

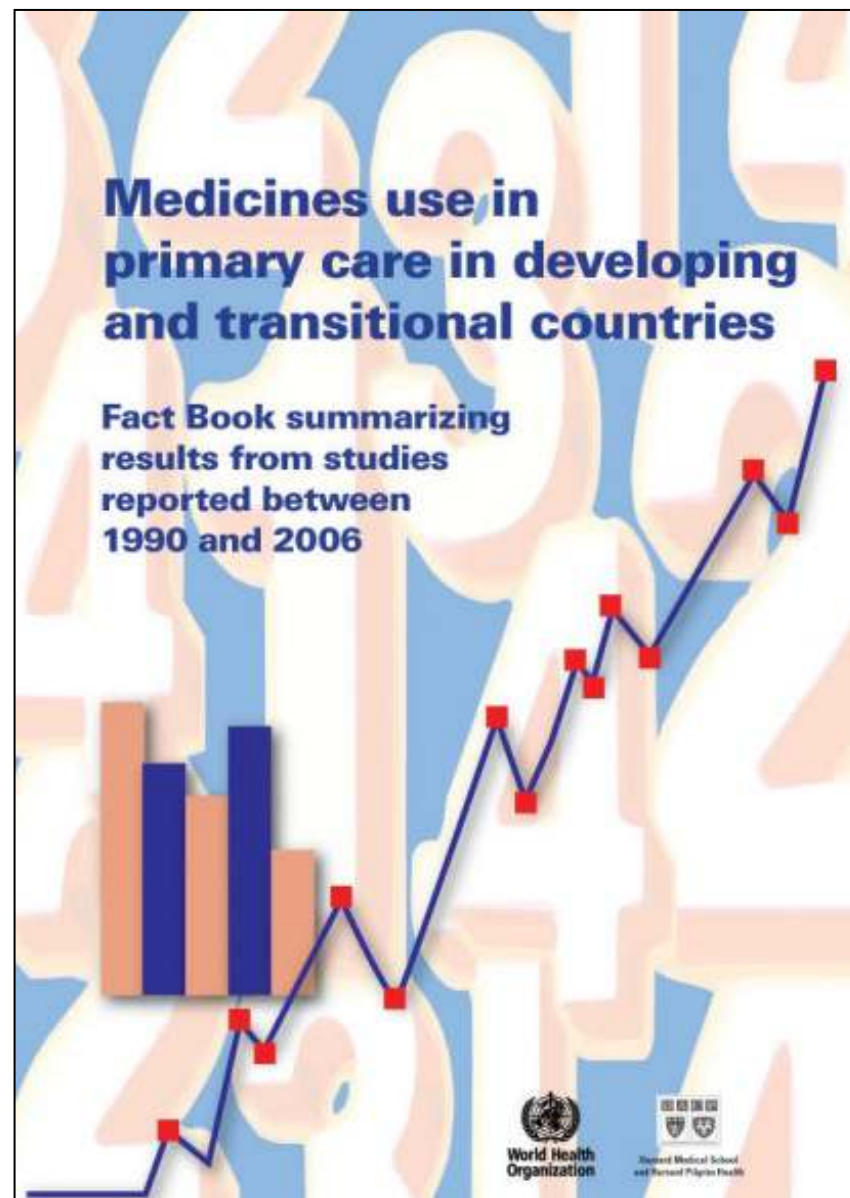
Interventions and innovations at community level to improve antibiotic access and use: global overview

Kathleen Holloway

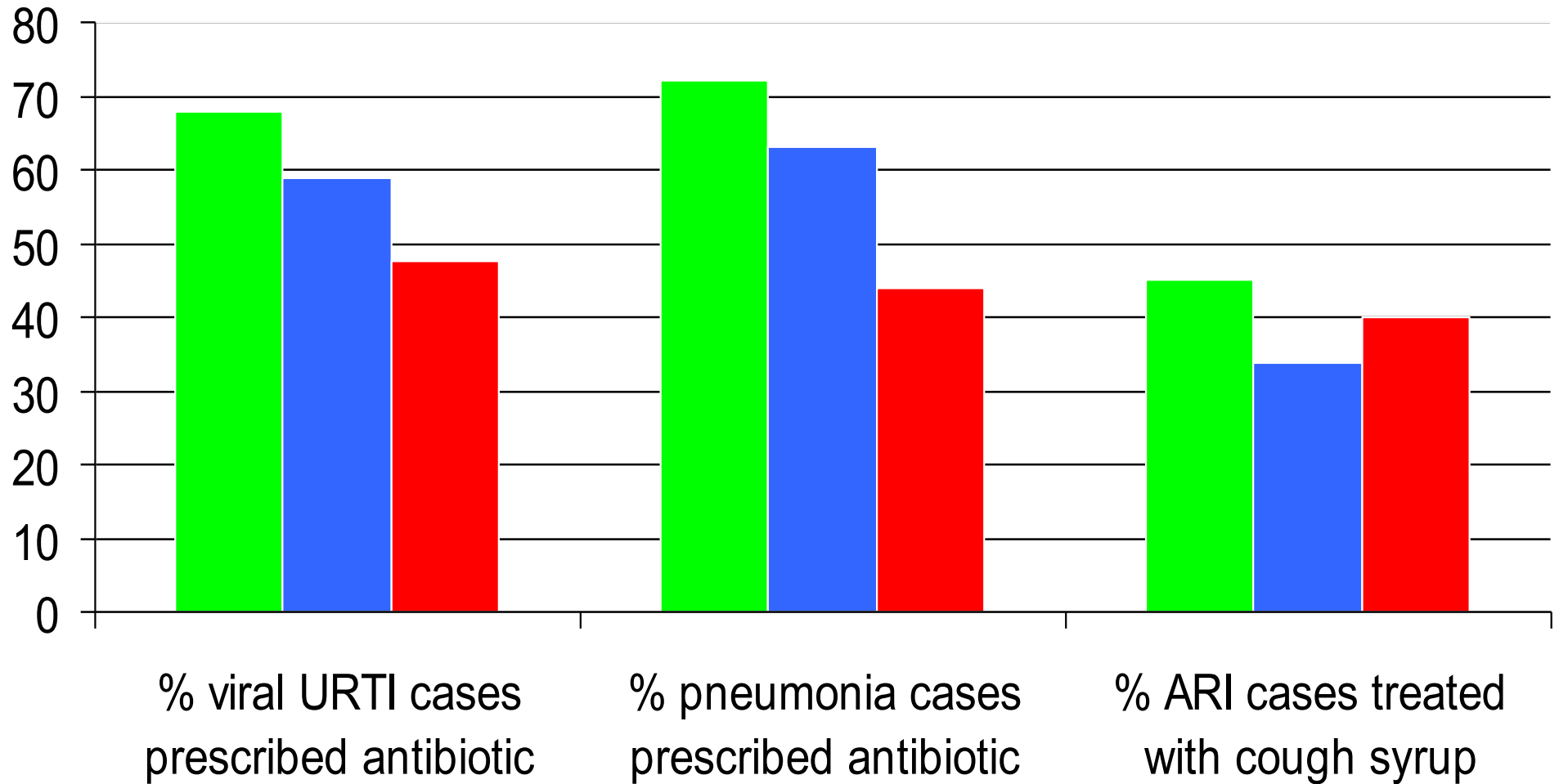
Regional Advisor Essential Drugs and Other Medicines
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Database on medicines use

- Database of all medicines use surveys using standard indicators in primary care in developing and transitional countries
- Studies identified from INRUD bibliog, PUBMED, WHO archives
- Data on study setting, interventions, methods and drug use extracted & entered
- All data extraction and entry checked by 2 persons
- Now > 900 studies entered
- Systematic quantitative review
- Evidence from analysis used for WHA60.16 in 2007

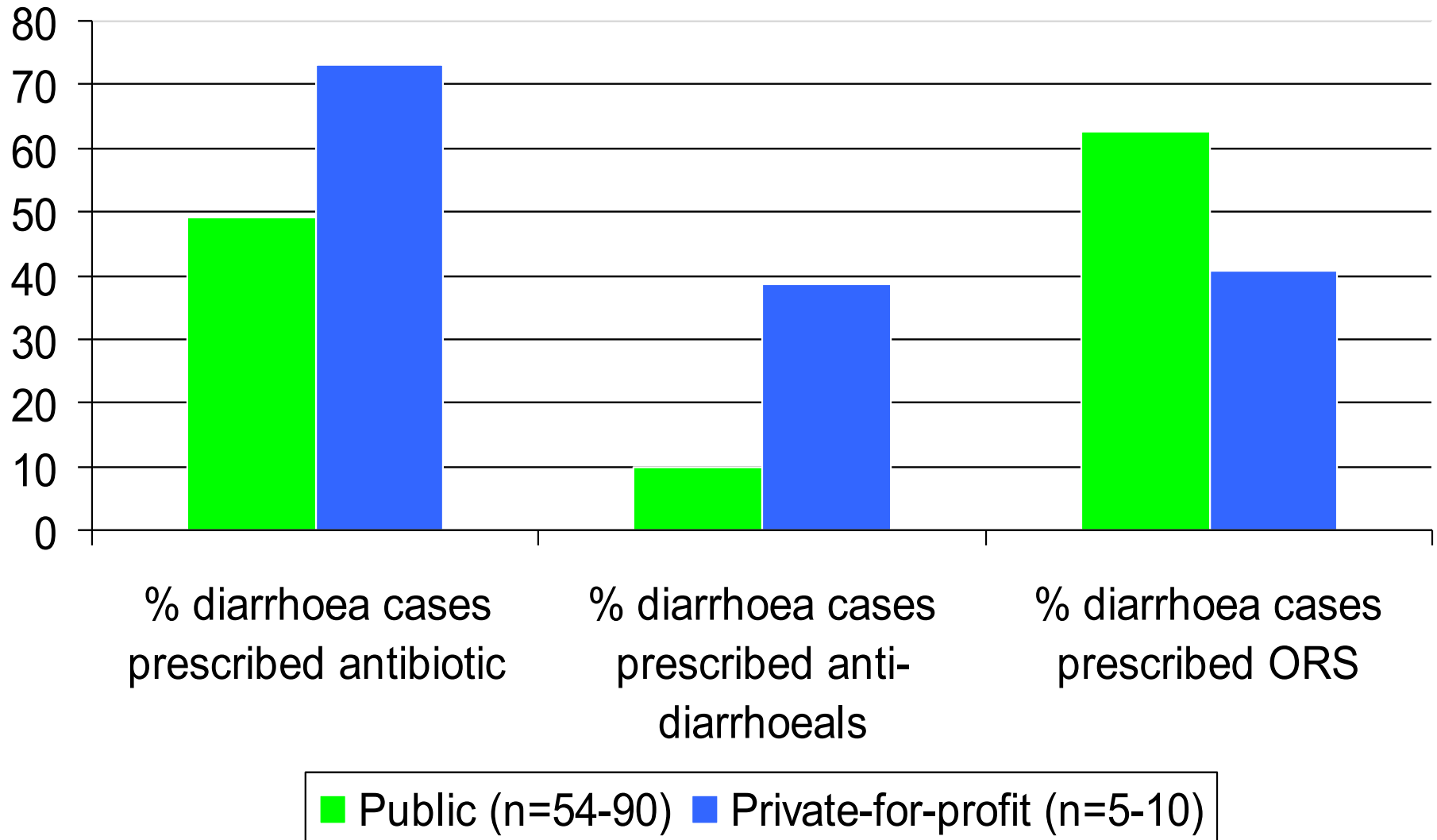


Treatment of ARI by prescriber type: WHO 2009

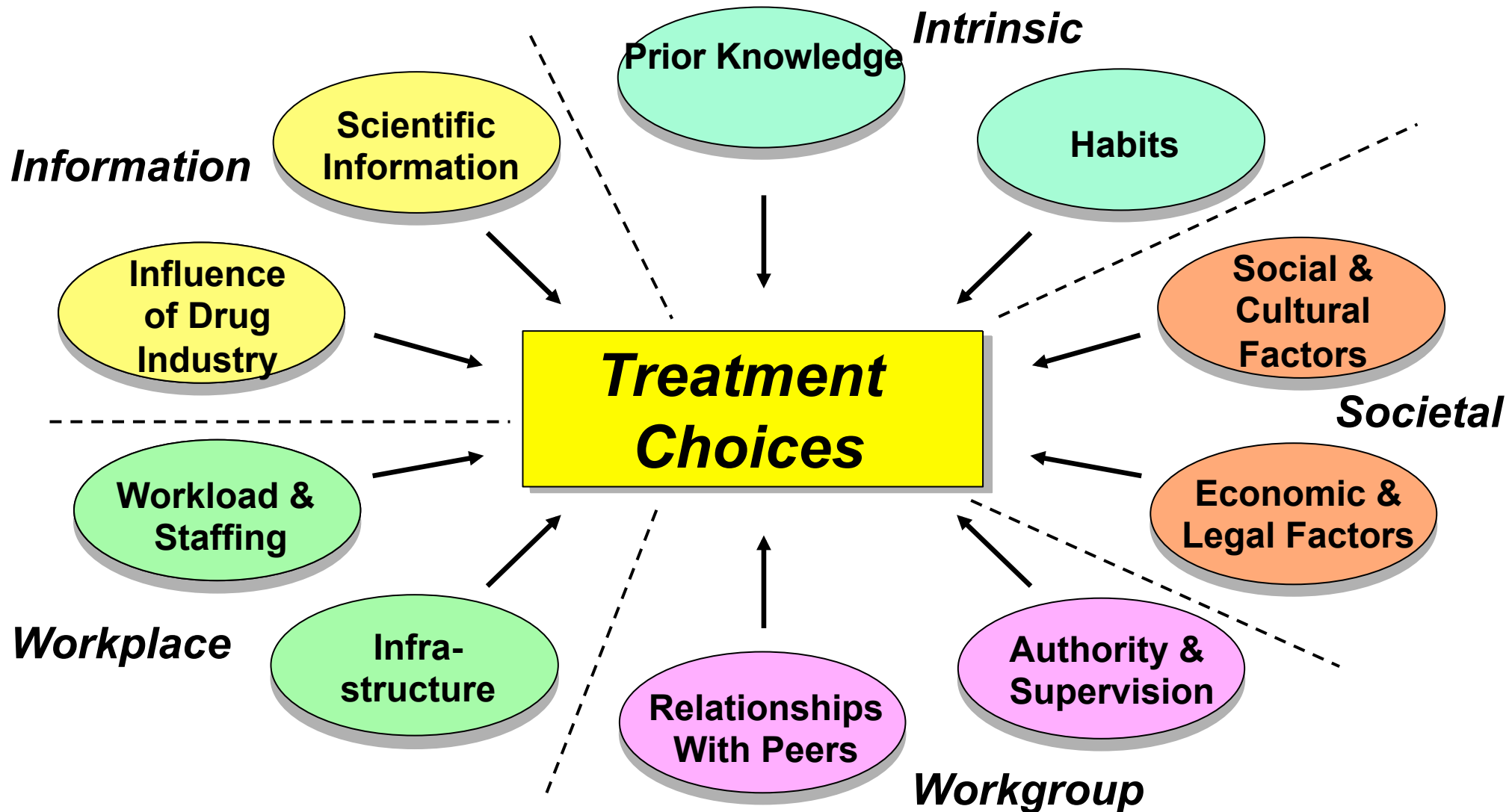


■ Doctor (n=26-62) ■ Nurse/paramedic (n=12-86) ■ Pharmacy staff (n=9-17)

Public / private treatment of acute diarrhoea by doctors, nurses, paramedical staff: WHO 2009



Many Factors Influence Use of Medicines

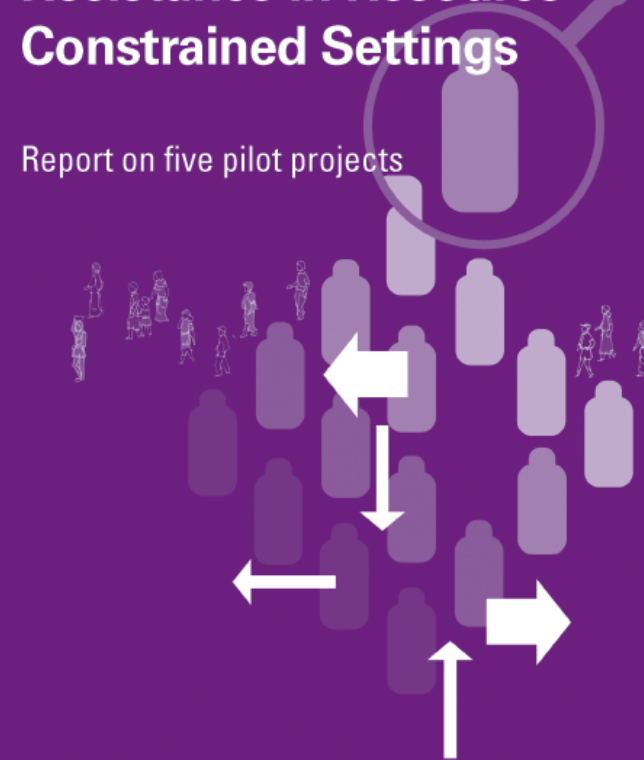


Community surveillance of AMR and use (1)

- Developing & piloting method for integrated surveillance of AMR & AB use & collection of baseline data in 2 resource-constrained settings
- 3 sites in India & 2 in S. Africa
- AMR & AB use data collected monthly for 1-2 years from same communities
- 4 sites measured AMR in *E.Coli* & 1 in *S.pneum* & *H.influenzae*
- AB use by private GPs, retailers, public & priv hospitals & PHCs by exiting patient interview or prescribing & dispensing records
- Qualitative study (FGDs) into provider & consumer behaviour

Community-Based Surveillance of Antimicrobial Use and Resistance in Resource-Constrained Settings

Report on five pilot projects



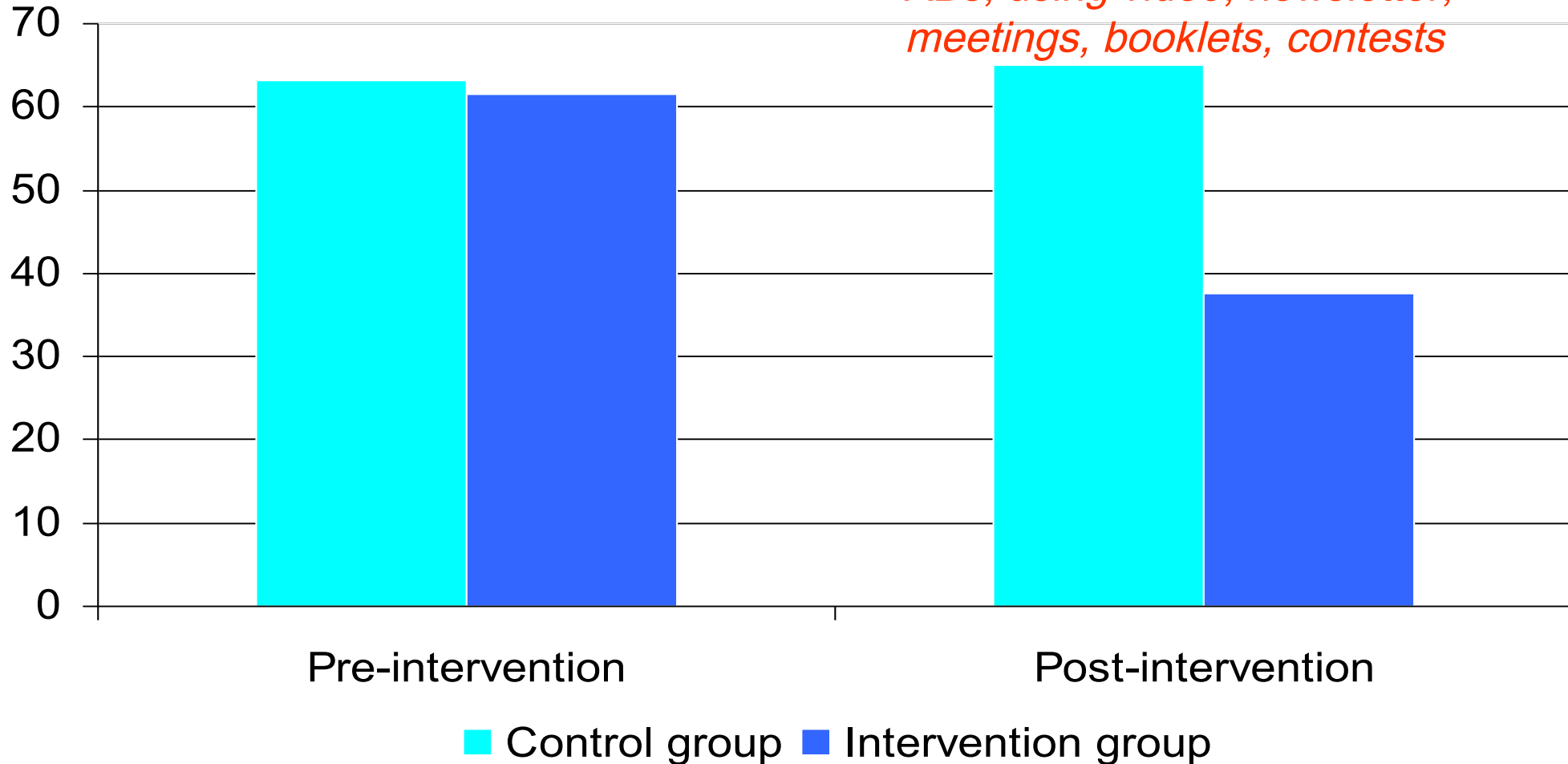
Community surveillance of AMR and use (2): results

- Antimicrobial resistance
 - pathogenic *E.Coli* in pregnant women's urine in India
 - Cotrim 46-65%; Ampicillin 52-85%; Ciprofloxacin 32-59%; Cefalexin 16-50%
 - *S.Pneumoniae* & *H.influenzae* in sputa in S. Africa
 - Cotrim > 50% (both organisms); Ampicillin >70% (*H.influenzae*)
- Antibiotic use
 - About 1/2 patients in India & 1/4 or less of patients in S.Africa get ABs
 - Much inappropriate AB use especially in India e.g. use of fluoroquinolones for coughs and colds in private sector
- Motivation of providers & consumers
 - Patient demand – looking for quick cure
 - Lack of CME & unwillingness to attend for fear of losing custom
 - Uncontrolled pharmaceutical promotion, involving financial gain

% school children treated with antibiotics for cough & cold in the previous winter in Moldova

Cebotarenco & Bush, Health Ed. Res, 2008

Intervention: volunteer students train fellow students & parents on ABs, using video, newsletter, meetings, booklets, contests



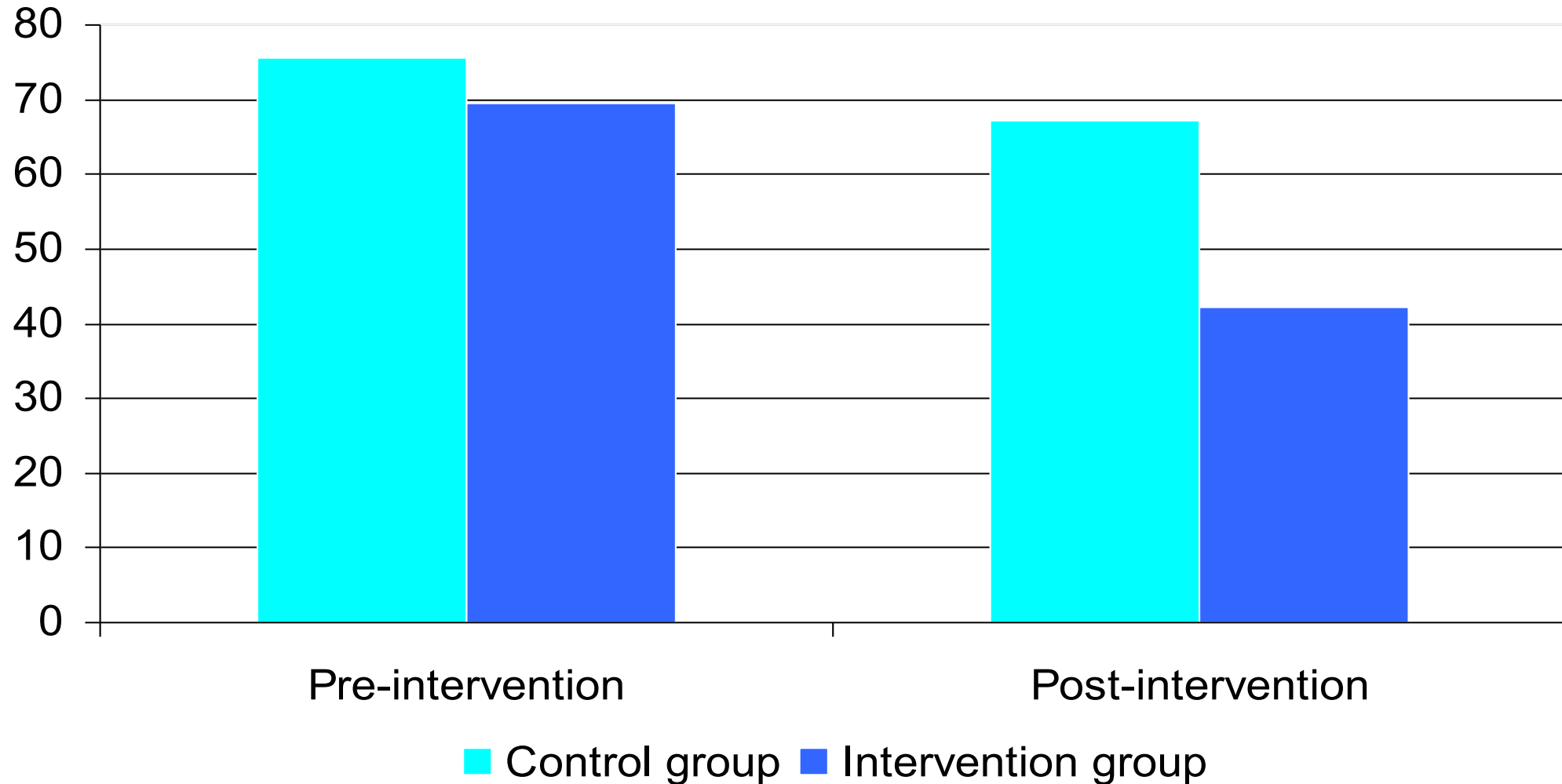
Impact of user fees on prescribing quality in Nepal

Source: Holloway et al: HPP 2001 & SSM 2002

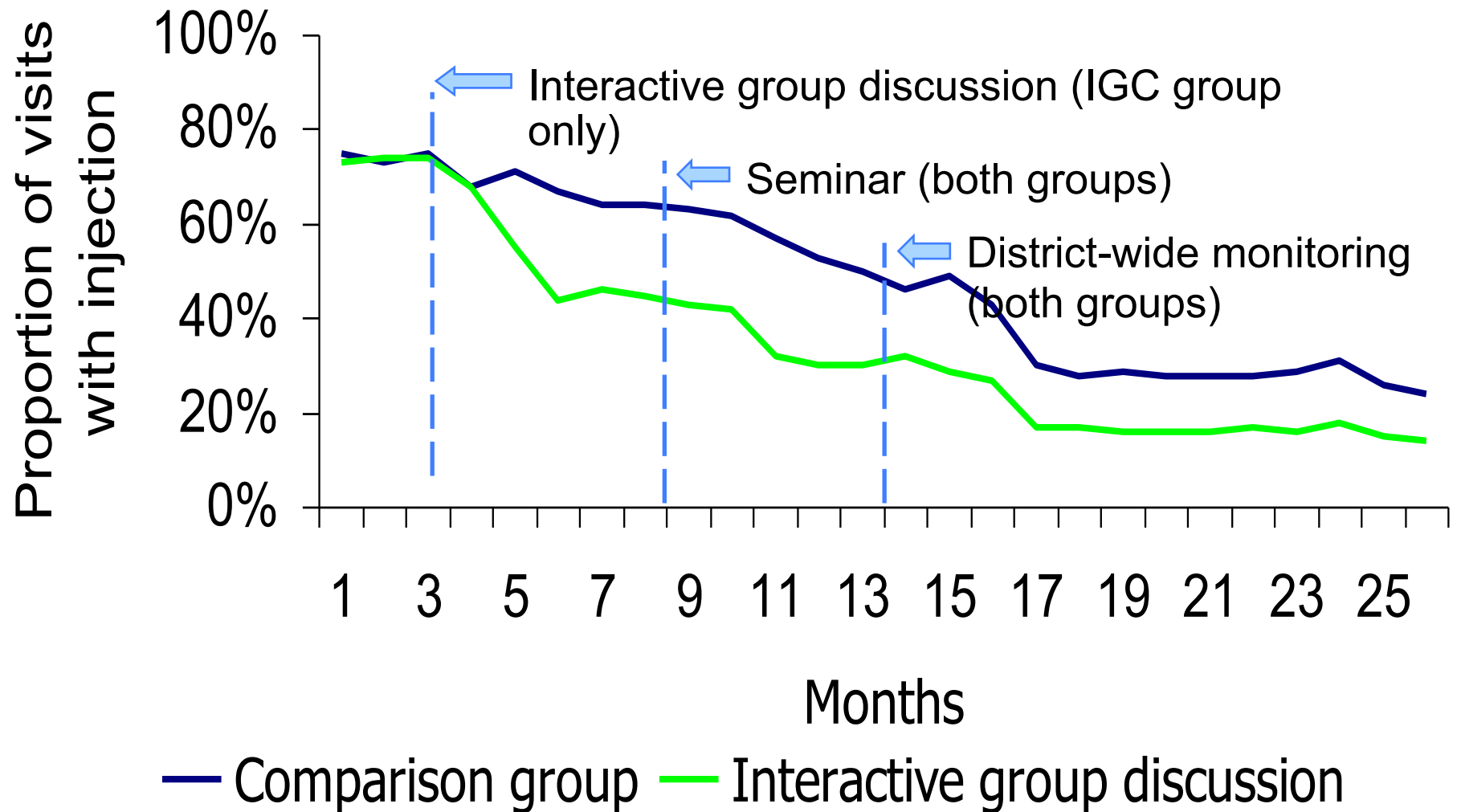
User Fees (complete drug courses)	control fee / Px N=12	1-band item fee N=10	2-band item fee N=11
Av. no. drugs per prescription (Px)	2.9 → 2.9 (+/- 0)	2.9 → 2.0 (-0.9 drugs)	2.8 → 2.2 (-0.6 drugs)
% prescriptions containing ABs	66.7 → 67.5 (+0.8%)	63.5 → 54.8 (-8.7%)	60.7 → 54.3 (-6.4%)
% prescriptions according to STGs	23.5 → 26.3 (+2.7%)	31.5 → 45.0 (+13.5%)	31.2 → 47.7 (+16.5%)
Average cost per prescription (Rs)	24.3 → 33.0 (+8.7 Rs)	27.7 → 28.0 (+0.3 Rs)	25.6 → 24.0 (-1.6 Rs)
Interviews with patients & providers	<i>Both wanted the most drugs for least cost so the item fee resulted in many people opting for fewer drugs</i>		

Impact of Patient-Provider Discussion Groups on % patients receiving injections in Indonesian PHC Facilities

Hadiyono et al, SSM, 1996, 42:1185



Impact of multiple interventions on injection use in Indonesia



Review: Public education campaigns in industrialised nations

Huttner et al 2009, Lancet Infectious Diseases, 2009,10(1):17-31.

Country	Period	Campaign Type	Antibiotic (AB) reduction
France	2002 -	Yearly mass media targeting Providers & Consumers	27% AB prescriptions
Belgium	2000 -		36% reimbursed packages
UK	Yearly		Stable use
Australia	2000-8		14% AB consumption (DDDs)
USA	1995 -		18-36% in ABs for ARI
Canada*	1996-2005		Limited
Spain	2006-8	Seasonal mass media campaign targeting consumers	High use / No change
Portugal	2004-7		
Germany	2000 -		
Norway	2004		

* *Providers also targeted*

Intervention impact: largest % change in any outcome measured: Source - WHO database on medicines use 2009

Intervention type	No. studies	Med. impact	25,75 th centiles
Printed materials only	5	8%	7%, 18%
National medicines policy	6	15%	14%, 24%
Economic strategies	7	15%	14%, 31%
Provider education	25	18%	11%, 24%
Consumer education	3	26%	13%, 27%
Provider+consumer education	12	18%	7%, 21%
Provider supervision	25	22%	16%, 40%
Provider group process	8	37%	21%, 59%
Essential drug program	5	28%	26%, 50%
Community case management	5	28%	28%, 37%
Provider+consumer ed & supervis	7	40%	23%, 54%

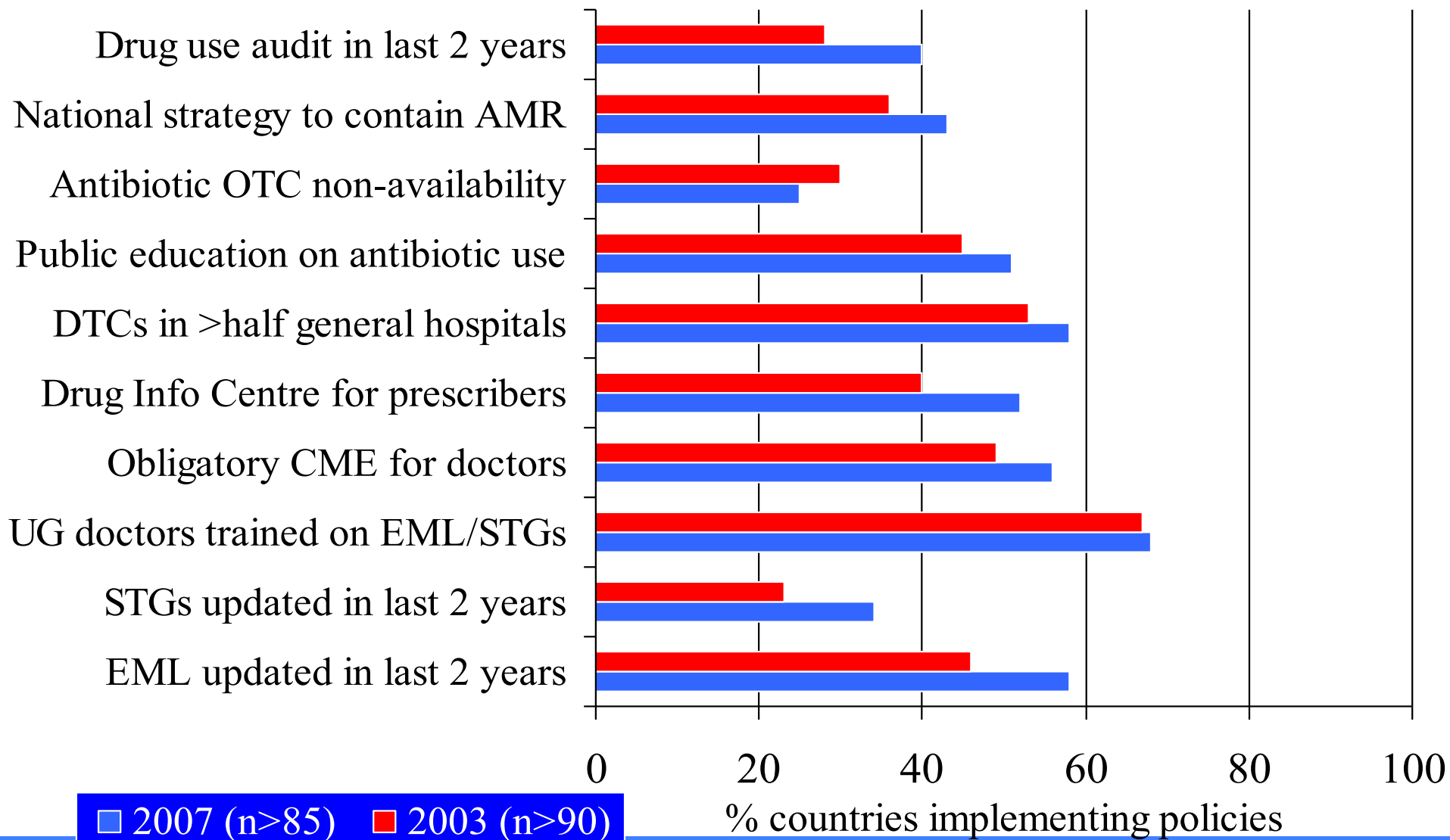
Intervention impact: median % change in all outcomes

measured (av. 4/study): Source - WHO database on medicines use 2009

Intervention type	No. studies	Med. impact	25,75 th centiles
Printed materials only	5	5%	-2%, 7%
National medicines policy	6	5%	0%, 15%
Economic strategies	7	6%	-1%, 8%
Provider education	25	7%	4%, 15%
Consumer education	3	2%	1%, 14%
Provider+consumer education	12	9%	-1%, 18%
Provider supervision	25	13%	5%, 17%
Provider group process	8	13%	9%, 28%
Essential drug program	5	15%	1%, 45%
Community case management	5	29%	24%, 36%
Provider+consumer ed & supervis	7	24%	18%, 28%

What national policies do countries have to promote rational use?

Source: MOH Pharmaceutical policy surveys 2003 and 2007



**2nd International Conference for
Improving Use of Medicines, Chiang
Mai, Thailand, 2004**
472 participants from 70 countries



<http://www.icium.org>

Recommendations for countries to:

- Implement national medicines programmes to improve medicines use
- Scale up successful interventions
- Implement interventions to address community medicines use

3rd ICIUM to be held 14-18 November 2011

What are we spending to promote rational use of medicines ?

- Global sales of medicines 2002-3 (IMS): **US\$ 867 billion**
- Drug promotion costs in USA 2002-3: **US\$ >30 billion**
- Global WHO expenditure in 2002-3: **US\$ 2.3 billion**
 - Essential Medicines expenditure **2% (of 2.3 billion)**
 - Essential Medicines expenditure on promoting rational use of medicines **10% (of 2%)**
 - WHO expenditure on promoting rational use of medicines **0.2% (of 2.3 billion)**

Conclusions

- Irrational use of medicines is a very serious global public health problem
- Much is known about how to improve rational use of medicines but much more needs to be done
 - policy implementation at the national level
 - implementation and evaluation of more interventions, particularly managerial, economic and regulatory interventions aimed at prescribers and the community
- Rational use of medicines could be greatly improved if a fraction of the resources spent on medicines and their promotion were spent on improving use.