

Oral tumour therapy in Emerging Countries: Special problems encountered

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Disclosure slide

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Outline

- Approaches in limited resource countries: the BHGI concept
- Treating (breast) cancer with limited resources: the reality check
- Discrepancies in access to oral cancer therapy across Europe (WHO essential medicines list)

BHGI MISSION STATEMENT

The *Breast Health Global Initiative (BHGI)* strives to develop, implement and study evidence-based, economically feasible, and culturally appropriate guidelines for international breast health and cancer control for low and middle income countries to improve breast health outcomes.

Heterogeneity

- Important differences exist between countries
 - social
 - economic
 - health system development
- Populational social and economic inequalities
 - The majority of the population is poor
 - The wealthy minority enjoys high standards of health and living

BHGI GUIDELINE TABLES

HEALTH CARE SYSTEMS

Level of resources	Patient and Family Education	Human Resource Capacity Building	Patient Navigation	Cancer Care Facility	Breast Care Center
Basic	General education regarding primary prevention of cancer, early detection and self examination Development of culturally adapted patient and family education services	Primary care provider education re breast cancer detection, diagnosis and treatment Nursing education re cancer patient management and emotional support Pathology technician education re tissue handling and specimen preparation Trained community worker	Field nurse, midwife or healthcare provider triages patients to central facility for diagnosis and treatment	Health facility Operating facility Outpatient care facility Pharmacy Home hospice support External consultation Pathology laboratory	Breast healthcare access integrated into existing healthcare infrastructure
Limited	Group or one-on-one counseling involving family and peer support Education regarding nutrition and complementary therapies	Nursing education re breast cancer diagnosis, treatment and pt management Imaging technician education re imaging technique and quality control Volunteer recruitment corp to support care	On site patient navigator (staff member or nurse) facilitates patient triage through diagnosis and treatment	Clinical information systems Health system network Imaging facility Internal pathology laboratory Radiation therapy	"Breast Center" with clinician, staff and breast imaging access Breast prostheses for mastectomy pts
Enhanced	Education regarding survivorship Lymphedema education Education regarding home care	Organization of national volunteer network Specialized nursing oncology training Home care nursing Psychotherapist & lymphedema therapist On-site cytopathologist	Patient navigation team from each discipline supports patient "handoff" during key transitions from specialist to specialist to ensure completion of therapy	Centralized referral cancer center(s) Radiation therapy: low energy linear accelerator, electrons, brachytherapy, treatment planning system	Multidisciplinary breast programs Oncology nurse specialists Physician assistants
Maximal		Organization of national medical breast health groups		Satellite (non-centralized or regional) cancer centers	

EARLY DETECTION

Level of resources	Public Education and Awareness	Detection Methods
Basic	Development of culturally sensitive, linguistically appropriate local education programs for target populations to teach value of early detection, breast cancer risk factors and breast health awareness (education + self-examination)	Clinical history and CBE
Limited	Culturally and linguistically appropriate targeted outreach/education encouraging CBE for age groups at higher risk administered at district/provincial level using healthcare providers in the field	Diagnostic breast US +/- diagnostic mammography in women with positive CBE Mammographic screening of target group*
Enhanced	Regional awareness programs regarding breast health linked to general health and women's health programs	Mammographic screening every 2 years in women ages 50-59 [†] Consider mammographic screening every 12-18 months in women ages 40-49 [†]
Maximal	National awareness campaigns regarding breast health using media	Consider annual mammographic screening in women ages 40 and older Other imaging technologies as appropriate for high-risk groups†

DIAGNOSIS

Level of resources	Clinical	Imaging and Lab Tests	Pathology
Basic	History Physical examination Clinical breast examination (CBE) Tissue sampling for cancer diagnosis (cytologic or histologic) prior to initiation of treatment		Pathology diagnosis obtained for every breast lesion by any available sampling procedure Pathology report containing appropriate diagnostic and prognostic/predictive information to include tumor size, lymph node status, histologic type and tumor grade Process to establish hormone receptor status possibly including empiric assessment of response to therapy† Determination and reporting of TNM stage
Limited	US-guided FNAB of sonographically suspicious axillary nodes Sentinel lymph node (SLN) biopsy with blue dye‡	Diagnostic breast ultrasound (US) Pain chest and skeletal radiography Liver US Blood chemistry profile* Complete blood count (CBC)*	Determination of ER status by IHC† Determination of margin status, DCIS content, presence of LV† Frozen section or touch prep SLN analyses §
Enhanced	Image guided breast sampling Preoperative needle localization under mammo and/or US guidance SLN biopsy using radiotracer‡	Diagnostic mammography Specimen radiography Bone scan, CT scan Cardiac function monitoring	Measurement of HER-2/neu overexpression or gene amplification‡ Determination of PR status by IHC
Maximal		PET scan, MBI scan, breast MRI, BRCA1/2 testing Mammographic double reading	IHC staining of sentinel nodes for cytokeratin to detect micrometastases Pathology double reading Gene profiling tests

STAGE I

Level of resources	Local-Regional Treatment		Systemic Treatment (Adjuvant)		
	Surgery	Radiation Therapy	Chemotherapy	Endocrine Therapy	Biological Therapy
Basic	Modified radical mastectomy			Oophorectomy in premenopausal women Tamoxifen*	
Limited	Breast conserving surgery† Sentinel lymph node (SLN) biopsy with blue dye‡		Classical CMF§ AC, EC, or FAC§		¶
Enhanced	SLN biopsy using radiotracer‡ Breast reconstruction surgery	Breast-conserving whole-breast irradiation as part of breast-conserving therapy†	Taxanes	Aromatase inhibitors LH-RH agonists	Trastuzumab for treating HER-2/ neu positive disease†
Maximal			Growth factors Dose-dense chemotherapy		

STAGE II

Level of resources	Local-Regional Treatment		Systemic Treatment (Adjuvant)		
	Surgery	Radiation Therapy	Chemotherapy	Endocrine Therapy	Biological Therapy
Basic	Modified radical mastectomy	.	Classical CMF† AC, EC, or FAC†	Oophorectomy in premenopausal women Tamoxifen‡	
Limited	Breast conserving surgery§ Sentinel lymph node (SLN) biopsy with blue dye†	Postmastectomy irradiation of chest wall and regional nodes for high-risk cases*			¶
Enhanced	SLN biopsy using radiotracer‡ Breast reconstruction surgery	Breast-conserving whole-breast irradiation as part of breast-conserving therapy§	Taxanes	Aromatase inhibitors LHRH agonists	Trastuzumab for treating HER-2/ neu positive disease†
Maximal			Growth factors Dose-dense chemotherapy		

LOCALLY ADVANCED

Level of resources	Local-Regional Treatment		Systemic Treatment (Adjuvant or Neoadjuvant)		
	Surgery	Radiation Therapy	Chemotherapy	Endocrine Therapy	Biological Therapy
Basic	Modified radical mastectomy	*	Preoperative chemotherapy with AC, EC, FAC or CMF†	Oophorectomy in premenopausal women Tamoxifen‡	
Limited		Postmastectomy irradiation of chest wall and regional nodes*			§
Enhanced	Breast-conserving surgery Breast reconstruction surgery	Breast-conserving whole-breast irradiation as part of breast-conserving therapy†	Taxanes	Aromatase inhibitors LH-RH agonists	Trastuzumab for treating HER2-neu positive disease§
Maximal			Growth factors Dose-dense chemotherapy		

METASTATIC

Level of resources	Local-Regional Treatment		Systemic Treatment (Palliative)		
	Surgery	Radiation Therapy	Chemotherapy	Endocrine Therapy	Supportive Therapy
Basic	Total mastectomy for ipsilateral breast tumor recurrence after breast conserving surgery*			Oophorectomy in premenopausal women Tamoxifen†	Nonopioid and opioid analgesics and symptom management
Limited		Palliative radiation therapy	Classical CMF‡ Anthracycline monotherapy or in combination‡		
Enhanced			Sequential single agent or combination chemotherapy Trastuzumab Lapatinib	Aromatase inhibitors	Bisphosphonates
Maximal			Bevacizumab	Fulvestant	Growth factors

MADRID
2014

ESMO congress

GHANA

West Africa

- Former British colony
- 20 million population
 - Two-thirds rural
- Literacy:
 - 76% male, 54% female
- Life expectancy:
 - 57 years of age
 - “Low level” resources
- 3.6% HIV positive

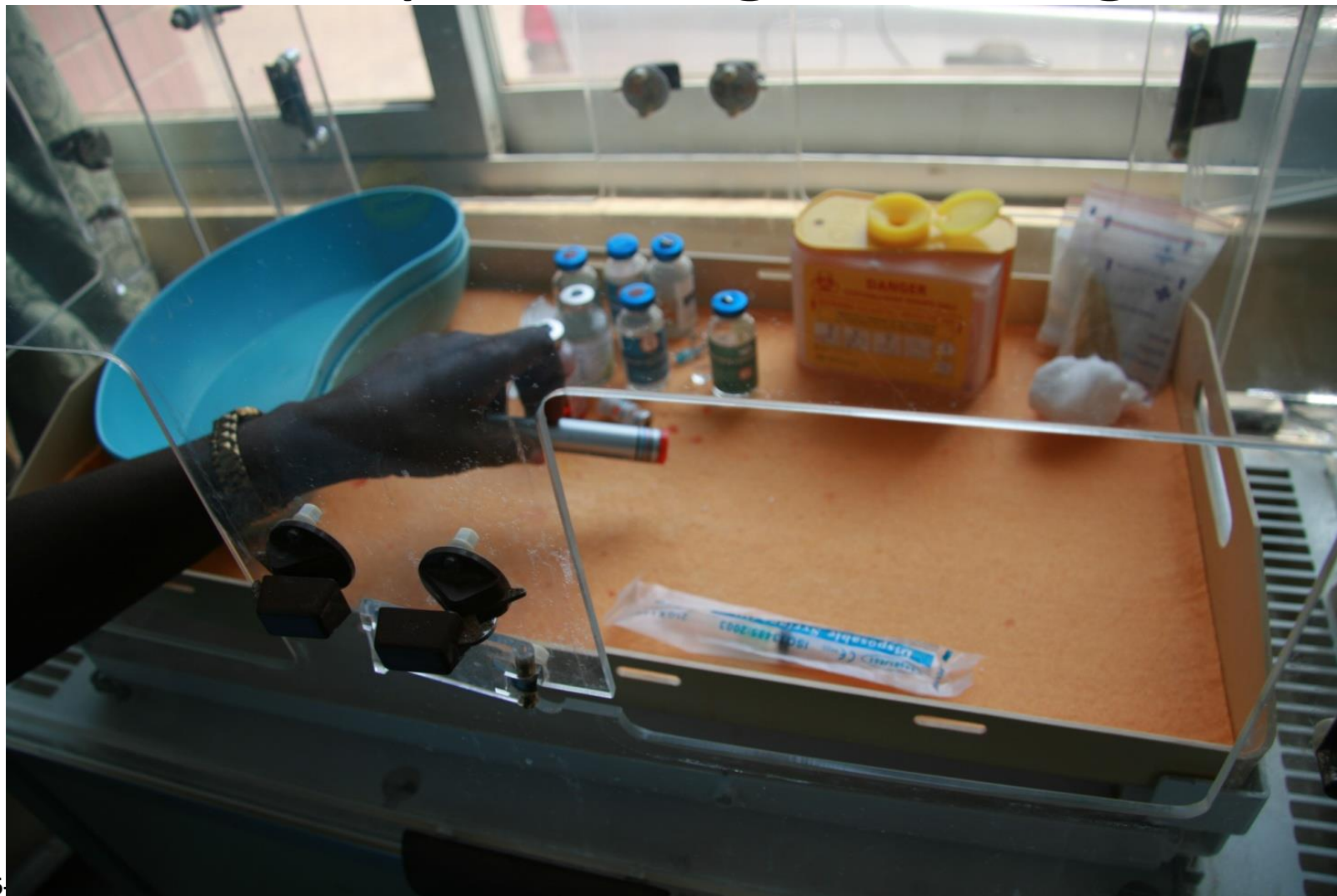
26-30 September 2014, Madrid, Spain



Available drugs

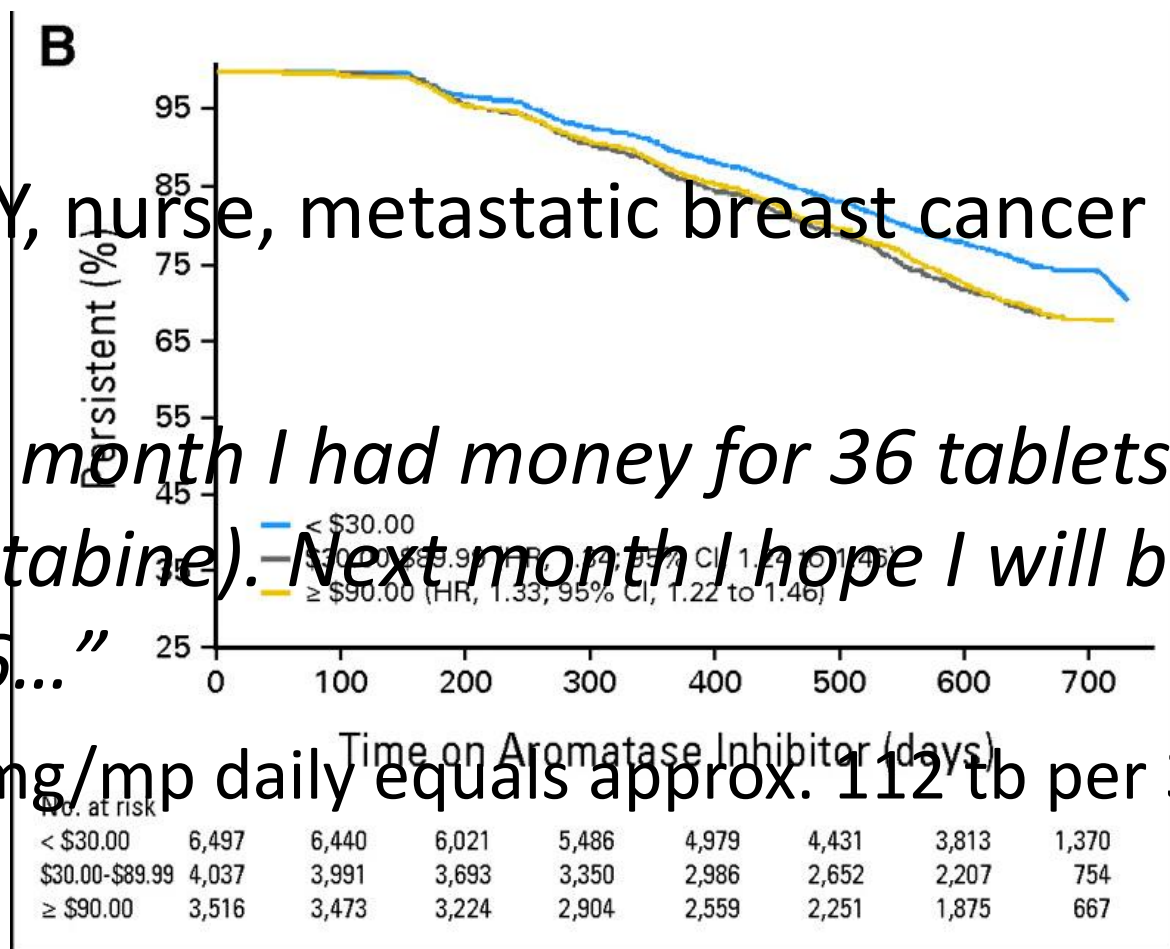


Compounding the drugs



Cost influences adherence

- Ms. X Y, nurse, metastatic breast cancer
- “...this month I had money for 36 tablets (...of capecitabine). Next month I hope I will be able to buy 56...”
- (2500 mg/mp daily equals approx. 112 tb per 3 weeks...)



Neugut A I et al. JCO 2011;29:2534-2542

Fake medication- a reality!

“30 to 50 percent of all prescription and over-the-counter medicines sold to consumers are counterfeits”



OBSERVATIONS

- No Medical Oncology specialists
- Drug choices driven by availability and buying power
- Nurses (in oncology...) were well trained
- Adherence to adjuvant therapy problematic, when cost is an issue over 5-10 years...
- Adherence in the metastatic setting- driven by symptoms, hampered by cost

Central Hospital HUE, Vietnam



MADRID
2014

ESMO

congress

Central Hospital HUE, Vietnam



Advantages of oral (metronomic) treatment in limited resource environments

- Lower treatment related toxicity
 - Greater acceptability/compliance
 - Less frequent needs for “clinic” visit
 - Potentially less blood tests needed
 - No special equipment for monitoring toxicity
- Oral treatment usually
 - No need for infusion facilities
 - Possible to be used in a distributed health care system
 - Caveat: ensuring compliance
- Direct cost lower
 - Less cost for patient- better compliance (?)
 - Greater chance for reimbursement from health authorities

8.2 Cytotoxic and adjuvant medicines

Complementary List

<i>allopurinol</i> [c]	<i>etoposide</i>
<i>asparaginase</i>	
<i>bleomycin</i>	<i>fluorouracil</i>
<i>calcium folinate</i>	<i>hydroxycarbamide</i>
<input type="checkbox"/> <i>carboplatin</i>	<i>ifosfamide</i>
<i>chlorambucil</i>	<i>mercaptopurine</i>
<i>cyclophosphamide</i>	<i>mesna</i>
<i>cytarabine</i>	<i>methotrexate</i>
<i>dacarbazine</i>	<i>paclitaxel</i>
<i>dactinomycin</i>	<i>procarbazine</i>
<i>daunorubicin</i>	<i>thioguanine</i> [c]
<i>docetaxel</i>	<i>vinblastine</i>
<i>doxorubicin</i>	<i>vincristine</i>

8.3 Hormones and antihormones

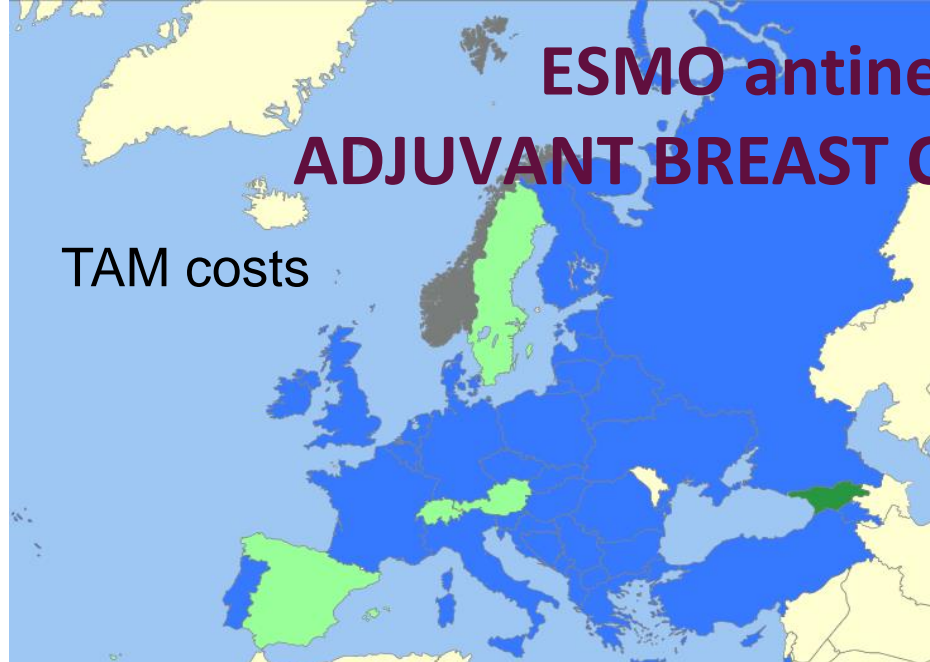
Complementary List

<i>dexamethasone</i>
<i>hydrocortisone</i>
<i>methylprednisolone</i> [c]
<input type="checkbox"/> <i>prednisolone</i>
<i>tamoxifen</i>

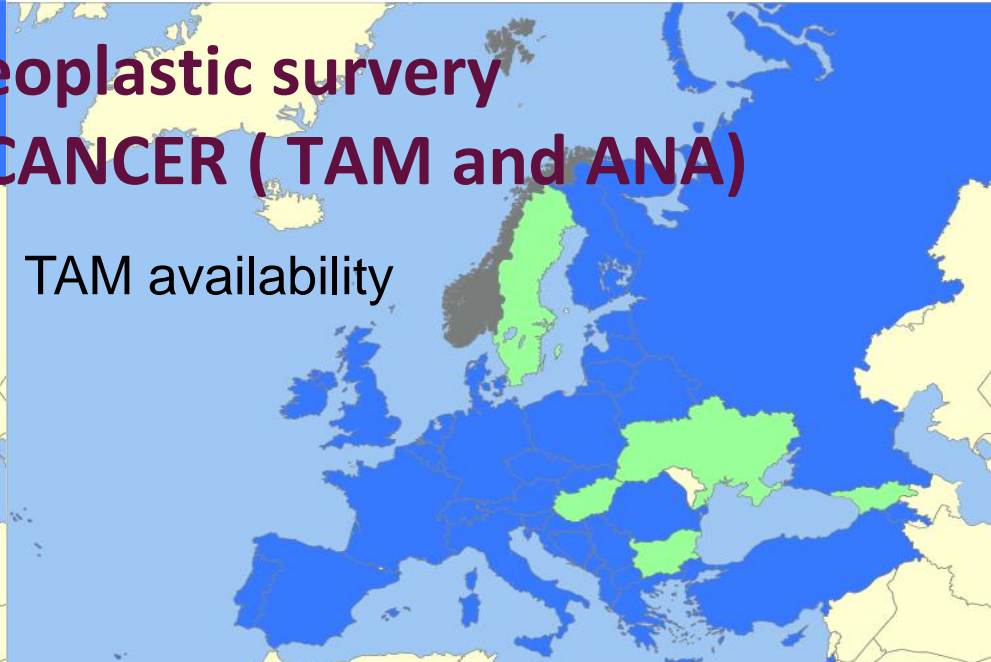
ESMO antineoplastic survey

ADJUVANT BREAST CANCER (TAM and ANA)

TAM costs



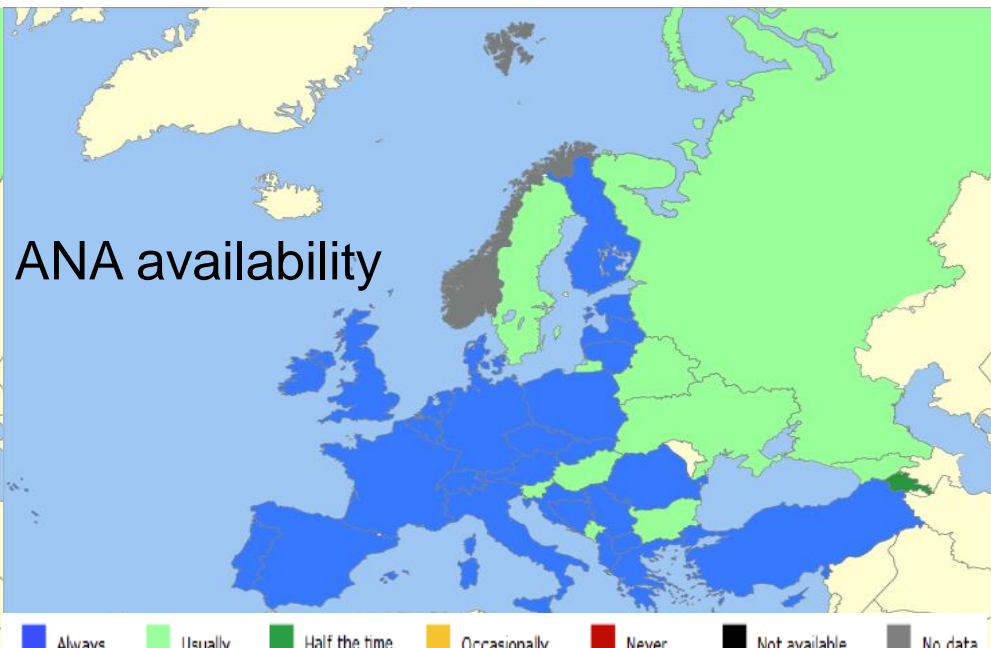
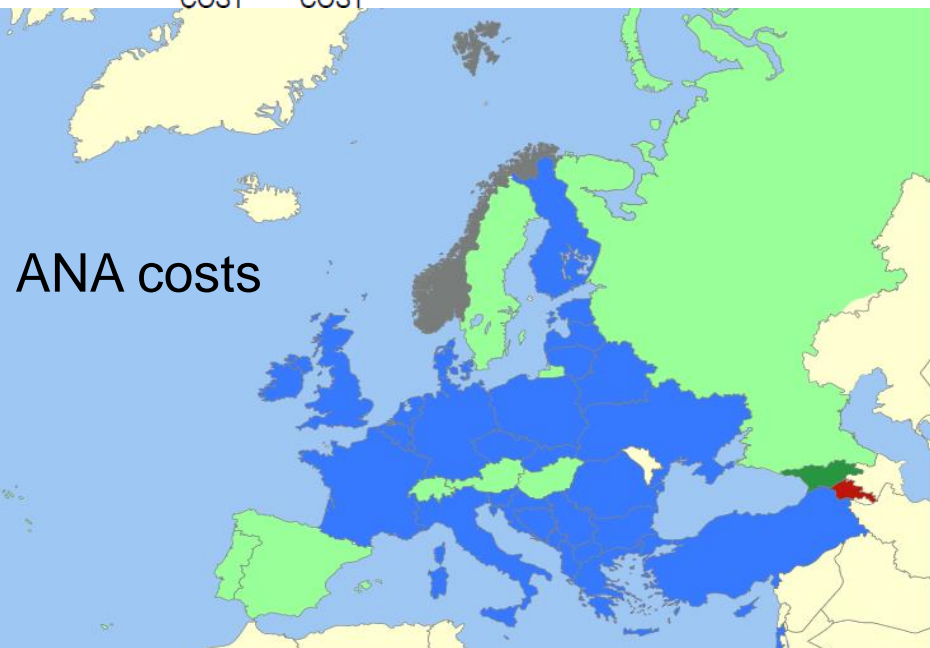
TAM availability



FREE <25% COST 25-50% COST DISCOUNT < 50% FULL COST NOT AVAILABLE NO DATA

Always Usually Half the time Occasionally Never Not available No data

ANA costs

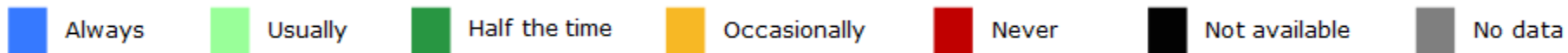
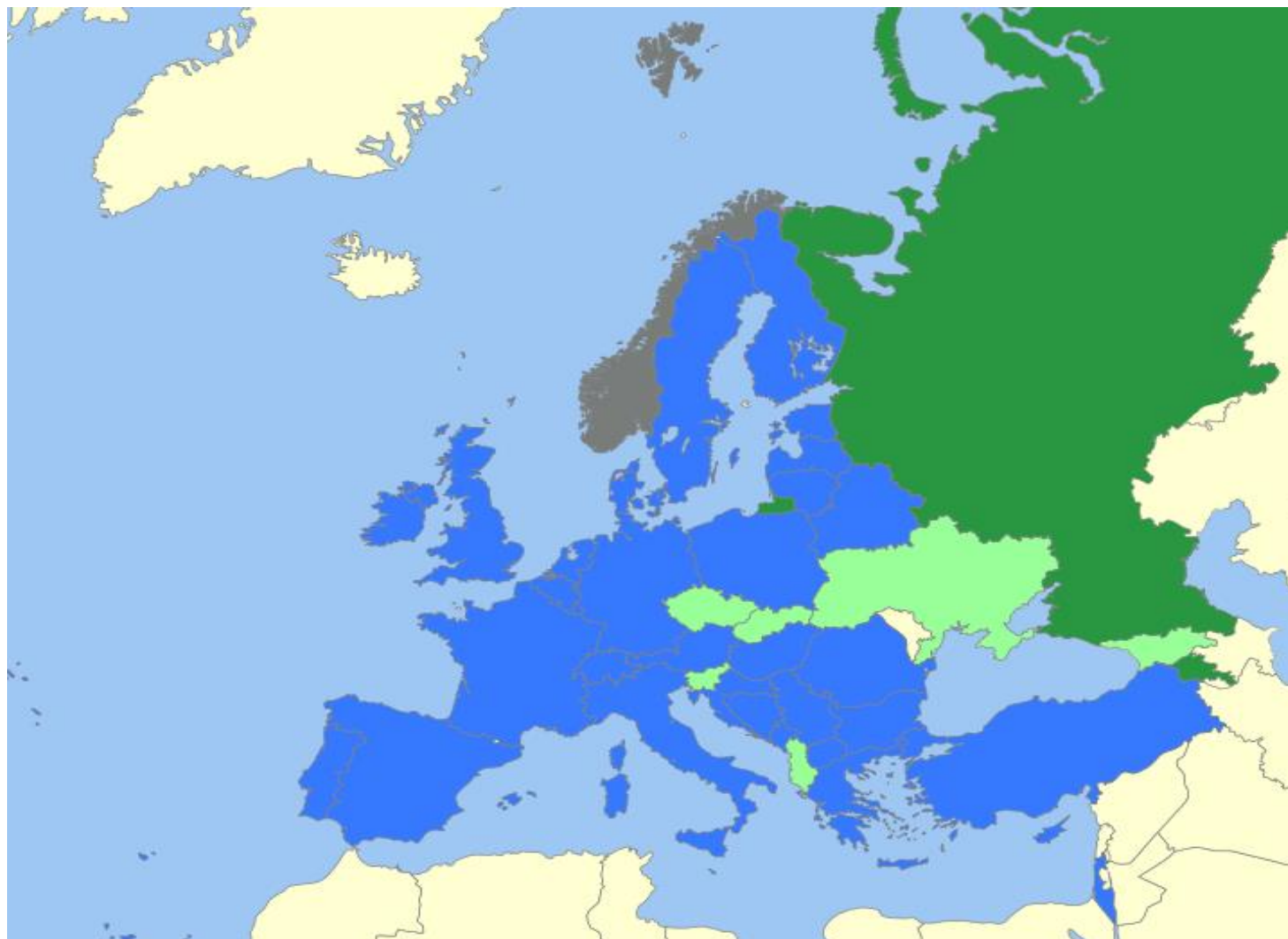


FREE <25% COST 25-50% COST DISCOUNT < 50% FULL COST NOT AVAILABLE NO DATA

Always Usually Half the time Occasionally Never Not available No data



Metastatic breast cancer (availability): Capecitabine



	RENAL CELL: Formulary and Cost											
Country:	Pazopanib	Sorafenib	Sunitinib	Axitinib	Everolimus	Temsirolimus	Bevacizumab	High dose IL-2	IFN	Pamidronate	Zolederonate	Denosomab
Austria												
Belgium												
Cyprus												
Denmark												
Finland												
France												
Germany												
Greece												
Holland												
Ireland												
Israel												
Italy												
Luxembourg												
Norway												
Portugal												
Spain												
Sweden												
Switzerland												
Turkey												
United Kingdom												

	Free
	<25% cost
	25-50% cost
	Discount <50%
	Full cost
	Not available

	RENAL CELL: Formulary and Cost											
Country:	Pazopanib	Sorafenib	Sunitinib	Axitinib	Everolimus	Temsirolimus	Bevacizumab	High dose IL-2	IFN	Pamidronate	Zolederonate	Denosomab
Albania												
Armenia												
Belarus												
Bosnia and Herzegovina												
Bulgaria												
Croatia												
Czech Republic												
Estonia												
Georgia												
Hungary												
Kosovo, Republic of												
Kyrgyzstan												
Latvia												
Lithuania												
Macedonia												
Malta												
Montenegro												
Poland												
Romania												
Russian Federation												
Serbia												
Slovenia												
Slovakia												
Ukraine												
Uzbekistan												

	Free
	<25% cost
	25-50% cost
	Discount <50%
	Full cost
	Not available

Summary

- Resource-adapted guidelines provide a framework for cancer program implementation in low-resource settings
- In low-resource environments, many obstacles to ensure compliance (education, cost, ...)
- Role of nurses essential in educating patients and improving compliance (as oncologists lack...)
- Even in Europe, availability and cost leads to discrepancies in access to essential oral drugs