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**Short Review**


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## Rational Use of Medicine: First Step towards Medication Safety

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### Abstract

Medically inappropriate, ineffective and economically inefficient use of drugs prevail worldwide. It is essential that medicines are prescribed and taken in a rational manner to ensure the best outcome of healthcare services. The current article briefly describes importance of rational use of medicines (RUM) and criteria for RUM. Additionally, the key reasons of irrational drug users are also discussed along with some examples. Some core policies to promote RUM have been described herein. It is inferred that RUM strategies should enhance effective, safe, and cost-effective use of medicines and at the same time, such strategies preserve the effectiveness of antimicrobials, and contribute to good health outcomes.

**Keywords:** Medicine, rational use, irrational use, antimicrobials

### 1. Introduction

Use of drugs by qualified doctors of Modern Medicine is assumed to be rational, but it is observed that medically inappropriate, ineffective and economically inefficient use of drugs prevail worldwide, more so in the developing countries. It is essential that medicines are prescribed and taken in a rational manner to ensure the best outcome of healthcare services. World Health Organization (1985) said “Rational use of medicines requires that patients receive medication appropriate to their clinical needs in doses that meet their own individual requirements for an adequate period of time, and at lowest cost to them and to their community” [1].

### 2. Importance of Rational Use of Medicines (RUM)

The aim of pharma-management system is to deliver the correct medicine to the patient. Rational Use of Medicine addresses every step in the supply-use chain of drugs, i.e., selection, procurement, storage, prescribing, dispensing, monitoring and feedback. Irrational Drug Use can destroy all the benefits of appropriate cost-effective selection, procurement and distribution of drugs. Resources spent on procurement are lost if right drugs are not prescribed and dispensed to the right patient [2-3].

Criteria for Rational Drug Use [4] are as follows:

- Appropriate indication
- Appropriate Drug (efficacy, tolerability, safety and suitability for patient.)
- Prescribed correctly (dose, route and duration)
- Availability

- Appropriate packaging and labelling
- Quality assurance
- Correct dispensing
- Appropriately informed patients
- Adequate monitoring of patient compliance
- Monitoring of beneficial/untoward effects of drugs

### 3. Reasons for Irrational Use of Drugs [5] are as follows:

- Wrong diagnosis
- Correct diagnosis - Wrong drug
- Right drug with wrong dose and duration
- Drugs with doubtful /unproven efficacy
- Unnecessary expensive drugs
- Drugs of uncertain safety status
- Inappropriate packaging
- Co-administration of multiple medications leading to drug interactions and adverse events.
- Lack of patient compliance

### 4. Examples of Irrational Use of Drugs

- Irrational Poly Pharmacy: more than five medications / prescription when not essentially indicated.

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- Unnecessary/ inappropriate/expensive medication: antibiotics misuse, irrational combinations.
- Incorrect drug/ dose/duration/ route of administration: less than 40% of patients are treated according to the Standard Treatment Guidelines.
- Compulsive co-prescription / Medicine with doubtful efficacy: multivitamins, tonics, serratiopeptidase for injuries or swellings, antioxidants, cough mixtures, memory enhancers etc.
- Unsafe Medicines: Anabolic steroids for athletes.
- Underuse of available effective medicine: Therapy for mental disorders; oral rehydration therapy for diarrhea etc.

### 5. Promotion of Rational Drug Use:

The first step to rational use of drugs is to improve the consultation process by physicians. It includes complete history taking, proper physical examination and relevant laboratory investigations. The prescribing habit must be improved by abiding to the Standard Treatment Guidelines. Poly-pharmacy should be allowed only when rationally justified and absolutely necessary. Dispensing practices must be taken care of with the help of competent personnel, organized dispensing area, proper quantity of drug dispensed with adequate instructions to the patients and caregivers. Further, proper labelling of drug container, ensuring patient's understanding of drug dosage and consideration of local beliefs and customs may improve compliance and promote the rational use of medicines [4].

#### 5.1. Core Policies to Promote RUM

- Multi-disciplinary national body to coordinate Drug policies.
- Clinical guidelines based on treatment of choice.
- Drugs and therapeutics Committees in districts and hospitals.
- Problem-based pharmacotherapy training in Under Graduate curricula.
- Regular continuing medical education (CME) as a licensure requirement.
- Supervision, audit and feedback.
- Independent information/ Public education on medicines.
- Avoidance of financial incentives by pharmaceutical companies to the prescribers
- Appropriate and enforced regulation.
- Sufficient government funds to ensure availability of drugs and competent staff [5].

### 6. Conclusion

To summarize, rational medicine use strategies enhance the effective, safe, and cost-effective use of medicines, preserve the effectiveness of antimicrobials, and contribute to good health outcomes.

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