

Practicing Evidence-Based Medicine in Local Context

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Source for EBM ; SR and RCT

- Systematic reviews summarize the existing uncertainty and serve as ‘best’ source of evidence based practice.
- The EBM movement is heavily dependent on these preappraised evidence sources
- The availability of synthesized knowledge(SR) is a product of the amount of primary research (RCT).

Concern on scientific basis of health care

The question

- What is the main factor that determines evidence based health care?

Depends on

- How many good quality research is available ?

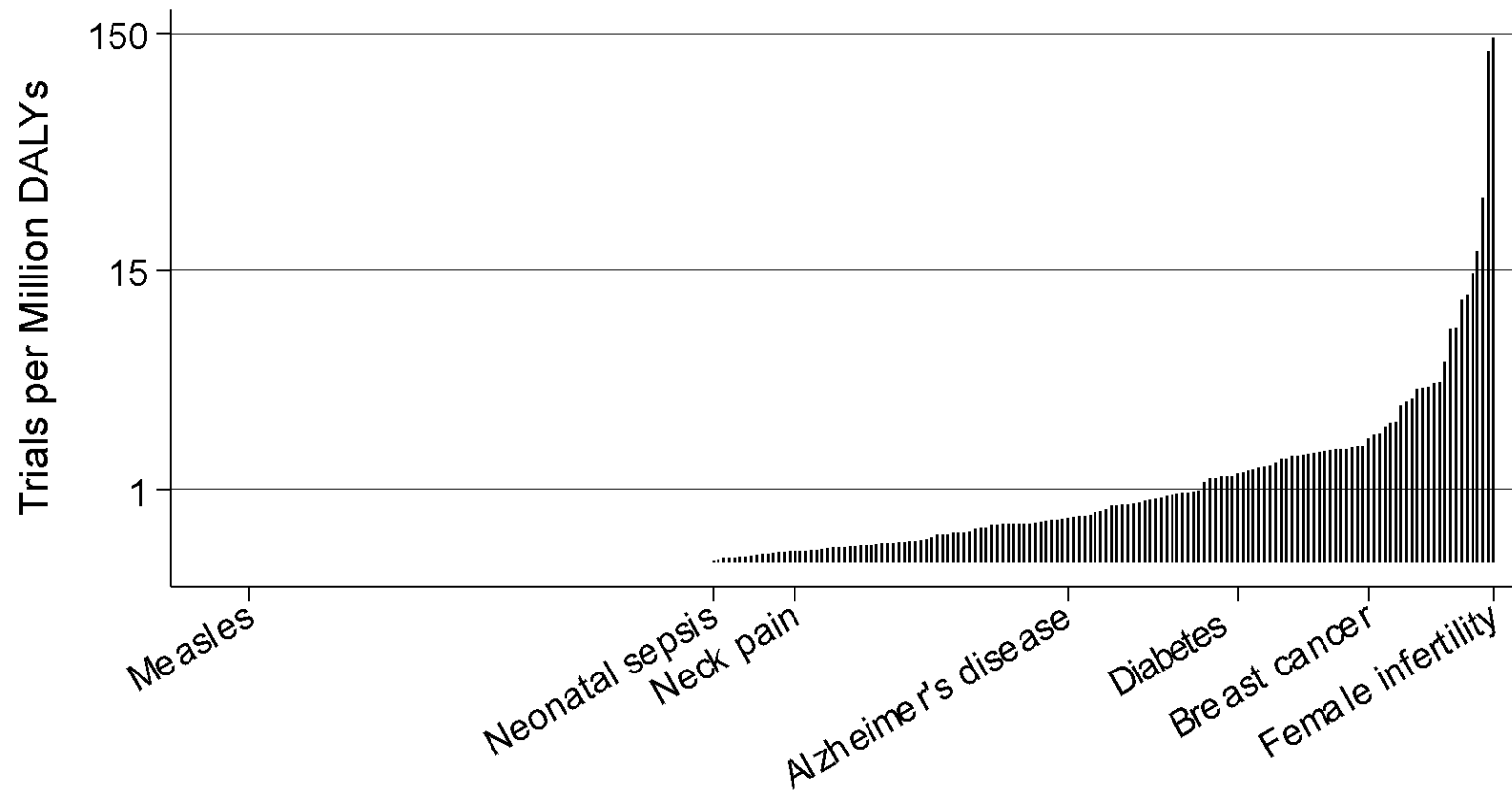
Disease Burden and Evidence

RCT and SR are not available for all clinical problems and cannot provide answers to all clinical questions in all over the world.

Ideally, evidence should be prioritized for disease with the greatest global impact.

The relationship between GBD and number of trials

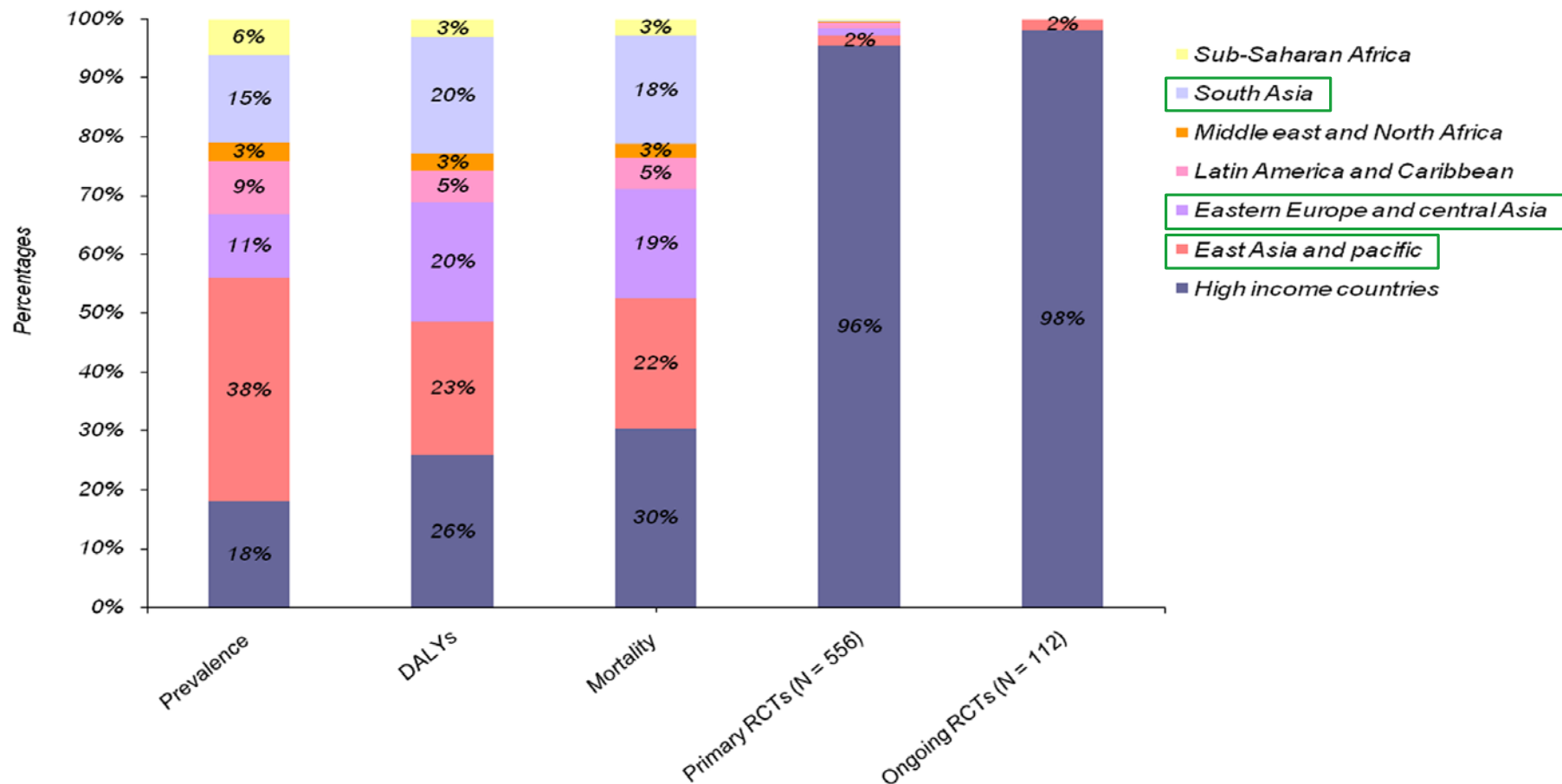
Trials per million DALYs for 239 diseases.



- Approximately 6400 fold variation between female infertility and neonatal sepsis

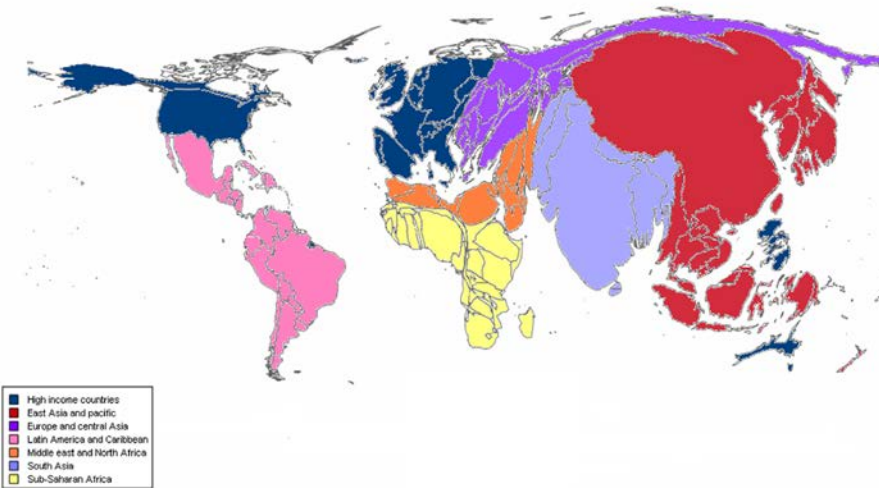
Geographical Representativeness of Published and Ongoing Randomized Controlled Trials. Example of Tobacco Consumption

(A) Tobacco use

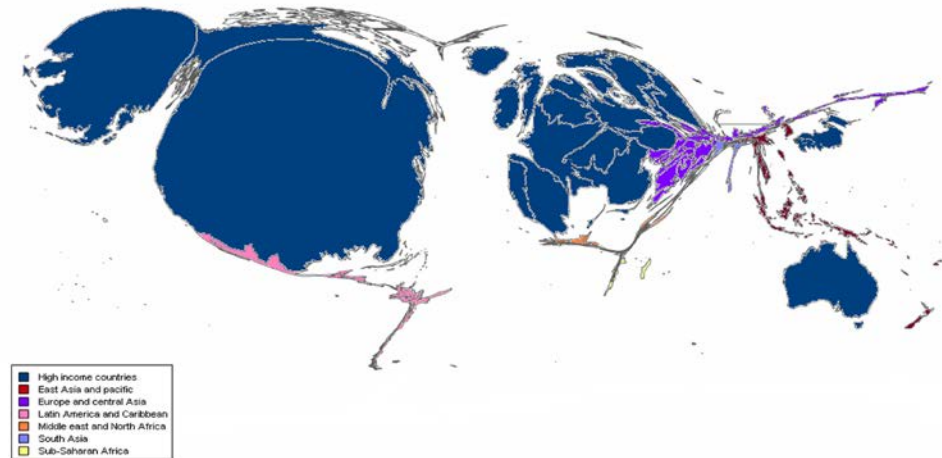


Area cartograms showing the sizes of countries in proportion to A) the number of smokers and B) the number of RCTs (RCTs included in Cochrane systematic reviews and ongoing RCTs) aimed at reducing or stopping tobacco use.

A. Number of smokers

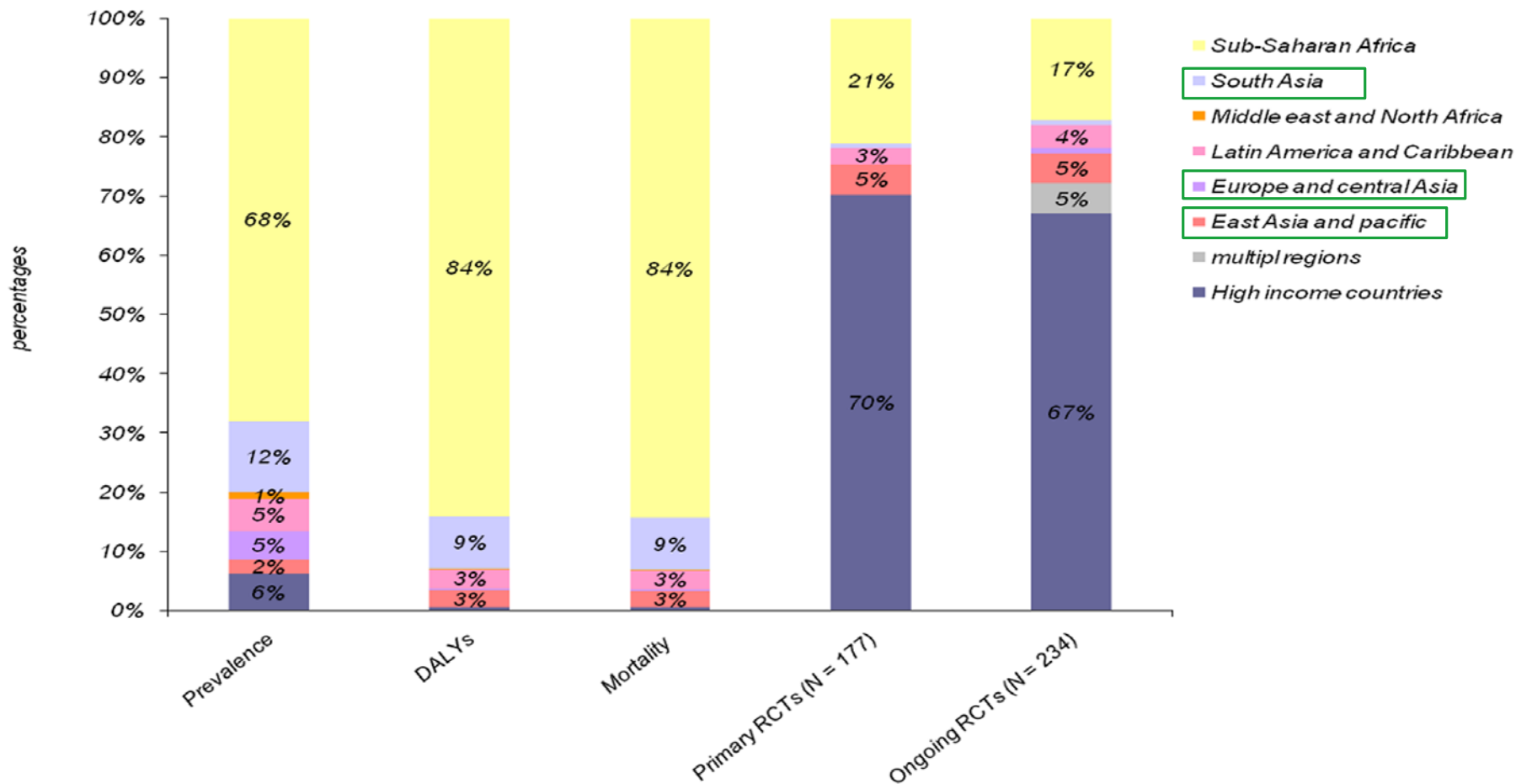


B. Number of RCTs aimed at reducing or stopping tobacco use



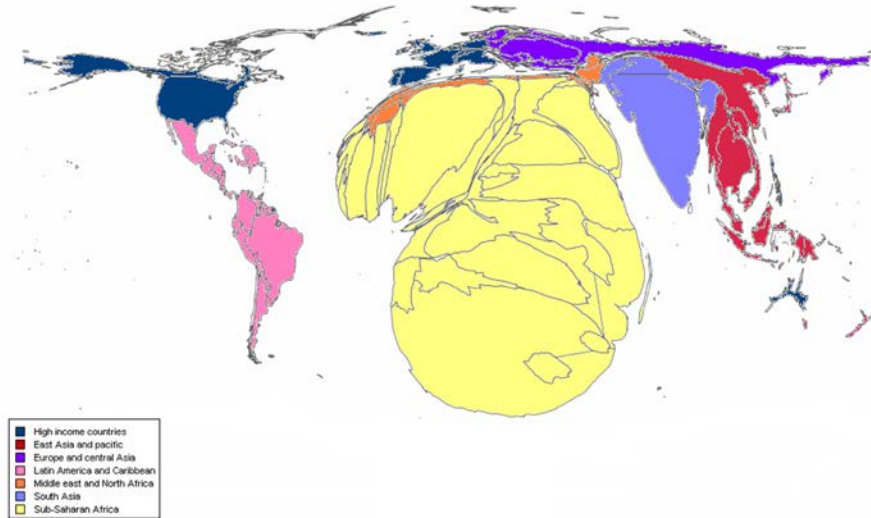
Geographical Representativeness of Published and Ongoing Randomized Controlled Trials. The Example of HIV Infection

(B) HIV infections

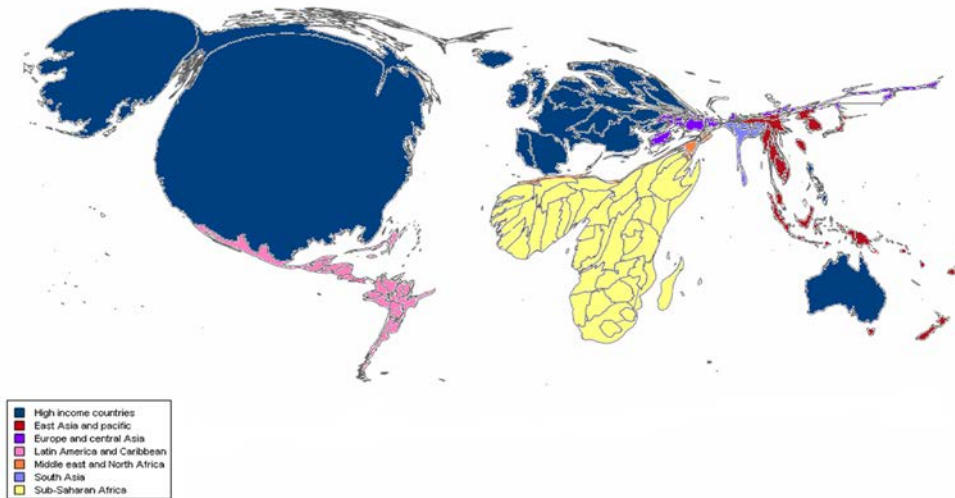


Area cartograms showing the sizes of countries in proportion to A) the number of people with HIV infection and B) the number of RCTs (primary and ongoing RCTs) aimed at treating or preventing HIV infection.

A. Number of people with HIV infection



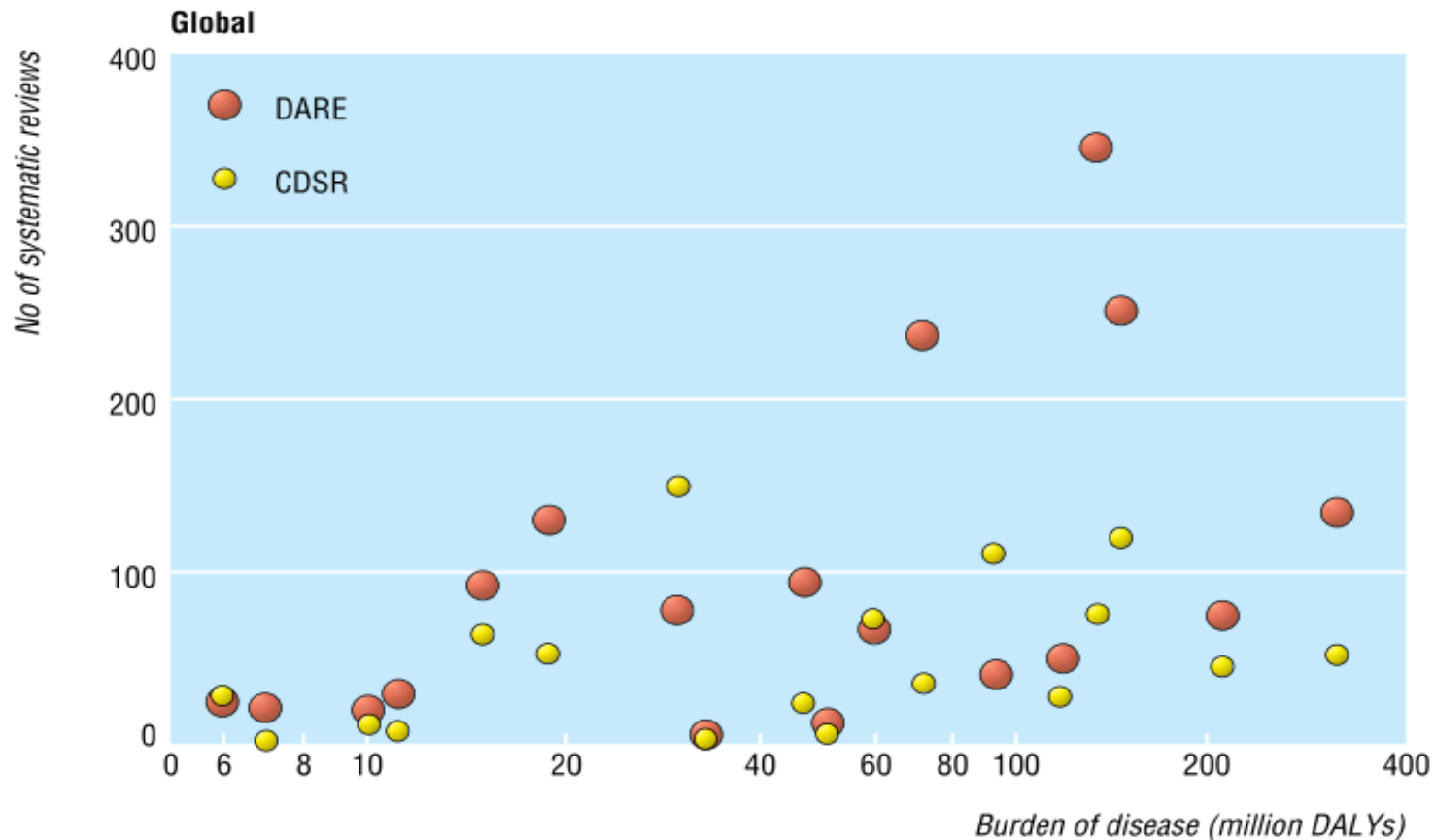
B. Number of RCTs aimed at preventing or treating HIV infection



Systematic review : research synthesis

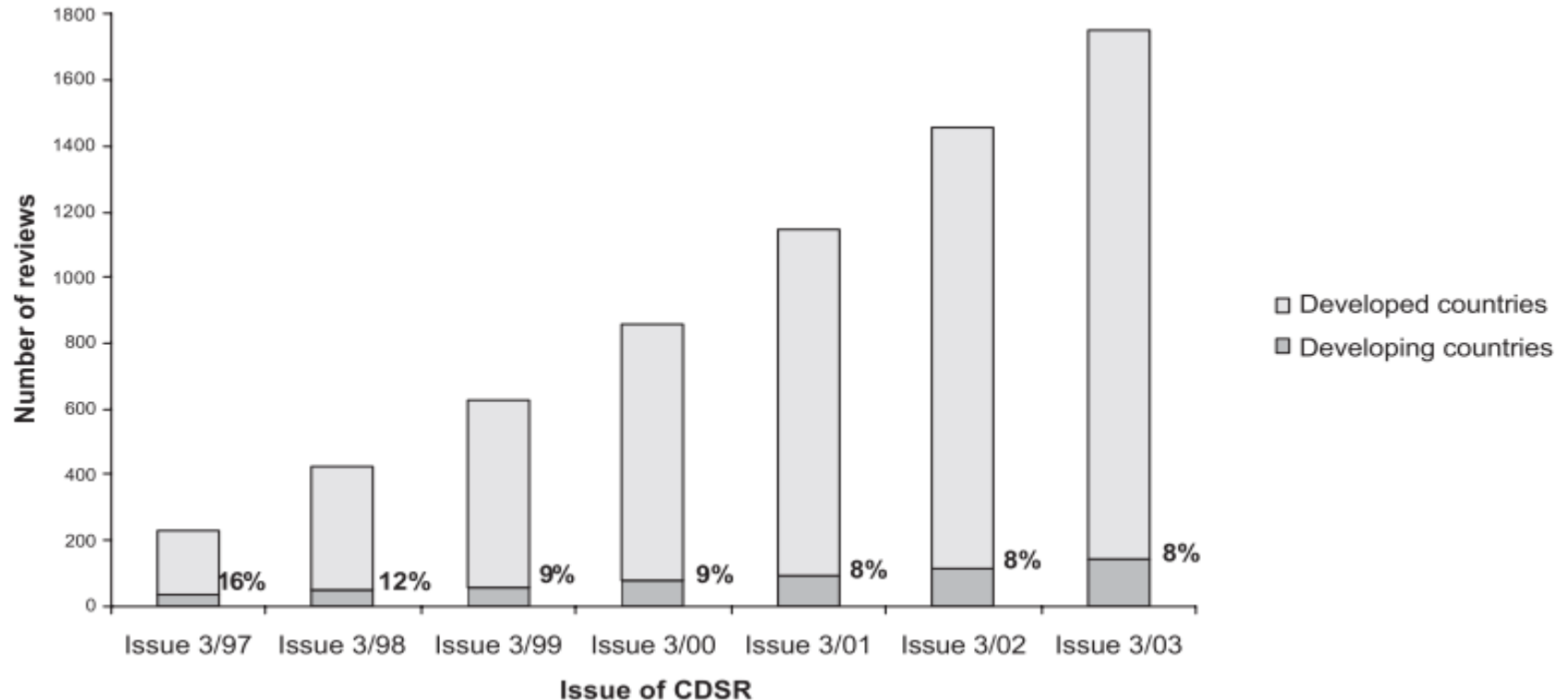
- Systematic reviews is important even if evidence is lacking.
- Synthesized knowledge is more relevant than primary research.

Number of systematic reviews according to the burden of disease for each major disease group



Most of reviews are on priorities in developed country

Origin of country; systematic review

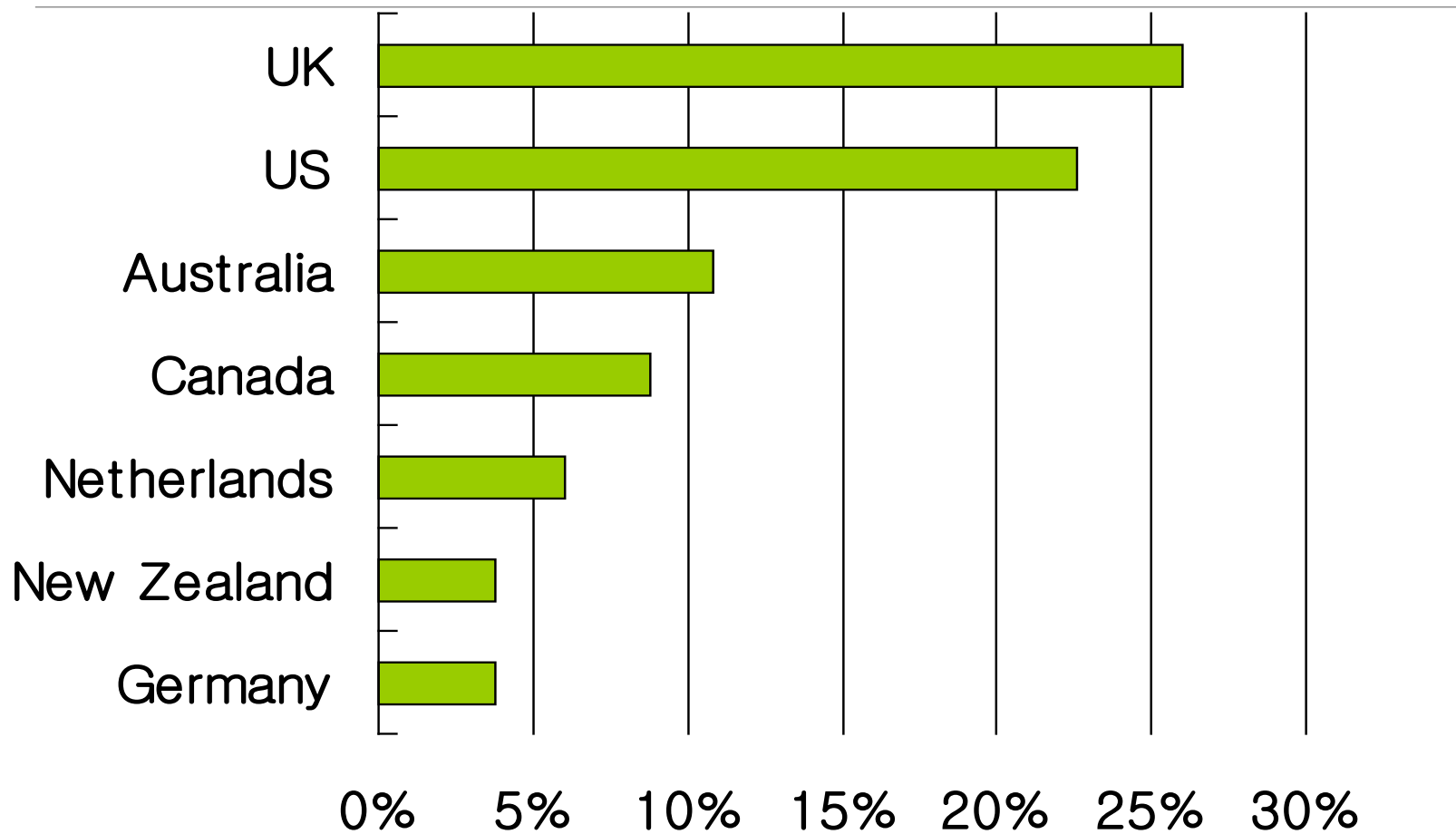


Number and proportions(%) of Cochrane reviews by location of contact author in developing/developed countries, 1997-2003

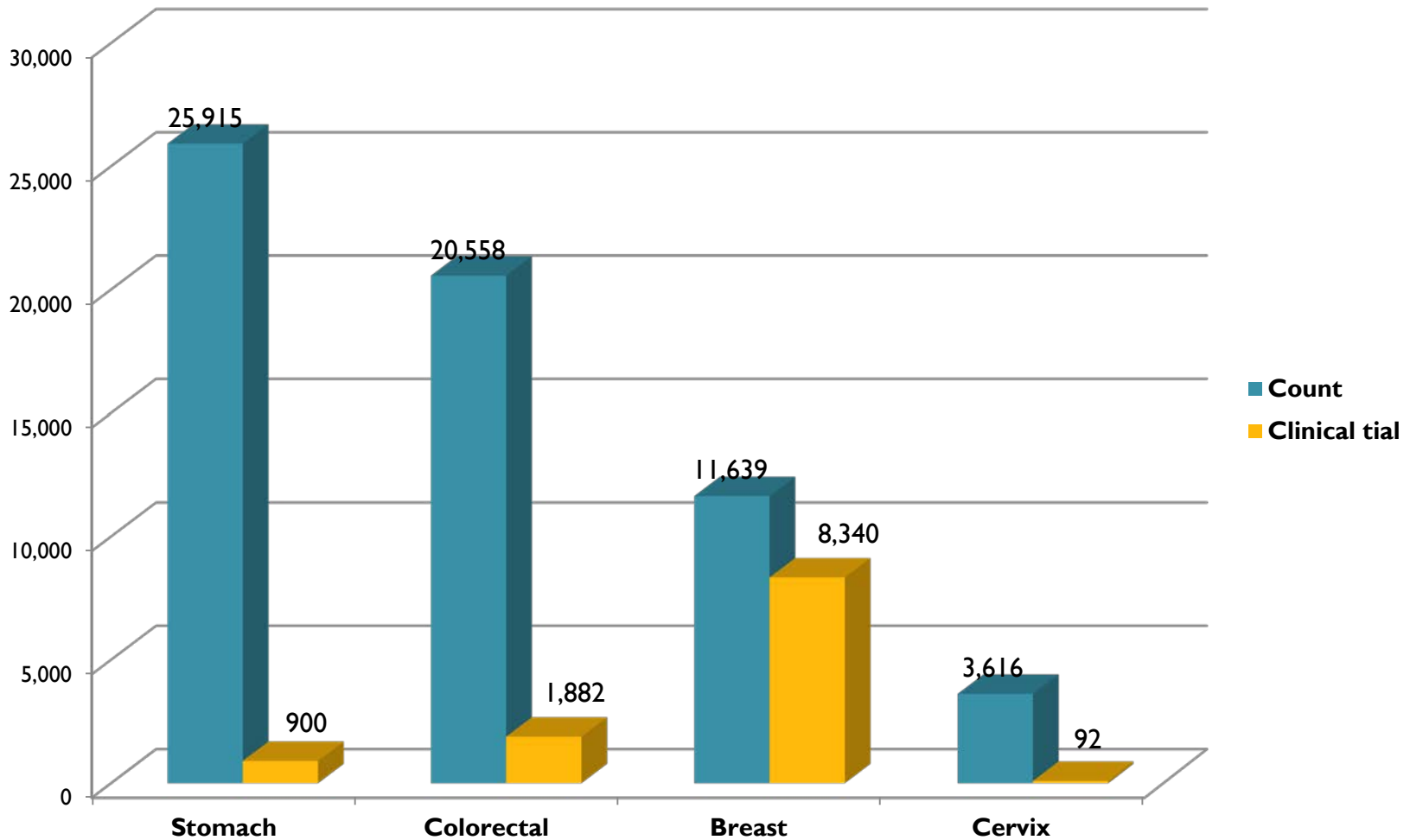
Evidence-based public health: what does it offer developing countries? ;
Celia McMichael, Elizabeth Waters and Jimmy Volmink; Journal of Public
Health Advance Access published April 8, 2005

Origin of study;

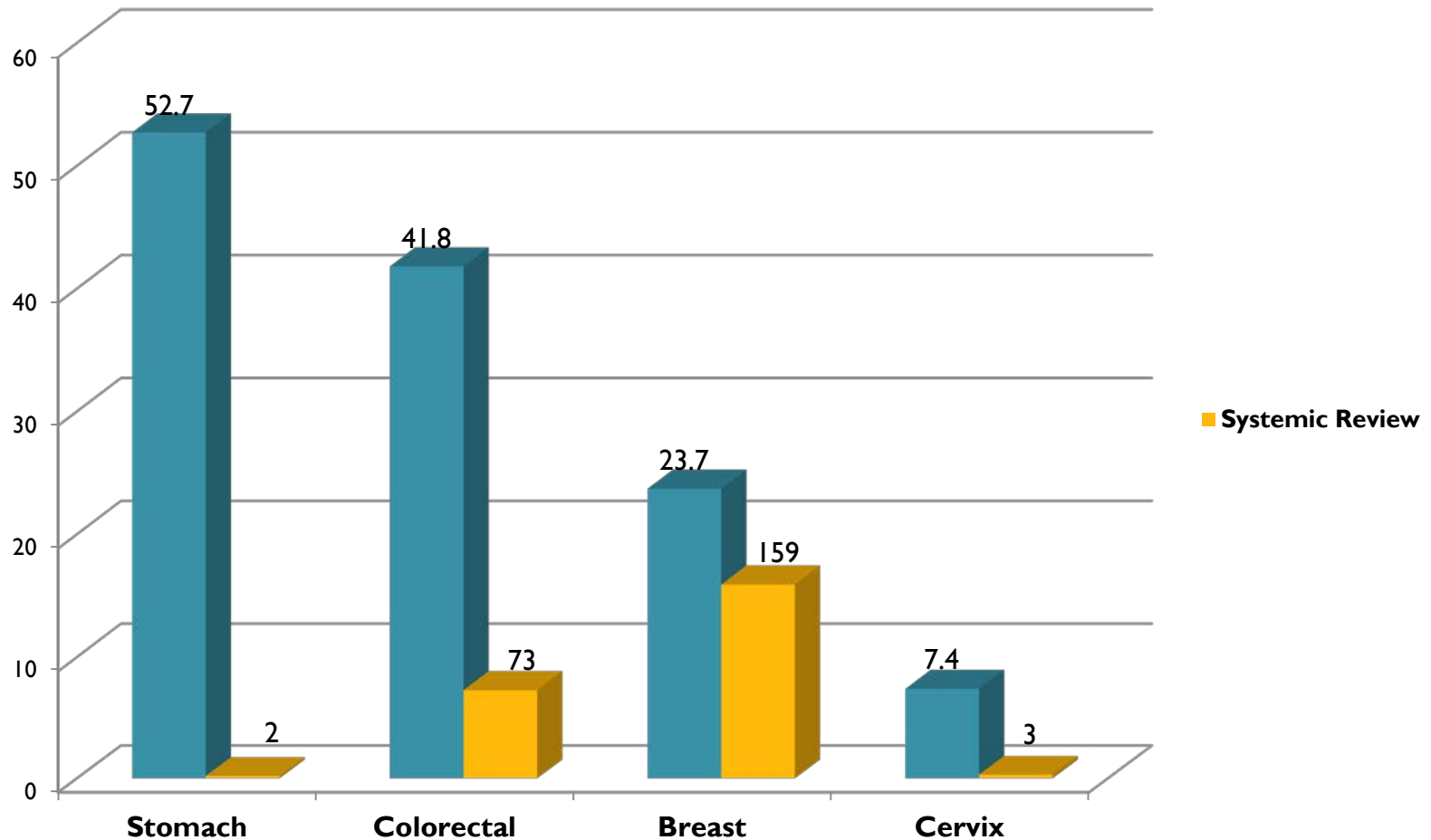
Systematic Review Production by Country



Conditions ; Number of RCT by cancers type(cited in SR)



Conditions ; Number of Systematic Review by cancer type



The 10/90 Gap

73 billion USD is invested annually in global health research

- Less than 10 per cent is spent on research into the health problems that account for 90 per cent of the global disease burden.

Exclusion of Studies from non Western Countries ; Unpublished

- Systematic bias in medical journals against diseases and health needs that is particular to non western country.
- Much knowledge is unpublished and consequently can not be included in systematic reviews.

Exclusion of Study; language

HTA

English-Language Restriction When
Conducting Systematic Review-based
Meta-analyses: Systematic Review of
Published Studies

FEBRUARY 2009

Exclusion of Study;

Percentage of Non-English-Language References and Journal of Publication

Journal	Articles n	References, n	Non-English-Language References	
			n	%
<i>American Journal of HSP</i>	315	7877	45	0.57
<i>Annals of P</i>	467	13132	218	1.66
<i>European Journal of HP</i>	36	659	21	3.19
<i>European Journal of PS</i>	204	7548	75	0.99
<i>Journal of DDST</i>	110	2834	19	0.67
<i>Journal of PS</i>	337	11572	50	0.43
<i>PWS</i>	99	2295	111	4.84

Exclusion of study due to study quality;

There were a number of deficiencies in the quality of the randomised trials in an developing country

Number, topic and quality of RCTs published		
Random allocation		51% (435)
Quasi-random methods of allocation		49% (423)
Concealment of treatment allocation		46% (200)
Blinding of observers assessing outcomes		28% (123)
All the allocated test subjects		28% (123)
The follow-up period was	more than 1year	4% (17)
	Less than 6 days	16% (71)

Randomised trials in the South African Medical Journal, 1948-1997.; Pienaar ED, Volmink J, Zwarenstein M, Swingler GH.; S Afr Med J 2002; 92: 901-903

- Reality; SR are not available for all clinical problems and cannot provide answers to all clinical questions in all of the country.
- There are cultural and geographical bias in the availability and relevance of evidence

What can be done?

- More high quality research of RCT and SR should be conducted in less represented countries,
- Also, systematic reviewers also have much to do to make a review better.

Challenges in EBM

-different key question

- Type and use of the evidence can be vary depending on the clinical questions.
- Sometimes clinical questions in one country is different from other countries.
- In this case, evidence from existent evidence became not relevant in country.

Difference in clinical questions between countries

- Antiviral prophylaxis in organ transplantation

	Ab(+)	Ab(-)
Western country	5%	95%
Asian country	80%	20%
Availability of evidence	Scarce (0 trials)	Abundant (Over 20 trials)

- Evidence for existing SR may be non relevant to this case
- *Antiviral prophylaxis for Ab(+) patients*

Challenges in EBM(2)

-cultural and organizational difference

- The translation of evidence in local setting should take into consideration the organizational and cultural context in which the evidence will be interpreted
- Difference in culture and organization may result in differences in application or recommendations

Making country specific evidence

- To ensure that SR addresses specific health questions relevant to a particular setting, the specific epidemiology, needs, priorities, and resources in the target setting should be considered
- This is the one of the most important step in making relevant SR

Making Evidence-Based Medicine Relevant

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- If the case for the use of RCT or systematic reviews is good in one country then the case is same in the other country.



Some thoughts

‘Evidence itself is not sufficient; it must be communicated in ways that make it relevant and compelling.’

‘ The use of evidence is most successful when local differences are factored into the decision-making process, whether at the clinical, system or policy level”. (*Eisenberg JM, 2002*)