

The Breast Health Global Initiative (BHGI) Resource-Stratified Matrix Guidelines

Early Detection and Access to Care

Level of resources	Detection Method(s)	Evaluation Goal
Basic	Breast health awareness (education ± self-examination) Clinical breast examination (clinician education)	Baseline assessment and repeated survey
Limited	Targeted outreach/education encouraging CBE for at-risk groups Diagnostic ultrasound ± diagnostic mammography	Downstaging of symptomatic disease
Enhanced	Diagnostic mammography Opportunistic mammographic screening	Opportunistic screening of asymptomatic patients
Maximal	Population-based mammographic screening Other imaging technologies as appropriate ; high-risk groups, unique imaging challenges	Population-based screening of asymptomatic patients

Diagnosis and Pathology

Level of resources	Clinical	Pathology	Imaging and laboratory tests
Basic	History Physical examination Clinical breast examination Surgical biopsy Fine-needle aspiration biopsy	Interpretation of biopsies Cytology and/or pathology report describing tumor size, lymph node status, histologic type, tumor grade	
Limited	Core needle biopsy Image guided sampling (ultrasounographic ± mammographic)	Determination and reporting of ER and PR status Determination and reporting of margin status	Diagnostic breast ultrasound ± diagnostic mammography Plain chest radiography Liver ultrasound Blood chemistry profile / complete blood count (CBC)
Enhanced	Preoperative needle localization under mammographic or ultrasound guidance	On-site cytopathologist	Diagnostic mammography Bone scan
Maximal	Stereotactic biopsy Sentinel node biopsy	HER-2/neu status IHC staining of sentinel nodes for cytokeratin to detect micrometastases	CT scanning, PET scan, MIBI scan, breast MRI

ABBREVIATIONS: ER, estrogen receptors; PR, progesterone receptors; CBC, complete blood count; IHC, immunohistochemistry

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Treatment and Allocation of Resources:

Stage I Breast Cancer

Level of resources	Local-regional treatment			Systemic treatment (adjuvant)	
	Surgery	Radiation therapy	Chemotherapy	Chemotherapy	Endocrine therapy
Basic	Modified radical mastectomy				Ovarian ablation Tamoxifen
Limited	Breast-conserving therapy*	Breast-conserving whole-breast irradiation as part of breast-conserving therapy Postmastectomy irradiation of chest wall and regional nodes for high-risk cases	Classical CMF** AC, EC, or FAC**		
Enhanced			Taxanes		Aromatase inhibitors LH-RH agonists
Maximal	Sentinel node biopsy Reconstructive surgery		Growth factors Dose-dense chemotherapy		

ABBREVIATIONS: CMF, cyclophosphamide, methotrexate, and 5-fluorouracil; AC, doxorubicin and cyclophosphamide; EC, epirubicin and cyclophosphamide; FAC, 5-fluorouracil, doxorubicin, and cyclophosphamide; and LH-RH, luteinizing hormone-releasing hormone.

* Breast conserving therapy requires mammography and reporting of margin status

** Requires blood chemistry profile and complete blood count (CBC) testing

Treatment and Allocation of Resources:

Stage II Breast Cancer

Level of resources	Local-regional treatment			Systemic treatment (adjuvant)	
	Surgery	Radiation therapy	Chemotherapy	Chemotherapy	Endocrine therapy
Basic	Modified radical mastectomy	*	Classical CMF*** AC, EC, or FAC***		Ovarian ablation Tamoxifen
Limited	Breast-conserving therapy**	Breast-conserving whole-breast irradiation as part of breast-conserving therapy Postmastectomy irradiation of chest wall and regional nodes for high-risk cases			
Enhanced			Taxanes		Aromatase inhibitors LH-RH agonists
Maximal	Sentinel node biopsy Reconstructive surgery		Growth factors Dose-dense chemotherapy		

ABBREVIATIONS: CMF, cyclophosphamide, methotrexate, and 5-fluorouracil; AC, doxorubicin and cyclophosphamide; EC, epirubicin and cyclophosphamide; FAC, 5-fluorouracil, doxorubicin, and cyclophosphamide; and LH-RH, luteinizing hormone-releasing hormone.

* Chest wall and regional lymph node irradiation substantially decreases the risk of postmastectomy local recurrence. If available, it should be used as a basic-level resource.

** Breast conserving therapy requires mammography and reporting of margin status

*** Requires blood chemistry profile and complete blood count (CBC) testing

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Treatment and Allocation of Resources:

Locally Advanced Breast Cancer

Level of resources	Local-regional treatment			Systemic treatment	
	Surgery	Radiation therapy	Chemotherapy	Chemotherapy	Endocrine therapy
Basic	Modified radical mastectomy		Neoadjuvant AC, FAC, or classical CMF**		Ovarian ablation Tamoxifen
Limited		Posimastectomy irradiation of the chest wall and regional nodes			
Enhanced	Breast-conserving therapy*	Breast-conserving whole-breast irradiation	Taxanes		Aromatase inhibitors LH-RH agonists
Maximal	Reconstructive surgery		Growth factors Dose-dense chemotherapy		

ABBREVIATIONS: CMF, cyclophosphamide, methotrexate, and 5-fluorouracil; AC, doxorubicin and cyclophosphamide; EC, epirubicin and cyclophosphamide; FAC, 5-fluorouracil, doxorubicin, and cyclophosphamide; and LH-RH, luteinizing hormone-releasing hormone.
 * Breast conserving therapy requires mammography and reporting of margin status
 ** Requires blood chemistry profile and complete blood count (CBC) testing

Treatment and Allocation of Resources:

Metastatic (Stage IV) and Recurrent Breast Cancer

Level of resources	Local-regional treatment			Systemic treatment		
	Surgery	Radiation therapy	Chemotherapy	Chemotherapy	Endocrine therapy	Supportive and palliative therapy
Basic	Total mastectomy for ipsilateral breast tumor recurrence*				Ovarian ablation Tamoxifen	Nonopioid and opioid analgesics
Limited		Palliative radiation therapy	Classical CMF** Anthracycline monotherapy or in combination**			
Enhanced			Taxanes Capecitabine Trastuzumab		Aromatase inhibitors	Bisphosphonates
Maximal			Growth factors Vinorelbine Gemcitabine Carboplatin		Fulvestrant	

ABBREVIATIONS: CMF, cyclophosphamide, methotrexate, and 5-fluorouracil.
 * Required resources are the same as those for modified radical mastectomy.
 ** Requires blood chemistry profile and complete blood count (CBC) testing

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Health Care Systems and Public Policy

Level of resources		Services	Facilities	Record Keeping
Basic	Primary care services Surgical services Pathology services Oncology services Nursing services Palliative services	Health facility Operating facility Pathology laboratory Pharmacy Outpatient care facility	Individual medical records and service-based patient registration	
Limited	Imaging services Radiation oncology services Peer support services Early detection programs	Imaging facility Radiation therapy Clinical information systems Health system network	Facility-based medical records and centralized patient registration Local cancer registry	
Enhanced	Opportunistic screening programs Cancer follow-up Rehabilitation services Group support	Centralized referral cancer center(s) Population-based cancer registry	Facility based follow-up systems Regional cancer registry	
Maximal	Population-based screening program Individual psychosocial care	Satellite (non-centralized or regional) cancer centers	National cancer registry	

References

1. Smith RA, Caleffi M, Albert US, Chen *et al.* Breast cancer in limited resource countries: early detection and access to care. *Breast J* 2006;12(suppl. 1):S16–26.
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3. Eniu AE, Carlson RW, Aziz Z, *et al.* Breast cancer in limited resource countries: treatment and allocation of resources. *Breast J* 2006;12(suppl. 1):S38–53.
4. Anderson BO, Yip CH, Ramsey S, *et al.* Breast cancer in limited-resource countries: health care systems and public policy. *Breast J* 2006;12(suppl. 1):S54–69.