Ensuring the rational use of drugs in future Universal Health Coverage

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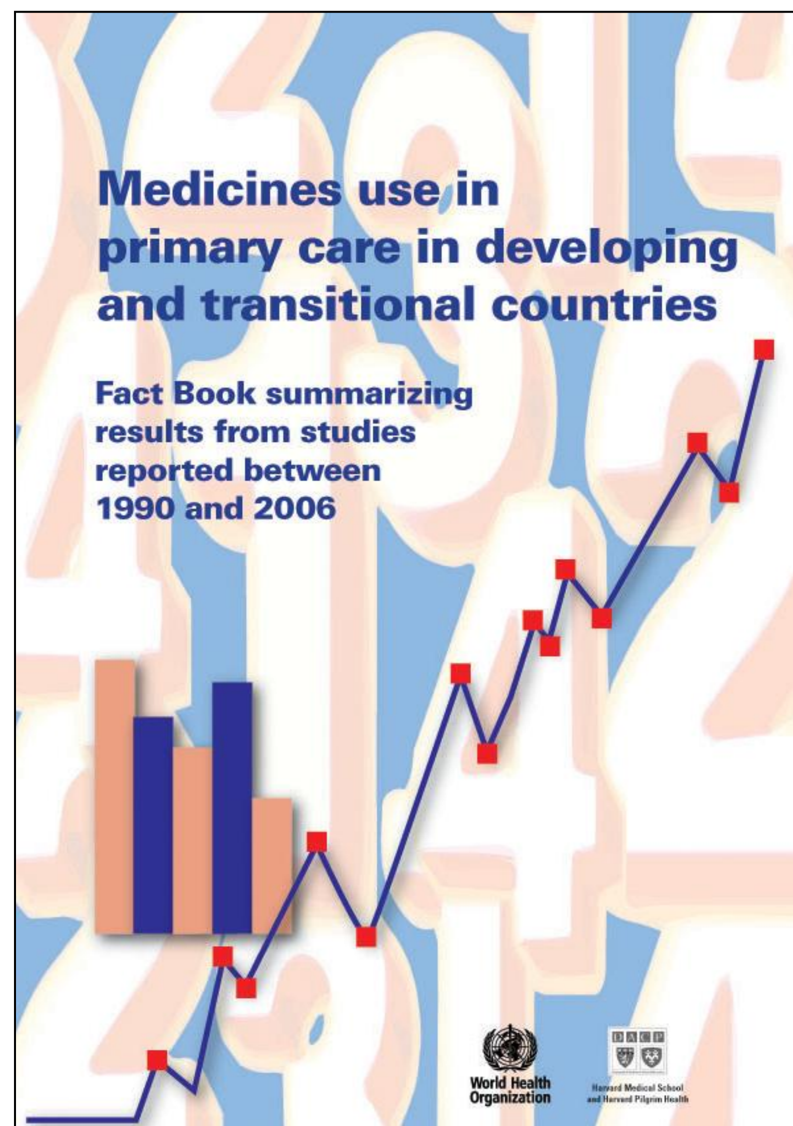
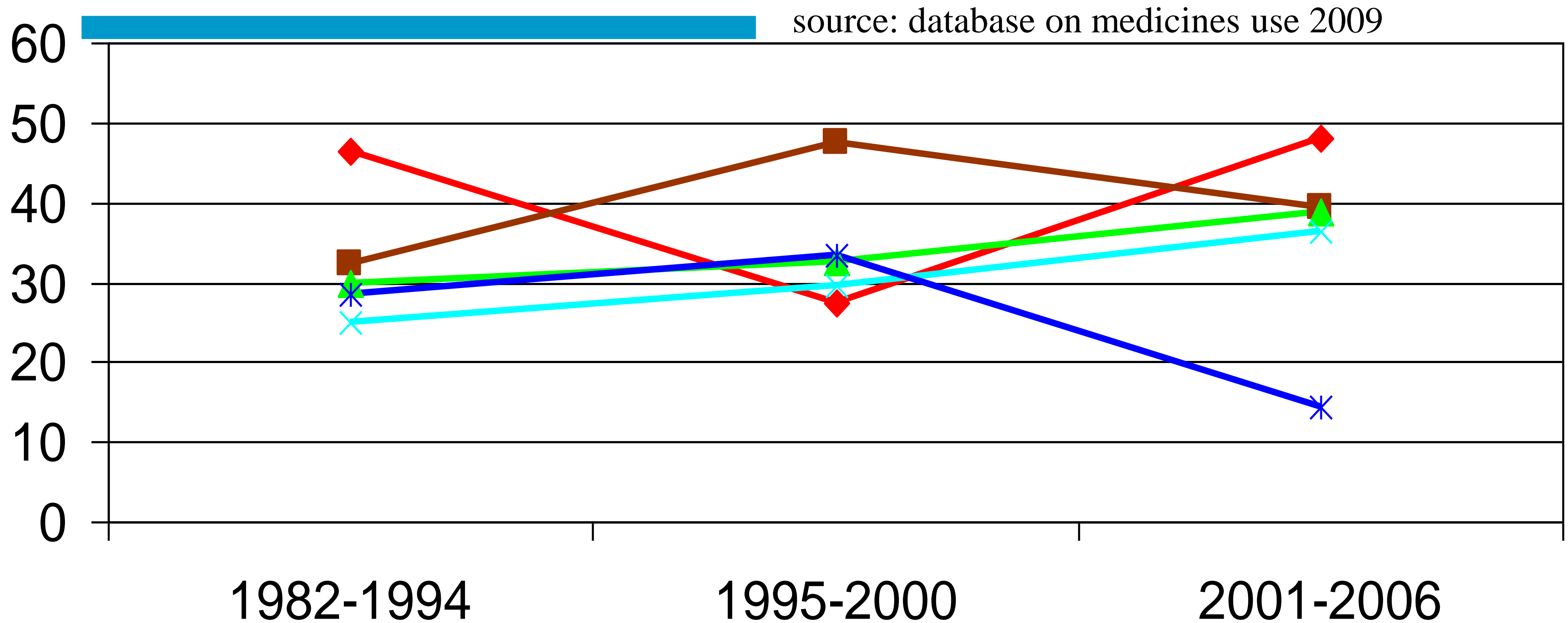
Medicines use in low and middle income countries

- WHO 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

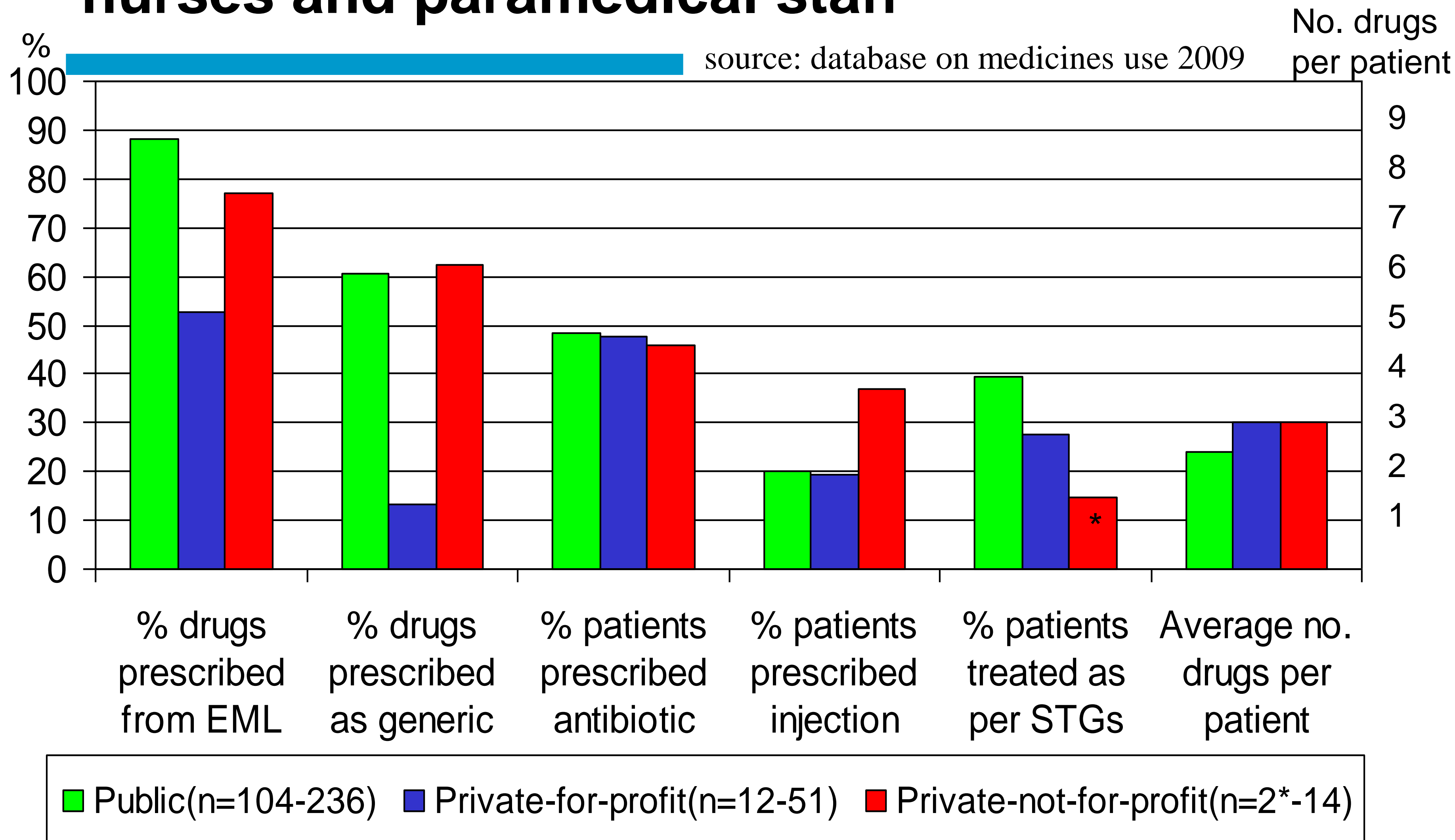


World Health Organization

% compliance with guidelines by WB region



Public / private prescribing by doctors, nurses and paramedical staff



Intervention impact: largest % change in any medicines use outcome measured in each study

source: database on medicines use 2009

Intervention type	No. studies	Median impact	25,75th centiles
Printed materials	5	8%	7%, 18%
National 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%	8%, 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 educ & supervision	7	40%	18%, 54%

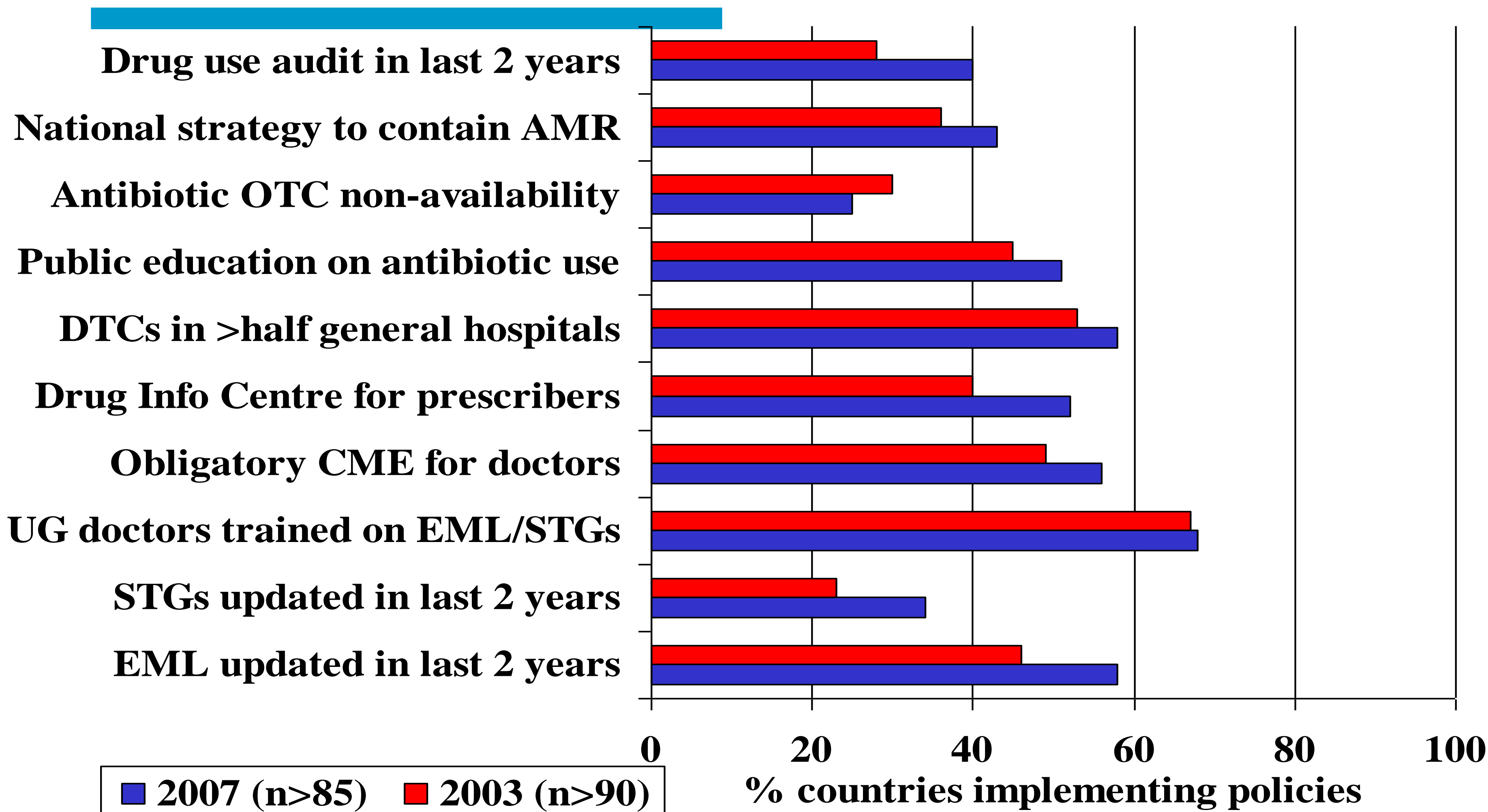
Intervention impact: median % change over all medicines use outcomes measured in each study (av.4/study)

source: database on medicines use 2009

Intervention type	No. studies	Median impact	25,75th centiles
Printed materials	5	5%	-2%, 7%
National 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%	0%, 50%
Community case management	5	29%	24%, 36%
Provider+consumer educ & supervision	7	24%	18%, 28%

What national policies do countries have to promote rational use?

Source: MOH Pharmaceutical policy surveys 2003 and 2007



Percent change in antibiotic consumption, out-patient care in 25 European countries 1997-2003

Data from ESAC

Percent change

25
20
15
10
5
0
-5
-10
-15
-20

Increase

Decrease

Poland
Croatia
Greece
Ireland
Portugal
Denmark
Luxembourg
Hungary
Italy
Slovakia
Israel
Norway
Sweden
Austria
Slovenia
Estonia
Finland
Spain
The Netherlands
Germany
Belgium
Iceland
Czech Republic
UK
France

For Iceland, total data (including hospitals) are used

Slide courtesy of Otto Cars, STRAMA, Sweden

Percent change in antibiotic consumption, out-patient care in 25 European countries 1997-2003

Data from ESAC

Co-ordination programs ↓ and national campaigns ↓

Percent change

25
20
15
10
5
0
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Poland
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For Iceland, total data (including hospitals) are used

Slide courtesy of Otto Cars, STRAMA, Sweden

High Level Expert Group (HLEG) Report on Universal Health Coverage (UHC)- 3.5.4: Ensure rational use of drugs

- Eliminate prescribing of hazardous non-essential drugs through regulation, education of providers & consumers, use of standard treatment guidelines & prescription audit, BUT what about …
  - Irrational use of essential drugs
  - Methods and investment needed for implementation of "regulation, education of providers and consumers, use of standard treatment guidelines and prescription audit"
  - Drug and Therapeutic Committees to undertake audit, training
  - Inclusion of prescribing, clinical guidelines, EDLs, problem-based pharmacotherapy in the curricula for undergraduate training and continuing medical education
  - Supervisory systems
  - Economic incentives e.g. pricing
  - Coordination of policies to promote rational use of medicines

World Health Organization

HLEG Report on UHC – 3.1.10: Purchase of all health care services should be done by central & state govts through DOH or quasi-govt autonomous agencies

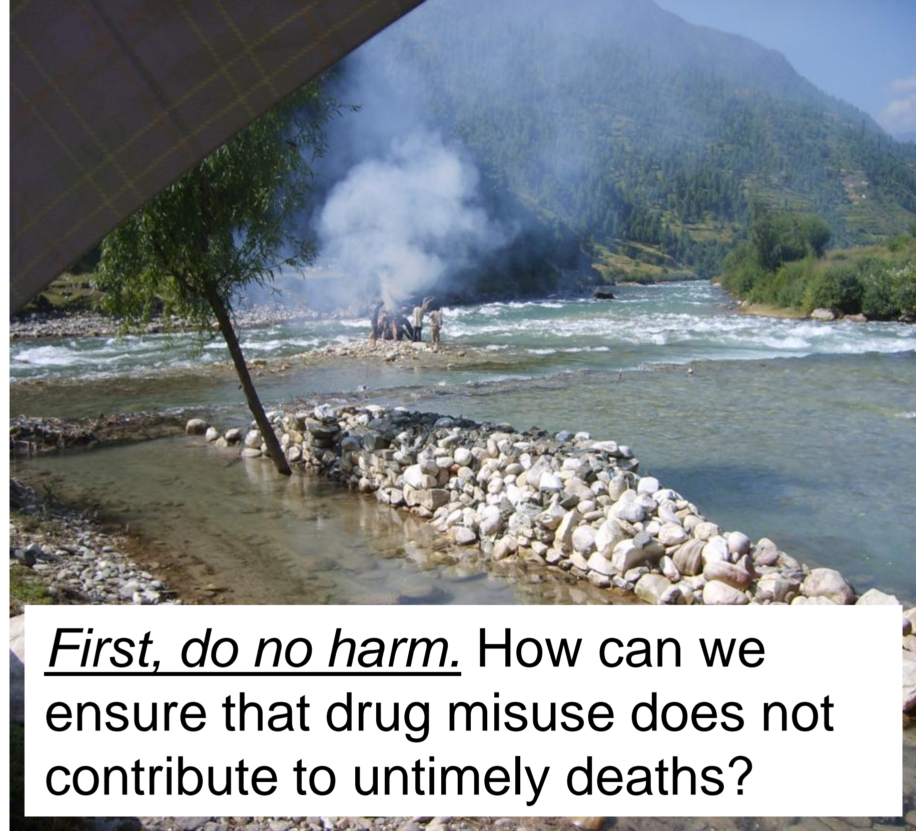
- "However, over time, it is possible to foresee a system where the district health system managers may eventually be able to purchase & enhance quality of care …. and also keep costs down" BUT…
- Has not worked in many countries
  - Indonesia: decentralized system where every district and hospital have their own formulary and buy their own drugs
  - Bangladesh: one-third of drugs are done by local purchase and contain many non-EDL drugs
  - Sri Lanka: specialists are allowed to order non-EDL drugs – in 2009 one-third budget was spent on non-EDL drugs
  - Maldives: decentralized system with private and social insurance and private dispensing - EDL is not followed

Nepal Health Worker Views

Auxiliary Health Worker

"For children under 5 years with pneumonia I must give amoxy syrup according to IMCI guidelines. Since we are short of amoxy syrup & have short-dated chloramphenicol syrup, I am prescribing it to children of more than 5 years with pneumonia in order to use up the stock."

Funeral pyre in remote N. E. Nepal



First, do no harm. How can we ensure that drug misuse does not contribute to untimely deaths?

Peon (untrained assistant in sub-HP)

"When doctor saab is not here I do dressings and give out cetamol. For young children I give cotrim."

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HLEG Report on UHC - 3.5.1: Revise & expand EDL

Include approved alternative Ayush medicines & use in procurement but the inclusion should be based on safety, efficacy and cost-effectiveness

- Why AYUSH drugs should not be included in an EDL
  - Level 1- A and B evidence is not available (meta-analysis, RCT)
  - Safety evaluation is not documented (mostly anecdotal / historical)
  - Regulatory issues – government certified drug quality testing labs for AYUSH products – are there any labs?
  - No universally accepted nomenclature- brand names not acceptable
  - Many drugs are combinations – the exact composition may vary
  - A separate list may be made as it is difficult to use any of the selection criteria for these to be called "essential"
- Be careful on expanding the EDL
  - 348 medicines and increasing ….
  - Often not followed by state procurement agencies or prescribers
  - Not harmonized with other programs
  - UHC focus is on PHC but pressure to increase EDL is from hospitals

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Non harmonization between national programs and official docs: the case of zinc sulphate for diarrhoea

- National program recommends ORS and Zinc Sulphate dispersible tablets for the treatment of acute childhood diarrhoea since 2007 but
  - National EML 2011 list Zinc syrup not dispersible tablets
  - National Formulary 2010 does not list Zinc
  - National Pharmacopoeia 2007 and 2010 do not have pharmacopoeal standards for Zinc
  - Standard Treatment Guidelines 2007 do not list Zinc
  - Zinc is not procured by governments – availability in Chattisgarh 29% (due to micronutrient initiative in 7 districts) and Orissa 2% (due to purchase by one medical officer)
  - Prescriber do not follow guidelines – 6/843 prescriptions followed guidelines (Pathak D et al, BMC Infect Dis. 2011; 11:32)

HLEG Report on UHC - 3.5.7: Strengthen drug regulation

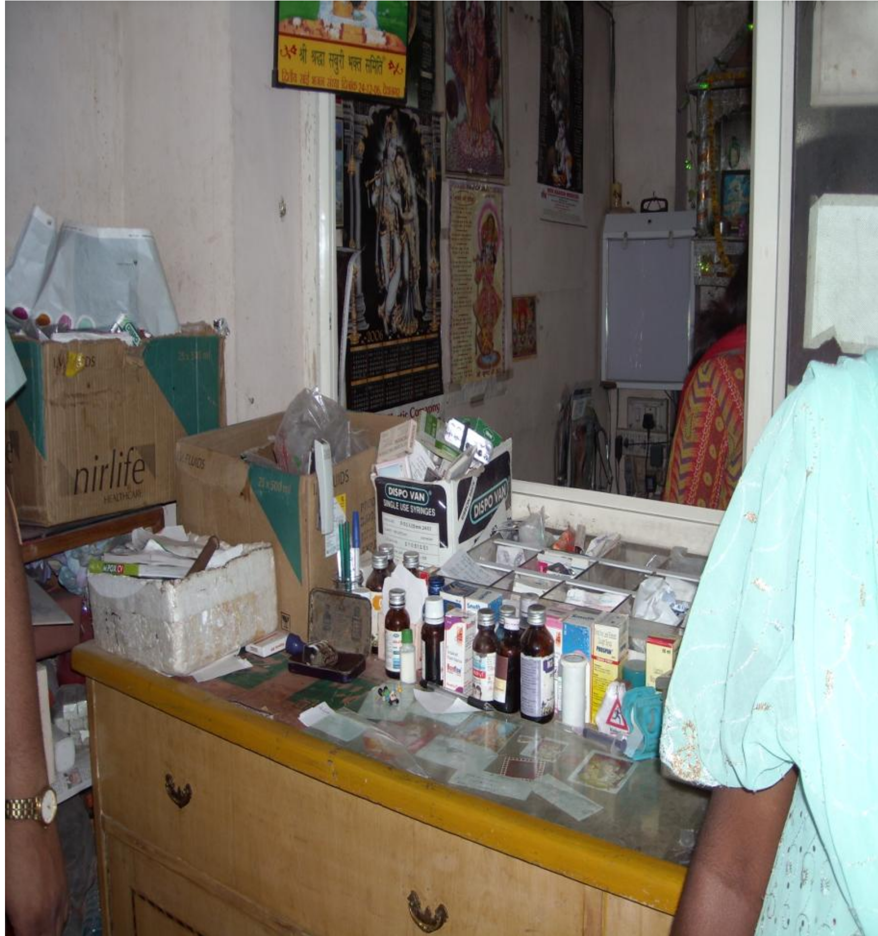
Empower MOHFW to strengthen drug regulatory system to regulate production, drug outlet operation, setting up drug testing facilities

BUT what about other aspects of regulation ?

- **> 100,000 products on the market in India**
  - 500+ 'brands' of some drugs e.g. ABs, analgesics, with irrational combinations e.g.
    - "Signoflam" = paracetamol + aceclofenac + serratiopeptidase;
    - "Formic-XL"= cefixime + dicloxacillin + lactobacillus sporogenes;
    - "Colnet Plus"= paracetamol + phenylephrine chlorpheniramine + caffeine;
  - *"We cannot limit the number of products for a particular molecule registered because of complaints of the monopolies commission"*
  - *"Having so many 'brands' makes it difficult to regulate the market and convince doctors and patients to follow any EDL"*
  - *"We had to choose the lowest priced tender because of new govt. financial rules even though we knew it may result in non-delivery due to supplier default"*
- **Drug promotion**
  - Company rep visits, adverts, free samples/trips/meals/commission…

World Health Organization

Indian private practice: every 4th 'patient' is a drug company representative



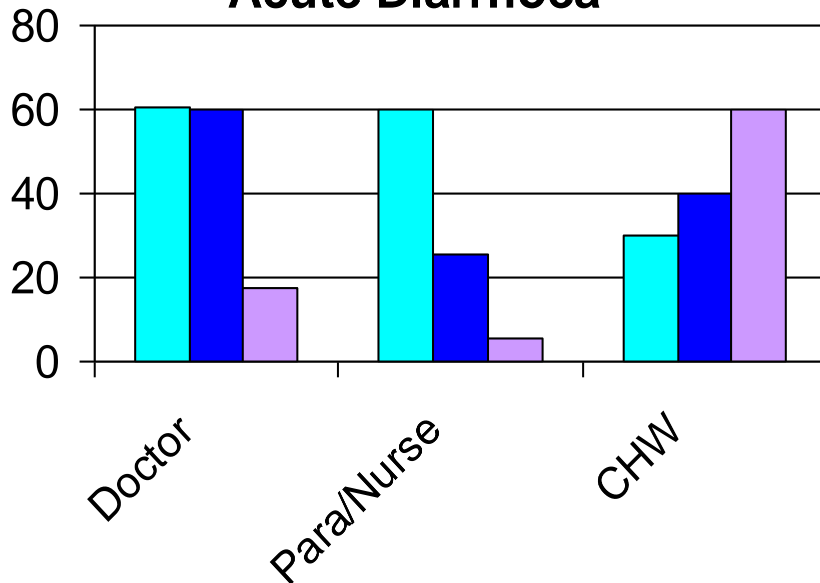
Essential Drugs and Other Medicines
Regional Office for South East Asia, 2012

World Health Organization

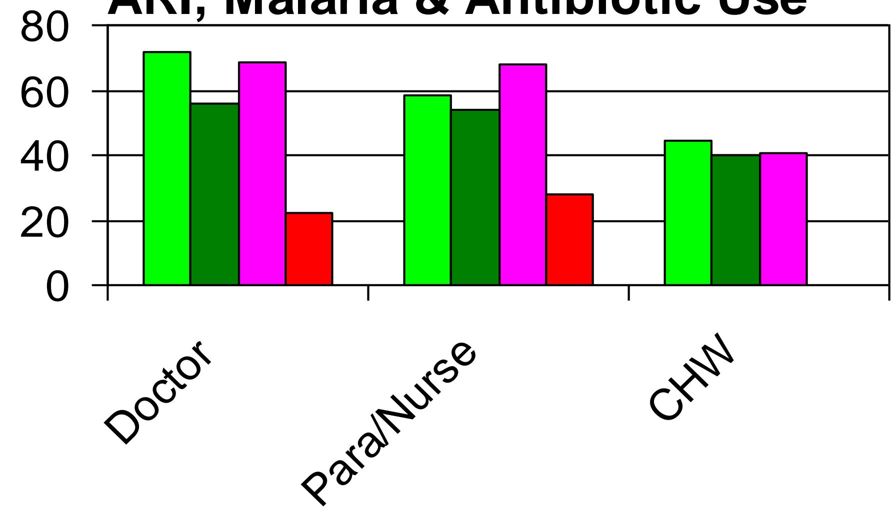
HLEG Report on UHC - 3.3.1: Ensure adequate number of trained health care providers

- Doctors, nurses, midwives and allied professionals covered, but how to ensure their availability - especially pharmaceutical professionals
  - Posts in the public sector will need creation
- "We recommend doubling the number of community health workers. The CHWs should provide preventive and basic curative care …."
  - But they will need regular supervision – who will do it?
  - Without supervision, community outreach programs for prevention & promotion can turn into drug dispensing exercises e.g. Timor-Leste, Bhutan

Treatment of childhood infections by prescriber type



% diarrhoea cases given ORS (n=27,59,16)
% diarrhoea cases given ABs (n=24,44,9)
% diarrhoea cases given antidiarrhoeals (n=16,24,8)



% pneumonia cases given correct ABs (n=17,85,4)
% viral URTI cases given ABs (n=26,48,3)
% malaria cases given appr antimalarial (n=2,51,12)
% cases given ABs inapprop (n=16,41)

Way Forward: Rational use could be greatly improved if a fraction (5%) of drug budgets were spent on improving use

- **Much more needs to be done to promote rational use of medicines**
  - Increased government investment and infrastructure, national policy implementation & regulation – institutionalise promoting rational use
  - Balancing profit-motive vs public good & addressing conflicts of interest at all stages of the supply chain
  - Advocacy by all stakeholders especially civil society & prof. bodies
  - Public health schools to teach on pharmaceutical sector; pharmacy & pharmacology courses to teach the skills of drug mgt, DTCs
- **SEAR/RC64/R5: Nat. Essential Drug Policy & RUM, 2011**
  - Urges Member States to "establish or strengthen a dedicated department/division/unit in the government, guided by a broad-based, long-term, independent steering committee …to monitor medicines use and coordinate strategies to promote rational use of medicines … and to develop a roadmap for action based on a situational analysis"