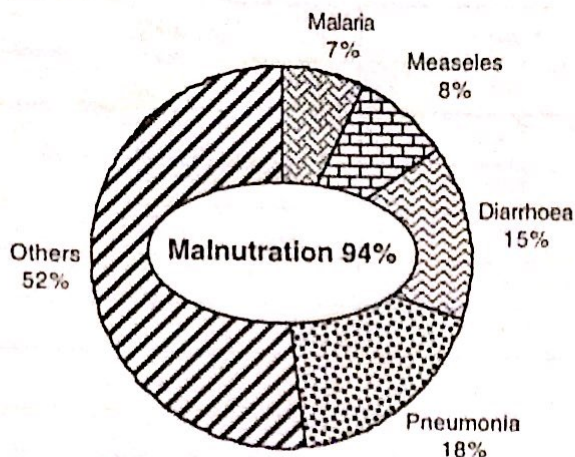


An Easy and Summarized Approach to Integrated Management of Childhood Illness (IMCI)

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Introduction:

Every year, about 10.5 million children die before their 5th birthday in developing countries, out of which 70% of these are due to:



IMCI guidelines approach childhood illness in a systematic way, combining the steps needed to manage several different conditions, particularly ARI, Diarrhoea, Measles, Malaria and Malnutrition. Because of its systematic approach, it has now become a part of the MBBS and MD (Paediatric) course. This article is useful for general practice in field or hospital GOPD and is an easy and systematic approach to handle children less than 5 years of age who come to the emergency and out patient department of or hospital.

Objectives of IMCI:

- Accurately assess, classify and treat sick children following IMCI guidelines.
- Correctly refer seriously ill patients after giving pre-referral treatment.
- Counsel care takers regarding home treatment follow up and when to return immediately.
- Routinely check immunization status.

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- Carry out proper feeding assessments
- Appropriate nutrition and breast-feeding counselling.

Complaints of 70% children attending paediatric OPD are cough, loose motion, fever, ear problem or decrease appetite.

IMCI provides a good, easy and systematic approach to tackle these complaints.

(Note: - Assessment of fever in this article and certain treatments modalities are not based on IMCI keeping in view of a hospital setting)

IMCI includes children aged from 1 week up to 5 years, which is further divided into 2 groups:

- 1 week to <2 months
- 2 months to <5 years

Approach to a Child Aged 2 Months to 5 Years:

- History + Assessment: should always include 6 points (which shall be elaborated sequentially)
 - GDS → General Danger Signs.
 - 4 main symptoms → cough / diarrhoea / fever / ear problem.
 - Nutritional status of child.
 - Immunization status / Vitamin A / Deworming
 - Feeding problem – if any.
 - Other problem.

A. GDS → General Danger Signs:

Ask:

- Is the child able to drink or breastfeed?
- Does the child vomit every thing as soon as he/she consumes food?
- Has the child had convulsions during the period of illness.

Look:

- i. Is the child lethargic or unconscious.
(If any of the above is present it suggests that the child has a GDS and is therefore serious).

B. 4 Main Symptoms → Cough / Diarrhoea / Fever / Ear Problem.

When the child presents with following symptoms, ask and look

for the following signs, then classify and treat accordingly.

1. **Cough or difficulty breathing: -****Ask:**

- Duration of cough

Look:

- Respiratory rate (for full one minute when the child is silent)
- Subcostal indrawing.
- Stridor.

Signs	Classify As	Treatment
<ul style="list-style-type: none"> • Any one GDS or • (kg) I/V stat and refer or • Stridor Present 	SEVERE PNEUMONIA OR Subcostal indrawing	Inj. Ceftriaxone VERY SEVERE DISEASE (@ 75mg/
Fast breathing (2 months - <12 months → ≥ 50/min. (12 months - <5 years → ≥ 40/min.	PNEUMONIA	<ul style="list-style-type: none"> ◆ Cortimoxazole (@ 6-8mg TMP/kg/day in 2 divided doses × 5 days) or ◆ Amoxicillin (@40-50mg/kg/day in 3 divided doses × 5 days ◆ Paracetamol (@ 10mg/kg/dose × 8 hourly) ◆ Salbutamol+Bromhexine syrup (@.1-.2 mg/kg/dose salbutamol × 8 hourly ◆ Follow up after two days
None of the above sign seen	COMMON COLD	<ul style="list-style-type: none"> ◆ Reassurance ◆ Soothing agent ◆ Follow up after five days

2. Diarrhoea**Ask**

- ◆ Duration of loose motion
- ◆ Is blood present in stool or not

Look

- ◆ Alertness
 - Lethargic/unconsciousness
 - Restlessness/irritable

- ◆ Sunken eye
- ◆ Offer fluid
 - Not able to drink
 - Drinks eagerly (thirsty)
- ◆ Skin pinch
 - Very slow ≥ 2 seconds
 - Slow < 2 seconds

Signs	Classify as	Treatment									
At least two or more of the following signs if present: * Lethargic/ Unconsciousness * Sunken eyes * Not able to drink * Skin pinch \geq 2 Seconds	SEVERE DEHYDRATION	1) IV Fluids (NS or RL) according to Plan C Total Fluids \rightarrow 100ml / kg. Total time \rightarrow up to 1 year \rightarrow 6 hrs 1 Year - 5 year \rightarrow 3 hrs (To be given in 2 phases): <table border="1"> <thead> <tr> <th>% of \rightarrow fluid / Age \downarrow</th> <th>1st phase 30% fluid</th> <th>2nd phase 0% fluid</th> </tr> </thead> <tbody> <tr> <td><1 year</td> <td>1 hr</td> <td>5 hr</td> </tr> <tr> <td>>/ 1 year -5 year</td> <td>1/2 hr</td> <td>2 1/2 hr</td> </tr> </tbody> </table> Formula for drop /min $= \frac{\text{Total fluid (ml)}}{\text{Total time (min)}} \times 20 \text{ drop / min}$ 2) ORS - 5 ml / kg / hr orally.	% of \rightarrow fluid / Age \downarrow	1 st phase 30% fluid	2 nd phase 0% fluid	<1 year	1 hr	5 hr	>/ 1 year -5 year	1/2 hr	2 1/2 hr
% of \rightarrow fluid / Age \downarrow	1 st phase 30% fluid	2 nd phase 0% fluid									
<1 year	1 hr	5 hr									
>/ 1 year -5 year	1/2 hr	2 1/2 hr									
At least 2 or more of the following signs if present * Restlessness or irritable * Sunken eyes * Drinks eagerly * Skin pinch - <2 Seconds	SOME DEHYDRATION	1) Fluid - ORS according to Plan - B - Total fluid \rightarrow 75 ml/kg - Total time \rightarrow in 4 hrs. 2) Continue breast feeding - Reassess after 4 hrs. and plan accordingly									
Any one or none of the above signs	NO DEHYDRATION	- Reassurance - Advice home fluids - ORS: <2 years \rightarrow 50 - 100ml 2-5 years \rightarrow 100 - 200ml									

If diarrhoea \geq 14 days

Signs	Classify as	Treatment
Some or severe dehydration if present	SEVERE PERSISTENT DIARRHOEA	* Correct dehydration accordingly * Vitamin A (If not given within 6 months) * To avoid other forms of milk beside breast feeding * Feeding advice (acc. to age discussed later)
No dehydration seen * Feeding advice	PERSISTENT DIARRHOEA	* Vitamin A * To avoid other forms of milk.
If blood is present in stool	DYSENTRY	* Correct dehydration accordingly. * Cotrimoxazole (6-8 mg/ TMP/kg/day in 2 divided dose x 5 days) Nalidixic acid (50mg/kg/day in 4 divided dose x 5 days) Or Nalidixic acid (50mg/kg/day in 4 divided dose x 5 days) \downarrow Follow up after 2 days. (if no improvement seen) Metronidazole (40 mg /kg/day in 3 divided dose x 5 day)

3. Fever:

(not based on IMCI), keeping in view that Kathmandu falls in a non malarial region) includes common causes of fever seen in children.

Signs	Classify as	Treatment
* Convulsions	FEBRILE CONVULSION	* Reassurance * Paracetamol (10mg/kg/dose x SOS) and refer
* Headache * Stiff Neck * Headache * Coated tongue * Abdomen pain * Splenomegaly	MENINGITIS ENTERIC FEVER	* Amoxicillin (100mg/kg/day in 3 divided dose) and refer * Ofloxacin 10 – 15 mg/kg/day in 2 divided dose x 7 days Or * Cotrimoxazole (8mg /kg/day TMP in 2 divided dose x 14 days) * Paracetamol
* Macular Rash * Running Nose or * Cough or * Red Conjunctiva	MEASELES	* Vitamin A On day 0 and day 1 (6 – 12 months → 1 lakh unit 12 months – 5 yrs → 2 Lakh Unit)
* Headache * Pallor ± * History of travel to malarious region within 30 days.	MALARIA	Syp. Chloroquine 10mg/kg stat 5mg/kg after 6 hrs 5mg/kg × BD × 2 days
* Pustular rash present all over body	PYODERMA	* Cloxacillin 50mg /kg/day in 4 divided dose x 5 days.
* Abdominal Pain * Burning micturation (cries during micturation * ± Hematuria * Vomiting	UTI	* Cotrimoxazole 8 mg of TMP /kg/day × BD × 5 days * Norfloxacin 10mg/kg/day x BD in 2 divided doses × 5 days
* Headache * Sinus tenderness * Blocked nose	SINUSITIS	* Amoxicillin (40–50mg /kg/day in 3 divided doses × 5 days) Or * Erythromycin 30mg/kg/day in 4 divided doses x 5 days * Normal Saline Drops intra-nasally × TDS
* Throat Pain * Congested and enlarged tonsils	TONSILLITIS	As above.

4. Ear Problem:

Ask:

- ◆ Is Ear pain present?
- ◆ Is there ear discharge?
- ◆ If present – duration

Look:

- ◆ Pus draining from ear
- ◆ Tender swelling behind ear

Signs	Classify as	Treatment
Tender Swelling behind ear * Ear pain present or * Pus Discharge present <14 days	MASTOIDITIS ACUTE EAR INFECTION	Cotrimoxazole/Amoxicillin stat dose and refer * Cotrimoxazole 8mg TMP/kg/day in two divided dose x 5 day or * Amoxicillin High dose 70 – 90mg /kg/day in 3 divided dose x 10 days * Paracetamol (10 mg/kg/dose) * Dry wicking to be done.
* Pus Discharge ≥14 days	CHRONIC EAR INFECTION	Dry wicking and refer.
No pain or discharge	NO EAR INFECTION	Symptomatic treatment Or Refer.

C. Malnutrition and Anaemia

Look and feel:

- ◆ Visible severe wasting
- ◆ edema of both feet
- ◆ Palmar pallor
 - Severe pallor
 - some pallor
- ◆ Determine weight for age (chart given)

Signs	Classify as	Treatment
Severe visible wasting or bilateral pedal edema or Severe pallor	SEVERE MALNUTRITION OR SEVERE ANAEMIA	Vitamin A <12 months – 1 lakh unit 12 months – 5 year – 2 lakh unit and refer
Some palmar pallor or Very low weight for age	ANAEMIA OR VERY LOW WEIGHT	Feeding advice (discussed later) If age > 2 years Albendazole (400mg) stat If pallor present Iron 6mg/kg/dose x BD x 14 days Follow up after 14 days
None of the above signs	NO ANAEMIA OR NO VERY LOW WEIGHT	No treatment If age <2 years – give feeding advice

D. Immunization Status (National Immunization Schedule)

Birth or first visit:	BCG, OPV
6 weeks age or 6 weeks after BCG:	DPT-1, OPV-1
10 weeks age or 1 month after 1 st dose:	DPT-2, OPV-2
14 weeks or 2 month after 1 st dose:	DPT-3, OPV-3
9 months age or:	Measles
Thereafter on first presentation	

Vitamin A Supplementation

- upto 6 months ×
- 6 months to < 12 months _ cap (1,00,000 unit)
- 12 months to 5 years 1 cap (2,00,000 unit)
- Vitamin A Supplementation should be done 6 monthly upto 5 years.
- Vitamin A as treatment is given for
 - Measles on day 0, day 1
 - Malnutrition on day 0, and 1
 - Night blindness on day 0, 1 & 21

Deworming

From the age of 2 years, every 6 monthly deworming should be done with Albendazole (400mg) up to the age of 5 years.

E. Feeding Advice

- (a) From birth to 6 months:
 - Exclusive breastfeeding, at least 8 times / 24 hrs.
 - Discourage use of any other fluid/food or artificial foods
 - Breastfeeding should be at least for 10 minute per sitting.
- (b) 6 to 12 months
 - Breastfeeding any time as for baby's want.
 - Introduce food items like rice, dal, jaulo, haluwa, milk + sugar+roti, fruits etc.
 - The above items should be taken at least 3 times a day for breast fed babies and 5 times a day for not breastfed babies.
- (c) 12 months to 2 years
Continue breastfeed as per demand.
the above mentioned food/ food cooked for other member of family should be given at least 5 times irrespective of breastfeed.
- (d) 2 years and above
Food cooked for other members should be given at least 3 times a day.
Following items should be given at least 2 times/day (Chiura cooked in ghee/oil, fruits, maize, pulses and other proteineous food)

Advice about breastfeeding

Proper positioning of baby	Proper attachment between baby and mother
1. Baby's chin should touch the breast	1. Baby's neck and body should be straight
2. Baby's lower lip should be turned outwards	2. Baby should be turned towards mother
3. Baby's mouth should be fully opened (sucking should be on areola)	3. Baby's body should touch mother's body
4. Areola's upper region should be seen more compared to lower region.	4. Baby's whole body+head should be supported by mother's arm, forearm and palms

F. Other Problem:

This category includes complaints other than mentioned earlier, which can be managed based on personal knowledge and exposure or life.

Approach to a Child (1 Week to 2 Months)

1. Ask and look for signs for any serious bacterial infection:

Ask/look/see/feel	Classify as	Treatment
<ul style="list-style-type: none"> • H/O convulsion or • RR - > 60/min or • Severe chest indrawing or • Nasal flaring or • Grunting or • Bulging fontanelle or • Ear discharge or • Pus discharge from umbilical region with inflammation spread to skin or • Fever (> 37.50 F or < 35.50F) or • Lethargic/Unconscious or • Movement of limbs less than normal or • Severe or many pustular rash present over skin or • Unable to suck or • Yellow discoloration of body or • Bluish discoloration of extremities and lip 	SEVERE BACTERIAL INFECTION	Inj PPF (50,000 IU/kg stat I/M) + Inj. Gentamycin (2.5 mg/kg I/M stat) and refer
<ul style="list-style-type: none"> • Umbilicus red and pus discharge with no involvement of skin or • Few pustules over skin 	LOCAL BACTERIAL INFECTION	Amoxycillin @ 40-50mg/kg/day in 3 div doses x 5 days Cleaning with antibiotic solution

2. Diarrhoea:

- Similar to assessment done for age group
- 2 months - 5 years, except that we do not assess thirst.
- Classification and treatment are similar to the other age group.

Conclusion:

The above method was taken from IMCI although certain symptoms, sign and various treatment strategies were modified keeping in view of our hospital setting. This will surely help a lot in examining children in the peripheries and in the GOPD.

Reference:

1. IMCI guidelines (His majesty government / WHO / UNICEF / USAID)