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

Fact Book summarizing results from studies reported between 1990 and 2006
% compliance with guidelines by WB region

- Sub-Saharan Africa (n=29-48)
- Lat. America & Carrib (n=5-13)
- Middle East & C. Asia (n=4-8)
- East Asia & Pacific (n=7-11)
- South Asia (n=6-12)

Source: database on medicines use 2009
Public / private prescribing by doctors, nurses and paramedical staff

% drugs prescribed from EML
% drugs prescribed as generic
% patients prescribed antibiotic
% patients prescribed injection
% patients treated as per STGs
Average no. drugs per patient

Public (n=104-236)  Private-for-profit (n=12-51)  Private-not-for-profit (n=2*-14)

Source: database on medicines use 2009
## Intervention impact: largest % change in any medicines use outcome measured in each study

source: database on medicines use 2009

<table>
<thead>
<tr>
<th>Intervention type</th>
<th>No. studies</th>
<th>Median impact</th>
<th>25,75&lt;sup&gt;th&lt;/sup&gt; centiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printed materials</td>
<td>5</td>
<td>8%</td>
<td>7%, 18%</td>
</tr>
<tr>
<td>National policy</td>
<td>6</td>
<td>15%</td>
<td>14%, 24%</td>
</tr>
<tr>
<td>Economic strategies</td>
<td>7</td>
<td>15%</td>
<td>14%, 31%</td>
</tr>
<tr>
<td>Provider education</td>
<td>25</td>
<td>18%</td>
<td>11%, 24%</td>
</tr>
<tr>
<td>Consumer education</td>
<td>3</td>
<td>26%</td>
<td>13%, 27%</td>
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<tr>
<td>Provider + consumer education</td>
<td>12</td>
<td>18%</td>
<td>8%, 21%</td>
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<tr>
<td>Provider supervision</td>
<td>25</td>
<td>22%</td>
<td>16%, 40%</td>
</tr>
<tr>
<td>Provider group process</td>
<td>8</td>
<td>37%</td>
<td>21%, 59%</td>
</tr>
<tr>
<td>Essential drug program</td>
<td>5</td>
<td>28%</td>
<td>26%, 50%</td>
</tr>
<tr>
<td>Community case management</td>
<td>5</td>
<td>28%</td>
<td>28%, 37%</td>
</tr>
<tr>
<td>Provider+consumer educ &amp; supervision</td>
<td>7</td>
<td>40%</td>
<td>18%, 54%</td>
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### Intervention impact: median % change over all medicines use outcomes measured in each study (av.4/study)

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<td>-2%, 7%</td>
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<td>6</td>
<td>5%</td>
<td>0%, 15%</td>
</tr>
<tr>
<td>Economic strategies</td>
<td>7</td>
<td>6%</td>
<td>-1%, 8%</td>
</tr>
<tr>
<td>Provider education</td>
<td>25</td>
<td>7%</td>
<td>4%, 15%</td>
</tr>
<tr>
<td>Consumer education</td>
<td>3</td>
<td>2%</td>
<td>1%, 14%</td>
</tr>
<tr>
<td>Provider + consumer education</td>
<td>12</td>
<td>9%</td>
<td>-1%, 18%</td>
</tr>
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<td>25</td>
<td>13%</td>
<td>5%, 17%</td>
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Source: database on medicines use 2009
What national policies do countries have to promote rational use?
Source: MOH Pharmaceutical policy surveys 2003 and 2007

- Drug use audit in last 2 years
- National strategy to contain AMR
- Antibiotic OTC non-availability
- Public education on antibiotic use
- DTCs in >half general hospitals
- Drug Info Centre for prescribers
- Obligatory CME for doctors
- UG doctors trained on EML/STGs
- STGs updated in last 2 years
- EML updated in last 2 years

2007 (n>85) | 2003 (n>90)
---|---
% countries implementing policies
Percent change in antibiotic consumption, out-patient care in 25 European countries 1997-2003

Data from ESAC

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

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
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.”

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.”

First, do no harm. How can we ensure that drug misuse does not contribute to untimely deaths?
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
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)
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…
Indian private practice: every 4\textsuperscript{th} 'patient' is a drug company representative
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

### Acute Diarrhoea

- **Doctor**: % diarrhoea cases given ORS (n=27), % diarrhoea cases given ABs (n=24), % diarrhoea cases given antidiarrhoeals (n=16)
- **Para/Nurse**: % diarrhoea cases given ORS (n=59), % diarrhoea cases given ABs (n=44), % diarrhoea cases given antidiarrhoeals (n=24)
- **CHW**: % diarrhoea cases given ORS (n=16), % diarrhoea cases given ABs (n=9), % diarrhoea cases given antidiarrhoeals (n=8)

### ARI, Malaria & Antibiotic Use

- **Doctor**: % pneumonia cases given correct ABs (n=17), % viral URTI cases given ABs (n=26), % malaria cases given appr antimalarial (n=2)
- **Para/Nurse**: % pneumonia cases given correct ABs (n=85), % viral URTI cases given ABs (n=48), % malaria cases given appr antimalarial (n=51)
- **CHW**: % pneumonia cases given correct ABs (n=4), % viral URTI cases given ABs (n=3), % malaria cases given appr antimalarial (n=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

  - 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”