Studying and Improving Medicine Use in Developing Countries

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Three Types of Medicine Use: Content Covered

• Health provider prescribing behaviors
• Patient adherence
• Consumer self-medication

Content Covered
• Definitions
• Factors/variables that influence
• Theoretical models
• Measures/measurement techniques
• Strategies to improve use

Factors Influencing Use of Medicines Are Complex

Cognitive
• Prior knowledge
• Access to information
• Mindfulness

Persuasive
• Marketing pressure
• Change agents

Sociocultural
• Patient demand
• Peer norms
• Legal factors

Economic
• Financial incentives
• Patient cost sharing

Environmental
• Workload/staffing
• Infrastructure
• Data systems
What Influences Medicine Use By Consumers

Household and Community Levels

* Household Level
  - Perceived need for medicines
  - Ideas about safety and efficacy
  - Uncertainty resulting in poly-pharmacy
  - Division of drug consumption roles
  - Cost of medicines
  - Literacy levels
  - Power of medicines

* Community Level
  - Drug use culture
  - Drug supply systems
  - Information channels

What Influences Medicine Use By Consumers

Health Institution Level

* Health Institution Level
  - Extent to which health workers are consulted
  - Quality of health worker prescribing
  - Quality of consultation
  - Quality of dispensing
  - Medicine availability (supply)
  - Cost of medicines

What Influences Medicine Use By Consumers

National and International Level

* National level
  - Implementation of essential drugs policy
  - Drug promotion
  - Financing and reimbursement
  - Consumer advocacy
  - Media
  - Public education

* International Level
  - Health consequences of global trade agreements
  - Donor support for essential drugs programs
  - Global consumer advocacy
  - Internet
Why Investigate Medicine Use

• Inappropriate Medicine Use (WHO)
  – Not using medicine the way intended by the prescriber
  – Self-medication with prescription drugs
  – Misuse of antibiotics
  – Overuse of injections (medicines)
  – Overuse of relatively safe medicines
  – Unsafe use of herbal medicines
  – Use of non-essential combination drug products
  – Use of needlessly expensive medicines
  – Adherence to medication regimens

Investigating Drug Use in Health Facilities

• Objectives of a Medicine Use Study
  – Describing current treatment practices
  – Comparing performance of individual facilities or prescribers
  – Periodic monitoring and supervision of specific drug use behaviors
  – Assessing the impact of a drug use intervention

Core Study Indicators

• Prescribing Practices
  – Average number of drugs per encounter
  – Percentage of drugs prescribed by generic name
  – Percentage of encounters with an antibiotic prescribed
  – Percentage of encounters with an injection prescribed (or given)
  – Percentage of drugs prescribed from essential drugs list or formulary

• Patient Care
  – Average consultation time
  – Average dispensing time
  – Percentage of drugs actually dispensed
  – Percentage of drugs adequately labeled
  – Patient’s knowledge of correct dosage (and drug name and regimen)

• Facility-specific
  – Availability of essential drugs list or formulary
  – Availability of key drugs
Additional Indicators for a Drug Study

- Percentage of patients treated without drugs
- Average drug cost per encounter
- Percentage of drug costs spent on antibiotics
- Percentage of drug costs spent on injections
- Percentage of prescriptions in accordance with treatment guidelines
- Percentage of patients satisfied with the care they received
- Percentage of health facilities with access to impartial drug information

Objectives of Field Visits

- In general, to learn about the various products and services offered at each pharmacy
- Specific objectives:
  - To learn about: staffing, volume, regulations, policy & procedures, quality assurance, budgeting/financing, procurement practices, pricing, clinical services, drug use, dispensing practices, other issues
  - Compare prices for select list of core drugs to international standard using WHO/HAI methodology

Investigating Drug Use in the Community

- Knowledge and beliefs about illness and drugs
- Care-seeking behaviors
- Treatment behaviors (drug and non-drug)
  - Drug use behaviors (drug consumption patterns)
- Household drug inventories
- Drug purchasing patterns and behaviors (e.g., sources, prices)
- Sources of drug information and information seeking
**ARV Adherence: Self Report Instrument**

1: Do you ever forget to take your meds?
2: Are you sometimes careless about taking your meds?
3: Sometimes if you feel worse, do you stop taking your meds?
4: Thinking about last week, how often have you not taken your medicine? (never, 1-2 times, 3-5 times, 6-10 times, > 10 times)
5: Did you not take any of your medicines over the past weekend?
6: Over the past 3 months, how many days have you not taken any medicine at all (range)?

Non Adherence = ‘Yes’ to #1, 2, 3 or 5; > 2 missed doses on #4, > 2 no-med days in past 3 months.

Grupa Espanol Para el Estudio Multifactoria de la Adherencia

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**ARV Adherence: Patient Self-Report**

**Visual Analogue Scale – Botswana & Tanzania**

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**Framework for Improving Use of Medicines**

*(Jonathan Quick)*

- **Educational**
  - Inform, persuade, motivate
  - Small group health worker training
  - Mothers’ OTC medication self-learning
  - TV/radio spots or village drama group

- **Managerial**
  - Guide, systematize, facilitate
  - STGs for providers
  - Consumers’ OTC formulary
  - Stamps for standard dispensing

- **Economic**
  - Give incentives, penalize, subsidize
  - Subsidies for key IMCI drugs
  - Copay exemptions for children
  - Limits on mark-ups for essential drugs

- **Regulatory**
  - Regulate, prohibit, sanction
  - Pharmacy/drug shop inspections
  - Enforce Rx-only regulations
  - Ban on injections in drug shops

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Conclusions From Systematic Reviews About Targeted Interventions (Ross-Degnan et al)

- Generally ineffective
  - Passive dissemination of guidelines or print material
  - Didactic training or CME
- Sometimes effective
  - Feedback or supervision (depends on how and what)
  - Local opinion leaders (depends on type)
  - Computerized warnings or reminders
- Generally effective
  - Interactive educational outreach, 1-on-1 or group
  - Multifaceted interventions

Intervention Research – Rational Use of Drugs (Le Grand, et al)

- 50 intervention studies in RDU in developing countries
  - Few interventions have been systematically evaluated
  - Focus primarily on prescribing in the public health sector (not private sector, community-based, or from consumer’s perspective)
  - Poor methodological designs
- Effective interventions
  - Face-to-face education
  - Focus group discussion
  - Peer review and feedback
  - Essential drug list
  - Regulatory action
- Future studies
  - Improve methodological rigor
  - Research impact of socio-cultural factors
  - Test different interventions across different settings

10 Recommendations to Improve Use (Laing, et al)

- National Standard Treatment Guidelines
- Essential Drugs List (or Formulary)
- Pharmacy & Therapeutics Committees
- Problem-based Training in Pharmacotherapy
- Targeted, Problem-based In-service Educational Programs
- Interactive Group Process among Health Providers or consumers to review and apply information about appropriate medication use
- Train pharmacists and drug sellers to be active in the medication use process
- Active involvement of consumer organizations in public education about drugs
- Strategic approach to improve prescribing in the private sector
- Systems to routinely monitor key pharmaceutical indicators