	51305021030
	51305021076
	51305021130
	51305021176
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	53104011207
	53104011208
	53104012605
	53104012706
	53104012807
	53104012908
	54087033918
	54087033922
	54087033950
	54087033956
	54087033961
	54087033962
	54087033963
	54087036018
	54087036022
	54087036050
Carboplatin	55390015001
Carboplatin	55390015101
Carboplatin	55390015201
Carboplatin	55390015301
Carboplatin	55390015401
Carboplatin	55390015501

Carboplatin		55390015601
Carboplatin		55390022001
Carboplatin		55390022101
Carboplatin		55390022201
		57277010505
		57277010615
		57277010745
		57527091201
		57527091202
		57527091203
		57527091215
		57527091216
		57527091279
		57527091501
		57527091579
		57527091601
		57527091615
		57527091701
		57527091716
		58364011101
		58364012101
		58364013101
Carboplatin		61703033918
Carboplatin		61703033922
Carboplatin		61703033950
Carboplatin		61703033956
Carboplatin		61703033961
Carboplatin		61703033962
Carboplatin		61703033963
Carboplatin		61703036018
Carboplatin		61703036022
Carboplatin		61703036050
Carboplatin		63323016610
Carboplatin		63323016720
Carboplatin		63323016721
Carboplatin		63323016800
Carboplatin		63323016905
Carboplatin		63323016915
Carboplatin		63323016945
Carboplatin		63323017205
Carboplatin		63323017215
Carboplatin		63323017245
Carboplatin		63323017260
Carboplatin		66758004701
Carboplatin		66758004702
Carboplatin		66758004703
Carboplatin		66758004704
		66860010001
		66860010101
		66860010201
Carboplatin		67457049154
Carboplatin		67457049215
Carboplatin		67457049346
Carboplatin		67457049461
Carboplatin		67457060820
		67817006112
		67817006312
		67817006612

		67817006712
		68083019001
		68083019101
		68083019201
		68083019301
		68152001101
		68152001201
		68152001301
		68842004701
		68842004702
		68842004703
Carboplatin		71288010005
Carboplatin		71288010015
Carboplatin		71288010045
Carboplatin		71288010051
Docetaxel		
INJECTION, DOCETAXEL, 20 MG	J9170	
Injection, docetaxel, 1 mg	J9171	
Docetaxel		00069914111
Docetaxel		00069914122
Docetaxel		00069914211
Docetaxel		00069914222
Docetaxel		00069914411
		00069914422
Taxotere		00075800120
Taxotere		00075800180
		00075800280
Taxotere		00075800301
Taxotere		00075800404
Docetaxel		00409020102
Docetaxel		00409020110
Docetaxel		00409020120
Docetaxel		00409020125
Docetaxel		00409020126
Docetaxel		00409020127
Docetaxel		00409036601
Docetaxel		00409036701
Docetaxel		00409036801
		00409036901
Docetaxel		00703572001
Docetaxel		00703573001
Docetaxel		00955102001
Docetaxel		00955102104
Docetaxel		00955102208
		12516800102
		12516800108
Docetaxel		16714046501
Docetaxel		16714050001
Docetaxel		16729012049
		16729012050
Docetaxel		16729022850
Docetaxel		16729023163
Docetaxel		16729023164
Docetaxel		16729023165
Docetaxel		16729026763
Docetaxel		16729026764
Docetaxel		16729026765
Docetaxel		25021022201

Docetaxel		25021022204
Docetaxel		25021022207
Docetaxel		25021024501
Docetaxel		25021024504
Docetaxel		39822212001
Docetaxel		39822218001
Docetaxel		39822220001
Docetaxel		42367012121
Docetaxel		42367012125
Docetaxel		42367012129
Docetaxel		43066000101
Docetaxel		43066000601
Docetaxel		43066001001
Docetaxel		43598025811
Docetaxel		43598025940
Docetaxel		43598038957
Docetaxel		43598061040
Docetaxel		43598061111
Docetaxel		45963073452
Docetaxel		45963073454
Docetaxel		45963073474
Docetaxel		45963076552
		45963078174
Docetaxel		45963079056
Docetaxel		47335028541
Docetaxel		47335028641
		50742042802
		50742043108
Docetaxel		50742046316
		57884302100
		57884304101
		57884304201
		57884304301
		60505603500
		60505603506
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		60505603706
Docetaxel		63739093211
Docetaxel		63739097117
Docetaxel		66758005001
Docetaxel		66758005002
Docetaxel		66758005003
Docetaxel		66758095002
Docetaxel		66758095003
Docetaxel		66758095004
Docetaxel		67457053102
Docetaxel		67457053208
Docetaxel		67457053316
Docetaxel		67457078108
		70121122101
		70121122201
		70121122301
Paclitaxel protein-bound		
INJECTION, PACLITAXEL PROTEIN-BOUND PARTICLES, PER 1 MG	C9127	
		63323013450
Abbraxane		68817013450
Cisplatin		

CISPLATIN, POWDER OR SOLUTION, BRAND NAME, PER 10 MG	C9418	
Injection, cisplatin, powder or solution, 10 mg	J9060	
Cisplatin, 50 mg	J9062	
Platinol (Restricted Access)		00003307297
Platinol		00015307020
		00015307097
Platinol		00015307220
		00015307297
Platinol-AQ		00015322022
Platinol-AQ		00015322026
		00015322097
Platinol-AQ		00015322122
Platinol-AQ		00015322126
		00015322197
Cisplatin		00069008101
Cisplatin		00069008407
Cisplatin		00143950401
Cisplatin		00143950501
Cisplatin		00703574711
Cisplatin		00703574811
Cisplatin		10019091001
Cisplatin		10019091002
		10019091011
		10019091057
		10130011250
		10130011299
Cisplatin		16729028811
Cisplatin		16729028838
		17101307202
		17101307207
Cisplatin		44567050901
Cisplatin		44567051001
Cisplatin		44567051101
Cisplatin		44567053001
Cisplatin		47781060925
Cisplatin		47781061023
Cisplatin		49452207801
Cisplatin		49452207802
Cisplatin		49452207803
		51305007020
		51305007220
		51305007297
		51305022022
		51305022026
		51305022122
		51305022126
		51552107609
Cisplatin		55390009901
Cisplatin		55390011250
Cisplatin		55390011299
Cisplatin		55390018701
Cisplatin		55390041450
Cisplatin		55390041499
		57527091011
		57527091057
		61126000301
		61126000310

		61126000401
		61126000402
		62991284901
		62991284902
Cisplatin		63323010351
		63323010363
Cisplatin		63323010364
Cisplatin		63323010365
		63323010391
		63323010395
		65219010351
		65219010364
		65219010365
Cisplatin		67457042410
Cisplatin		67457042551
		68001028324
Cisplatin		68001028327
Cisplatin		68001028332
		68001028333
		68083016201
		68083016301
Cisplatin		70860020650
Cisplatin		70860020651
Epirubicin		
	C1167	
Injection, epirubicin hcl, 2 mg	J9178	
	J9180	
Ellence		00009509101
Ellence		00009509301
Epirubicin Hydrochloride		00115167572
Epirubicin Hydrochloride		00115167573
Epirubicin Hydrochloride		00143920201
Epirubicin Hydrochloride		00143920301
Epirubicin Hydrochloride		00591346983
Epirubicin Hydrochloride		00591347057
Epirubicin Hydrochloride		00703306711
Epirubicin Hydrochloride		00703306911
Epirubicin Hydrochloride		10139006101
Epirubicin Hydrochloride		10139006125
Epirubicin Hydrochloride		10518010410
Epirubicin Hydrochloride		10518010411
		15210040428
		15210040429
Epirubicin Hydrochloride		25021020325
Epirubicin Hydrochloride		25021020351
Epirubicin Hydrochloride		45963060860
Epirubicin Hydrochloride		45963060868
Epirubicin Hydrochloride		53150024701
Epirubicin Hydrochloride		53150025001
Epirubicin Hydrochloride		55390020701
Epirubicin Hydrochloride		55390020801
Epirubicin Hydrochloride		59762509101
Epirubicin Hydrochloride		59762509301
Epirubicin Hydrochloride		59923070100
Epirubicin Hydrochloride		59923070125
Epirubicin Hydrochloride		61703034735
Epirubicin Hydrochloride		61703034859
Epirubicin Hydrochloride		61703035901

Epirubicin Hydrochloride		61703035902
Epirubicin Hydrochloride		61703035959
Epirubicin Hydrochloride		61703035991
Epirubicin Hydrochloride		61703035992
Epirubicin Hydrochloride		61703035993
Epirubicin Hydrochloride		63323015100
Epirubicin Hydrochloride		63323015105
Epirubicin Hydrochloride		63323015125
Epirubicin Hydrochloride		63323015175
Epirubicin Hydrochloride		66758004201
Epirubicin Hydrochloride		66758004202
		67457035725
		67457035810
Ixabepilone		
INJECTION, IXABEPILONE, 1 MG	C9240	
Injection, ixabepilone, 1 mg	J9207	
Ixempra		00015191012
Ixempra		00015191113
Ixempra		70020191001
		70020191002
Ixempra		70020191101
		70020191102
Capecitabine		
Capecitabine, oral, 150 mg	J8520	
Capecitabine, oral, 500 mg	J8521	
Xeloda		00004110020
		00004110022
Xeloda		00004110051
		00004110075
Xeloda		00004110116
Xeloda		00004110150
		00004110151
Xeloda		00004110175
Capecitabine		00054027121
Capecitabine		00054027223
Capecitabine		00093747306
Capecitabine		00093747489
		00179014970
		00179019570
		00179022970
		00179156770
		00179156771
		00179156772
		00378251105
Capecitabine		00378251191
		00378251205
Capecitabine		00378251278
Capecitabine		16714046701
Capecitabine		16714046801
Capecitabine		16729007212
Capecitabine		16729007329
Capecitabine		42291016660
Capecitabine		42291016712
Capecitabine		42291019060
Capecitabine		42291019112
		50268015411
Capecitabine		50268015413
		51079051001

Capecitabine		51079051005
Capecitabine		51407009560
Capecitabine		51407009612
		53808041101
		54569571700
Xeloda		54868414300
		54868414301
		54868414302
		54868414303
		54868526000
Xeloda		54868526001
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		54868526007
		54868526008
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Capecitabine		59651020460
Capecitabine		59651020508
		59651020510
		60687014911
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Capecitabine		60687014994
Capecitabine		62756023920
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Capecitabine		64980027606
Capecitabine		64980027712
Capecitabine		65162084306
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Capecitabine		65162084416
		65162084450
		67877045812
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		67877045860
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		67877045930
		67877045960
		68258903601
Capecitabine		69097094808
Capecitabine		69097094903
Capecitabine		72205000660
Capecitabine		72205000792
Capecitabine		72485020460
Capecitabine		72485020512
Capecitabine		72606055401
Capecitabine		72606055501
Gemcitabine		
Injection, gemcitabine hydrochloride (infugem), 200 mg	J9199	
Injection, gemcitabine hydrochloride, not otherwise specified, 200 mg	J9201	
Gemzar		00002750101
Gemzar		00002750201
Gemcitabine		00069385710

Gemcitabine		00069385810
Gemcitabine		00069385910
Gemcitabine		00409018101
Gemcitabine		00409018125
Gemcitabine		00409018201
Gemcitabine		00409018225
Gemcitabine		00409018301
Gemcitabine		00409018325
Gemcitabine		00409018501
Gemcitabine		00409018601
Gemcitabine		00409018701
Gemcitabine		00591356279
Gemcitabine		00591356355
Gemcitabine		00703577501
Gemcitabine		00703577801
Gemcitabine		00781328275
Gemcitabine		00781328379
Gemcitabine		16714090901
Gemcitabine		16714093001
Gemcitabine		16729009203
Gemcitabine		16729011711
Gemcitabine		16729011838
Gemcitabine		16729039130
Gemcitabine		16729041903
		16729041930
Gemcitabine		16729042333
Gemcitabine		16729042605
Gemcitabine		23155021331
		23155021431
Gemcitabine		23155048331
		23155048431
		23155052831
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Gemcitabine		25021020810
Gemcitabine		25021020950
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Gemcitabine		25021023926
Gemcitabine		25021023952
		42236000101
		42236000201
Gemcitabine		45963061257
Gemcitabine		45963061959
Gemcitabine		45963062060
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Gemcitabine		55111068725
Gemcitabine		55390039110
Gemcitabine		55390039150
Gemcitabine		60505611306
Gemcitabine		60505611400
Gemcitabine		60505611502
Infugem		62756000860

Infugem		62756007360
Infugem		62756010260
Infugem		62756021960
Infugem		62756032160
Infugem		62756043860
Infugem		62756053360
Infugem		62756061460
Infugem		62756074660
Infugem		62756097460
Gemcitabine		63323010210
Gemcitabine		63323010213
Gemcitabine		63323010294
Gemcitabine		63323012550
Gemcitabine		63323012553
Gemcitabine		63323012594
Gemcitabine		63323012600
		63323012603
Gemcitabine		67457046201
Gemcitabine		67457046302
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Gemcitabine		67457061730
Gemcitabine		67457061810
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Gemcitabine		68001028227
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		70860020410
Gemcitabine		70860020550
Gemcitabine		71288011310
Gemcitabine		71288011450
Fluorouracil		
Injection, fluorouracil, 500 mg	J9190	
		00004190406
Fluorouracil		00004197701
		00013102691
Adrucil		00013103691
		00013103695
Adrucil		00013104694
Adrucil		00013105694
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Fluorouracil		00187395364
Fluorouracil		00247089410
		00338202703
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Fluorouracil Topical		00378479106
		00381059980
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Fluorouracil		00702171030
		00703301511
Adrucil		00703301513
		00703301811
Adrucil		00703301812
		00703301911
Adrucil		00703301912
		10019095001
Fluorouracil		10019095002
Fluorouracil		10139006301
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Fluorouracil		10139006311
Fluorouracil		10139006312
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Fluorouracil		10139006350
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		16364008433
		16364008435
		16729027603
		16729027605
Fluorouracil		16729027611
Fluorouracil		16729027638
Fluorouracil		16729027667
Fluorouracil		16729027668
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Fluorouracil		39769001290
Fluorouracil Topical		43547025801

Fluorouracil Topical	43547025901
Fluorouracil	49452317501
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Fluorouracil	49452317503
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	49452317505
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	51552073305
Fluorouracil Topical	51672406201
Fluorouracil Topical	51672406301
Fluorouracil Topical	51672411806
	51927108500
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Fluorouracil	63323011710
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	64886020001
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Fluorouracil Topical	66530025830

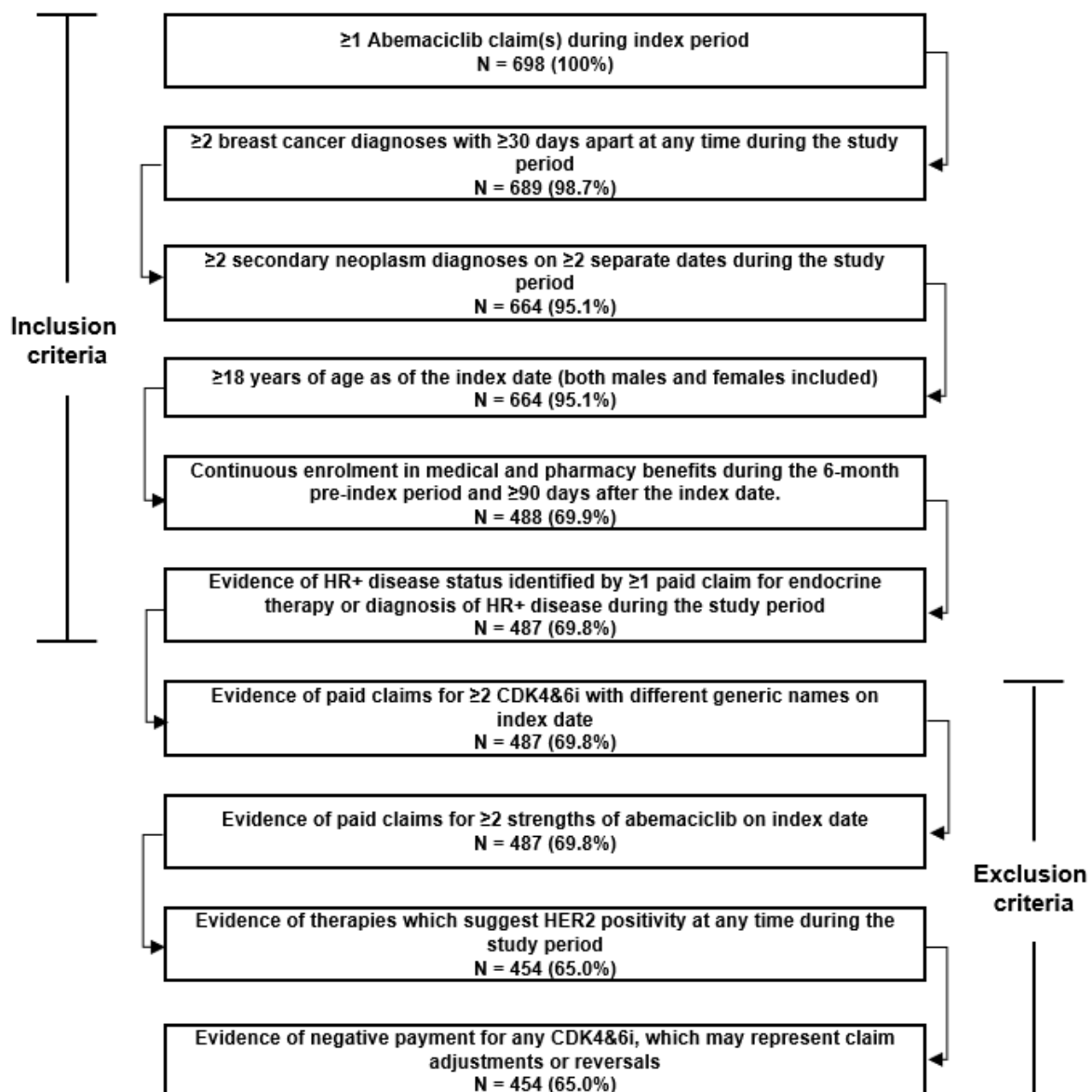
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		68083029201
		68083029301
Fluorouracil Topical		68682000431
Fluorouracil Topical		68682008531
		68842004401
Eribulin		
Injection, eribulin mesylate, 1 mg	C9280	
Injection, eribulin mesylate, 0.1 mg	J9179	
Vinorelbine		
VINOELBINE TARTRATE, BRAND NAME, PER 10 MG	C9440	
Injection, vinorelbine tartrate, 10 mg	J9390	
Vinorelbine Tartrate		00069009901
Vinorelbine Tartrate		00069010303
Vinorelbine Tartrate		00069020510
Vinorelbine Tartrate		00069020550
Navelbine		00081065601
Navelbine		00081065644
Navelbine		00173065601
Navelbine		00173065644
Vinorelbine Tartrate		00703418201
Vinorelbine Tartrate		00703418281
Vinorelbine Tartrate		00703418291
Vinorelbine Tartrate		00703418301
Vinorelbine Tartrate		00703418381
Vinorelbine Tartrate		00703418391
Vinorelbine Tartrate		10019097001
Vinorelbine Tartrate		10019097002
Vinorelbine Tartrate		25021020401
Vinorelbine Tartrate		25021020402
Vinorelbine Tartrate		25021020405
Vinorelbine Tartrate		45963060755
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Vinorelbine Tartrate		55390006901
Vinorelbine Tartrate		55390007001
Vinorelbine Tartrate		55390026701
Vinorelbine Tartrate		55390026801
Vinorelbine Tartrate		59911595801
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Navelbine		60831308601
Navelbine		60831308602
Vinorelbine Tartrate		61703034106

Vinorelbine Tartrate		61703034109
Vinorelbine Tartrate		63323014801
Vinorelbine Tartrate		63323014805
Vinorelbine Tartrate		64370021001
Vinorelbine Tartrate		64370025001
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Navelbine		64370053202
		64370308601
Vinorelbine Tartrate		64370308602
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Vinorelbine Tartrate		67457043111
Vinorelbine Tartrate		67457048101
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Eribulin		
Halaven		62856038901

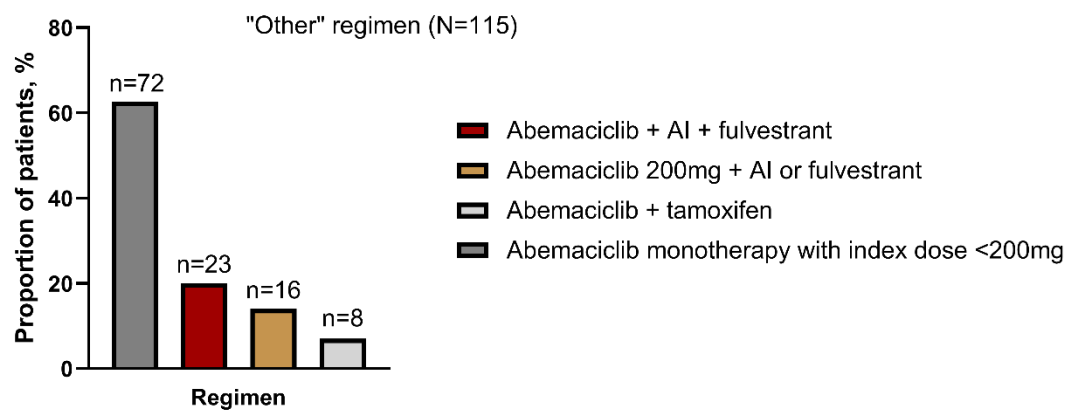
Supplementary Table 5. Summary of wastage costs for patients receiving abemaciclib

Wastage costs (N=88)	Median (IQR)
Total amount paid	\$5,059.61 (\$2,086.53 - \$8,853.97)
Wholesale acquisition cost	\$2,541.73 (\$1,105.10 - \$4,696.68)
Time (months) to CDK 4 & 6i discontinuation using last treated day	6.46 (4.11 - 11.52)
Per month by wholesale acquisition cost	\$355.63 (\$155.17- \$878.78)
Per month by amount paid	\$685.56 (\$310.90- \$1,676.85)
PPPM	Mean^a
Total amount paid PPPM	\$808.12
Wholesale acquisition cost PPPM	\$452.15

^aWastage per patient per month (PPPM) was calculated as the sum of wastage costs divided by the sum of the persistent treatment period (PTP) for CDK4 & 6i discontinuation for patients who had different overlapping doses/NDCs. Note: the Consumer Price Index (CPI) Medical Care Component was used to adjust costs for inflation over time, using 2019 US dollars (\$). CDK4 & 6i, Cyclin Dependent Kinase 4 & 6 inhibitor; PPPM, per patient per month



Supplementary Fig. 1 Flow chart showing the eligibility criteria applied to abemaciclib recipients. CDK4 & 6i, cycling dependent kinase 4 & 6 inhibitors.



Supplementary Fig. 2 Drug combinations comprising the “other” treatment regimen. AI, aromatase inhibitor.