Findings of Primarily Analysis
CORE DRUG USE INDICATORS

- Prescribing indicators
- Patient care indicators
- Facility Indicators
- Complementary Drug Use Indicators
A. Prescribing indicators

**Average number of medicines per encounter**

- To measure the degree of polypharmacy

  Calculation: the total number of different drug products prescribed by the number of encounters surveyed.
Average Number of Medicines

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>1995</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOS.</td>
<td>1.99</td>
<td>2.1</td>
</tr>
<tr>
<td>HC</td>
<td>2.0</td>
<td>1.7</td>
</tr>
<tr>
<td>HS</td>
<td>1.89</td>
<td>1.7</td>
</tr>
</tbody>
</table>
Average Number of Medicines

- Anseba: 1.87
- Debub: 2.03
- Gash-Barka: 1.93
- Maekel: 1.75
- NRS: 2.03
- SRS: 1.99
- Average: 1.93
- Maximum: 7
- Minimum: 0

No. of drugs
Percentage of drugs prescribed by generic name

- To measure the tendency to prescribe by generic name
- For the purpose of this study, the ENLM used as a base so that all names out of this will be considered as brand names.

\[
\text{total number of drugs prescribed by generic name} \times \frac{X}{100}.
\]

\[
\text{total number of drugs prescribed}
\]
Percentage of Generics

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>1995</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOS</td>
<td>85</td>
<td>70</td>
</tr>
<tr>
<td>HC</td>
<td>86</td>
<td>79</td>
</tr>
<tr>
<td>HS</td>
<td>87</td>
<td>82</td>
</tr>
</tbody>
</table>
Percentage of Generics

<table>
<thead>
<tr>
<th>Region</th>
<th>% Generic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anseba</td>
<td>83</td>
</tr>
<tr>
<td>Debub</td>
<td>85</td>
</tr>
<tr>
<td>Gash-Barka</td>
<td>85</td>
</tr>
<tr>
<td>Maekel</td>
<td>87</td>
</tr>
<tr>
<td>NRS</td>
<td>89</td>
</tr>
<tr>
<td>SRS</td>
<td>93</td>
</tr>
<tr>
<td>Average</td>
<td>86</td>
</tr>
</tbody>
</table>
Percentage of encounters with an antibiotic prescribed

To measure the antibiotic consumption which is commonly overused

For the purpose of this study, Antibiotics include drugs that are mentioned in the category of antibacterial specifically in the ENLM 6.2.1 Penicillins and 6.2.2 other antibacterials, 13.2 Dermatological anti-infective medicines and 22.1 ophthalmological anti-infective preparations

number of patient encounters during which an antibiotics are prescribed \( \times 100 \)

total number of encounters surveyed
Percentage of Antibiotics

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>1995</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOS</td>
<td>58.6</td>
<td>48</td>
</tr>
<tr>
<td>HC</td>
<td>62.9</td>
<td>49</td>
</tr>
<tr>
<td>HS</td>
<td>59.2</td>
<td>37</td>
</tr>
</tbody>
</table>
Percentage of Antibiotics

- Anseba: 53.3%
- Debub: 63.3%
- Gash-Barka: 62.9%
- Maekel: 65.6%
- NRS: 56.8%
- SRS: 51%
- Average: 59.9%

% antibiotics
Percentage of encounters with an injection prescribed

- To measure the overall use of important, but commonly overused and costly form of drug therapy
- Immunizations have been excluded

\[
\text{number of patient encounters during which injections are prescribed} \times 100
\]
\[
\text{total number of encounters surveyed}
\]
Percentage of Injection

Percentage of Injection

- Anseba: 15.5%
- Debub: 19.2%
- Gash-Barka: 16.5%
- Maekel: 21.2%
- NRS: 8.4%
- SRS: 7.5%
- Average: 15.5%
% of Injections

- Yemen
- Zimbabwe
- Niger
- Macedonia
- Oman
- Nigeria
- Sudan
- Guatemala
- Eritrea
- Nambia
Percentage of medicines prescribed from ENLM

- To measure the degree to which practices conform to a National Drug Policy

\[
\text{number of products prescribed which are listed on ENLM} \times 100 \quad / \quad \text{total number of products prescribed}
\]
Percentages of medicines on ENLM
Percentages of medicines on ENLM

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anseba</td>
<td>98.5</td>
</tr>
<tr>
<td>Debub</td>
<td>99</td>
</tr>
<tr>
<td>Gash-Barka</td>
<td>99.5</td>
</tr>
<tr>
<td>Maekel</td>
<td>99</td>
</tr>
<tr>
<td>NRS</td>
<td>99.8</td>
</tr>
<tr>
<td>SRS</td>
<td>99</td>
</tr>
<tr>
<td>Average</td>
<td>99</td>
</tr>
</tbody>
</table>
Patient care indicators

Average Consultation time

• To measure the average time that health professional spend with patients in the process of consultation and prescribing

• Time between entering and leaving the consultation room (OPD)

  total time for a series of consultations
  number of consultations
Average Consultation time

- HOS: 2005 = 5 minutes, 1995 = 4.6 minutes
- HC: 2005 = 6 minutes, 1995 = 4.5 minutes
- HS: 2005 = 5 minutes, 1995 = 4.9 minutes
Average Dispensing time

- To measure the average time that personnel dispensing medicines (pharmacist or drug dispensers) spend with patients
- Time between handing prescription to the dispenser and leaving the counter

**total time for dispensing drugs**

**number of encounters**
Average Dispensing time

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>1995</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOS.</td>
<td>90</td>
<td>89</td>
</tr>
<tr>
<td>HC</td>
<td>143</td>
<td>99</td>
</tr>
<tr>
<td>HS</td>
<td>157</td>
<td>110</td>
</tr>
</tbody>
</table>
Percentage of medicines actually dispensed

- To measure the degree to which health facilities are able to provide the medicines which were prescribed

  total time for dispensing drugs
  number of encounters
Percentages of medicines dispensed

- HOS: 90% (2005), 82% (1995)
- HC: 89% (2005), 83% (1995)
- HS: 98% (2005), 96% (1995)
Percentage of medicines adequately labeled

- To measure the degree to which dispensers record essential information on the drug packages they dispense.
- Packages should contain at least:
  -- drug name and its strength
  -- when the drug should be taken
  -- expiry date

\[
\frac{\text{packages containing all information}}{\text{Total number of packages dispensed}} \times 100
\]
Percentage Adequate Labeling

HOS. 1995: 67%
HC 1995: 57%
HS 1995: 43%

HOS. 2005: 76%
HC 2005: 43%
HS 2005: 44%
Percentage Adequate Labeling

Anseba
Debub
Gash-Barka
Maekel
NRS
SRS
Average

29
53
44
94
51
67
52
Patient Knowledge of correct dose

- To measure the effectiveness of the information given to patients on the dosage schedule of the drugs they receive.

- Though the patient is expected to get many information concerning the medication, but for this purpose patients should only be evaluated on their knowledge of **when** and **in what quantity** each drug should be taken.

\[
\text{number of patients who can adequately report the dosage schedule for all drugs} \times 100
\]

\[
\text{total number of patients interviewed}
\]
Percentage Adequate Patient Knowledge
Percentage Adequate Patient Knowledge

92 93 94 98 91 78 93

Anseba Debub Gash-Barka Maekel NRS SRS Average

Patient knowledge
Availability of drug information

- To measure the extent of the health facility access to drug information sources
Percentage of Availability of ENLM

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<td>93</td>
</tr>
<tr>
<td>HS</td>
<td>90</td>
<td>67</td>
</tr>
</tbody>
</table>
Percentage of Availability of ENLM

- Anseba: 94%
- Debub: 97%
- Gash-Barka: 91%
- Maekel: 100%
- NRS: 81%
- SRS: 100%
- Average: 93%

(Note: ENLM stands for Ethiopian National Livestock Management.)
Availability of key drugs

☐ To measure the availability of key drugs in the health facility recommended for the treatment of some common health problems in the country.
Percentage of Key medicines Available

- HOS: 93 in 2005, 94 in 1995
- HC: 95 in 2005, 92 in 1995
- HS: 96 in 2005, 88 in 1995
Percentage of Key medicines Available

<table>
<thead>
<tr>
<th>Region</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anseba</td>
<td>97</td>
</tr>
<tr>
<td>Debub</td>
<td>97</td>
</tr>
<tr>
<td>Gash-Barka</td>
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<tr>
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Discussion

- In regard to the prescribing indicators, the results show more irrational drug use is practicing than 1995 study and even when compared with other countries.

- The results of the other indicators show considerable improvement except the labeling practice.
Conclusion

From this study it can be concluded that there is very high usage of antibiotics, injections and low level of labeling practice.
THANK YOU