

ANNEXES

ANNEX 1. AREAS TO BE EMPHASIZED IN FUTURE IMCI CLINICAL TRAINING AND FOLLOW-UP VISITS

Step	Targeted children	Condition	Areas to emphasize	Evidence from survey (cases managed by IMCI-trained providers)
Assessment	All children	All	<i>Case history</i> and caretaker's answers should be carefully validated (unreliability of caretaker)	Discordant information provided by the same caretaker to provider and surveyor in several cases, leading to incorrect assessment and management of the child
	All children	Severe conditions	<i>General danger signs</i> should be correctly checked in all children	The three general danger signs were not checked in 72.1% of children
	All children	All	The <i>temperature</i> should be taken correctly	The temperature was not taken or not taken correctly with a thermometer in 82.1% of children
	All children	Very low weight	Child's <i>weight</i> should not only be taken but also <i>checked against a growth chart</i>	Child's weight was not checked against a growth chart in 37.5% of children
	All children	ARI	Caretakers should be asked not only whether the child has cough but also <i>whether the child has difficult breathing</i>	Breathing problem not asked of 20% of caretakers reporting that child had no cough
	Children with cough or difficult breathing	ARI	The <i>respiratory rate</i> should be counted carefully; more supervised practice is needed	Respiratory rate considered unreliable in 59% of children in whom taken
	Children with diarrhoea	Diarrhoea	Correct <i>technique to pinch abdomen skin</i> to be emphasized and practised	Abdomen skin either incorrectly pinched or not pinched in 58.8% of children with diarrhoea
	Children with an ear problem	Ear problem	Children should be checked more carefully; both tasks should be performed: checking both ears <u>and</u> feeling for tender swelling behind the ear	(Both) ears not checked in 57.7% and feeling for tender swelling behind the ears not performed in 80.8% of children with ear problem
	Children with fever	Fever	<i>History of measles</i> within the last three months should be asked in all children with fever or history of fever	History of measles within the last three months not checked in 47.3% of children with fever or history of fever.

Step	Targeted children	Condition	Areas to emphasize	Evidence from survey (cases managed by IMCI-trained providers)
Assessment (continued)	All children	Anaemia	All children should be checked for <i>palmar pallor</i>	Palmar pallor not assessed in 41.8% of children
			More practice is needed to assess palmar pallor	No agreement on classification of cases with severe anaemia or anaemia in 76.6% of children with palmar pallor
	All children	Malnutrition	All children should be checked properly for <i>visible severe wasting and oedema of both feet</i>	Visible severe wasting not (or not properly) assessed in 68.2% of children; oedema of both feet not (or not properly) checked in 58.2% of children
	Children less than 2 years old and those with low weight and/or anaemia	Feeding assessment	Particular attention should be paid to <i>assess feeding practices</i> , also in children with low weight and/or anaemia	Feeding assessment not performed in 65.1% of children age less than 2 years and in 93.1% of those two years old or older with low weight and/or anaemia
All children	Other problems	Asking about and <i>checking for 'other problems'</i> and routinely checking for <i>eye infections</i> in all children should be emphasized	Caretakers not asked about the presence of other problems in 55.7% of children; 59% of children with eye infection – pus draining from the eye – missed	
Road-to-health card	All children	Road-to-health card	Child's <i>health card</i> should be routinely asked for and checked also for sick children, not only for immunization sessions. Caretakers should be advised on it.	Health card not asked for in 89.6% of children
Classification	Children with diarrhoea	Persistent diarrhoea and dysentery	<i>Assessment findings</i> should be used to classify the child	Caretakers of 9 out of 10 children with persistent diarrhoea asked about duration of diarrhoea, but 7 cases not classified as persistent diarrhoea; caretakers of 7 out of 8 children with blood in stools asked about presence of blood in stool, but 4 cases not classified as dysentery
Treatment and counselling	Children needing urgent referral or admission to hospital	Severe classification	All children with a severe classification needing urgent admission to hospital should receive the <i>first dose of 'pre-referral treatment'</i> , including at the hospital out-patient or emergency department: this should be practised during training courses	None of the severe cases needing urgent referral or admission to hospital received a first dose of pre-referral treatment (antibiotic, quinine, ORS, vitamin A -- as appropriate)

Step	Targeted children	Condition	Areas to emphasize	Evidence from survey (cases managed by IMCI-trained providers)
Treatment and counselling (continued)	Children needing oral antibiotics and/or antimalarials	IMCI conditions requiring antibiotics and/or antimalarials	Providers should improve their prescription practices and advise caretakers correctly on <i>treatment</i>	Prescription incorrect in 62.3% and 69.4% of cases with IMCI conditions needing oral antibiotics and/or antimalarials, respectively; caretakers of 75% of children prescribed oral antibiotics and of 75.7% of children prescribed oral antimalarials did not know how to administer them correctly at home
			Giving the <i>first dose of treatment</i> at the facility should be practised during training courses	85.7% and 94.6% of children not given the first dose of antibiotic and antimalarial, respectively, among those prescribed them
	Children with diarrhoea	Diarrhoea	Children with diarrhoea and <i>some dehydration should be rehydrated with ORS at the facility and ORS sachets given for home use</i> to those with no dehydration	71.4% of children with diarrhoea and some dehydration not administered the solution at the facility; caretakers of 48% of children with diarrhoea and no dehydration given no ORS sachets for home use
			Communication skills to <i>advise on ORS treatment</i> should be enhanced through more supervised practice	Caretakers of 74.4% children given ORS were given no demonstration or explanation on how to give it nor asked checking questions; 72.1% were unable to describe how to prepare and administer ORS correctly; 65.1% did not know when to give it to the child, and 44.2% did not know how much to give it each time
	Children needing vitamin A	IMCI conditions requiring vitamin A, and children age 6 months or older not given a dose in previous 6 months	<i>Giving vitamin A</i> to the target group of children, according to the IMCI guidelines, should be practised during training	82.8% of children needing to receive vitamin A were not given it or not advised to come back to receive it on another day
Children with eye infection	Other problems	All children with an <i>eye infection should be given tetracycline ointment</i> : practise during the training course	75.9% of children with pus draining from the eye were not given tetracycline ointment	

Step	Targeted children	Condition	Areas to emphasize	Evidence from survey (cases managed by IMCI-trained providers)
Treatment and counselling (continued)	All children	Any non-severe condition	<i>Advice on giving extra fluids and continue feeding</i>	Caretakers of 58.0% of children not needing urgent referral given no advice on <i>both</i> home care rules
			<i>Advice on when to take the child back to the facility immediately</i>	84.8% of caretakers not given advice on <i>all</i> the three home care rules, especially the specific early danger signs to watch out at home (74.3% not advised on at least 3 of the 7 key signs)
			<i>Use of home care card and communication techniques</i> should be emphasized and practised under supervision during training and closely monitored during follow-up visits	Home care card <i>and</i> good communication techniques not used in 93.2% of caretakers of children not needing urgent referral
	Children needing immunization	Needing immunization	Ensure that all children's <i>immunization status</i> and road-to-health card are routinely checked and those needing immunization are given it or advised when/where to obtain it	48.2% of children needing immunization left the facility with no immunization nor advice on where/when to obtain it
	Children less than 2 years old and children with low weight and/or anaemia	Feeding	Practice on <i>counselling on complementary feeding</i> should be strengthened during training and follow-up visits	Caretakers of 76.3% of children less than 2 years old and those with very low weight and/or anaemia (seen by IMCI-trained and untrained providers) not given correct advice on breastfeeding and frequency of complementary foods
Caretaker-mother	Children not needing urgent referral, drug or ORS treatment, or specific advice (i.e., "green row" conditions)	Training should start emphasizing the need to <i>counsel on their health mothers</i> of sick children who have only a mild illness	99% of caretaker-mothers of children not needing urgent referral were asked no questions on their health	

ANNEX 2. MAIN STEPS OF THE IMCI PROCESS IN SUDAN

August 1996 –December 1999

1996

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|----------|--|
| August | <ul style="list-style-type: none">• IMCI Task Force established and a focal point appointed |
| October | <ul style="list-style-type: none">• IMCI Working Group created with two Sub-groups: Adaptation (4 technical units) and Implementation |
| November | <ul style="list-style-type: none">• National IMCI Orientation Meeting• Adoption of the IMCI strategy by the Federal Ministry of Health• Preliminary planning workshop• Selection of 4 Districts (2 in Khartoum and 2 in Gezira) |

1997

- | | |
|-----------|---|
| May | <ul style="list-style-type: none">• National IMCI Steering Committee established by Ministerial Decree• IMCI Planning and Adaptation Workshop (1st Consensus meeting) |
| August | <ul style="list-style-type: none">• State IMCI co-ordinators and IMCI Task Forces established in Khartoum and Gezira |
| September | <ul style="list-style-type: none">• 2nd Consensus meeting on the IMCI adapted guidelines |
| December | <ul style="list-style-type: none">• First national 11-day IMCI training course |

1998

- | | |
|-----------------|--|
| March | <ul style="list-style-type: none">• First IMCI facilitation skills training course |
| April | <ul style="list-style-type: none">• 2nd national IMCI case management course |
| May | <ul style="list-style-type: none">• 2nd IMCI facilitation skills training course |
| June | <ul style="list-style-type: none">• Strengthening health facilities' services¹ in the 4 districts selected for early implementation |
| July – December | <ul style="list-style-type: none">• Translation of IMCI materials into Arabic |

1999

- | | |
|----------|---|
| February | <ul style="list-style-type: none">• Implementation at district level |
| March | <ul style="list-style-type: none">• Arabic version of IMCI training materials used for 1st course for medical assistants |
| June | <ul style="list-style-type: none">• First follow-up visit |
| December | <ul style="list-style-type: none">• Review of the IMCI Early Implementation Phase and Planning for Expansion |

¹Provision of drugs, organization of work, etc.

DRUGS: Drugs needed for IMCI were already included in the national Essential Drug List (EDL). However, use of some drugs (e.g. parenteral chloramphenicol and gentamicin as injectable pre-referral drugs) was not allowed for medical assistants and nurses at dispensaries and health centres. Special arrangements were made with local authorities for exemption from EDL restrictions of facilities with staff trained in IMCI.

ANNEX 3. IMCI TRAINING AND IMPLEMENTATION

IMCI Training

Type of course	Level	No. of courses	No. of participants	
			Nationals	Foreigners
Case Management	National	4	91	0
	Regional	5	93	17
	State/Dr*	43	360	
	State/MA*		520	
	Others		25	
Facilitation skills	National	7	82	
	Regional	1	8	2
	State	13	104	
Supervisory (follow-up after training)	National	2	12	
	State	6	31	
University		2	48	
Total		83	1374	19

State/Dr: Course at State level for doctors

State/MA: Course at State level for medical assistants

IMCI implementation status

	1997	1998	1999	2000	2001	2002
Khartoum	Introduction	Training				
Gezira	Introduction	Training				
River Nile				Int. Training		
Sennar				Int. Training		
North Kordofan					Int. Training	
Kassala					Int. Training	
El Gadarif					Introduction	Training
Red Sea					Introduction	Training
South Darfour					Introduction	Training
White Nile						Int. Training
West Kordofan						Introduction
South Kordofan						Introduction
West Darfour						Introduction
Bher Elgazal		Introduction		Training		
	1997	1998	1999	2000	2001	2002

IMCI COVERAGE: Percentage of districts and facilities implementing IMCI in 14 States where IMCI has been introduced from inception through August 2002

States IMCI introduced	Date 1st training	Districts implementing IMCI	Total districts in State	% implementing	Facilities implementing IMCI	Total facilities in IMCI districts	% implementing in IMCI districts	Total facilities in State	% implementing in State
<i>Khartoum</i>	1998	18	36	50%	97	355	27%	474	20%
<i>Gezira</i>	1998	13	34	38%	177	236	75%	913	19%
<i>River Nile</i>	2000	9	19	47%	65	176	37%	327	20%
<i>Sennar</i>	2000	5	16	31%	46	68	68%	213	22%
<i>North Kordofan</i>	2001	8	18	44%	35	109	32%	645	5%
<i>Gadarif</i>	2002	4	24	17%	19	114	17%	262	7%
<i>Red Sea</i>	2002	7	20	35%	22	45	49%	75	29%
<i>White Nile</i>	2002	2	21	10%	16	73	22%	238	7%
<i>Kassala</i>	2001	3	17	18%		65		302	
<i>South Darfour</i>	2002	3	41	7%	15	77	19%	396	4%
<i>West Darfour</i>	2002	2	16	13%				248	
<i>South Kordofan</i>	2002	2	19	11%				247	
<i>West Kordofan</i>	2002	2	19	11%				357	
<i>Bher Algazal</i>	1998	2	11	18%	3	15	20%	64	5%
Total		80	311	26%	495	1333	37%	4761	10%

ANNEX 4. SCHEDULE OF SURVEY ACTIVITIES

October 2002 (planning); March – April 2003 (survey)

- **PLANNING**

Planning meeting 26 – 31 October 2002

- **TRAINING**

Surveyor training 15 - 20 March 2003

- **FIELD WORK**

Data collection 22 March - 3 April 2003

- **DATA ENTRY AND ANALYSIS**

Completion of data entry and cleaning 5 – 9 April 2003

Preparation of tables for data analysis 10 - 13 April 2003

Team analysis 14 - 15 April 2003

Additional analysis, preparation for feedback meeting, conclusions and recommendations 16 - 20 April 2003

- **PRESENTATION OF MAIN FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

Meeting with H.E. the Federal Minister of Health and Undersecretary of Health 21 April 2003

National feedback meeting 22 April 2003

Calendar

March														April						
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4
Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr
<i>Surveyor training</i>						<i>Data collection</i>														
										<i>Data entry</i>										

April																	
5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu
<i>Data cleaning</i>								<i>Data analysis, with conclusions and recommendations</i>						<i>Meetings*</i>			
<i>Data entry</i>								<i>Graphs</i>									

* Meetings with H.E. the Federal Minister of Health and Undersecretary of Health, and National feedback meeting

ANNEX 5. SCHEDULE OF PLANNING

Federal Ministry of Health

26–31 October 2002

Saturday, 26 October

- ↻ Meeting with National IMCI coordinator and focal point
- ↻ Meeting with UNICEF
- ↻ Meeting with survey planning team: Planning for the survey:
 - ▶ Background on the child health situation in the country (e.g., DHS data, health facility data), rationale for the IMCI strategy and progress in implementation; summary results of follow-up visits and observations and lessons.
 - ▶ Tentative schedule of planning visit
 - ▶ Survey manager and co-ordinator
 - ▶ Objectives of survey
 - ▶ Geographic scope and sampling (options and related issues, data required)
 - ▶ Surveyors, supervisors (responsibilities, requirements)
 - ▶ Review of survey forms -to be cont'd-

Sunday, 27 October

- ↻ Meeting with interested partners (SCF)*
- ↻ Meeting with survey planning team: Planning for the survey (continued):
 - ▶ Review of survey forms (and plans for translation of selected sections) –to be cont'd-
 - ▶ Initial list of country-specific health facility survey rules

Monday, 28 October

- ▶ Review of survey forms (and plans for translation of selected sections) – continued -
- ▶ List of country-specific health facility survey rules – continued -

Tuesday, 29 October

- ▶ Visit to the outpatient department of Omdurman hospital, Khartoum:
 - Pre-test of forms
 - Patient flow, outpatient logbooks, drug stock cards
 - Revision of forms and survey rules

Wednesday, 30 October

- ▶ Plans for revision of EpiInfo data entry and analysis files based on revised forms
- ▶ Selection of districts
- ▶ Health facilities to survey: criteria and random selection procedures
- ▶ Estimate of number of sets of forms, summary comment sheets and surveyor instructions needed for the survey; instruments to translate (survey rules, checklist of tasks, forms)
- ▶ List of potential surveyors and supervisors
- ▶ Review of plans for data entry and analysis
- ▶ Budget

Thursday, 31 October

- ↻ Debriefing with the Undersecretary of Health and Director-General for International Health
- ↻ Planning for surveyor training (responsibility, language, schedule)
- ↻ Planning for data collection (survey itinerary)
- ↻ Planning for data entry and analysis; labels for 'health facility envelopes'
- ↻ Planning for dissemination of findings and Feedback Meeting
- ↻ Finalization of survey schedule
- ↻ Planning for remaining survey tasks
- ↻ Debriefing with WR

*Unavailable

ANNEX 6. SURVEY PLANNING TEAM

26–31 October 2002

Federal Ministry of Health

Department of Primary Health Care

Dr Samia Mohammed El Hassan	Acting Director, and national IMCI coordinator
Dr Igbal Ahmed El Bashim	National IMCI focal point
Dr Khalid Mohamed Khalid	IMCI team (1 st component)
Dr Hanan Mukhtar	IMCI team (2 nd component)
Dr Wafaa Mustafa Osman	Nutritionist, IMCI team (3 rd component – community)
Dr Tarig Abdul Wahid	PHC support
Dr Rogaia Abuelgasim	Reproductive health and Dean, School of Nursing, Khartoum University
Dr Siham Ahmed Balla	Nutrition

Academic institutions

Khartoum University

Prof Zein Abdul Rahim Karrar*	Dean, Graduate College
Ms Nadia Bushra	Sociologist, Faculty of Medicine

Gezira University

Dr Samira Hamid Abdelrahman	Associate Professor, Department of Community Medicine
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Al Rabat University

Dr Abd Rahim Babikir	Department of Community Medicine
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UNICEF

Dr Rafah S. Aziz*	Senior Project Officer for Health and Nutrition, Chief of Health and Nutrition Section, UNICEF Sudan Country Office
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World Health Organization

Dr Sumaia Elfadil	National Officer, Focal Point for Child Health, Office of the WHO Representative for Sudan
Dr Sergio Pièche	Medical Officer, Child Health and Development (CAH), Regional Office for the Eastern Mediterranean (EMRO)

Resource persons

Dr El Tayeb Ahmed El Sayed	<i>Expanded Programme on Immunization</i>
Dr Al Fatih Malik	<i>Malaria Programme</i>

*Able to attend some of the sessions

ANNEX 7. SURVEY SELECTION CRITERIA

The following criteria were agreed upon to decide which geographical areas and facilities to cover in the survey:

- *States where more than one IMCI training course (with follow-up visit after training) had been conducted.* This was done to provide time for implementation of actions recommended at debriefing meetings after follow-up visits to strengthen health system support in facilities located in districts implementing IMCI (“IMCI districts”);

- *Facilities implementing IMCI (“IMCI health facilities”) and belonging to the following types:*
 - Outpatient departments of hospitals;
 - Health centres;
 - Dispensaries; and
 - Dressing stations.

ANNEX 8. SAMPLING OF DISTRICTS

Sampling method: probability proportionate to size (pps)

Areas to be selected: 40 Contained in 29 districts

Sampling method: Probability proportionate to size

Areas to be selected: 40 Contained in 29 districts

State	Districts		Total population under-five	Cumulative population under-five	Areas selected	
Khartoum	1 Soba Walgeref		12,726	12,726		
	2 White Nile	1	52,984	65,710	13,430	52,619
	3 Elkalakla	2	45,701	111,411	91,808	
	4 Elazhari	3	41,856	153,267	130,997	
	5 Omdurman North		15,568	168,835		
	6 Omdurman South	4	13,427	182,262	170,185	
	7 Elreif Elganoubi		19,311	201,573		
	8 Elameer	5	91,623	293,196	209,374	248,563 287,752
	9 Elbogaa	6	107,740	400,936	326,941	366,130
	10 Elsalam	7	97,607	498,543	405,319	444,507 483,696
	11 Elreif Elshamali		8,850	507,393		
	12 Elmukhtar	8	24,135	531,528	522,885	
	13 Elgaile		8,498	540,026		
	14 Elhag Yousif	9	122,596	662,622	562,074	601,263 640,452
	15 Elgeraifat & Omdoum	10	63,446	726,068	679,640	718,829
	16 Elailafoon		8,284	734,352		
	17 Umdwanban		11,559	745,911		
	18 Elsileat		2,322	748,233		
Gezira	19 Alhoosh	11	18,518	766,751	758,018	
	20 Elhadad		14,439	781,190		
	21 Wadmedani	12	45,505	826,695	797,207	
	22 Alhag abdala	13	19,327	846,022	836,396	
	23 Ummalgura wasat		17,047	863,069		
	24 Umelgura Ganoop	14	18,267	881,336	875,585	
	25 Umelgora shimal		7,516	888,852		
	26 Elmanagil		16,464	905,316		
	27 Reifi Almanagil	15	22,189	927,505	914,774	
	28 Almosalamia		10,727	938,232		
	29 Alhasahesa	16	21,054	959,286	953,962	
	30 Lemaseed		17,382	976,668		
	31 Wasat Elbotana	17	16,976	993,644	993,151	
River Nile	32 Reif Barbar		14,153	1,007,797		
	33 Abeedeaya		7,709	1,015,506		
	34 Barbar		5,923	1,021,429		
	35 Elbawga		8,158	1,029,587		

State	Districts		Total population under-five	Cumulative population under-five	Areas selected
	36 Atbara	18	24,976	1,054,563	1,032,340
	37 Damar		9,176	1,063,739	
	38 Reifi Damar	19	10,593	1,074,332	1,071,529
	39 Zeidab		18,697	1,093,029	
	40 Sedwan		7,601	1,100,630	
Al Gadarif	41 Algadarif	20	62,268	1,162,898	1,110,718 1,149,907
	42 Middle Gadarif		21,086	1,183,984	
	43 Kasap	21	13,442	1,197,426	1,189,096
Red Sea	44 Middle Portsudan		20,930	1,218,356	
	45 East Portsudan	22	18,537	1,236,893	1,228,284
	46 South Portsudan		28,500	1,265,393	
North Kordofan	47 Elobeid	23	63,539	1,328,932	1,267,473 1,306,662
	48 Reifi sheakan	24	22,971	1,351,903	1,345,851
	49 Abu Haraz		13,660	1,365,563	
	50 Arahad	25	34,864	1,400,427	1,385,040
	51 Bara wasat		12,836	1,413,263	
	52 Sharig Bara	26	21,392	1,434,655	1,424,229
	53 Garip Bara		16,183	1,450,838	
	54 Kasgail			1,450,838	
White Nile	55 Kosti	27	41,773	1,492,611	1,463,417
	56 Aldeweam	28	15,700	1,508,311	1,502,606
Sennar	57 Singa		7,771	1,516,082	
	58 Soki		5,510	1,521,592	
	59 Shargi		10,416	1,532,008	
	60 Elgarbi	29	16,531	1,548,539	1,541,795
	61 Sennar		19,015	1,567,554	
Total population in IMCI districts			9,558,256		
Total population under five			1,567,554		
Sampling interval			39189		
Random number			13430		
Population in the districts selected:			7,131,323		
Population under-five			1,169,537		
Proportion of total population:			74.6%		

Note: The population of the district of Kasgail was not available at the time of the selection and the district was then automatically left out. It was learnt later on, however, that the correct name of the district was Sheikan district, already included in this list. For practical purposes, it was agreed to accept the list of districts as shown in this annex.

ANNEX 9. LIST OF HEALTH FACILITIES SURVEYED

STATE	DISTRICT	FACILITY				
		Code	Name of facility	Type	Caseload/month	Location
RED SEA	EAST PORT SUDAN	1	Deam Altigani	Health centre	75	Urban
RED SEA	EAST PORT SUDAN	2	Almawani	Health centre	311	Urban
AL GADARIF	AL GADARIF	3	Ummshagara	Health centre	143	Rural
AL GADARIF	AL GADARIF	4	Algomhoria	Health centre	140	Urban
AL GADARIF	AL GADARIF	5	Al Soufi Al Azrag	Health centre	176	Urban
AL GADARIF	AL GADARIF	6	Ababo	Health centre	196	Urban
AL GADARIF	AL GADARIF	7	Alsaumah	Dispensary	93	Urban
AL GADARIF	KASSAB	8	Wad Alsanosi	Dispensary	225	Rural
KHARTOUM	AL AMIR	9	AL Fatimab	Health centre	87	Urban
KHARTOUM	AL AMIR	10	Al Quosai	Health centre	134	Urban
SENNAR	ALRIF ALGARBI	11	Ribia	Health centre	66	Rural
SENNAR	ALRIF ALGARBI	12	33 alsukarr	Dispensary	65	Rural
SENNAR	ALRIF ALGARBI	13	Hilat albagar	Dispensary	138	Rural
GEZIRA	AL HAJ ABDALLAH	14	Aldawha	Health centre	60	Rural
GEZIRA	AL HAJ ABDALLAH	15	Awlad Yaseen	Dispensary	63	Rural
GEZIRA	AL HASAHISA	16	Arbagi	Hospital	194	Rural
GEZIRA	AL HASAHISA	17	Alaikora	Health centre	78	Rural
GEZIRA	AL HASAHISA	18	Arbagi	Health centre	106	Rural
GEZIRA	AL HASAHISA	19	Wad Alsaid	Health centre	185	Rural
GEZIRA	AL HOUSH	20	Alhoush	Hospital	204	Rural
GEZIRA	RIFI ALMANAGIL	21	Alshikeania	Health centre	86	Rural
GEZIRA	RIFI ALMANAGIL	22	Al Raga	Dispensary	58	Rural
GEZIRA	RIFI ALMANAGIL	23	Umm Sidira	Dispensary	78	Rural
GEZIRA	RIFI ALMANAGIL	24	Bagadi	Dispensary	86	Rural
GEZIRA	RIFI ALMANAGIL	25	Ummzikra	Dispensary	89	Rural
GEZIRA	RIFI ALMANAGIL	26	Katir alnifidia	Dressing station	116	Rural
GEZIRA	UMM ALGOURA GANOOP	27	Babanosa	Health centre	85	Rural
GEZIRA	UMM ALGOURA GANOOP	28	Algaria 30	Dispensary	75	Rural
GEZIRA	UMM ALGOURA GANOOP	29	Almasara	Dispensary	83	Rural
GEZIRA	WADMEDANI	30	Arkawit	Health centre	63	Urban
GEZIRA	WADMEDANI	31	Habeeb Allah	Health centre	81	Urban
GEZIRA	WADMEDANI	32	Awoodah	Health centre	103	Urban
GEZIRA	WADMEDANI	33	Alkireaba	Health centre	264	Urban
KHARTOUM	AL AZHARI	34	Soba Al Aradi	Health centre	1000	Urban
KHARTOUM	AL BOKAA	35	Badr Al Kobra	Health centre	57	Urban
KHARTOUM	AL BOKAA	36	AL Manara	Health centre	124	Urban
KHARTOUM	AL BOKAA	37	Al Sheikh Abuzeid	Health centre	177	Urban
KHARTOUM	AL HAJ YOUSSEF	38	Al Shahida Nada	Health centre	115	Urban
KHARTOUM	AL HAJ YOUSSEF	39	Kamboni	Health centre	424	Urban
KHARTOUM	AL HAJ YOUSSEF	40	Khaled Ben Al Walid	Health centre	588	Urban
KHARTOUM	AL HAJ YOUSSEF	41	Al Razi	Dispensary	447	Urban
KHARTOUM	AL JERIFFAT & UMM DOM	42	Halat Koko	Health centre	342	Urban
KHARTOUM	AL SALAM	43	Al Bar International Organization	Dispensary	159	Urban
KHARTOUM	AL SALAM	44	Al Kanaes	Dispensary	206	Urban
KHARTOUM	ALKALAKLAT	45	Sankaat	Health centre	900	Urban

Note:

> Gezira State: Facility with code 18 – “Arbagi” health centre (rural) in Al Hasahisa district: replaced during the survey with “Maringan Alumal” health centre (urban) in Medani district

List of health facilities surveyed (continued)

STATE	DISTRICT	FACILITY				
		Code	Name of facility	Type	Caseload/month	Location
WHITE NILE	ALDOIM	46	Alshitib	Health centre	128	Urban
WHITE NILE	ALDOIM	47	Alarshkol	Health centre	137	Urban
WHITE NILE	KOSTI	48	Kosti	Hospital	690	Urban
WHITE NILE	KOSTI	49	Allia	Health centre	86	Urban
WHITE NILE	KOSTI	50	Aligani Mohamed Khir	Health centre	127	Urban
WHITE NILE	KOSTI	51	Kadogli	Health centre	172	Urban
WHITE NILE	KOSTI	52	Alengaz	Health centre	181	Urban
GEZIRA	WADMEDANI	53	Banat	Health centre	499	Urban
GEZIRA	WASAT ALBUTANA	54	Alginhead	Hospital	90	Rural
KHARTOUM	WHITE NILE	55	Abaashar	Dispensary	650	Urban
RIVER NILE	ATBARA	56	Elsilah Eltibi	Hospital	66	Urban
RIVER NILE	ATBARA	57	Aldakhla	Health centre	110	Urban
RIVER NILE	ATBARA	58	Alshargi	Health centre	125	Urban
RIVER NILE	ATBARA	59	Hai Almatar	Health centre	183	Urban
RIVER NILE	RIFI ALDAMER	60	Alaliab Ganoop	Health centre	53	Rural
RIVER NILE	RIFI ALDAMER	61	Almahamia	Health centre	62	Rural
RIVER NILE	RIFI ALDAMER	62	Alaliab Wasat	Health centre	65	Rural
RIVER NILE	RIFI ALDAMER	63	Thiat	Dispensary	54	Rural
KHARTOUM	OUMDORMAN SOUTH	64	Daw Haggog	Health centre	199	Urban
KHARTOUM	WHITE NILE	65	Tiba Alhasanab	Health centre	169	Urban
KHARTOUM	WHITE NILE	66	Sadra	Dispensary	529	Urban

Note:

> White Nile State: Facility with code 49 – “Allia” health centre (urban) in Kosti district: replaced during the survey with “Goze Al Salam” health centre (urban) in the same district

Table. Distribution of health facilities (clusters) in the states (*sample not stratified by state*)

State	No. of districts	Facilities included (clusters)	Children enrolled
Gezira	7	22	123
Khartoum	9	18	99
River Nile	2	8	52
White Nile	2	7	41
Al Gadarif	2	6	27
Sennar	1	3	12
Red Sea	1	2	10
Total: 7 states	24	66	364

ANNEX 10. CONSIDERATION ABOUT TIMING OF THE SURVEY

- Typical diarrhoea peak months are usually in Sudan in July and August. A higher under-five caseload would then be expected to occur at that time. At the same time, access to some facilities would also be likely to become an issue for some health facilities because of the rainy season.
- Colder months – December to February – would have been suitable, with an expected increase in number of cases among children under 5 years old. However, these months were too close to the planning for all the arrangements to be completed by then. There was also the need to collect and validate data on caseload from the field, to select the sample of facilities to survey. This task took many months.

For the above reasons the survey was carried out in March and April 2003.

ANNEX 11. MAIN SURVEY FORM ADAPTATIONS

Enrolment card: The enrolment card was thoroughly revised to become a true form containing key information not only on the enrolment of children in the survey but also on some key aspects of care-seeking behaviour, such as local terminology for major illness entities and symptoms, delay in care-seeking since the appearance of danger signs or respiratory signs, and signs triggering the care-seeking process.

Observation of case management (Form 1): Further information on health provider's IMCI training, follow-up after training and case management was included in the form. The aim of the additional questions on case management was to collect valuable information not only on whether a certain task was performed by the health provider ('quantity'), but also on "how" the task would be carried out ('quality') and "who" would carry it out (organization of work). Feeding was given due attention. A number of questions on malaria were added (see below). "Eye infections" were pre-listed under "other problems" to standardize the collection of information on this condition, that was reportedly a common cause of consultation at health facilities in Sudan. Coding of selected questions by supervisors was improved.

Exit interview (Form 2): A few questions on caretaker recall of the home care messages in Form 2 were added and harmonized with the observation of counselling on home care in Form 1, to enable relational analysis. A section relating to the use of the "IMCI mother card" to assess health provider communication skills and a section on total child care costs – including also costs of transportation to facility - were added. The malaria scope of the survey instrument was expanded to include information on availability and use of bed-nets, and timely home treatment. As the revised version of the IMCI guidelines in Sudan required a blood smear for the classification of cases with fever in facilities with a laboratory, all the blood smears taken in children enrolled in the survey were collected by the survey teams and brought back to Khartoum, to be re-examined in a malaria reference laboratory. This procedure was suggested because of concerns about the reliability of laboratory examinations in the field³².

Equipment and supply (Form 4): One long-debated and still open issue in this type of surveys is the assessment of drug availability by rapid techniques. The common lack of information or of reliable information on drug management at health facilities (drug stock cards or registers), the need to relate drugs available at the time of the visit to expected caseload by age and illness and next procurement date, buffer stocks and so on, make the issue complex. The current survey method looks at the availability of just one course of treatment of each of the key drugs needed for IMCI as a rapid index of drug availability. This index is of limited value, although the absence of even a course of treatment on the day of the visit points to a serious problem in drug availability. In this survey, an attempt was made to use a proxy indicator on a trial basis, accepting all the limitations that such an indicator entails. When reviewing records to calculate the caseload for a given month in Form 4, supervisors were asked also to count the number of cases classified or diagnosed as "pneumonia" and "malaria" in the same logbook and for the same period and, independently, request health providers to estimate the number of the same type of cases they had managed the previous week. The supervisors then checked whether the facility has at least as many treatment courses of the recommended antibiotic for pneumonia and recommended antimalarial for malaria as the number of pneumonia and malaria cases, respectively, that have been recorded for the reference month. These figures were compared also with the estimates given verbally by the health providers. Pneumonia and malaria were chosen as they represented leading causes of mortality in children in Sudan and require prompt drug treatment, more so in young children.

³² The National Strategic Plan for Roll-Back Malaria, 2001-2010, Sudan

ANNEX 12. LIST OF SUPERVISORS AND SURVEYORS

Survey responsibility	Name	Position	IMCI Responsibility
<i>Survey manager</i>	Dr Samia M. Hassan	FMOH – Acting director of PHC Dept	National IMCI coordinator
<i>Survey coordinator</i>	Dr Igbal Ahmed	FMOH – PHC Dept	National IMCI focal point
<i>Technical support</i>	Dr Sergio Pièche	WHO/EMRO – Medical officer	Child health and development
<i>Supervisor</i>	Dr Huda Mohamed Haroon	Paediatrician, University of Gezira, Faculty of Medicine	Senior IMCI trainer and supervisor
<i>Supervisor</i>	Dr Iglal Bashir Nasir	Public health consultant, Gezira State	State IMCI focal point; senior IMCI trainer and supervisor
<i>Supervisor</i>	Dr Khalid Mohamed Khalid	FMOH – National trainer officer; Paediatrics registrar	National IMCI team
<i>Supervisor</i>	Dr Yasir Osman Abdallah	FMOH – National trainer officer; Paediatrics registrar	National IMCI team
<i>Supervisor</i>	Dr Tayfour Khidir	Community physician; EPI officer	Senior IMCI trainer and supervisor
<i>Supervisor</i>	Dr Ayman Osman Fadlala	Medical officer, Gezira State	IMCI team
<i>Supervisor</i>	Dr Mohamed Sid Ahmed	FMOH – Community physician, PHC Dept	Senior IMCI trainer and supervisor
<i>Surveyor</i>	Dr Hanan Mukhtar Abdu	Registrar, community medicine	National IMCI team
<i>Surveyor</i>	Dr Bashir Mukhtar Elwasila	Registrar, paediatrics, Bhri Teaching hospital	Senior IMCI trainer and supervisor
<i>Surveyor</i>	Dr El Sadig Abdelrahman	Medical officer, Khartoum State	Senior IMCI trainer and supervisor
<i>Surveyor</i>	Dr Mubarak Abdelrahman	Registrar, paediatrics, Soba hospital	National IMCI team; senior IMCI trainer and supervisor
<i>Surveyor</i>	Dr Abdelrahman Ali Sanosi	Registrar, paediatrics, Omdurman Paediatrics hospital	Senior IMCI trainer and supervisor
<i>Surveyor</i>	Dr Seham Abdallah Gabir	Registrar, community medicine, Al Gadarif State	State senior IMCI trainer and supervisor
<i>Surveyor</i>	Dr Mohamed Banaga Elyas	Medical officer, River Nile State	State senior IMCI trainer and supervisor
<i>Surveyor</i>	Dr Mohamed Sabir Bahary	Medical officer	Master IMCI trainer and supervisor
<i>Surveyor</i>	Dr Amir Omer Ahmed	MOH, IMCI office, Khartoum State	Master IMCI trainer and supervisor
<i>Surveyor</i>	Dr Hind Omer Osman	MOH, IMCI office, Khartoum State	Master IMCI trainer and supervisor
<i>Surveyor</i>	Dr Wefag Ibrahim Elkhidir	Registrar, paediatrics, Khartoum State	State master IMCI trainer and supervisor
<i>Surveyor</i>	Dr Safa Mohamed El Haj	Medical officer, Sennar hospital, Sennar State	State IMCI coordinator; master IMCI trainer and supervisor
<i>Surveyor</i>	Dr Yara Badreldin El Sheikh	FMOH – Medical officer	National IMCI team
<i>Observer</i>	Dr Abdel Halim El Tahir	UNICEF – Khartoum	
<i>Data entry coordinator</i>	Ms Nadia Bushra	Sociologist, Khartoum University, Faculty of Medicine	

FMOH=Federal Ministry of Health; PHC=Primary health care; IMCI=Integrated Management of Childhood Illness; WHO=World Health Organization; EMRO=Eastern Mediterranean Regional Office

ANNEX 13. SURVEYOR TRAINING SCHEDULE

15–20 March 2003

8:00–16:30 (30 min. for tea break)

DAY 1:

- Welcome, purpose of the training and introduction of participants
- Administrative information
- Introduction to the survey: survey objectives and training agenda
- Survey methodology
- Introduction to survey forms
- Introduction to survey Q-by-Q instructions
 - *Enrolment card*
 - *Form 1: Observation of case management*
 - Classroom practice with exercises and role-plays
- Briefing on 1st practice with outpatients at health facility

DAY 2:

↳ 1st practice with outpatients: using Enrolment Form and Form 1

- Review of practice in groups

- ❖ *Meeting with team supervisors:*
 - ✓ Enrolment Form and Form 1

DAY 3:

- Plenary on 1st practice
 - *Form 2: Exit interview*
 - Classroom practice
 - *Form 3: Re-examination of child*
 - Classroom practice
 - *Form 4: Equipment and supply*
- Briefing on 2nd practice with outpatients at health facility

- ❖ *Meeting with team supervisors:*
 - ✓ Forms 2, 3 & 4
- ✓ Providing feedback to health facility staff

DAY 4:

↳ 2nd practice with outpatients: using all forms

- Review of practice in groups and plenary
- Briefing on 3rd visit to health facility

- ❖ *Meeting with team supervisors:*
 - ✓ Checking surveyor reliability and forms
 - ✓ Summarizing qualitative observations

DAY 5:

↳ 3rd practice at health facility: using all forms

- Review of practice in groups and plenary

- ❖ *Meeting with team supervisors:*
 - ✓ Checking forms in the field
 - ✓ Collection of blood smears
- ✓ Supervisors' daily meetings with teams in the field

DAY 6:

- Drills on Q-by-Q instructions and survey procedures
 - Training evaluation
- ❖ *Meeting with team supervisors:*
 - ✓ Survey itinerary
 - ✓ Team composition
 - ✓ Forms and supplies
 - ✓ Final arrangements

ANNEX 14. TRAINING EVALUATION FORM

20 Respondents

1) How do you rate the training overall?

Very good [8] Good [12] Just right [] Inadequate []

2) How confident do you feel in using the survey forms by now?

Very confident [11] Confident [9] Not too confident yet [] Not confident []

3) How clear do you feel about the survey procedures?

Very clear [6] Clear [14] Not too clear yet [] Unclear []

4) How much practice do you feel you have had with the form/s that you are going to use in the survey?

Too much [2] Adequate [17] Just right [1] Insufficient []

Practice with examples: Adequate [19] Too many [1] Too few []

Practice with role plays: Adequate [17] Too many [1] Too few [2]

Case demonstration at hospital: Very helpful [11] Helpful [9] Not helpful []

Practice with actual cases at hospital: Adequate [19] Too many [] Too few [1]

5) In general, how clearly were all issues raised addressed in the training?

Very clearly [4] Clearly [16] Not too clearly [] Not clearly []

6) Which training method did you enjoy most? (Tick only ONE choice)

Examples [1] Role-plays [2] Practice with actual cases [14] Drills [3]

7) How did you find the Q-by-Q explanations?

Very useful [11] Useful [8] Not very useful [1] Not useful []

8) Do you think that the duration of this training course was:

Adequate [16] Too long [3] Too short [1]

9) Do you think the venue of the training was:

Suitable [19] Not suitable [1]

ANNEX 15. SURVEY TEAMS ITINERARY

Teams	State	District	Code	Health facility	Date of visit
Team A Supervisor: Yasir S1: Amir S2: Bahari	Red Sea	East Port Sudan	01	Deam Altigani	22/3
		East Port Sudan	02	Almwani	23/3
	Algardarif	Algardarif	03	Ummshagra	24/3
		Algardarif	04	Algomhoria	26/3
		Algardarif	05	Alsoufi Al Azrag	27/3
		Algardarif	06	Ababyo	29/3
		Algardarif	07	Alsaumah	30/3
		Kassab	08	Wad Alsanosi	31/3
	Khartoum	Al Amir	09	Al fatimab	2/4
		Al Amir	10	Al Quosai	3/4
Team B Supervisor: Iglal S1: Alsadig S2: Yara	Sennar	Alrif Algarbi	11	Ribia	22/3
		Alrif Algarbi	12	33 Alsukarr	23/3
		Alrif Algarbi	13	Hilat Albagar	24/3
	Gezira	Al haj Abdallah	14	Aldawha	26/3
		Al haj Abdallah	15	Awlad Yaseen	27/3
		Al Hasahisa	16	Arbagi hospital	29/3
		Al Hasahisa	17	Alakora	30/3
		Al Hasahisa	18	Arbagi*	31/3
		Al Hasahisa	19	Wad Alsaid	1/4
		Alhoush	20	Alhoush	2/4
		Rifi Almanagil	21	Alshikeania	3/4
Team C Supervisor: Huda S1: Mohammed S2: Abdelrahman	Gezira	Rifi Almanagil	22	Alraga	22/3
		Rifi Almanagil	23	Umm Sidira	23/3
		Rifi Almanagil	24	Bagadi	24/3
		Rifi Almanagil	25	Ummzikra	25/3
		Rifi Almanagil	26	Katir Alnifidia	26/3
		Umm Algoura Ganoop	27	Babanosa	27/3
		Umm Algoura Ganoop	28	Algaria 30	29/3
		Umm Algoura Ganoop	29	Almasara	30/3
		Wadmedani	30	Arkawit	31/3
		Wadmedani	31	Habeeb Allah	1/4
		Wadmedani	32	Awoodah	2/4
		Wadmedani	33	Alkireab	3/4

*Note - Gezira State: Facility with code 18 – “Arbagi” health centre (rural) in Al Hasahisa district: replaced during the survey with “Maringan Alupal” health centre (urban) in Medani district

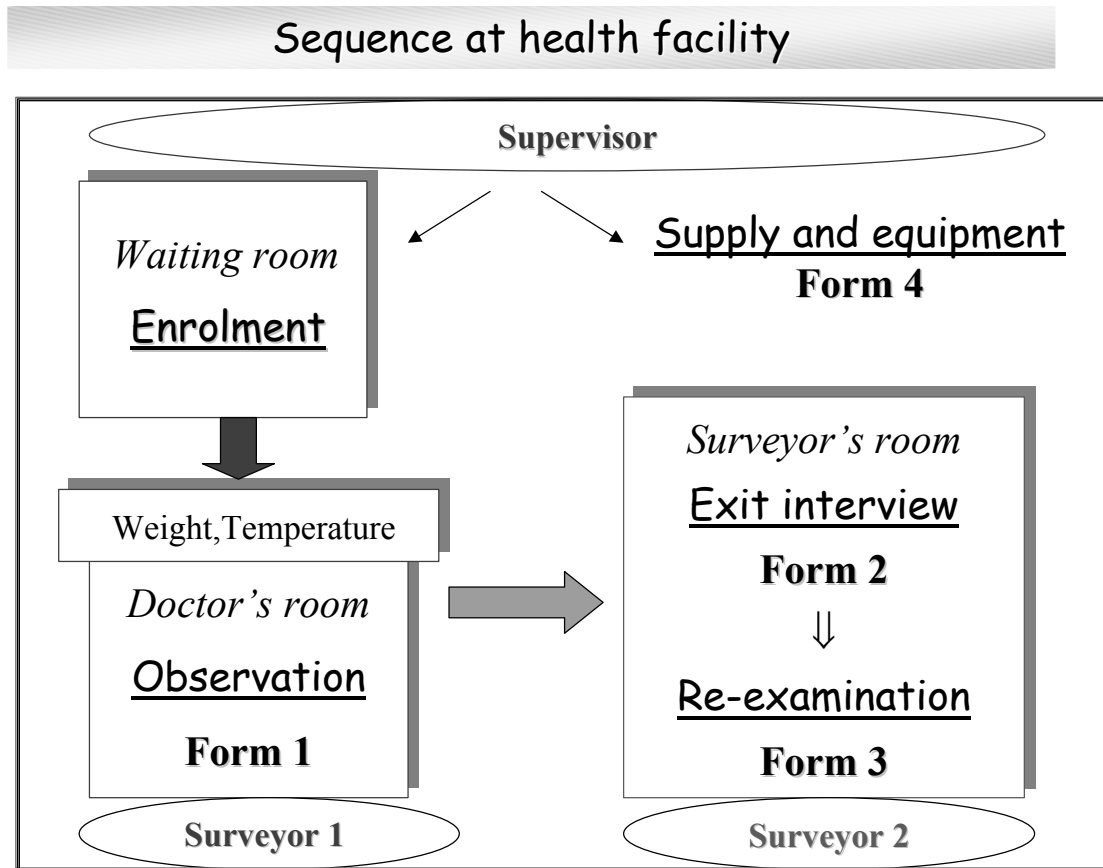
SURVEY TEAMS ITINERARY (continued)

Teams	State	District	Code	Health facility	Date of visit		
Team D Supervisor: Mohammed Sid Ahmed	Khartoum	Alazhari	34	Soba Al Aradi	22/3		
		Albukaa	35	Badr Alkobra	23/3		
		Albukaa	36	Al Mannara	24/3		
		Albukaa	37	Al Sheikh Abuzeid	25/3		
		Alhaj Youssef	38	Al Shahida Nada	26/3		
		Alhaj Youssef	39	Kamboni	27/3		
		S1: Hanan	Alhaj Youssef	40	Khaled Ben Al Walid	29/3	
		S2: Mubarak	Alhaj Youssef	41	Al Razi	30/3	
			Al Jeriffat & UmmDom	42	Halit KoKo	31/3	
			Al Salam	43	Al Bar international	1/4	
	Al Salam	44	Al Kanaes	2/4			
	Al Klaklat	45	Sankaat	3/4			
Team E Supervisor: Khalid	White Nile	Aldoim	46	Alshitib	22/3		
		Aldoim	47	Alarashkol	23/3		
		Kosti	48	Kosti hospital	24/3		
		Kosti	49	Allia*	25/3		
		S1: Wefag	Kosti	50	Altigani mohammed Khir	26/3	
		S2: Hind	Kosti	51	Kadogli	27/3	
			Kosti	52	Alengaz	29/3	
			Gezira	Wadmedani	53	Banat	1/4
				Wasat Albutana	54	Alginead	2/4
			Khartoum	White Nile	55	Abaashar	3/4
Team F Supervisor: Tayfoor	River Nile	Atbara	56	Elsilah Eltibi	22/3		
		Atbara	57	Aldakhla	23/3		
		Atbara	58	Alshargi	24/3		
		Atbara	59	Hai Almatar	25/3		
		S1: Siham	Rifi Al Damer	60	Alaliab Ganoop	26/3	
		S2: Basheer	Rifi Al Damer	61	Almahamia	27/3	
			Rifi Al Damer	62	Alaliab Wasat	29/3	
			Rifi Al Damer	63	Thiat	30/3	
			Khartoum	Omdurman South	64	Daw Haggog	1/4
				White Nile	65	Tiba alhasanab	2/4
		White Nile	66	Sadra	3/4		

S1 = surveyor 1; S2 = surveyor 2

*Note - White Nile State: Facility with code 49 – “Allia” health centre (urban) in Kosti district: replaced during the survey with “Goze Al Salam” health centre (urban) in the same district

ANNEX 16. SURVEY PROCEDURES FOR DATA COLLECTION AT HEALTH FACILITY



ANNEX 17. LIST OF PARTICIPANTS IN THE NATIONAL FEEDBACK MEETING

Federal Ministry of Health

1	Dr Ibrahim Elsubaie	Health Promotion, FMOH
2	Mrs Nadia Eldirdery	Curative Medicine directorate, FMOH
3	Miss Amani A. Razig	IMCI, PHC, FMOH
4	Ms Amira Mohamed Elmuneer	Nutrition, PHC, FMOH
5	Ms Nima Ibrahim Mohamed	TB Programme, FMOH
6	Dr Hajir Ali El Haj	IMCI, PHC, FMOH
7	Mr Tarig A/Alla	Health education, FMOH
8	Dr Khalid Khalefa Jawdat Alla	Non communicable disease, PHC, FMOH
9	Mrs Hala Mohamed A.Rahim	School Health, health promotion, PHC, FMOH
10	Dr Mustafa Salih	Planning director, FMOH
11	Dr A.All Tuktuk	FMOH
12	Dr El Sadig Eljali	PHC support, FMOH
13	Dr Abubaker Mohamed Toum	EPI, PHC, FMOH
14	Dr Khalid Mohamed Eltahir	Nutrition, PHC, FMOH
15	Dr Yara Badr Eldin Elsheikh	IMCI, PHC, FMOH
16	Mr Mohamed Ahmed Baroodi	IMCI, PHC, FMOH
17	Dr Tarig A.Wahid	PHC Support, PHC, FMOH
18	Mrs Shazza Mohamed ElAmin	RH, PHC, FMOH
19	Miss Sitana Ahmed Elsayed	EPI, PHC, FMOH
20	Dr Yasir Osman A.Alla	FMOH
21	Dr Mohamed Mustafa Mohamed	Epidemiology Department, FMOH
22	Dr Ashraf Ibied Mohamed Elhadi	Development and planning, FMOH
23	Dr Mohamed Sabir El Bahari	IMCI, PHC, FMOH
24	Dr Rania El Moniem Sharawi	FMOH
25	Dr Mayadah Imam Ali	Nutrition, PHC, FMOH
26	Dr Rawda Mohamed Ahmed Idris	IMCI, PHC, FMOH
27	Ms Zennat Balla	Non-communicable disease, PHC, FMOH
28	Dr Samia Mohamed Hassan	Director General, PHC, FMOH
29	Dr Igbal Ahmed Elbashi	IMCI, PHC, FMOH

Federal Ministry of Social Welfare

30	Rabab Hamid	Ministry of Social Welfare
31	Madina Ekrayah	Ministry of Social Welfare
32	Seif Eldin A.Rahim Mohamed	Ministry of Social Welfare

Federal Ministry of Education

33	Mrs Awatif Mohamed Babiker	Ministry of Education
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Federal Ministry of Communication

34	Marum Hassan Saad	Ministry of Communication
35	Niemat Mohamed Awad	Ministry of Communication
36	Samia Ibrahim Ahmed	Ministry of Communication
37	Mutaaz Mirghani Hussien	Ministry of Communication
38	Ibrahim Ahmed Mohamed Salih	Ministry of Communication

Federal Ministry of Agriculture and Forest

39	Al-Amin Hassan Al –Amin	Ministry of Agriculture & Forest
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State Ministries of Health

40	Dr Ahmed Karamino	Minister of health - Northern State
41	Dr Peter Adok Aouto	Minister of health – Organization Council for Southern States
42	Dr Younis A.Rahman	Minister of health – Sinnar State
43	Dr Agweir Sabino	Minister of health – Western Kordofan State
44	Dr Mohamed Ibrahim Ali	Minister of health – Northern Kordofan State
45	Ms Fatima Awad Elkarim	PHC, MOH, Northern State
46	Dr Abeer Mustafa	MOH, Khartoum State
47	Dr Al-Amin Hassan Mustafa	MOH, Khartoum State
48	Dr Fatima Ibrahim Al – Amin	MOH, Khartoum State
49	Dr Howida Hassan Abu – Salih	MOH, Khartoum State
50	Dr Ahmed Omer El Fahal	MOH, Khartoum State
51	Dr Aamir Omer Ahmed	MOH, Khartoum State
52	Dr Wifag Ibrahim Elkhidir	MOH, Khartoum State
53	Dr Abbas El Hadi	MOH, White Nile State
54	Dr Abu El – Gasim Mirghani	Director General. MOH, Western Kordofan State
55	Dr Imad Mustafa A.Alla	IMCI coordinator, River Nile State
56	Dr Mohamed Banaga Elyas	MOH, River Nile State
57	Dr Samia Mohamed A. Raham	PHC coordinator, PHC, MOH, River Nile State
58	Dr Ahmed Elbashir	Director General, MOH, Gezira State
59	Dr Siham A.Alla Gabir	MOH, Gadarif State

World Health Organization

60	Dr Suzanne Farhoud	Regional adviser on child and adolescent health and development (CAH), WHO/ EMRO
61	Dr Sergio Pièche	Medical officer, CAH, WHO/EMRO
62	Dr Sumaia El –Fadil	WHO, Sudan
63	Dr Samia Yousif Habani	WHO, Sudan

UNICEF

64	Dr Abd Elhalim Eltahir	UNICEF, Sudan
65	Mr Mohamed A.Hamie	UNICEF, Sudan

Academic institutions and other organizations, agencies and interested parties

66	Dr Farima A.Rahman	Military hospital
67	Dr Yasir Ahmed Ibrahim	National Council for Child Care
68	Dr Mabou Mustafa	Paediatrician
69	Dr El Sir M. Hashim	Paediatrician
70	Dr Attiyat Mustafa	Paediatrician
71	Dr Zin El Abdeen Karrar	Paediatrician, Faculty of Medicine, Khartoum University
72	Dr Alamin Osman	Paediatrician, Military hospital
73	Dr Huda Haroun	Paediatrician, Faculty of Medicine, Gezira University
74	Dr Samira Hamid	PHC, Faculty of Medicine, Gezira University
75	Dr Siddiga A. Rahim Washy	Ahfad University
76	Ms Igbal Ahmed Ibrahim	Khartoum University
77	Ms Ihklas Ibrahim Elbashir	Suna Agency
78	Ms Tahani El – Hussien	Suna Agency
79	Ms Geronika Alex	Ireland Goal Organization
80	Ms Rawia Suliman Eljak	NCCW, Childhood council
81	Ms Manal Elbadri	Sudan Academy for Communication Science
82	Ms Fatima Hamid Ali	Childhood Council , Western Kordufan
83	Dr Ali Naser Eissa	Plan Sudan, Khartoum
84	Mr Fath El Rahman Abu Elgasim	Khartoum T.V. & Broadcast Corporation
85	Mrs Nagia Elwasela Elsadig	SABA
86	Ms Rasha Fadl Alla	SABA
87	Ms Intisar Elhadi Bad Eldin	HTP Association
88	Dr A.Rahman Ali Sanosi	Omdurman Paediatric Hospital
89	Dr Bashir Mukhtar Elwasela	Sudan Medical Association Council , FMOH
90	Dr Mubarak A.Rahamn Mohamed	Khartoum Paediatric Hospital
91	Dr Mohamed Ali Awad Elkarim	Community Medicine, Faculty of medicine, Khartoum University
92	Dr Gafaar Ibnaouf Suliman	Director General, Khartoum Emergency Paediatric Hospital
93	Dr Awatif Mustafa	Ahfad University
94	Dr Nagwan Shams Eldin	Khartoum Childhood Curative Council

List provided by FMOH; names arranged by institution and order of registration

Abbreviation used:

FMOH=Federal Ministry of Health; IMCI=Integrated Management of Childhood Illness; PHC=Primary Health Care; SABA=Sudanese Association for Breastfeeding Action; TB=Tuberculosis control programme; RH=Reproductive health; MOH=Ministry of Health; EMRO=Eastern Mediterranean Regional Office of WHO; HTP=Harmful Traditional Practices

ANNEX 18. MINIMUM SURVEY REQUIREMENT FOR DRUG AVAILABILITY

1. ORS	1 sachet
2. Cotrimoxazole (tablet or suspension—First line antibiotic for pneumonia and dysentery).....	2 bottles
3. Amoxicillin tablets (125mg) or suspension—Second line antibiotic for pneumonia	2 bottles
4. Nalidixic acid tablets (250mg)—Second line antibiotic for dysentery.....	20 tabs
5. Chloroquine tablet (150) or syrup (50 mg or 75 mg base/5ml).....	1 bottle
6. Sulfadoxine+ pyrimethamine tablets (500mg Sulfa + 25 mg Pyrim.).....	1 strip
7. Vitamin A blue (100,000 IU) or red (200,000 IU) capsules with nipple	3 caps
8. Iron syrup or drops 25mg/ml.....	1 bottle
9. Paracetamol syrup 120 mg/5 ml or tablets 100 mg or 500mg	1 bottle
10. Tetracycline eye ointment	1 item
11. Gentian violet (0.5%)	1 bottle
12. Salbutamol solution or metered dose inhaler (MDI).....	1 bottle
13. Salbutamol syrup 2mg/5ml or tablets 2 mg or 4 mg.....	1 bottle
14. Diazepam ampule (10mg/2ml)	1 ampule
14. Chloramphenicol IM	1 ampule
16. Quinine IM	1 ampule
17. Benzyl penicillin IM	1 ampule
18. Procaine penicillin IM	1 ampule
19. Gentamicin IM	1 ampule
20. Sterile water for injection	3 vials
21. Ringer's Lactate Solution (for severe dehydration)	1 drip
22. Saline (for severe dehydration).....	1 drip

**ANNEX 19. FINDINGS RELATED TO THE WHO GENERIC LIST OF IMCI
PRIORITY INDICATORS (P) AND SUPPLEMENTAL MEASURES (S) AT
HEALTH LEVEL**

*A validated classification is a classification made by the surveyor after re-examining the child.
The indicators listed below refer to children two months up to five years of age*

CASE MANAGEMENT

❖ **ASSESSMENT**

P1. Child correctly checked for three general danger signs: (**adapted definition*) **21.4%** of children were checked for the three general danger signs.

Numerator: Number of sick children aged 2 months up to five years seen who are *correctly* checked for three danger signs (is the child able to drink or breastfeed, does the child vomit everything, has the child had convulsions)

Denominator: Number of sick children aged 2 months up to five years seen

S11. Child not visibly awake checked for lethargy: Seven (**77.8%**) of the nine children who were not visibly awake (*i.e. who were not playing, smiling, or crying with energy*) were checked for lethargy.

Numerator: Number of sick children not visibly awake when assessed by the health provider (who are not playing, smiling, or crying with energy) who are checked for lethargy.

Denominator: Number of sick children not visibly awake seen.

P2. Child checked for the presence of cough, diarrhoea and fever: **74.7%** of children were checked for the presence of cough, diarrhoea, and fever.

Numerator: Number of sick children seen whose caretakers were asked about the presence of cough, diarrhoea, and fever

Denominator: Number of sick children seen

P3. Child weight checked against a growth chart: **52.5%** of children were weighed the same day and had their weight checked against a recommended growth chart.

Numerator: Number of sick children seen who have been weighed the same day and have their weight checked against a recommended growth chart

Denominator: Number of sick children seen

P4. Child vaccination status checked: **59.6%** of children had their vaccination status checked.

Numerator: Number of sick children seen who have their vaccination card or vaccination history checked.

Denominator: Number of sick children seen

P5. WHO Index of integrated assessment: *mean of 5.9 assessment tasks performed out of 10 tasks per sick child assessed*

Definition: Arithmetic mean of 10 assessment tasks performed for each child (checked for three danger signs, checked for the three main symptoms, child weighed and weight checked against a growth chart, checked for palmar pallor, and checked for vaccination status).

Calculation:

- checked for “ability to drink or breastfeed”, “vomits everything”, and “convulsions”: 1 point each
- checked for presence of “cough & fast/difficult breathing”, “diarrhoea”, and “fever”: 1 point each
- child weighed the same day and child’s weight used against a recommended growth chart: 1 point each
- child checked for palmar pallor: 1 point
- child vaccination status checked (card or history): 1 point

P6. Child under two years of age assessed for feeding practices: *Caretakers of 27.5% of children under two years of age were asked about breastfeeding, complementary foods, and feeding practices during this episode of illness.*

Numerator: Number of sick children under two years of age whose caretakers are asked if they breastfeed this child, whether the child takes any other food or fluids other than breastmilk, and if during this illness the child’s feeding has changed.

Denominator: Number of sick children under two years of age seen

S3. Child with very low weight and/or anaemia assessed for feeding problems: *16.9% of sick children with very low weight and/or anaemia were assessed for feeding problems.*

Numerator: Number of sick children with a validated classification of very low weight and no severe classification whose caretaker are asked if the mother breastfeeds the child, if the child takes food or fluids other than breastmilk, and if during this illness the child’s feeding has changed.

Denominator: Number of sick children with a validated classification of very low weight and/or anaemia

S1. Child checked for other problems: *48.1% of children brought to the facility were checked for “other problems”.*

Numerator: Number of children brought to the facility for one or more of the main symptoms (cough/fast/difficult breathing, diarrhoea, fever) or for “ear problems” and with an “other problem”, whose caretaker were asked to describe this other problem.

Denominator: Number of children brought to the facility for one or more of the main symptoms (cough/fast/difficult breathing, diarrhoea, fever) or for “ear problems”.

❖ CLASSIFICATION

S4. Child with very low weight correctly classified: *34.8% of children with very low weight were correctly classified.*

Numerator: Number of children with a validated classification of very low weight who are classified as very low weight.

Denominator: Number of children with a validated classification of very low weight

- S5. Child correctly classified:** (**adapted definition*) **46.0%** of classifications given by the health provider for important conditions matched the classifications[#] given by an IMCI-trained surveyor for the same conditions (validated classification)

Numerator: Number of validated classifications[#] for important conditions (very severe disease or severe pneumonia or pneumonia, and/or severe dehydration or some dehydration, and/or severe persistent diarrhoea or persistent diarrhoea, and/or dysentery, and/or mastoiditis or acute or chronic ear infection, and/or very severe febrile disease or malaria, and/or measles with or without eye and mouth complications, and/or severe malnutrition or very low weight, and/or severe anaemia or anaemia) that match the classifications given by the health provider.

Denominator: Number of classifications[#] for important conditions

[#] 'Red-coded' and 'yellow-coded' classifications, including also the 'green-coded' classification of measles.

❖ TREATMENT AND ADVICE

- S12. Child with severe illness correctly treated:** (**adapted definition*) *None of the 13 children with severe classifications needing urgent referral and whose caretakers accepted referral received correct pre-referral treatment and referral.*

Numerator: Number of children with validated classifications of severe disease needing urgent referral (very severe disease or severe pneumonia, severe dehydration, severe persistent diarrhoea, very severe febrile disease, severe complicated measles, mastoiditis, severe malnutrition or severe anaemia) who receive correct pre-referral dose of the recommended antibiotic and/or antimalarial and/or ORS and/or vitamin A and referral

Denominator: Number of children with validated classifications of severe disease needing urgent referral

- P7. Child needing an oral antibiotic and/or antimalarial prescribed the drug correctly:** **29.5%** of children who did not need urgent referral and who needed an oral antibiotic and/or an antimalarial were prescribed the drug correctly.

Numerator: Number of sick children with validated classifications, who do not need urgent referral, who need an oral antibiotic and/or antimalarial (pneumonia, and/or dysentery, and/or malaria, and/or acute ear infection) who are correctly prescribed them, including dose, number of times per day, and number of days

Denominator: Number of sick children with validated classifications who do not need urgent referral, who need an oral antibiotic and/or an antimalarial.

- S6. Child with pneumonia correctly treated:** **33.3%** of children with pneumonia were prescribed antibiotic treatment correctly.

Numerator: Number of children with a validated classification of pneumonia and no severe classification who are given/prescribed treatment with an appropriate antibiotic (including correct amount, times per day, and number of days)

Denominator: Number of children with a validated classification of pneumonia and no severe classification

- S7. Child with dehydration correctly treated: 22.2% of children with diarrhoea and some dehydration received ORS at the facility.**
- Numerator:** Number of children with a validated classification of diarrhoea with some dehydration and no severe classification who receive ORS at the facility.
- Denominator:** Number of children with a validated classification of diarrhoea with some dehydration and no severe classification
- S7. Child with malaria correctly treated: 27.4% of children with malaria who are prescribed antimalarial treatment correctly.**
- Numerator:** Number of children with a validated classification of malaria and no severe classification who are given/prescribed treatment with an appropriate antimalarial (including correct amount, times per day, and number of days)
- Denominator:** Number of children with a validated classification of malaria and no severe classification
- S9. Child with anaemia correctly treated: (*adapted definition) 25.5% of children with anaemia were prescribed iron treatment.**
- Numerator:** Number of children with a validated classification of anaemia and no severe classification who are given/prescribed iron treatment.
- Denominator:** Number of children with a validated classification of anaemia and no severe classification
- S10. Child receives first dose of oral treatment at facility: 9.1% of children, who did not need urgent referral, who needed an oral antibiotic and/ or antimalarial received the first dose(s) at the facility.**
- Numerator:** Number of children with validated classifications, who do not need urgent referral, who need an oral antibiotic and/or antimalarial (pneumonia, dysentery, malaria, acute ear infection) who receive the first dose(s) at the health facility.
- Denominator:** Number of children with validated classifications, who do not need urgent referral, who need an oral antibiotic and/or antimalarial
- P8. Child not needing antibiotic leaves the facility without antibiotic: 62.6% of children who did not need urgent referral and who did not need an antibiotic left the facility without having received or having been prescribed antibiotics.**
- Numerator:** Number of children with validated classification who do not need urgent referral and do not need an antibiotic for one or more IMCI classifications or other problems (no pneumonia: cough or cold, diarrhoea with or without dehydration, persistent diarrhoea, malaria, fever-malaria unlikely, measles, chronic ear infection, no ear infection, anaemia / very low weight, and/or no anaemia / not very low weight, and/or other problems) who leave the facility without receiving antibiotics or a prescription for antibiotics for those validated classifications.
- Denominator:** Number of children seen who do not need urgent referral and who do not need an antibiotic for one or more IMCI classifications or other problems

S13. Child prescribed oral medication whose caretaker is advised on how to administer the treatment: 27.9% of children not needing urgent referral and who received or were prescribed an antibiotic and/or an antimalarial and/or ORS, who received at least two treatment counselling messages.

Numerator: Number of children with validated classifications not needing urgent referral and who received or were prescribed an antibiotic and/or an antimalarial and/or ORS, who receive at least two treatment counselling messages (explanation on how to administer treatment, demonstration on how to administer treatment, open-ended question to check caretaker understanding).

Denominator: Number of children with validated classifications not needing urgent referral, who received or were prescribed an antibiotic and/or an antimalarial and/or ORS

P10. Child needing vaccinations leaves facility with all needed vaccinations: (*adapted definition) 48.6% of children needing vaccinations (based on vaccination card or history) left the health facility with all needed vaccinations or advice to come back for vaccination on the scheduled vaccination day.

Numerator: Number of children who need vaccinations (based on vaccination card or history) who leave the health facility with all needed vaccinations or advice to come back on the scheduled vaccination day

Denominator: Number of children seen who need vaccinations (based on vaccination card or history)

❖ ADVICE ON HOME CARE

P9. Caretaker of sick child is advised to give extra fluids and continue feeding: the caretakers of 32.3% of sick children were advised to give extra fluid and continue feeding.

Numerator: Number of sick children with validated classifications, who do not need urgent referral, whose caretakers are advised to give extra fluid and continue feeding

Denominator: Number of sick children with validated classifications, who do not need urgent referral

S14. Sick child whose caretaker is advised on when to return immediately: the caretakers of 19.7% of sick children received at least three counselling messages on when to return immediately.

Numerator: Number of sick children, who do not need urgent referral, whose caretakers received at least three of the following counselling messages on when to return immediately to a health facility: if the child is not able to drink or breastfeed, becomes sicker, develops a fever, has difficult breathing, has fast breathing, has blood in the stool, or is drinking poorly.

Denominator: Number of sick children seen who do not need urgent referral

S15. Child less than two years old or with very low weight or anaemia whose caretaker received correct age-appropriate feeding counselling: (*adapted definition) The caretakers of 23.7% of children less than two years old or with very low weight and/or anaemia were provided with age-appropriate feeding messages[#].

Numerator: Number of children less than two years old or with a validated classification of very low weight and/or anaemia, who do not need urgent referral, whose caretakers are provided with age-appropriate feeding messages[#].

Denominator: Number of children less than two years old or with a validated classification of very low weight and/or anaemia, who do not need urgent referral.

[#] For definition of age-appropriate feeding advice used in this survey see note under Table A32.

- S16. Child leaving the facility whose caretaker was given or shown a mother's card:** *The caretakers of 34.0% of children, who did not need urgent referral, were shown a mother's counselling card by the health provider.*

Numerator: Number of children, who do not need urgent referral, whose caretakers have been shown a mother's card by the health provider during the visit.

Denominator: Number of sick children seen who do not need urgent referral.

❖ CARETAKER KNOWLEDGE ABOUT ORAL TREATMENT

- P11. Caretaker of child who is prescribed ORS, and/or an oral antibiotic and/or an oral antimalarial knows how to give the treatment:** *caretakers of 24.3% of children prescribed ORS, and/or an oral antibiotic and/or an oral antimalarial could describe correctly how to give the treatment.*

Numerator: Number of sick children prescribed ORS, and/or an oral antibiotic and/or oral antimalarial whose caretakers can describe how to give the correct treatment including the amount, number of times per day, and number of days

Denominator: Number of sick children prescribed ORS and/or an antibiotic and/or an antimalarial

❖ REFERRAL

- P12. Child needing referral is referred:** *42.9% of children needing referral were referred by the health providers.*

Numerator: Number of sick children with a validated classification of severe disease needing referral (one or more danger signs, severe pneumonia or very severe disease, and/or severe dehydration with any other severe classification, and/or severe persistent diarrhoea, and/or very severe febrile disease, and/or severe complicated measles, and/or mastoiditis, and/or severe malnutrition or severe anaemia) who were referred by the health providers

Denominator: Number of sick children with a validated classification of severe disease needing referral

HEALTH SYSTEM SUPPORT

- P13. Health facility received at least one supervisory visit that included observation of case management during the previous six months:** *10.6% of health facilities received at least one visit of routine supervision that included the observation of case management during the previous six months.*

Numerator: Number of health facilities that received at least one visit of routine supervision (excluding the follow-up visits to health providers shortly after their training that are part of IMCI training) that included the observation of case management during the previous six months

Denominator: Number of health facilities surveyed

- P14. Index of availability of essential oral treatments:** *a mean of 5.0 out of 6 essential oral drugs for home treatment of sick children were present on the day of visit.*

Definition: Arithmetic mean of essential oral drugs recommended for home treatment of diarrhoea, dysentery, pneumonia, fever, malaria and anaemia available at each facility the day of visit.

Calculation:

- ORS, 1 point
- recommended antibiotic for pneumonia and dysentery, 1 point
- recommended antimalarial, 1 point
- vitamin A, 1 point
- iron, 1 point
- paracetamol, 1 point

- P15. Index of availability of injectable drugs for pre-referral treatment:** *a mean of 2.6 out of 4 injectable antibiotics and antimalarials for pre-referral treatment of sick children and young infants were available in each facility on the day of visit.*

Definition: Arithmetic mean of recommended injectable pre-referral treatment for children and young infant with severe classification needing immediate referral.

Calculation:

- chloramphenicol, 1 point
- quinine, 1 point
- gentamicin, 1 point
- benzylpenicillin, 1 point

- P16. Health facility has the equipment and supplies to support full vaccination services:** *(*adapted definition) 35.8% health facilities providing immunisation services had the equipment and supplies to provide full vaccination services on the day of survey.*

Numerator: Number of health facilities providing immunisation that have the equipment and supplies to support full vaccination services (functioning refrigerator or cold chain, and functioning sterilizer and needles/syringes or disposable needles/syringes) available on the day of survey

Denominator: Number of health facilities surveyed

- S17. Health facility has essential equipment and materials:** *31.8% of health facilities had all needed equipment and materials available on the day of the survey.*

Numerator: Number of health facilities with all needed equipment and materials (accessible and working weighing scales for adults and children, timing device, source of clean water, spoons, cups and jugs to mix and administer ORS) available on the day of the survey

Denominator: Number of health facilities surveyed

- S18. Health facility has IMCI chart booklet and mothers' counselling cards[#]:** *77.3 % of health facilities had IMCI chart booklet available for use by health providers and mothers' counselling cards for use during mothers' counselling on the day of the survey.*

Numerator: Number of health facilities with at least one legible IMCI chart booklet available for use by health providers managing children and at least one mother counselling card for use during counseling of caretakers of sick children.

Denominator: Number of health facilities surveyed

[#]Counselling card given or shown to the caretaker during counselling and that includes at least country-appropriate and age-specific feeding advices and the danger signs when to bring the child immediately back to a health facility.

- P18. Health facilities with at least 60% of providers managing children trained in IMCI:** *(*adapted definition) 60.7% of first-level health facilities had at least 60% of doctors managing children trained in IMCI.*

Numerator: Number of non-hospital health facilities with at least 60% of doctors managing children who are trained in IMCI

Denominator: Number of non-hospital health facilities surveyed