Rational use of Medicines in Public health facilities of Tamil Nadu; A Provider’s prescription analysis

Indranil Mukhopadhyya, Sagri Negi, Kartik Sharma, Richa Jaswal

Presenter: Richa Jaswal
Sr. Research Assistant
Introduction

• 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
  - at the lowest cost

• Worldwide more than 50% of all medicines are prescribed, dispensed, or sold inappropriately, while 50% of patients fail to take them correctly (WHO)
Rational drug use problem; health system relevance

**Irrational prescribing pattern**
- Polypharmacy
- Unnecessary use of antimicrobials
- Inadequate information to the patient

**Inappropriate medicine demand**

**Health hazard to community along with drug Resistance**

**Cost Burden to both health system and patient**
Rational drug Use and Quality of care

**Outcomes Indicators**

- Maternal and Child health status
- Health seeking behavior

**Process Indicators**

- Perceived quality of care and User experiences
- Rational use of Medicine (patient care Indicators)

**Structural Indicators**

- Accessibility
- Affordability
- Availability

**Providers Perspective**

- Structural Indicators: Infrastructure/HR, Equipment's, Medicines

- Process Indicators: Adherence to standard treatment protocol, Providers Prescription Practice

- Output Indicators: Health facility utilization rate/service coverage, HMIS

**Consume Perspective**

- Structural Indicators: - Client Exit Interview

- Process Indicators: Perceived quality of care and User experiences, Rational use of Medicine (patient care Indicators)

- Output Indicators: Health seeking behavior, Maternal and Child health status

**Data Sources**

- Integrated facility survey
- Medical vignettes, Prescription analysis
- - Integrated facility survey
- - Household Survey
- Client Exit Interview & Prescription Audits, KII's
- Household Survey
Changing drug misuse problem

Measure Existing Practices
(Descriptive Quantitative Studies)

Research Question

Measure Changes in Outcomes
(Quantitative and Qualitative Evaluation)

Identify Specific Problems and Causes
(In-depth Quantitative and Qualitative Studies)

Design and Implement Interventions
(Collect Data to Measure Outcomes)
Methodology - WHO/INRUD

<table>
<thead>
<tr>
<th>Prescribing Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Average number of medicines prescribed per patient</td>
</tr>
<tr>
<td>- % medicines prescribed by generic name</td>
</tr>
<tr>
<td>- % encounters with an antibiotic prescribed</td>
</tr>
<tr>
<td>- % medicines prescribed from essential medicines list</td>
</tr>
<tr>
<td>- % of prescription containing fixed dose against single dose</td>
</tr>
</tbody>
</table>
Sampling and Data collection methods

**Sampling technique**: Multistage cluster sampling

- **District hospital**: 9
  - 1st stage: 30% of the total districts
- **CHC**: 34
  - 2nd stage: 30% of the total CHC
- **PHC**: 70
  - 3rd stage: 2 per CHC

**Data collection**:
- 10-15 prescription was collected per facility
- with total of 1589

**Unit of analysis**: Prescription
Results

- 1539 prescriptions were used for the analysis which included (62%) from the PHCs, 399(26%) from the CHCs/SDH, 155(10%) from the district hospitals.

### Table 1: Prescription indicator across Tamil Nadu

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Quantity/ percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average number of medicines per encounter</td>
<td>2.7</td>
</tr>
<tr>
<td>Percentage of prescription having generic drugs</td>
<td>78</td>
</tr>
<tr>
<td>Percentage of prescription having FDC</td>
<td>8</td>
</tr>
<tr>
<td>Percentage of encounters with antibiotics prescribed</td>
<td>41</td>
</tr>
<tr>
<td>Percentage of drugs prescribed from EDL</td>
<td>77</td>
</tr>
</tbody>
</table>
Prescription practice by ATC
Prescription pattern of cat “A” Drugs (%)

- Vitamins (A11) 50%
- Drugs for acid related disorders (A02) 25%
- Drugs used in Diabetes (A10) 15%
- Antidiarheals/Intestinal Antiinfectives (A07) 4%
- Drugs for functional gastrointestinal disorders (A03) 3%

Figure 8.2 Prescription practice of Cat “J” drugs (%)

- Betalactam Antibacterial, penicillin 63%
- Tetracyclines 18%
- Macrolides 6%
- Vaccines 4%
- Other-beta lactam antibacterials 6%
Conclusion and Policy Implication

**Strengths**
- With high % encounters with generic drugs and drugs from EDL along with relatively low % of FDC’s we can comment that the Prescription Practice was fairly good in Tamil Nadu. In Literature this type of prescription pattern is related to:
  - containing cost
  - retaining patient’s faith in public health facilities

**Weaknesses**
- No significant difference in the prescription pattern across level of care warrants the need to **strengthen gatekeeping mechanisms in health care**
- Percentage of antibiotic encounters were in inappropriate range (20-50%) as per community setting
- With growing concern of antibiotic resistance, a **regulation policy for antibiotic usage is recommended**
Limitations

• Cannot comment on rationality of prescription as

1. Providers Prescription practice depends on
   - Patient demand
   - supply side factors (availability, affordability, perceived quality)
   - Providers competence (Adherence to standard treatment protocols/essential medicine list)
   - Incentives to prescribe certain drugs

2. Majority prescription didn’t have probable diagnosis thus couldn’t link to DDD and standard treatment guidelines.
THANK YOU