Breast Health Global Initiative

Global Summit on International Breast Health and Cancer Control:

Improving Breast Health Care through Resource-Stratified Phased Implementation

Early Diagnosis Policy Strategies

Raúl Murillo, MD, MPH
Centro Oncológico Javeriano (Colombia)

BHGlatFredHutch BreastHealthGlobalInitiative

FRED HUTCH CURES START HERE® susan g. komen® BREAST CANCER INITIATIVE 2.5 NCCN National Comprehensive Cancer Network®

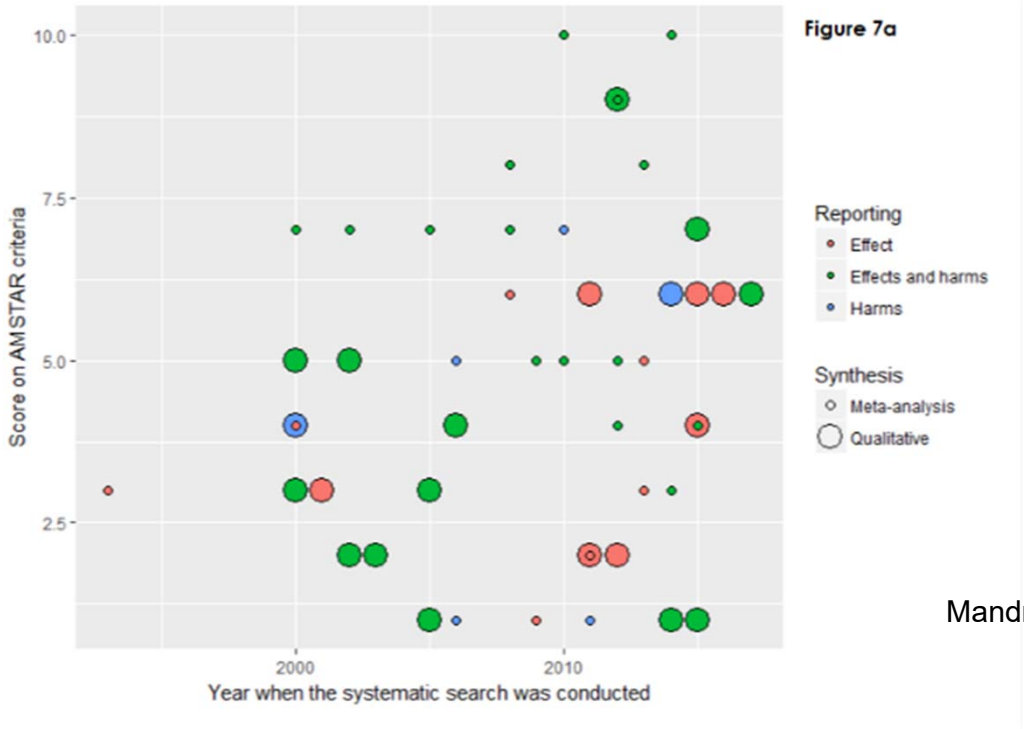
No conflicts of interest to declare

Content

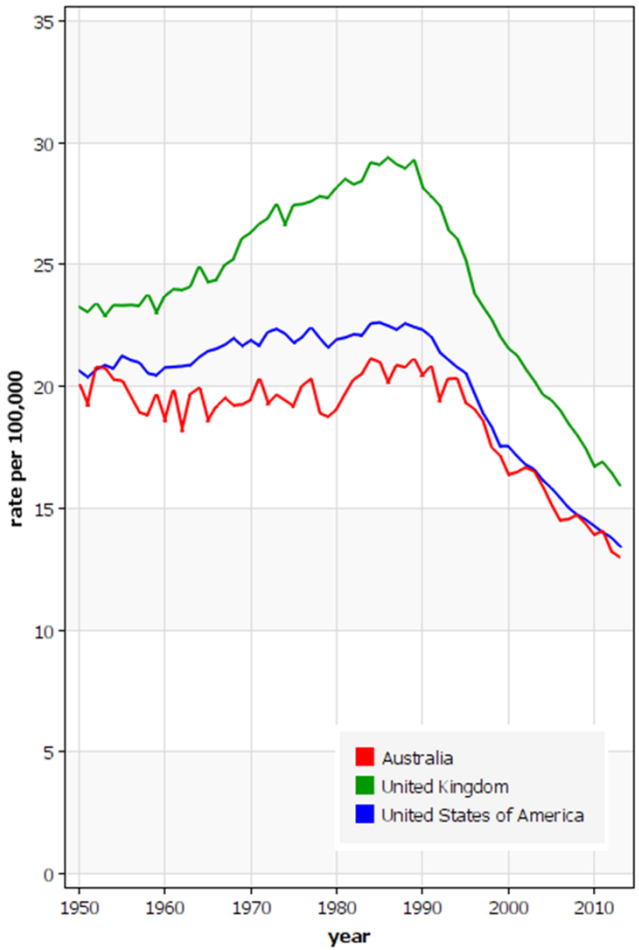
- Evidence-based policies: from efficacy to effectiveness
- Policy development: definition of the screening program
- Policy development: program implementation

Evidence-based policies: which evidence?

A systematic review of reviews on effects and harms of BCS



Mandrik O et al. Submitted



Breast cancer mortality trends in selected countries with different screening policy

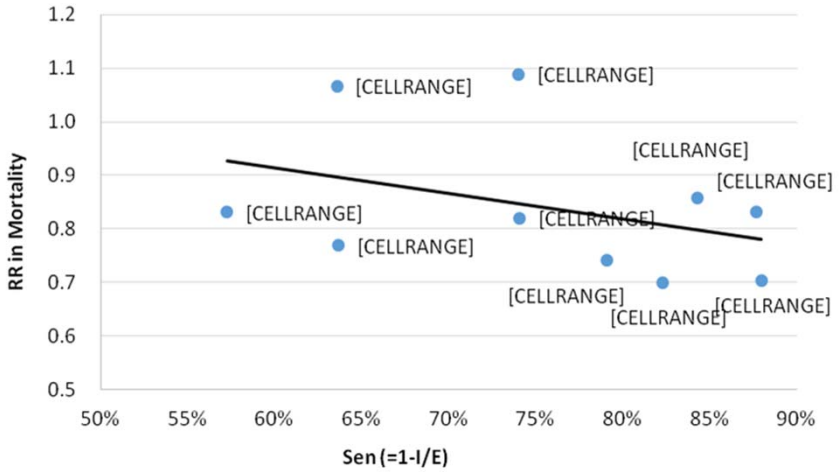
Global Cancer Observatory
WHO-IARC Cancer Mortality Database
Accessed 01-10-2018

Breast cancer screening programs in the European Union - 2016

European Commission. Cancer Screening in the European Union (2017)

Causes of heterogeneity of breast cancer screeening outcomes

A. Mammography sensitivity and BC mortlality in RCT

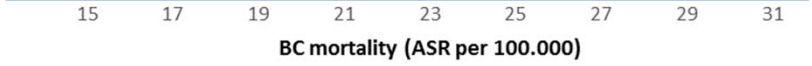


Chen TH et al. Medicine (Baltimore); 2017
Supplemental content

B. Screening coverage and BC mortality in Europe

Chen TH et al: Effect of attendance rates on screening performance in RCT (Attendance rate from 61.3% to 90.4%)

1. BC mortality
   RR 0.995 (95%CI 0.973-1.017)
1. Advanced disease
   RR 0.923 (95%CI 0.905-0.939)



Source: European Comission.
Cancer screening in Europe; 2017

Delays in diagnosis and treatment of breast cancer: a multinational study (months)

Country[a]	*N*	Mean PDT (SE)	*N*	Mean SDT (SE)	*N*	Mean TDT (SE)
BGR	448	4.83 (0.22)	644	12.51 (0.53)	644	15.87 (0.62)
HUN	167	3.44 (0.30)	350	14.47 (0.59)	350	16.12 (0.66)
IND	207	6.10 (0.33)	268	24.69 (1.22)	268	29.41 (1.37)
LVA	111	6.17 (0.47)	156	13.14 (0.72)	156	17.53 (0.89)
LTU	368	4.85 (0.25)	458	8.27 (0.37)	458	12.16 (0.45)
POL	557	3.61 (0.17)	1000	9.49 (0.22)	1000	11.50 (0.25)
ROU	271	6.02 (0.28)	319	20.42 (0.75)	319	25.54 (0.92)
RUS	718	4.81 (0.17)	1059	12.42 (0.37)	1059	15.68 (0.43)
SVK	154	4.00 (0.35)	253	10.72 (0.50)	253	13.15 (0.60)
SRB	663	4.47 (0.19)	800	9.16 (0.27)	800	12.86 (0.38)
TUR	694	4.84 (0.18)	1031	10.49 (0.32)	1031	13.75 (0.38)
HRV	167	4.88 (0.39)	248	10.23 (0.65)	248	13.51 (0.85)
Total	4525	4.71 (0.07)	6586	11.86 (0.14)	6586	15.10 (0.16)

a: Country: Bulgaria (BGR), Hungary (HUN), India (IND), Latvia (LVA), Lithuania (LTU), Poland (POL), Romania (ROU), Russia (RUS), Slovakia (SVK), Serbia (SRB), Turkey (TUR) and Croatia (HRV).
SE, standard error.

Jassem J et al. Eur J Public health 2013

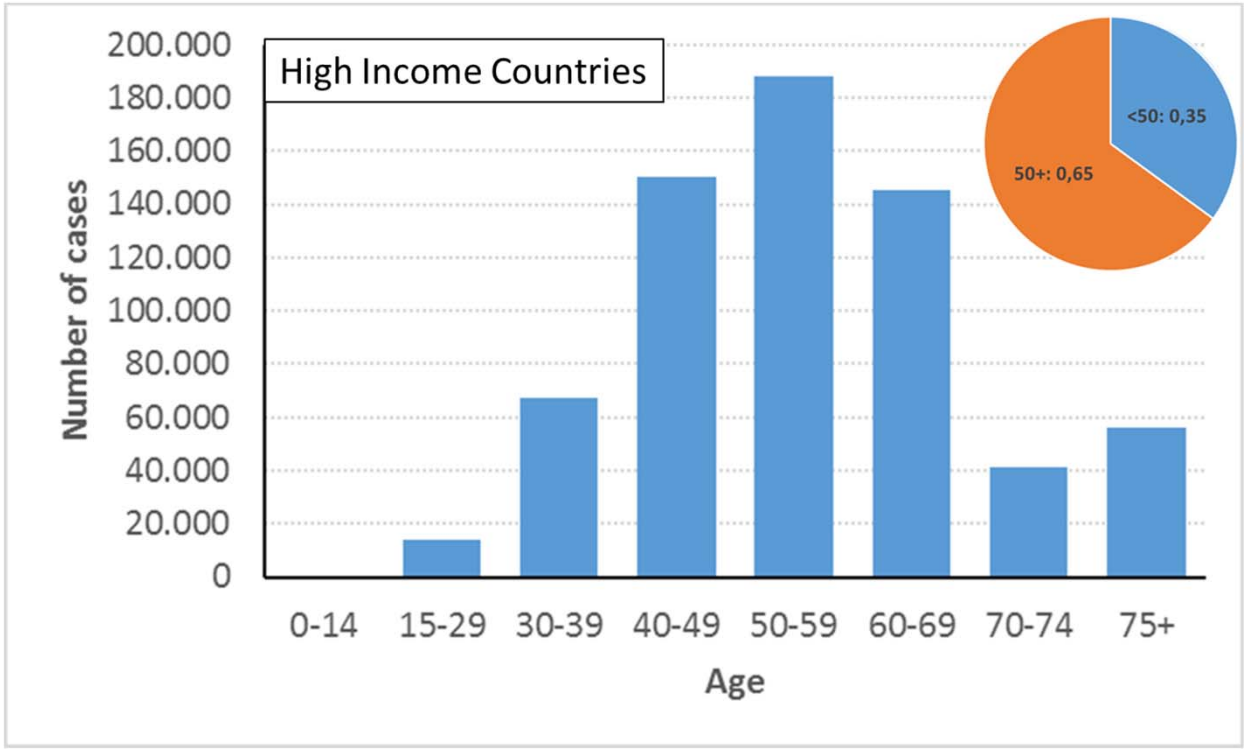
Major elements for policy development

- Definition of the screening program
  - Target population
  - Screening tests
  - Screening intensity (interval)
- Implementation
  - Screening coverage (geographic, cultural, and economic access)
  - Quality of screening tests (detection rates, false positives)
  - Access to diagnosis and treatment (follow-up)
  - Rollout

Content

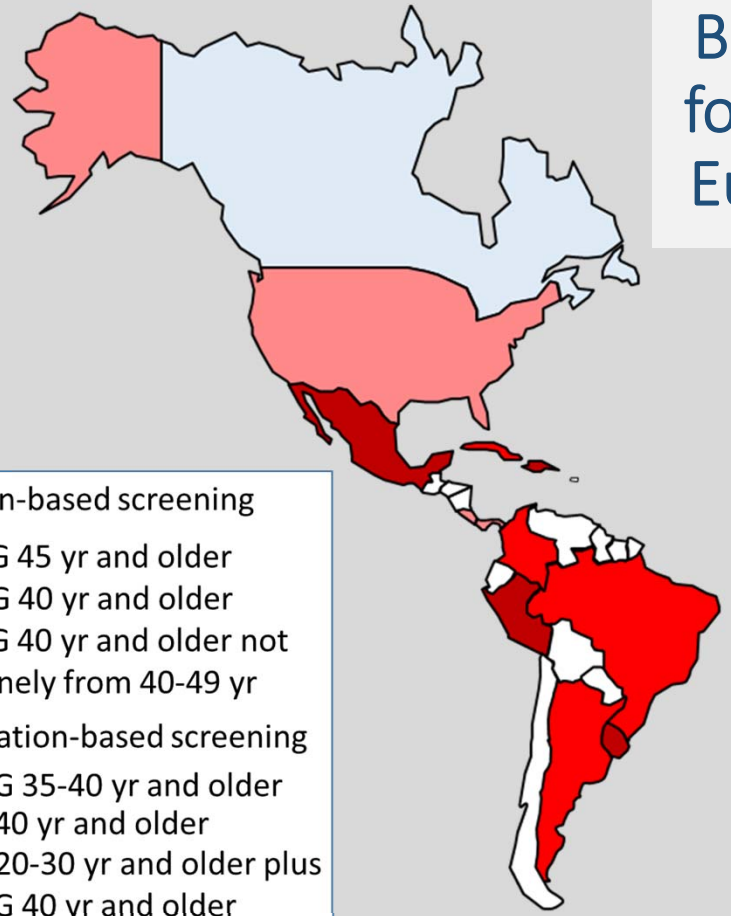
- Evidence-based policies: from efficacy to effectiveness
- Policy development: definition of the screening program
- Policy development: program implementation

Breast cancer incident cases by age



Source:
Global Cancer Observatory
2018

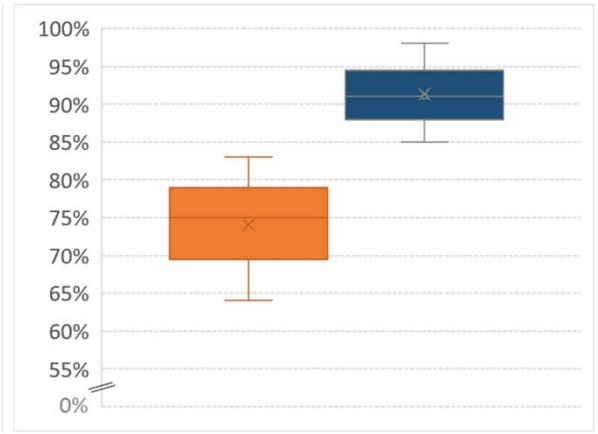
Breast cancer screening policies for women under 50 years old in Europe and the Americas region



Sources:
European Commission. Cancer Screening in the European Union (2017)
IARC Handbook of Cancer Prevention Vol 15; 2017

Screening accuracy and screening intensity

Regular screening



Sensitivity
Specificity

Accuracy of mammography and CBE in the implementation of breast cancer screening in Colombia

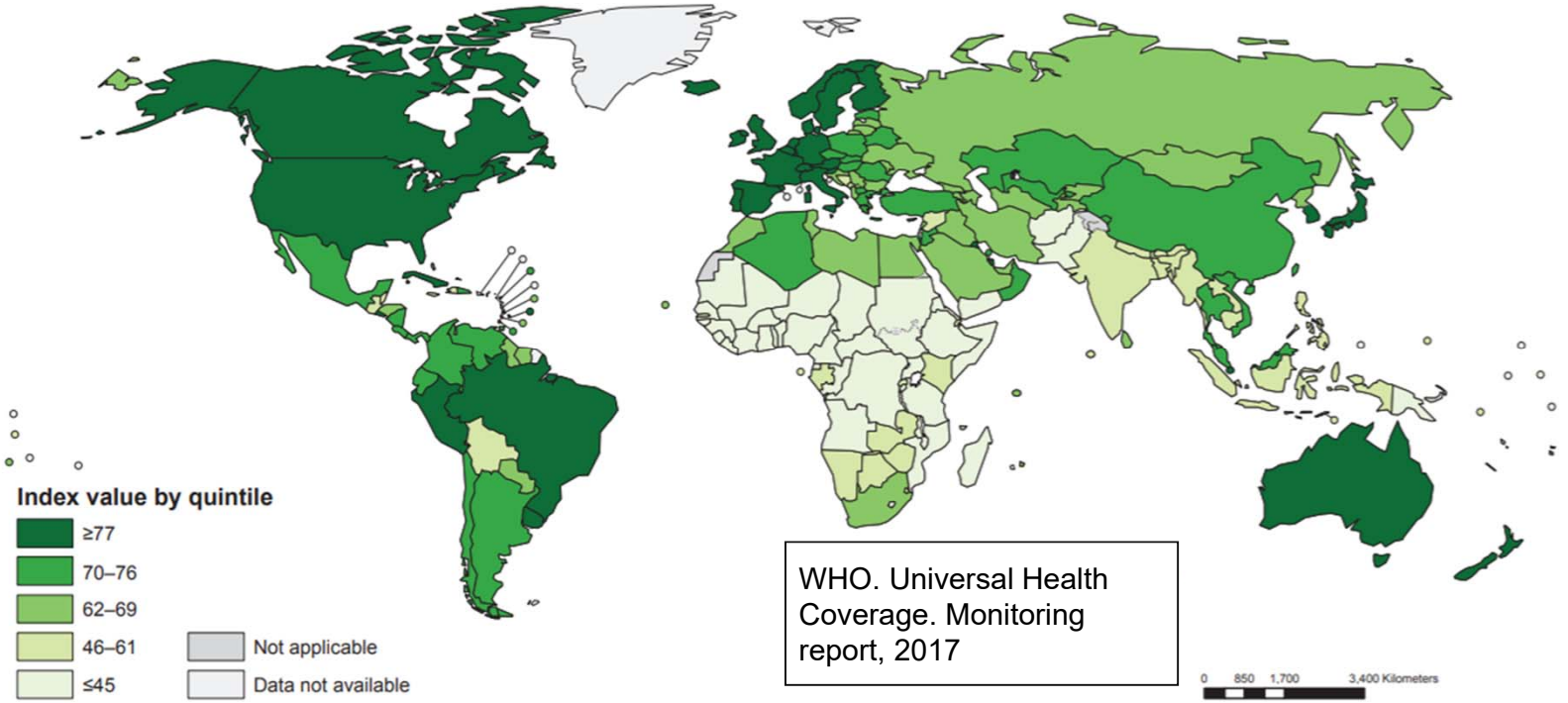
Test	Sensitivity % (95%CI)	Specificity % (95%CI)
Single tests		
Mammography	78.3 (77.3–79.3)	99.4 (99.2–99.6)
CBE	39.1 (37.9–40.3)	83.4 (82.6–84.3)
Combined mammography & CBE		
Parallel	95.6 (95.1–96.2)	83.1 (82.2–84.0)
Serial	13.0 (12.2–13.9)	99.9 (99.9–100.0)

Alba LH et al. Prev Med 2018

Content

- Evidence-based policies: from efficacy to effectiveness
- Policy development: definition of the screening program
- Policy development: program implementation

UHC: service coverage index by country, 2015



WHO. Universal Health Coverage. Monitoring report, 2017

Financial protection: several challenges

Screening	Coverage (2 yr)
• USA: Mostly private	40-74 yr: 78.3% BRFSS 2014
• Brazil: Universal health	50-69 yr: 60.0% PNS 2013
• Chile: Two providers (FONASA-ISAPRE) and special protection for women 50-59 (GES)	50-59 yr: 60.0% CASEN 2011
• Colombia: Insurance based (Two insurance plans: Contributory-Subsidized)	50-69 yr: 62.5% ENDS 2015

Breast cancer care	Identified effects
• User fees	Utilization preventive and curative services differ
• Public insurance	Improves equity, reduces OOP
• Public hospitals	ND
• Community-based insurance	Increases health services utilization, no evidence on health outcomes or OOP
• Catastrophic health insurance	Improves equity, reduces OOP

Wiysonge CS et al.
Cochrane Database 2017

Coverage 2 yr: mammography in the previous 2 years to the survey. OOP: out-of-pocket expenditure

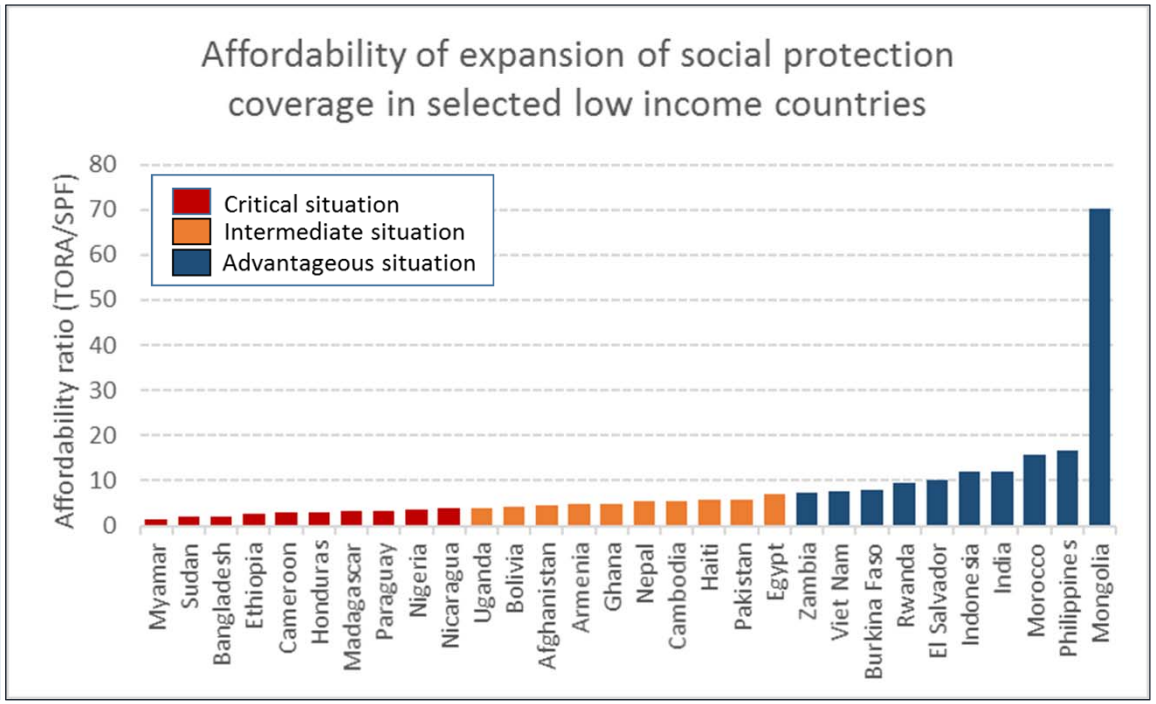
Cost-effectiveness and affordability

Selected cost-effectiveness analyses in LMIC

• Vietnam: anual CBE (40+ yr)	V
• Korea: MMG (45-65 yr)	NA
• Hong Kong: biennial MMG (40-69 yr)	Y/N
• India: Screening (40-60 yr)	
Single CBE (50 yr)	V
CBE every 5 yr	V
Biennial CBE	V
Annual CBE	Y
Biennial MMG	N

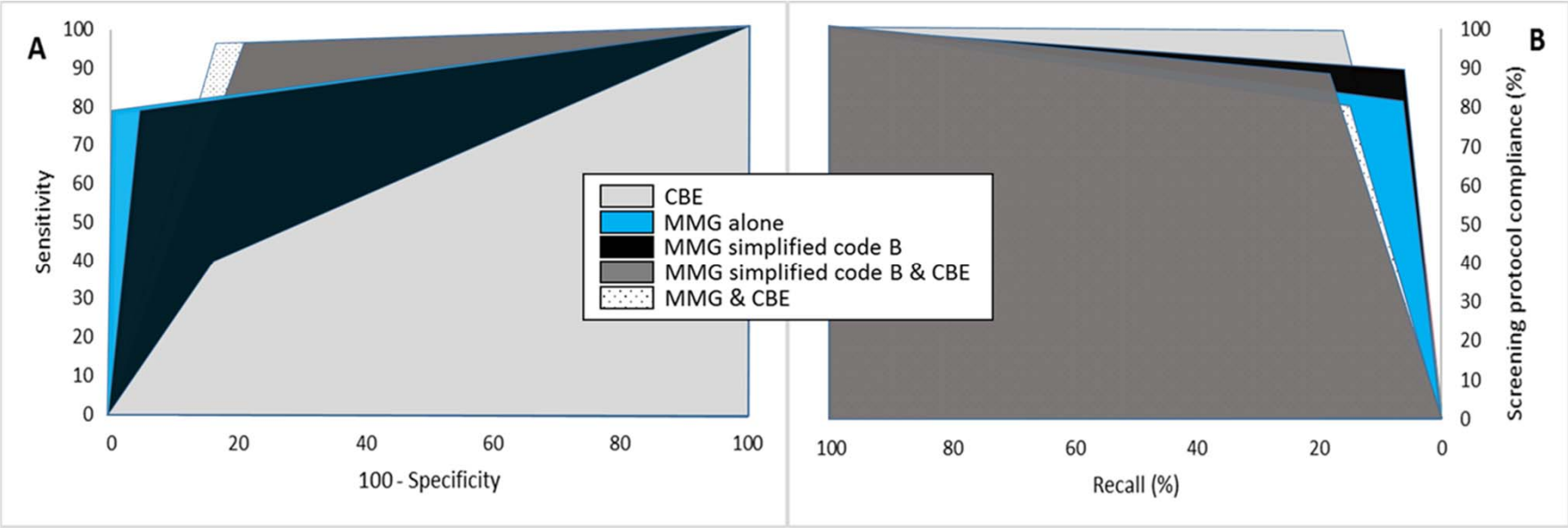
ICER interpretation: V- very cost-effective
NA- not assesable, Y- cost-effective,
N- not cost-effective

DCP3, 2016

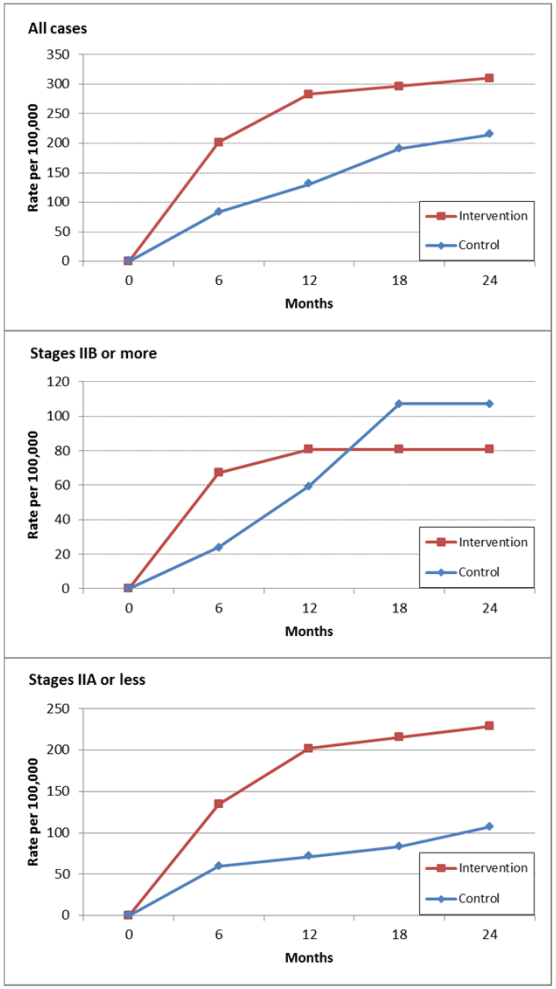


TORA: Tax and official resources available. SPF: Social protection floor
International Labour Organization. EES-Working paper No. 58; 2017

Follow-up: a needed balance between test accuracy, recall rates, and number of visits



Alba LH et al. Prev Med 2018

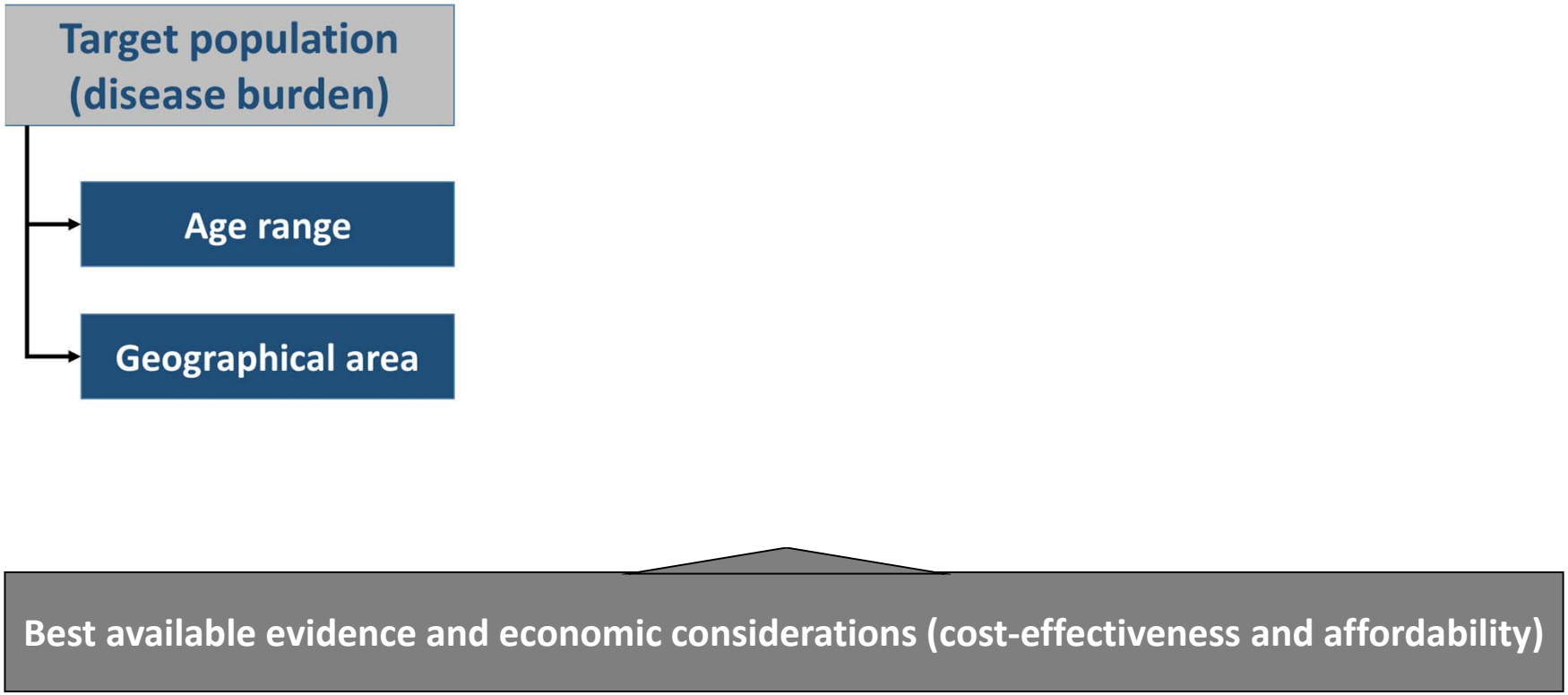


Breast cancer downstaging in facility based screening in Colombia: A randomized trial

Outcome	Cases	Incidence ratio
Year 1 follow-up		
Advanced breast cancer	6	1.0 (0.3–3.5)
Early breast cancer	15	2.9 (1.1–9.2)
All breast cancers	21	1.9 (0.9–4.1)

Murillo R et al. Int J Cancer 2016

Summary: phased implementation



Gracias