

## ASSESSMENT OF DRUG USE PATTERN AND PRESCRIBING BEHAVIOR IN SHAMBU GENERAL HOSPITAL, OROMIA, ETHIOPIA, 2010 E.C.

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### INTRODUCTION

Rational prescription and use of drugs has been a concern in both developed and developing countries during the last two decades.

**Drug use evaluation** is defined as an authorized, structured, ongoing review of prescribing, dispensing and use of medication.

**The rational use of drugs** requires that “patients receive

- Appropriate medications to their clinical needs,
- Appropriate doses
- Adequate period of time,
- At the lowest cost to the consumer (patient)

As WHO set standard; drug use evaluation is measured by drug use indicators which are Prescribing Indicators, Patient Care Indicators and Health Facility Indicators.

The prescribing indicator is measured by

- Average number of drugs prescribed per encounter
- Percentage of drugs prescribed by generic name
- Percentage of encounters in which an antibiotic was prescribed
- Percentage of encounters with an injection prescribed
- Percentage of drugs prescribed from an essential drug list

### Statement of the Problem

Worldwide, more than half of all medicines are prescribed & dispensed improperly, and 50% of patients fail to take them correctly

Irrational prescribing is a global problem. It leads to

- Ineffective and unsafe treatment,
- exacerbation or prolongation of illness,
- distress and harm to the patient,
- higher costs

### Significance of the Study

1. Irrational drug use are numerous and complex involving the health system, prescriber, dispenser, patient and the community
2. The overall drug use situation needs to be **assessed, problems identified and remedial intervention strategies** to be implemented
3. Study hadn't yet done in the study area, the investigators believe that as this study serve as a baseline for the further study and
4. The prescription quality and rational prescribing pattern will be promoted

### OBJECTIVES

#### General

To assess drug use pattern and prescribing behavior in Shambu General Hospital.

#### Specific

- To assess completeness of prescription paper
- To assess average number of drugs prescribed per encounter
- To assess Percentage of drugs prescribed by generic name
- To assess Percentage of encounters in which an antibiotic was prescribed
- To assess Percentage of encounters with an injection prescribed
- To assess Percentage of drugs prescribed from Shambu General

Hospital essential drug list

To compare the results with WHO core prescribing indicators

**METHODOLOGY****Study Area and Period**

The study was conducted at Shambu General Hospital from May 1, 2010 to August 21, 2010 E.C.

**Study Design**

A retrospective cross-sectional study

**Sampling Technique and Sample Size Determination**

Based on WHO standards 600 prescriptions were selected by simple random sampling technique from OPD pharmacy and Inpatient Pharmacy.

Among 600 prescriptions, 37 prescriptions containing only medical supplies were rejected making the actual sample analyzed 563.

**Data collection and analysis**

The data was collected by four well-trained pharmacy personnel retrospectively by using prescription paper. It was analyzed using computer and presented by graph,

table & chart

**Ethical Consideration**

Ethical approval was obtained from the Shambu General Hospital Chief Executive Officer and Shambu General Hospital Medical Director.

**Dissemination of the Result**

- Shambu General Hospital Pharmacy Department
- Shambu General Hospital Medical Director & CEO
- Horro Guduru Wollega Zonal Health Department
- Oromia Regional Health Bureau

**RESULT AND DISCUSSION**

A sample of 600 prescriptions were selected from prescription using simple random sampling technique and 62 prescriptions were rejected for they have medical supplies only.

Therefore 538 prescriptions were assessed retrospectively.

**The completeness of prescription paper in Shambu General Hospital from May 1, 2010 to August 21, 2010 E.C.**

List	Frequency	Percentage
Standard Prescription	534	99.25%
Date	387	71.93%
Sex	421	78.25%
Age	397	73.79%
Weight	2	0.37%
Patient ID (MRN)	224	42.42%
Diagnosis	8	1.4%
Patient Address	4	0.7%
Prescriber name	252	46.84%
Prescriber qualification	189	35.13%
Prescriber signature	498	92.5%
Dispenser signature	27	5.02%
Dispenser Name	24	4.46%
Dispenser Qualification	31	5.76%
Drug Name	538	100%
Strength	520	96.66%
Dosage form	327	60.78%
Route	348	64.68%
Dose	425	79%
Frequency	329	61.15%
Quantity	27	7.8%

**Encourageable**

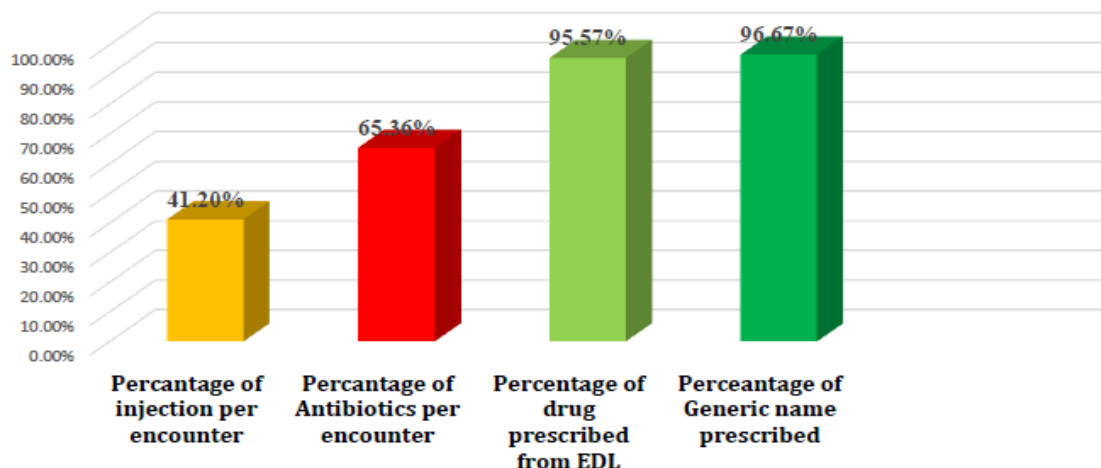
- Patient Name (100%)
- Drug name (100%)
- Standard prescription (99.25%)
- Prescriber signature (92.5%)

**Below standard (<100%)**

- Dispenser signature (5.02%)
- Diagnosis (1.4%)
- Weight (0.37%)
- Patient Address (0.7%)

- Dose (79%)
- Dosage form (60.78%)
- Quantity (7.8%)
- Prescriber name (46.84%)
- Prescriber qualification (35.13%)
- Dispenser name (4.46%)
- Dispenser qualification (5.76%)

**The Prescribing Indicators In Shambu General Hospital From May 1, 2010 To August 21, 2010 E.C**



- The average number of drugs per prescription at Shambu General Hospital is **3.61** which is higher than WHO standard (1.6-1.8)
- Higher than study performed in North West Ethiopia at Bahirdar hospital (**2.2**)
- Higher than study done at Jimma University and teaching hospital (1.59)
- Higher than study done at Haramaya Hospital (2.61)
- Higher than **The national** average number of drugs prescribed per encounter (**2.0**)
- A high number of drug per prescription in the study area might be due to **patient influence** and **lack of therapeutically correct drugs**.
- The percentage of drugs prescribed by generic name at Shambu General Hospital is **96.67%** which is almost similar with WHO (100%).
- Unlike study done at Jimma University and teaching

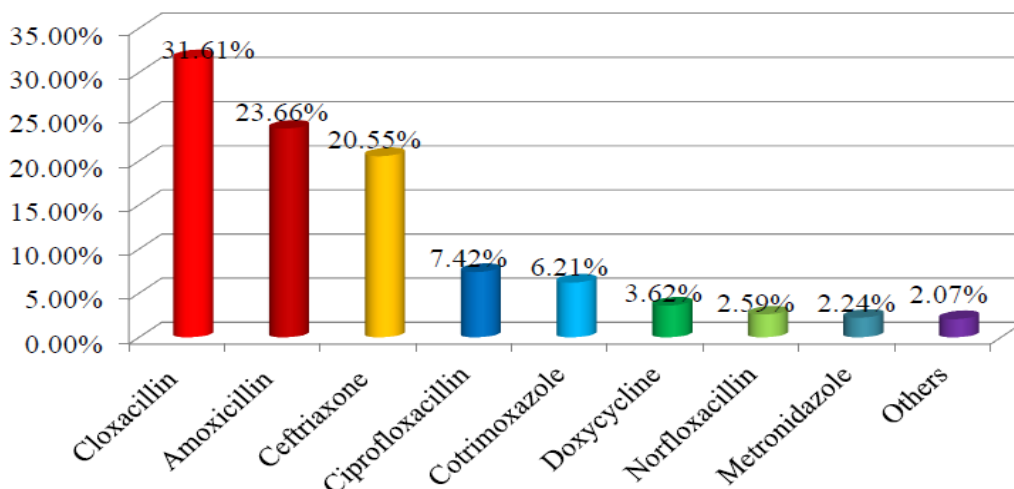
hospital which was 75.2% which was below WHO standard.

- Inline with study done in Hawassa Hospital (98.7%) and Haramaya Hospital 94.67%.

**Percentage of Encounter in Which Antibiotics Prescribed**

- Percentage of encounter in which antibiotics prescribed at Shambu General Hospital was **65.36%**
- Very high as compared to WHO standard values (**20-26.8%**)
- This might be due to
  1. Duplicate drug therapy,
  2. Unnecessary drug therapy (drug without indication)
  3. Prescriber belief that antibiotics efficacy is high.

**Table 3: The most commonly prescribed Antibiotics at Shambu General Hospital from May 1, 2010 to August 21, 2010 E.C.**



Other commonly prescribed antibiotics were

- Amoxicillin + clavulanic acid
- Ampicillin
- Gentamicin

- Tetracycline chloramphenicol

### Percentage of encounter in which Injection prescribed

1. Percentage of encounter in which injections were prescribed at Haramaya Hospital was **49.5%**
2. It was double that of WHO standard range (**13.4-24.1%**)
3. This might be due to
  - Belief and attitudes of the patients and health professional about which is efficacy of injection versus oral medication
  - Trauma is the first top ten disease in study area which required injection medication to provide immediate relief than oral medication

**Table 2: The most commonly prescribed injection in**

Commonly Prescribed Injections	Frequency	Percentage(%)
Ceftriaxone	121	27.88%
Diclofenac	103	23.73%
Cimetidine	86	19.8%
Oxytocin	48	11.05%
Tetanus Antitoxoid(tat)	42	9.67%
Furosemide	21	4.83%
Ampicillin	9	2.07%
Other	4	0.9%
Total	434	100%

Other Commonly prescribed injections were

- Crystalline penicillin
- Metronidazole
- Gentamicin
- Tramadol
- Chloramphenicol
- Omeprazole
- Vancomycin

### CONCLUSIONS

- The average drugs per encounter shows deviation from WHO standard range.
- There was polypharmacy.
- The prescribing practices for antibiotic and injection in the study area were too high as compared to WHO standard range.
- Percentage of drugs prescribed by generic name and Percentage of drugs prescribed from an essential drug list in the study area were too high as compared to WHO standard range.
- Many part of prescriptions were incomplete.

### Recommendation

#### Drug and therapeutics committee (DTC)

Percentage of antibiotics prescribed was too high which could facilitate emergence of resistance therefore DTC should

- Establish Antimicrobial resistance committee in the Hospital.

- Should review and edit the Hospital essential drug list.
- Functionalize Drug information center (DIC) 24 hour.

### Shambu General Hospital Management

Medicine information is crucial for rational and in one health facility. Therefore Shambu General Hospital Management should

- Support & facilitate Shambu General hospital drug information center to serve 24 hour.
- Support in providing training concerning rational drug use
- Enhance utilizations of formulary, STG, prescribing manual and dispensing manual

### Dispensers

1. Pharmacy personnel should promote rational drug use
2. To prevent, minimize & monitor medication error they should
  - Check the prescription carefully for their completeness
  - If they were some mistake on prescription; contact prescribers without patient aware
  - Write their name
  - Qualification
  - Signature

### Prescribers

1. As result of the study shows some of prescription format were below the standard.
2. Therefore to increase prescription quality prescribers should write.
  - Diagnosis
  - Weight
  - Patient Address
  - Dose
  - Dosage form
  - Quantity
  - Prescriber name
  - Prescriber qualification

### Clinical Pharmacists

1. Should conduct drug use Evaluation for some antibiotics to confirm whether they appropriately prescribed or not
2. Should promote rational drug use through
  - Communicating with prescribers during round and at OPD
  - Providing Health education, posting poster and preparing leaflet
  - Establishing problem based pharmacotherapy morning session

### Other Partnership

#### Chal and chemonics

1. Provide training concerning Antimicrobial resistance & rational drug use

2. support in fulfillment of DIC materials like
  - ✓ Books
  - ✓ Computer
  - ✓ Shelf
  - ✓ Printer
3. Provide poster, brochures & bulletin concerning rational drug use.

**Oromia Regional Health Bureau**

4. Strengthening antimicrobial resistance committee through
  - ✓ Training
  - ✓ News letter
  - ✓ Bulletins
  - ✓ Books
5. Providing training concerning antimicrobial resistance & rational drug use
6. support and strength Shambu General Hospital DIC

**Horro guduru Wollega Zonal Health Department**

7. Strengthen and following clinical pharmacy service regularly
8. Support in fulfillment of DIC materials like
  - ✓ Books
  - ✓ Computer
  - ✓ Shelf
  - ✓ Printer
  - ✓ Internet
9. Support in revising Shambu General Hospital essential drug list.