IMCI Health Facility Survey

Sudan
March - April 2003
OBJECTIVES
To assess the quality of outpatient care, including both clinical and counselling care, provided to sick children aged 2 months up to 5 years old at health facilities implementing the IMCI strategy;

To describe organizational and other “health systems support” elements influencing the quality of care and identify major constraints to it;

To measure key indicators of quality care to monitor progress of the IMCI strategy at health facilities; and

To recommend further approaches to improving the quality of outpatient child health services.
METHODOLOGY
SELECTION OF HEALTH FACILITIES

Systematic, random selection of 66 health facilities from a list of 136 facilities in 8 States in urban and rural areas and by type of facility:

- implementing IMCI; and
- with estimated daily caseload of at least 2 cases below 5 years old
DISTRIBUTION OF HEALTH FACILITIES IN THE SAMPLE 
BY LOCATION AND TYPE

<table>
<thead>
<tr>
<th>Type</th>
<th>No. of facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals</td>
<td>2</td>
</tr>
<tr>
<td>Health centres</td>
<td>11</td>
</tr>
<tr>
<td>Dispensaries</td>
<td>6</td>
</tr>
</tbody>
</table>

Urban

Rural
SURVEY FINDINGS
1. Sample characteristics
2. Quality of clinical care
3. Factors influencing care
1. SAMPLE CHARACTERISTICS

- Case management observations: 364 children aged 2 months up to 5 years old
- Gender of cases: 46.7% female
- Age: 54.3% under 2 years old
- Caretakers interviewed: 350
- Mother caretakers: 82.6%
CASES MANAGED BY TYPE OF HEALTH PROVIDER (N = 364)

- Nurses: 3%
- Doctors: 20%
- Medical Assistants: 77%
2. QUALITY OF CLINICAL CARE

- ASSESSMENT
- Classification
- Treatment and advice
DISTRIBUTION OF MAIN CONDITIONS IDENTIFIED IN THE SAMPLE (N = 364)

- Acute respiratory infections: 63%
- Fever: 57%
- Diarrhoeal diseases: 30%
- Anaemia: 17%
- Eye infections: 11%
- Ear problem: 9%
- Severe malnutrition and Very low weight: 7%
- Needing urgent referral: 4%
INTEGRATED ASSESSMENT (1) : MAIN TASKS AND INDEX

- Child checked for 3 main symptoms (cough, diarrhoea and fever): 75%
- Child vaccination status checked: 60%
- Child weight taken and checked against growth chart: 53%
- Child checked for palmar pallor: 45%
- Child checked for 3 general danger signs: 21%
- Child road-to-health card asked for: 9%

WHO Index of integrated assessment: 5.9 out of 10 tasks
INTEGRATED ASSESSMENT (1): MAIN TASKS AND INDEX

TRAINED vs UNTRAINED

- Child checked for 3 main symptoms (cough, diarrhoea and fever): 79% (Trained) vs 62% (Untrained)
- Child vaccination status checked: 71% (Trained) vs 23% (Untrained)
- Child weight taken and checked against growth chart: 63% (Trained) vs 19% (Untrained)
- Child checked for palmar pallor: 58% (Trained) vs 0% (Untrained)
- Child checked for 3 general danger signs: 28% (Trained) vs 0% (Untrained)
- Child road-to-health card asked for: 10% (Trained) vs 5% (Untrained)
- WHO Index of integrated assessment: 6.6 (Trained) vs 3.4 (Untrained)

Out of 10 tasks
PERFORMANCE OF SELECTED TASKS: TAKING TEMPERATURE AND WEIGHT

Percentage of cases in which task done

<table>
<thead>
<tr>
<th>Task</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature taken</td>
<td>48</td>
</tr>
<tr>
<td>Temperature taken correctly</td>
<td>14</td>
</tr>
<tr>
<td>Weight taken</td>
<td>82</td>
</tr>
<tr>
<td>Weight taken correctly</td>
<td>53</td>
</tr>
</tbody>
</table>
PERFORMANCE OF SELECTED TASKS: TAKING TEMPERATURE AND WEIGHT
TRAINED vs UNTRAINED

<table>
<thead>
<tr>
<th>Task</th>
<th>Trained</th>
<th>Untrained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature taken</td>
<td>61</td>
<td>4</td>
</tr>
<tr>
<td>Temperature taken</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>Weight taken</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Weight taken correctly</td>
<td>91</td>
<td>46</td>
</tr>
</tbody>
</table>

Percentage of cases in whom task done
PERFORMANCE OF SELECTED ASSESSMENT TASKS: ARI (N = 228) AND DIARRHOEA (N = 109)

<table>
<thead>
<tr>
<th>Task</th>
<th>ARI</th>
<th>Diarrhoea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory rate counted</td>
<td>76</td>
<td>57</td>
</tr>
<tr>
<td>Respiratory rate counted correctly</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td>Duration of diarrhoea episode asked about</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>Presence of blood in stool asked about</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td>Something to drink offered</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>Abdomen skin pinched</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>Abdomen skin pinched correctly</td>
<td>33</td>
<td></td>
</tr>
</tbody>
</table>
SELECTED ASSESSMENT TASKS: ARI AND DIARRHOEA

TRAINED vs UNTRAINED

- Respiratory rate counted
- Respiratory rate counted correctly
- Duration of diarrhoea episode asked about
- Presence of blood in stool asked about
- Something to drink offered
- Abdomen skin pinched
- Abdomen skin pinched correctly

ARI:
- Trained: 89%
- Untrained: 15%

Diarrhoea:
- Trained: 88%
- Untrained: 77%
- Trained: 69%
- Untrained: 64%
- Trained: 82%
- Untrained: 41%
- Trained: 4%
- Untrained: 4%
ASSESSMENT OF FEEDING PRACTICES:
CHILDREN LESS THAN 2 YEARS OLD (N = 189) AND OLDER CHILDREN
WITH VERY LOW WEIGHT AND/OR ANAEMIA (N = 36)

Assessed for feeding practices
76%

Not assessed
24%
ASSESSMENT OF FEEDING PRACTICES IN THE TARGET GROUP
TRAINED vs UNTRAINED

Percentage of cases in whom task done

- Child under 2 years old assessed: 35 trained, 0 untrained
- Child 2 years old or older with very low weight and/or anaemia assessed: 7 trained, 0 untrained
- Both groups assessed for feeding practices: 30 trained, 0 untrained
2. QUALITY OF CLINICAL CARE

- Assessment
- CLASSIFICATION
- Treatment and advice
AAGREEMENT OF PROVIDER'S CLASSIFICATIONS WITH SURVEYOR'S CLASSIFICATIONS ON MAIN CONDITIONS

Very severe febrile disease or malaria N=65
Very severe disease/severe pneumonia or pneumonia
Dysentery N=8
Severe malnutrition or very low weight N=26
Mastoiditis or acute or chronic ear infection N=27
Diarrhoea with severe or some dehydration N=11
Severe or non-severe persistent diarrhoea N=10
Complicated or uncomplicated measles N=4
Severe anaemia or anaemia N=61
TOTAL AGREEMENT ON ALL CLASSIFICATIONS ABOVE

Percentage of matching classifications

72
56
50
38
37
36
33
25
21
46
### AGREEMENT ON CLASSIFICATIONS

#### TRAINED vs UNTRAINED

<table>
<thead>
<tr>
<th>Disease/Clinical Feature</th>
<th>Trained</th>
<th>Untrained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very severe febrile disease or malaria</td>
<td>71%</td>
<td>77%</td>
</tr>
<tr>
<td>Very severe disease/severe pneumonia or pneumonia</td>
<td>59%</td>
<td>50%</td>
</tr>
<tr>
<td>Dysentery</td>
<td>50%</td>
<td>43%</td>
</tr>
<tr>
<td>Severe malnutrition or very low weight</td>
<td>43%</td>
<td>20%</td>
</tr>
<tr>
<td>Mastoiditis or acute or chronic ear infection</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>Diarrhoea with severe or some dehydration</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Severe or non-severe persistent diarrhoea</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Complicated or uncomplicated measles</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Severe anaemia or anaemia</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Danger signs</td>
<td>23%</td>
<td>14%</td>
</tr>
</tbody>
</table>

**Overall Agreement on Child Classifications:**
- Percentage of matching classifications:
  - Trained: 49%
  - Untrained: 49%
2. QUALITY OF CLINICAL CARE

- Assessment
- Classification
- TREATMENT AND ADVICE
MANAGEMENT OF SEVERE CASES NEEDING URGENT REFERRAL (N = 14):
SEVERE CASES IDENTIFIED AND REFERRED

Severe cases identified and referred: 43%

Severe cases missed and/or not referred: 57%

All the 6 children correctly referred out of the 14 severe cases were identified by IMCI-trained providers.
PRESCRIPTION OF RECOMMENDED ORAL ANTIBIOTIC TREATMENT
(N = 80 CASES WITH "IMCI CONDITIONS" NEEDING ORAL ANTIBIOTICS)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribed oral antibiotics</td>
<td>73</td>
</tr>
<tr>
<td>Prescribed recommended oral antibiotics</td>
<td>68</td>
</tr>
<tr>
<td>Prescribed antibiotics correctly</td>
<td>33</td>
</tr>
</tbody>
</table>
PRESCRIPTION OF RECOMMENDED ORAL ANTIBIOTIC TREATMENT FOR IMCI CONDITIONS (1)
TRAINED vs UNTRAINED

Percentage of cases with an IMCI condition needing antibiotics

- Prescribed oral antibiotics
  - Trained: 71%
  - Untrained: 82%
- Prescribed recommended oral antibiotics
  - Trained: 70%
  - Untrained: 55%
- Prescribed antibiotics correctly
  - Trained: 38%
  - Untrained: 0%
PREScription of recommended oral antibiotics for IMCI Conditions (2) Trained vs Untrained

Percentage of cases given a recommended antibiotic

Correct dose: 63%
Correct frequency: 92%
Correct duration: 73%
Correct prescription: 54%

Trained
Untrained
CARETAKER CORRECT KNOWLEDGE ABOUT ORAL ANTIBIOTIC TREATMENT (IMCI CONDITIONS)

TRAINED vs UNTRAINED

<table>
<thead>
<tr>
<th></th>
<th>Trained</th>
<th>Untrained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct dose</td>
<td>49</td>
<td>0</td>
</tr>
<tr>
<td>Correct frequency</td>
<td>59</td>
<td>11</td>
</tr>
<tr>
<td>Correct duration</td>
<td>45</td>
<td>22</td>
</tr>
<tr>
<td>CORRECT KNOWLEDGE</td>
<td>25</td>
<td>0</td>
</tr>
</tbody>
</table>

Percentage of caretakers of cases given a recommended antibiotic.
CARETAKER’S POTENTIAL COMPLIANCE WITH PROVIDER’S ADVICE ON DURATION OF ORAL ANTIBIOTIC TREATMENT
SHOULD CHILD GET BETTER BEFORE COMPLETING TREATMENT COURSE

- Would continue as advised: 65%
- Would stop treatment: 22%
- Would continue but reduce dose: 1%
- Other / don’t know: 12%
RATIONAL USE OF DRUGS:
CASES NOT NEEDING ANTIBIOTICS GIVEN NO ANTIBIOTICS (N = 254)

Cases correctly prescribed no antibiotics 63%

Cases prescribed antibiotics but not needing them 37%
RATIONAL USE OF ANTIBIOTICS

TRAINED vs UNTRAINED

Percentage of cases not needing antibiotics

<table>
<thead>
<tr>
<th></th>
<th>Trained</th>
<th>Untrained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Given no antibiotics</td>
<td>74</td>
<td>74</td>
</tr>
<tr>
<td>Given antibiotics but not needing them</td>
<td>26</td>
<td>26</td>
</tr>
</tbody>
</table>
PRESCRIPTION OF RECOMMENDED ORAL ANTIMALARIAL TREATMENT
(N = 62)

Percentage of cases with malaria

- Prescribed oral antimalarials: 74%
- Prescribed recommended oral antimalarials: 74%
- Prescribed antimalarials correctly: 27%
PRESCRIPTION OF ORAL ANTIMALARIAL TREATMENT
TRAINED vs UNTRAINED

- Prescribed oral antimalarials: Trained 76%, Untrained 69%
- Prescribed recommended oral antimalarials: Trained 76%, Untrained 69%
- Prescribed antimalarials correctly: Trained 41%, Untrained 22%
PRESRIPTION OF ORAL ANTIMALARIALS

TRAINED vs UNTRAINED

Percentage of cases given antimalarials

Correct dose: Trained 43, Untrained 56
Correct frequency: Trained 78, Untrained 100
Correct duration: Trained 76, Untrained 56
CORRECT PRESCRIPTION: Trained 41, Untrained 22
CARETAKER CORRECT KNOWLEDGE ABOUT ANTIMALARIAL TREATMENT

TRAINED vs UNTRAINED

Percentage of cases given antimalarials

- Correct dose
  - Trained: 35%
  - Untrained: 0%

- Correct frequency
  - Trained: 38%
  - Untrained: 22%

- Correct duration
  - Trained: 43%
  - Untrained: 0%

CORRECT KNOWLEDGE

- Trained: 24%
- Untrained: 0%
ADVICE ON ORS
TRAINED vs UNTRAINED

Correct amount of water to prepare ORS: 72%
Correct advice on when to give ORS: 44%
Correct advice on how much ORS to give each time: 40%
CORRECT ADVICE ON ORS: 40%
CARETAKER KNOWLEDGE ABOUT ORS PREPARATION AND ADMINISTRATION
TRAINED vs UNTRAINED

<table>
<thead>
<tr>
<th>Knowledge/Action</th>
<th>Trained</th>
<th>Untrained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knows correct amount of water to prepare ORS</td>
<td>79</td>
<td>73</td>
</tr>
<tr>
<td>Knows when to give ORS</td>
<td>35</td>
<td>9</td>
</tr>
<tr>
<td>Knows how much ORS to give each time</td>
<td>56</td>
<td>27</td>
</tr>
<tr>
<td>Correct Knowledge About ORS</td>
<td>28</td>
<td>9</td>
</tr>
</tbody>
</table>
OTHER CURATIVE AND PREVENTIVE TREATMENTS AND OPPORTUNITIES FOR IMMUNIZATION FOR NON-REFERRED CASES

- Cases with eye infection given tetracycline ointment (N = 41) - 24%
- Cases with anaemia prescribed iron (N = 55) - 26%
- Cases needing Vitamin A given (N = 46) - 17%
- Cases needing vaccine given it or told when/where - 49%
Cases given advice on home care by provider and caretaker knowledge:

- Give extra fluids: Advised by provider - 41%, Known by caretaker - 48%
- Continue feeding: Advised by provider - 38%, Known by caretaker - 79%
- Signs to take child back immediately: Advised by provider - 20%, Known by caretaker - 6%
- All three home care rules: Advised by provider - 12%, Known by caretaker - 2%
ADVICE ON HOME CARE GIVEN BY PROVIDER

TRAINED vs UNTRAINED

- Advised to give extra fluids: 52 (Trained), 5 (Untrained)
- Advised to continue feeding: 49 (Trained), 1 (Untrained)
- Advised on signs to take child back immediately: 26 (Trained), 0 (Untrained)
- ADVISED ON ALL THREE HOME CARE RULES: 15 (Trained), 0 (Untrained)
CARETAKERS ADVISED ON SIGNS TO RETURN IMMEDIATELY AND KNOWING ABOUT THEM

SIGNS FOR ALL:
- Becomes sicker
  - Caretaker advised: 32%
  - Caretaker knowing: 32%

- Unable to drink
  - Caretaker advised: 21%
  - Caretaker knowing: 5%

FOR NO FEVER:
- Develops a fever
  - Caretaker advised: 25%
  - Caretaker knowing: 70%

FOR NO PNEUMONIA:
- Develops difficult breathing
  - Caretaker advised: 21%
  - Caretaker knowing: 18%

- Develops fast breathing
  - Caretaker advised: 19%
  - Caretaker knowing: 4%

FOR NO DEHYDRATION:
- Has blood in stools
  - Caretaker advised: 14%
  - Caretaker knowing: 2%

- Drinks poorly
  - Caretaker advised: 5%
  - Caretaker knowing: 1%
CARETAKERS GIVEN AGE-APPROPRIATE ADVICE ON FREQUENCY OF FEEDING

Given no or incorrect advice 76%

Given correct advice 24%
MOSQUITO BEDNETS AND THEIR USE (N = 350)

- 52% of caretakers interviewed have a mosquito bednet.
- 21% have a treated mosquito bednet.
- 20% of children slept under a bednet the previous night.
- 10% of children slept under a treated bednet the previous night.
Home care card used (N = 347)

Card held properly

Pictures pointed at

Caretaker understanding checked

Details on communication techniques (N = 118 cases in whom card used)

Percentage of cases

34

26

25

23
USE OF HOME CARE CARD AND COMMUNICATION TECHNIQUES

TRAINED vs UNTRAINED

Details on communication techniques (cases in whom home care card used)

- Home care card used: 44 Trained, 0 Untrained
- Home care card and communication techniques used: 7 Trained, 0 Untrained
- Card held properly: 26 Trained, 0 Untrained
- Pictures pointed at: 25 Trained, 0 Untrained
- Caretaker understanding checked: 23 Trained, 0 Untrained
3. FACTORS INFLUENCING CARE

- Drug availability
- Availability of supply for IMCI
- Availability of supply for immunization
- Availability of supply for malaria laboratory
- Availability of other supply
- Supervision
INDEX (MEAN) OF DRUG AVAILABILITY (N = 66 FACILITIES)
(Availability of at least 1 treatment course)

- Essential oral treatments
  - Index if all key drugs available in all facilities: 6
  - Mean no. of key drugs available in the facilities surveyed: 5

- Non-injectable drugs
  - Index if all key drugs available in all facilities: 12
  - Mean no. of key drugs available in the facilities surveyed: 8.7

- Pre-referral injectable drugs
  - Index if all key drugs available in all facilities: 4
  - Mean no. of key drugs available in the facilities surveyed: 2.6
AVAILABILITY OF SUPPLY AND EQUIPMENT FOR IMCI

- Working baby scale: 94%
- Source of clean water: 91%
- Working timing device: 89%
- Supplies to mix ORS: 88%
- Thermometer: 79%
- Working adult scale: 45%
- Working nebulizer: 15%

Percentage of the 66 facilities in which item available
1. Needles and syringes
Safety box to dispose of used needles and syringes
2a. Functioning refrigerator with correct temperature
2b. Cold box and all ice packs frozen
Availability of supply and equipment for immunization (1 and 2)
AVAILABILITY OF KEY SUPPLY AND EQUIPMENT FOR MALARIA LABORATORY

- Giemsa: 77%
- Slides: 77%
- Functioning microscope: 70%
- Lancets to prick finger: 68%
- ALL 4 ITEMS FOR MALARIA LABORATORY: 62%

Percentage of the 66 facilities with the items available
<table>
<thead>
<tr>
<th>Item</th>
<th>Availability (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMCI chart booklet</td>
<td>88</td>
</tr>
<tr>
<td>Mother home care counselling card for provider use</td>
<td>77</td>
</tr>
<tr>
<td>IMCI recording forms</td>
<td>77</td>
</tr>
<tr>
<td>Road-to-health cards</td>
<td>70</td>
</tr>
<tr>
<td>IMCI daily register</td>
<td>65</td>
</tr>
<tr>
<td>Vaccination register</td>
<td>65</td>
</tr>
<tr>
<td>Drug stock cards</td>
<td>41</td>
</tr>
</tbody>
</table>
SUPERVISION IN THE 66 FACILITIES VISITED

- Received at least 1 supervisory visit in the past 6 months: 50%
- Case management observed in past 6 months: 11%
- Has supervisory book: 26%
- Last visit’s recommendations recorded on the book: 15%
- Clinical supervision done and findings recorded: 2%
CONCLUSIONS
1. Better clinical performance of staff trained in IMCI than those untrained

IMCI training can improve quality of outpatient child care

2. Very low clinical performance of staff not trained in IMCI

Issue of pre-service training standards
3. Weak health systems support elements

Major constraint to delivery of quality child care services and IMCI implementation
RECOMMENDATIONS
TO FURTHER IMPROVE
OUTPATIENT CHILD
HEALTH SERVICES
POLICY: EQUITABLE ACCESS TO DRUGS AND SERVICES

Consideration should be given to protecting children below 2 years old, especially in poor families, by issuing a policy and establishing mechanisms to provide affordable drugs to them.

States should commit to making key drugs regularly available to the health facilities where IMCI-trained staff work, to make the most of the substantial investment placed in IMCI training.
Consideration should be given to strengthening pre-service training curriculum of medical assistants and introducing the IMCI outpatient care approach as a way to develop basic skills. The Federal level and States concerned should jointly plan to develop and commit adequate human resources to follow up visits after IMCI training, to conduct them on a timely basis and according to standard methodology.
SUPERVISION: MALARIA LABORATORY AND ROUTINE SUPERVISION

Close supervision by Federal and State levels with quality control of malaria microscopic diagnosis should be carried out regularly to improve the quality of malaria laboratory diagnosis.

A training package on supervision of child health services should be developed. Supervisors responsible for routine supervision should be trained in child health supervisory skills and involved in IMCI follow-up visits.
The Italian Cooperation