

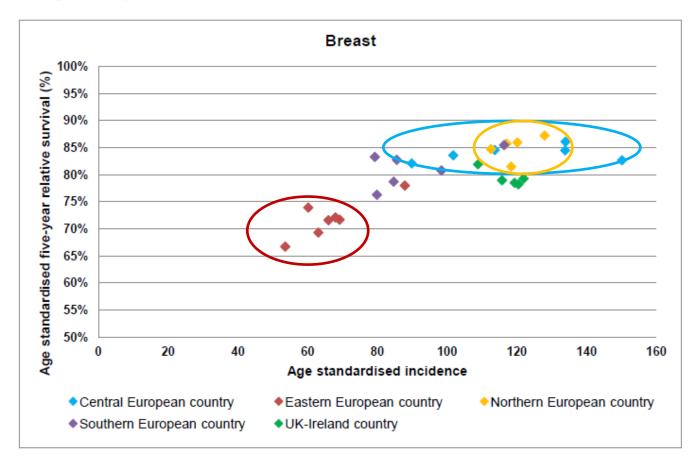
THE ESMO INTERNATIONAL ANTINEOPLASTIC MEDICINES SURVEY: HOW AVAILABLE ARE THE WHO ESSENTIAL CANCER MEDICINES?

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Disparities in cancer outcomes (survival) across Europe

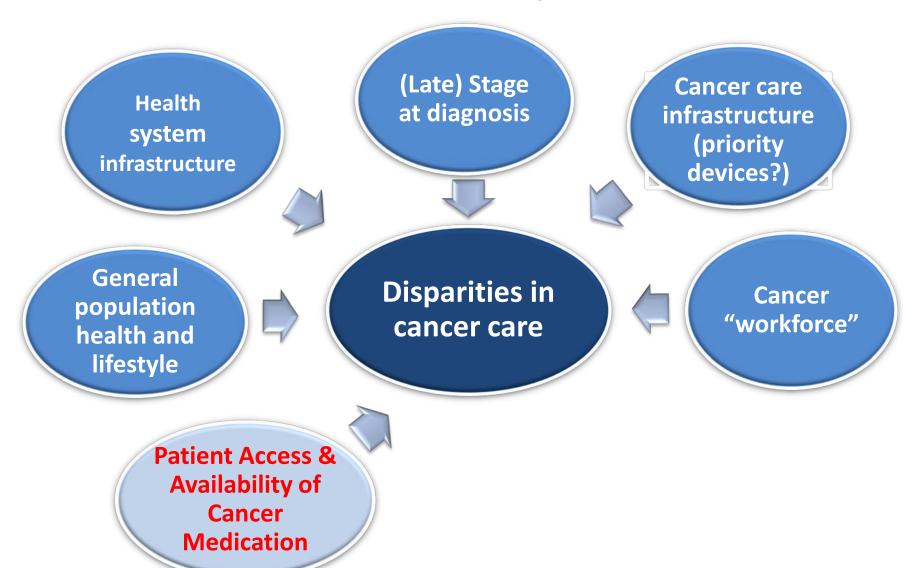
Figures 2: Age-standardised incidence (rates per 100,000 person-year) vs. age-standardised five-year relative survival (%) for cancers of breast (women), prostate, skin melanoma by European region. Period of diagnosis 2000-2007. Countries represented by dots.



De Angelis, et al: Cancer survival in Europe 1999–2007 by country and age: EUROCARE-5 Lancet Oncol, 2013



Factors accounting for cancer outcomes disparities





ESMO Anti-Neoplastic Medicines Survey

Perception survey to map access to cancer medicines, including WHO Essential Medicines, reporting on:

- Approval status (yes/no)
 - Informative for new drugs
- Reimbursement (yes/no)
 - Highlight differences in cancer policies
 - Residual (out of pocket) cost to patients
 - Delays in access due to special authorization
- Actual availability
 - Drug shortage for old drugs
 - Unavailability in the pharmacy (parallel export) for expensive drugs
- Two steps: European Data and International Data



Coordinating & Collaborating Partners

Coordinating Organization

- ESMO
- Collaborating Project Partners
- World Health Organization (WHO), Geneva, Switzerland
- 2. Union for International Cancer Control (UICC), Geneva, Switzerland
- 3. Institute of Cancer Policy, Kings College, London, UK
- 4. European Society of Oncology Pharmacists

INTERNATIONAL SURVEY

- Breast Cancer(adjuvant)
- Breast Cancer (metastatic)
- Lung Cancer
- Colorectal Cancer

- Prostate Cancer
- Renal cell Cancer
- GIST
- Melanoma



Coordinating and Collaborating Partners

■ Collaborating Project Partners

- American Society of Clinical Oncology (ASCO)
- Chinese Society of Clinical Oncology (CSCO)
- Indian Society for Medical & Pediatric Oncology (ISMPO)
- Japanese Society of Medical Oncology (JSMO)
- Korean Association of Clinical Oncology (KACO)
- Myanmar Oncology Society (MOS)
- Medical Oncology Group of Australia Incorporated (MOGA)
- Medical Oncology Society of Peru (SPOM)
- Middle East Cancer Consortium (MECC)



Example of form : Metastatic Breast Cancer

European Society for Medical Oncology

BREAST CANCER (METASTATIC)

	•	,																					
	ls it pern prescri medicatio indica	be the on for this	Is the m reimburse indica	ed for this	reimbu requi	nes rsement re pre- isation?	Does pre-autho process treatment than 4 v	orisation s delay by more	prop	ortion o	f the full r	patients (retail price TENT have	does	Actual availability when needed for most			If the medication is not always available, what are the reasons for this (one or more)?				t are the		
	Yes	No	Yes	No	Yes	No	Yes	No	Free	<25% cost	25-50% cost	Discount <50%	Full cost	Always	Usually	Half the time	Occasionally	Never	No / unreliable supplier	No commercial motive *	Parallel export	Manufacturing problems	Budget capitation
Albumin-bound paclitaxel	.0	0	0	0	0	0	0	0	0	0	0	0	0	О	0	0	0	0					
Anastrozole	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Bevacizumab	0	0	0	0	0	0	0	0	0	0	0	0	O	0	0	0	0	0					
Capecitabine	0	0	0	O	Ō	Ō	Ö	Ō	Ö	O	Ō	Ö	Ö	Ō	O	O	Ö	Ō					
Carboplatinum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Cisplatinum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Cyclophosphamide IV	.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Cyclophosphamide (tablets)	0	O	0	Ō	Ō	Ō	O	Ō	o	Ō	0	Ō	Ō	0	0	Ö	O	O					
Denosumab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0	0					
Docetaxel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Doxorubicin	0	0	O	0	0	0	0	0	0	0	0	0	Ö	0	0	0	0	0					
Epirubicin	0	0	0	0	0	O	0	0	0	0	0	0	0	0	0	0	0	0					
Eribulin	.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	O	0					



Data reporters

- O ESMO National representatives
- O Known credible professionals nominated by coordinating and collaborating partners
- O Minimum of 2 reporters for each country nominated
- O Total 439 from 119 countries
 - O 185 from 49 European countries,
 - O 254 from 70 countries worldwide
- Respondents
 - 42 oncology pharmacists (22 countries)
 - 147 oncologists
 - 90 Academic cancer centers or hospitals



Response Rates

	Total	Surveyed		Total	Surveyed	
	Countries	Countries	percent	Pop (bil)	population	Percent
Sub Saharan Africa	51	9	18%	0.795	0.245	32%
North Africa	6	4	67%	0.161	0.155	96%
Mid East	16	9	56%	0.195	0.117	60%
Asia and Indian	29	13	49%	3.703	3.192	86%
Ocana	21	1	5%	0.033	0.02	61%
N America	5	2	40%	0.332	0.332	100%
Latin AM and Carrib	45	6	13%	0.562	0.423	75%
	173	44	25%	5.781	4.484	76%



WHO ESSENTIAL MEDICINES LIST 2015 Solid Tumors

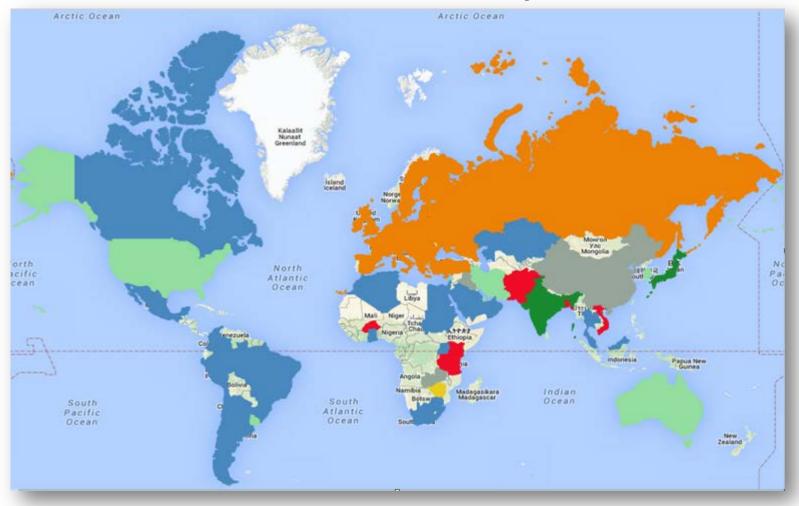
- **UICC Task Force on EML**: UICC, Dana Farber Cancer Institute, ESMO, ASCO, SIOP, US NCI, NCCN International & others
- New drugs, tumor-specific indications

Cytotoxics	Cytotoxics	Cytotoxics	Hormones
bleomycin	docetaxel	irinotecan	anastrozole
calcium folinate	doxorubicin	methotrexate	bicalutamide
capecitabine	etoposide	oxaliplatin	dexamethasone
carboplatin	fluorouracil	paclitaxel	leuprorelin
cisplatin	filgrastim	rituximab	tamoxifen
cyclophosphamide	gemcitabine	trastuzumab	
dacarbazine	Ifosfamide+mesna	vinblastine	
dactinomycin	imatinib	vincristine	
		vinorelbine	

http://www.who.int/medicines/publications/essentialmedicines/EML2015 8-May-15.pdf



Adjuvant breast cancer: Cost & availability - Tamoxifen



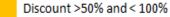














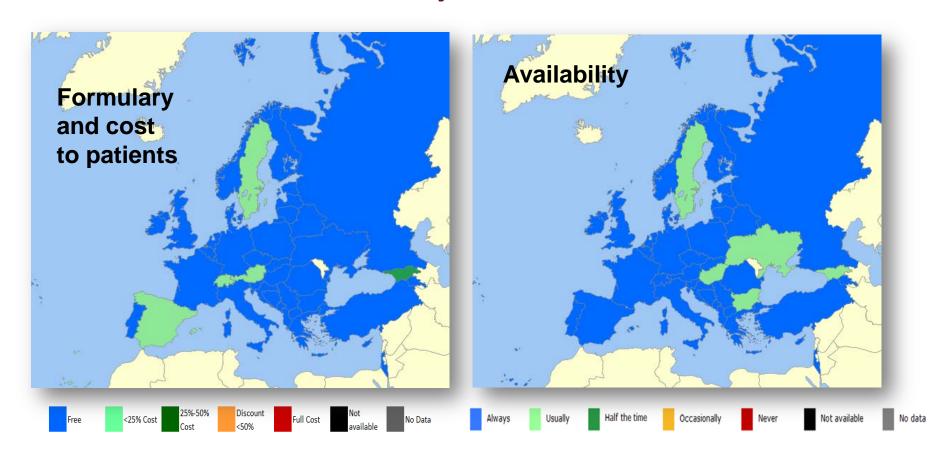








BETTER MEDICINE Adjuvant breast cancer: : formulary inclusion European Society for Medical Oncology and availability: TAMOXIFEN



- Drug shortages affect several essential, old and inexpensive drugs (tamoxifen, doxorubicin, cisplatin, 5-FU, bleomycin...)
- Not an issue of resources!



Multi-use (WHO) Essential Medicines: Cost & availability

European Society for Medical Oncology





25-50% cost

Discount >50% and < 100%

<25% cost





Missing data

European Data

Not available

Full cost



GOOD SCIENCE Adjuvant breast cancer: TRASTUZUMAB

BEST PRACTICE formulary inclusion, cost, preapproval and

European Society for Medical Oncology

delays











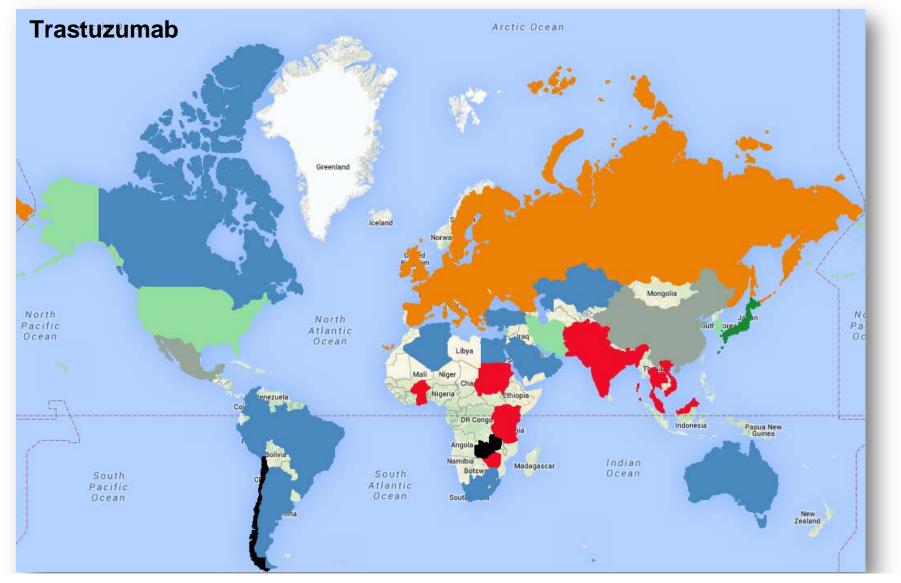
Metastatic breast cancer

(formulary inclusion and cost to patients): Anti-Her2 therapy

European Society for Medical Oncology

25-50% cost

<25% cost



Discount >50% and < 100%

Full cost

Not available

Missing data

European Data



High

Multi-use EML

Upper Middle

Free	
<25% cost	
25-50% cost	
Discount >50% and <100%	
Full cost	
Not available	
Missing data	ı

Low Middle

Low

					CO	ST AND 7	VAILABIL	ITV							
			1	Cyclo	1		VAILADIL	···	1	1		MTX	MTX		т —
Country	Bleo	CarboP	CisP	(IV)	Cyclo (tab)	DTIC	Dox.	Epir.	Etop (IV)	5FU	Ifos.	(IV)	(tab)	VBL	VCR
Argentina															
Australia															
Canada															
Chile															
Cyprus															
Israel															
Japan															
Korea, South															
Oman															
Qatar															
Saudi Arabia															
Singapore															
United Arab Emirates															
USA															
Algeria															
Brazil															
China															
Colombia															
Iran															
Kazakhstan															
Lebanon															
Malaysia															
Mexico															
Peru															
South Africa															
Thailand															
Tunisia															
Turkey															
Bangladesh															
Egypt															
Ghana															
India															
Kenya															
Morocco															
Pakistan															
Palestine															
Sudan															
Vietnam															
Zambia															
Afghanistan															
Burkina Faso															
Tanzania															
Uganda															
Zimbabwe															
LIIIDADWE															



trastuzumab

capecitabine +

T-DM1 vs

lapatinib

chemo +/-

pertuzumab Lapatinib +/-

trastuzumab

Capecitabine

+/- lapatinib

Eribulin vs

other chemo

Paclitaxel +/-

bevacizumab

+/- everolimus

Exemestane



QoL

Later

ration

ESM₀

MCBS

Α

5

3

2

OS HR

0.68

0.68

0.74

(0.57 - 0.97)

NS

0.81

(0.66-0.99)

NS

NS

m (0.56-0.84)

(0.55-0.85) deterio

Field	testing	Breast	Cancer

77.4%

12.4 m 6 m

4.4 m 4 m

2 m

5.9 m

4.1 m

3.2

m

1 m

5.8

m

6.5

m

PFS & OS 6.4 m

(0.43 - 0.67)

0.65

(0.55-0.77)

0.62

(0.52 - 0.84)

0.73

(0.57-

0.93)

0.49

(0.34 - 0.71)

0.6

(0.51 - 0.70)

0.43

(0.36 - 0.54)

25 m

9.5 m

10.6 m

40.8 m 15.7

6.8

m

4.5

m

2.5

	Field testing Breast Cancer												
Medication	Trial	Setting	Primary outcome				OS control	OS gain					
Chemo +/-	HFRA	(Neo)Adiuvant	DES	2 v DES	8 4%	0.54			Ī				

PFS

PFS

PFS

OS

PFS

PFS

HER-2 positive

2nd line metastatic

after trastuzumab

3rd line metastatic

2nd line metastatic

after trastuzumab

3rd line metastatic

after anthracycline

1st line metastatic

Metastatic after

failure aromatase

inhibitor+PFS >6 m

tumors

failure

failure

& taxane

EMILIA

EGF

104900

Geyer,

EMBRACE

BOLERO-2

2006

Miller,

2007

Trastuzumab + CLEOPATRA 1st line metastatic



Example of using MCBS data: Breast cancer, Romania

European Society for Medical Oncology

Medication	Setting	Primary outcome	ESMO- MCBS
Chemotherapy +/- trastuzumab	(Neo)adjuvant HER-2 positive tumours	DFS	Α
T-DM1 vs lapatinib + capecitabine	2nd line metastatic after trastuzumab failure	PFS and OS	5
Trastuzumab + chemotherapy +/-pertuzumab	1st line metastatic	PFS	4
Lapatinib +/- trastuzumab	3rd line metastatic	PFS	4
Capecitabine +/- lapatinib	2nd line metastatic after trastuzumab failure	PFS	3
Eribulin vs other chemotherapy	3rd line metastatic after anthracycline and taxane	OS	2
Paclitaxel +/- bevacizumab	1st line metastatic	PFS	2
Exemestane +/- everolimus	Metastatic after failure of aromatase inhibitor (with PFS > 6 mth)	PFS	2



Conclusions

- Disparities exist across Europe and the world in access to the WHO essential cancer medicines
- Drug shortages affect several "essential", old and inexpensive drugs
 - THIS SHOULD BE UNACCEPTABLE!
- Many cheap generic medicines on the WHO EML are only available at full cost in many low-income countries
- No/unreliable distribution =major barrier
- The ESMO Magnitude of Benefit Scale, applied on the availability data (ESMO Antineoplastic Medicines Survey) can inform the process of prioritization access to medicines, when resources are limited



Special Acknowledgments

European Society for Medical Oncology

Project Leader:

European Society for Medical Oncology (ESMO)

Coordinating Partners:

- World Health Organization (WHO)
- Kings College London Institute of Cancer Policy
- European Society of Oncology Pharmacy (ESOP) and International Society of Oncology Pharmacy Practitioners (ISOPP)
- Union for International Cancer Control (UICC)

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Collaborating Partners:

- American Society of Clinical Oncology (ASCO)
- Chinese Society of Clinical Oncology (CSCO)
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- Medical Oncology Society of Peru (SPOM)
- Middle East Cancer Consortium (MECC)

Collaborators

- African Organisation for Research and Training in Cancer (AORTIC)
- Latinamerican & Caribbean Society of Medical Oncology (SLACOM)

104 individual reporters