Rational Drug Use: Prescribing, Dispensing, Dispensing, Counseling and Adherence in ART Programs

Supported by USAID
A 26 yr old female has been on HAART for the past 12 months, with no adherence problems. She comes for her repeat Rx at the pharmacy and when you check the patient records you discover that she is 1 week early for her refill. Further checking reveals that she also collected 1 week early previous month and that her CD4 count has dropped for first time since she started HAART.

- What could be the possible causes?
- What action would you take at this point?
Objectives

• Define Rational Drug Use (RDU) and describe specific relevance to ART programs
• Describe the different types of irrational drug use
• Identify factors that influence use of ARTs
• Discuss strategies and interventions that can improve RDU in ART programs
The rational use of drugs requires that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements for an adequate period of time, and at the lowest cost to them and their community.

WHO conference of experts, Nairobi 1985
Pharmaceutical Management Cycle

- Selection
- Management Support
- Procurement
- Distribution
- Use

Policy, Regulations, Laws
Aspects of Irrational Drug Use

Diagnosis
• Inadequate examination of patient
• Incomplete communication between patient and doctor
• Lack of documented medical history
• Inadequate laboratory Resources

Prescribing
• Extravagant prescribing
• Over-prescribing
• Incorrect prescribing
• Under-prescribing
• Multiple prescribing/ers
Aspects of Irrational Drug Use (2)

Dispensing:
• Incorrect interpretation of the prescription
• Retrieval of wrong ingredients
• Inaccurate counting, compounding, or pouring
• Inadequate labeling
• Unsanitary procedures

Packaging:
  – Poor-quality packaging materials
  – Odd package size, which may require repackaging
  – Unappealing package
Aspects of Irrational Drug Use (3)

Patient adherence:

• Poor labeling
• Inadequate verbal instructions
• Inadequate counseling to encourage adherence
• Inadequate follow-up/support of patients
• Treatments or instructions that do not consider the patient’s beliefs, environment, or culture
What is the Significance of Rational Drug Use in the ART context?

- Fast development of resistance if adherence < 90%
- Treatment failure likely if adherence <95%
- High incidence of toxicities
- Waste of financial resources
How Much Adherence is Required for Optimal Optimal Results of HAART?

<table>
<thead>
<tr>
<th>Adherence</th>
<th>Viral load &lt;400</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;95%</td>
<td>81%</td>
</tr>
<tr>
<td>90-95%</td>
<td>64%</td>
</tr>
<tr>
<td>80-90%</td>
<td>25%</td>
</tr>
<tr>
<td>&lt;70%</td>
<td>6%</td>
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</tbody>
</table>
Ensuring Rational Drug Use in the Pharmaceutical Management Cycle

- Patient and the Community
- Prescriber, dispenser and their workplace
- Use
- Selection
- Management Support
- Procurement
- Distribution
- Policy, Regulations, Laws
Strategies to Improve Use of Drugs

**Economic:**
- Offer incentives
  - Institutions
  - Providers and patients

**Managerial:**
- Guide clinical practice
  - Information systems/STGs
  - Drug supply / lab capacity

**Educational:**
- Inform or persuade
  - Health providers
  - Consumers

**Regulatory:**
- Restrict choices
  - Market or practice controls
  - Enforcement

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3WHO, Dept. Essential Drugs and Medicines Policy
Addressing a Drug Use Problem: ARVs at Kenyatta National Hospital (KNH)

The situation:

- Feb 1998 KNH started free ARV treatment to staff
- By June 1999, the situation was getting out of hand.
  - There were no clear guidelines for prescribing and dispensing the ARVs.
  - There were no proper records.
  - The buying and supply of ARV was erratic.
- A number of prescriptions were not genuine.
- There was no follow up on the genuine patients.
Addressing a Drug Use Problem: ARVs at Kenyatta Kenyatta National Hospital (KNH) - 2

**Actions:**

- Medical Advisory Committee implemented the following actions:
  - Only 3 specialists to prescribe ARVs
  - Prescriptions countersigned by Head of Clinical Clinical Services for verification
  - Dispensing was centralized to one pharmacy.
  - Only recommended combinations dispensed (guidelines developed)
  - Computerized record keeping in pharmacy
  - ARV monitoring form was introduced in March 2001.
Addressing a Drug Use Problem: ARVs at Kenyatta Kenyatta National Hospital (KNH) - 3

Results:
• Reduced false prescriptions from 16% to 2%
• Compliance with prescription refill dates improved
• Easier to monitor patients and their medication,
• Hence strengthening the counselling of patients

Lessons Learnt:
• Difficult to control ARV use among own staff
• Simple regulatory measures can promote rational ARV use.
Counseling for Adherence Problems

WHAT TO DO?
• No double dose
• Within 3 hours, take the missed dose
• If > 3 hours, go for the next
Role of the Dispenser in the Adherence Counseling

- Member of the treatment and adherence team
- Responsible for
  - Dispensing of medications
  - Treatment-related counseling
  - Adherence counseling at time of dispensing treatment
  - Checking out for side effects and adverse events
  - Pill counts at time of medication refill.
An elderly Granny brings in child for ARV medicines refill [the 3yrs old had been on ART for 2 years and ‘doing quite well’]. You find out that the doctor gave patient 3 months review date and last Pharmacy records show patient has been on same strength of medicine. Granny was dosing child 3 full measures of the provided 10ml provided 10ml syringe bd [child was supposed to be on 13mls Nevirapine bd] It appears the child has also added lots of weight.

• What would you do?
• How would you measure adherence?
Methods of Measuring Adherence

- Self reports
- Pill counts
- Pharmacy records
- Provider estimate
- Pill identification test
- Biological markers
- Electronic devices
- Measuring drug levels
Conclusions (1)

- Use of ARVs is one component of the full pharmaceutical management cycle – rational use is critical for program success.
- There are many different types and causes of irrational use.
- The consequences of irrational drug use are poor health outcomes and increased health care costs.
- There is ample evidence that implementing complementary interventions improves impact.
- Basic management interventions can improve use of ARVS in facilities.
- To improve adherence, patient-tailored interventions,
Conclusions (2)

• In order to monitor and evaluate the nature of drug use, an information system is needed that can generate and integrate data on:
  – Pharmaceutical consumption
  – Service utilization, including laboratory
  – Inventory management
  – Prescribing practices
  – Dispensing practices
  – Counseling practices

• Studies are often needed to provide insight on why drug use problems occur and how to best address them.