An Internship Report

On

"Fellowship Training and Field Work Experience on Nutrition and Health at icddr,b"

Submitted To:

Prof. Dr . Md. Bellal Hossain

Head

Department of Nutrition & Food Engineering

Daffodil International University

Submitted by

Hayatun Nabi

ID: 151-34- 341

Department of Nutrition and Food Engineering

Daffodil International University

Date of Submission'

22th December 2018

LETTER OF TRANSMITTAL

22th December 2018

Prof. Dr. Md. Bellal Hossain
Head
Department of Nutrition and Food Engineering
Daffodil International University.

Subject: Submission of Internship Report.

Dear Sir,

I would like to take this opportunity to thank you for the guidance and support you have provided me during the course of this report. Without your help, this report would have been impossible to complete.

To prepare the report I collected what I believe to be most relevant information to make my report as analytical and reliable as possible. I have concentrated my best effort to achieve the objectives of the report and hope that my endeavor will serve the purpose. The practical knowledge and experience gathered during report preparation will immeasurably help in my future professional life. I request you to excuse me for any mistake that may occur in the report despite of my best effort.

I would really appreciate if you enlighten me with your thoughts and views regarding the report. In addition, if you wish to enquire about an aspect of my report, I would gladly answer your queries. Thank you again for your support and patience.

Yours Sincerely,

Hayatun Nabi

ID-151-34-351

Department of Nutrition and Food Engineering

Daffodil international university

Letter of Authorization

22th December 2018

Prof. Dr. Md. Bellal Hossain
Head
Department of Nutrition and Food Engineering
Daffodil International University.

Subject: Declaration regarding the validity of the Internship Report.

Dear Sir,

This is my truthful declaration that the "Internship Report" I have prepared is not a copy of any internship report previously made by any other students.

I also express my honest confirmation in support to the fact that the said internship report has neither been used before to fulfil my other course related nor it will be submitted to any other person in future.

Yours sincerely,

Hayatun Nabi

ID-151-34-351

Department of Nutrition and Food Engineering

Daffodil International University

Approval Certification

This is to certify that Hayatun Nabi bearing ID-151-34-351 , Program B.Sc. in Nutrition & Food Engineering is a regular student department of Nutrition & Food Engineering Faculty Allied health Science Daffodil international University. She has successfully completed her internship work report of 15 days 7th October 18th October, 2018 of ICDDRB at Mohakhali, Dhaka, Bangladesh under my direct report is a worth of fulfilling the partial requirements of NFE program.

Supervisor

Fouzia Akter
18-12-18

.....

Fouzia Akter
Internship Supervisor
Senior Lecturer
Department of Nutrition and Food Engineering
Daffodil International University

.....

Prof. Dr. Md. Bellal Hossain
Head
Department of Nutrition and Food Engineering Daffodil International

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……

Dr. Md Iqbal Hossain
Head Child Malnutrition Unit , icddr,b
Mohakhali, Dhaka 1212, Bangladesh

ACKNOWLEDGEMENT

In the preparation of this report, I would like to acknowledge the encouragement and assistance give to me by a number of people. At first, I would like to express my gratitude to my creator the almighty Allah for enabling me the strength and opportunity to complete the report in time successfully. I am grateful to each and every people who are involved with me in every phase of my life.

I am grateful to my parents without whom I cannot be here. Without the support of my parents, I could not be able to achieve my objectives and goals.

My Deep gratitude and sincere thanks to the Honourable Dean, Faculty of Allied Health Science, **Professor Dr. Ahmed Ismail Mostafa** for his kind cooperation and to accept this Degree.

I am deeply indebted to the , Head of the Department of Nutrition & Food Engineering, **Prof. Dr. Md Bellal Hossain** at Daffodil International University for his kind cooperation and to accept this Degree.

I would also like to express my great respect & warmest thanks to co-operate my internship supervisor**, Ms Fouzia Akter ,** senior Lecturer of Department of Nutrition & Food Engineering for her whole-hearted help and supervision during my internship work and organizational attachment period. My gratitude goes to entire NFE Department of Daffodil International University for arranging Internship Program that facilitates integration of theoretical knowledge with real life situation.

I would also like to express my gratitude to NCSD department in icddr,b hospital , Dhaka. I also thankful to **Ms Anowara Haider** (senior Dietician , icddr,b hospital) , **Ms Nuhsrat Nuray Alam** (dietician**), Ms Farhana** (dietician) **and Ms Sanjeda perveen** (breast feeding counsellor) for their cooperation during my internship program in icddrb hospital.

At last I also thankful to **Dr Tahmeed Ahmed** (Director in NCSD in ICDDRB) , Course Coordinator **DR. Md Iqbal Hossain** (Head child Malnutrition Unit, icddrb), Course Coordinator **DR. Sayeedahuqe** (Clinical lead , nutrition Unit , Dhaka hospital, icddr,b) for their permission to carry out this internship in his organization.

Table of content

Dedication

I dedicate this report to my beloved parents and my Teacher.

Chapter 1

Abstract

Report has been prepared on the basis of 15 days practical experience at International Centre for Diarrheal Disease Research , Bangladesh (ICDDRB). This program help me to gather a lot of practical knowledge about diarrheal disease's patients and also malnourished patients . ICDDR,B mainly works to improve nutritional status of our country . Result is very transparent , Bangladesh has been making a glorious progress for reduce malnutrition , a very big credit goes to ICDDR,B. we mainly work at their several units like emergency unit, short stay unit ,long stay unit ,general ward ,Out patient department ,Nutritional rehabilitation unit ,Nutrition follow up unit ,Diet unit and in breast feeding counselling unit .we deal with the patient to identify patent's present conditions took the proper action to improve patient's present diseases condition .we prepared several diet item which was provided to the patients depending on his/her age , physical conditions. We were able to learn how to prepare the diet which are very important for the patients especially for the diarrheal diseases patients and malnourished patients .we gathered detailed knowledge about the breast feeding counselling ,where health workers are trying at their highest level to motivate the mother to feed their breastmilk to their baby .

1.0 Overview of ICDDR,B

‘’EAT OF THE GOOD THINGS WHICH WE HAVE PROVIDED FOR YOU” (AL QURAN 2:172) & IF ALLAH CAN TURN NIGHT INTO DAY, THEN SURELY ALLAH CAN TURN THE DARKNESSBOF YOUR LIFE INTO HAPPINESS AND PROSPERITY, TRUST IN ALLAH (HADITH)

ICDDR,B(international center for diarrheal diseases research ,Bangladesh) is the world’s leading global health research institute which is situated in Bangladesh.

In Bangladesh ,they are committed to solving public health problems facing which is very common in at middle income countries like Bangladesh through the innovative scientific research including –laboratory based ,clinical ,epidemiological and health system research .mainly they are working to improve the health and wellbeing of people living. This organization mainly run by the some international organization Swedish International Development Cooperation Agency (SIDA),Canada ,UKAID ,also by the Bangladesh government . these organization donate a lot of money every year to run the ICDDR,B.

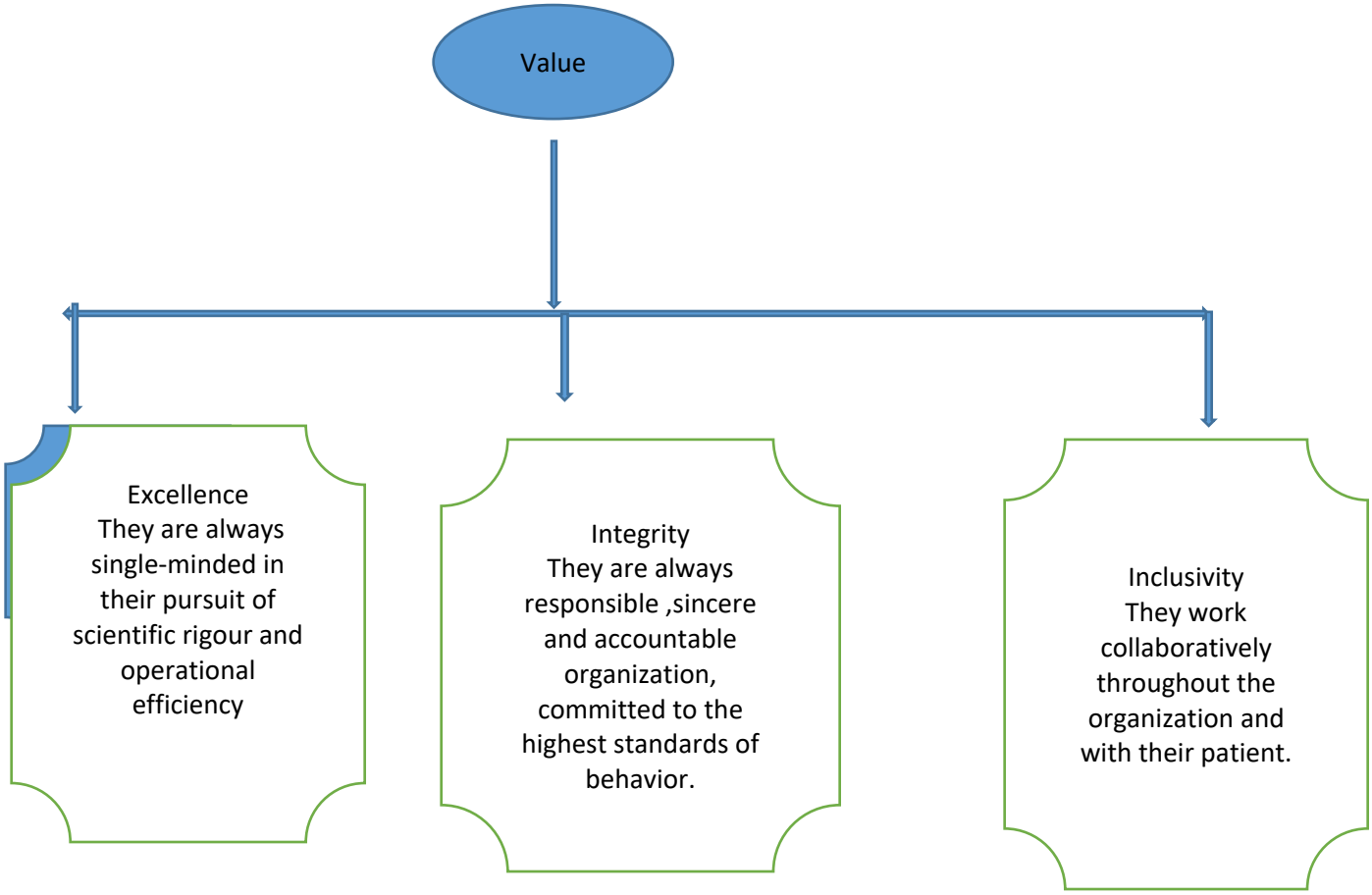
The main purpose of this organization is to prevent or control the diarrhoeal diseases and malnutrition which are very severe problem in developing countries especially in Bangladesh .Every year millions of children are died due to the diarrhea and the malnutrition .At this situation Icddr,b strongly committed to prevent or control the diarrheal disease to reduce the death rate .Icddr,b provide the proper treatment to the patent who come there for treatment is fully free of cost, even the medicine is also free of cosr.in a word a patient does not required single penny for his or her treatment .Furthermore ,Icddr,b also do various international reaseach to invent new methods of treatment as well as inventing various diet or medicine for the various disease like diarrhea , Tuberculosis etc . I must say that ,Icdrr,b saves million child’s life every year .Icddr,b is the most leading diarrheal diseases center in Bangladesh .

Icddr,b works according to their mission ,vision value . They have their own mission ,vision and value

Mission : The main mission of the icddr,b is to solve the public health problems through their innovative scientific research .they always work to create or invent new methods or process that help to solve the public health complications .

Visions :icddr,b works towards a vision that is people living in the entire world are capable of survive the health complications and every one can enjoy their live .

Value:



1.1 Treatment process at a Glance :

Patient

ICU

Assessment table

If condition doesn't improve

Short stay Unit(SSU)

Longer stay unit (LSU)

If Condition is improved

OPD

stands for

Out-Patient Department

Abbreviations.com

General ward

NRU

Nutrition follow up unit

1.2 Assessment Criteria :

When a patient come into the hospital ,The doctors sitting on the assessment table assess the patient depending on some history which is taken by the doctors and health workers history's are like :

1.Patient name

2.Height

3.weight

4.Starting period of Diarrhea

5.how many time stool being released

6.stool's color, consistency ,frequency and the volume

7. Diet plan before diarrhea

8.Diet plan After diarrhea

9.Age

10.Mother’s diet plan before child’s diarrhea

11.mother’s diet plan after diarrhea

12.child’s intake any complementary food or not

13.fever

14.Abdominal pain

15.Vomitting

16.Watery stool or bloody stool

Without these ,Doctors assess some physical examination by which they are able to know the present health conditions of the patient :

1. 1.Dry mucous

2.lips color become pale

3.washery hand

4. Skin that doesn't flatten quickly after you pinch and release it (it doesn’t applicable for the child under five years old)

5.watery stool or bloody stool

6.abdominal pain

7.frontal nil reduced etc

8. .Vomitting

9.Watery stool or bloody stool etc

After Taking All the history and assessment . the doctors send the patient into the different department based on their sign and symptoms .there is no any protocol to this way or that way. Which patient goes to which department fully depends on their sign and symptoms .it is happened that some patient come to the hospital with critical situation .when the doctors saw that the patient is in critical condition then they send the patient directly to the intensive care unit(ICU).More over some patient does not require to admit in the hospital due to their good health condition then the doctors send them to the OPD where the doctors and health workers monitor them for at least two hours .after tow hours if they see the health condition is improving then they discharge them with giving some ORS and medicine also provide some training about food preparation

1.3 Assessment Table (Emergency unit): All the patient come first at this unit,where doctors and health workers are sitting on the assessment table .the doctors and health workers are assessing the patient by taking several history that I already discussed over.Doctors monitor the sign and symptoms of the patient .depending on the sign and symptoms doctors send the patient in to various unit like LSU,OPD,SSU,GW,ICU,NRU ,NFU etc .But some patient are badly needed some Iv saline due to a lot dehydration ,then they immediately push some saline through the IV or NG .

1.4:**Out Patient Department (OPD):** if any patient come to the hospital.and the doctors don't find any severe complications except normal diarrhea ,they the doctors refer the patient into the Out patient department where the doctors and health workers observe the patient for at least two hours .if any patient's health condition is not improved then they observe the patient for six hours .After six hours when the health workers see that the health conditios of the patient is improving then they discharge the patient with some necessary medicine ,ORS and also provide some training on preparation of various food like kichuri,halwa etc

If any patient's condition still bad after six hours .then the doctors send them LSU or SSU or Generak ward depending the Patient's Health conditions .

1.5:Short Stay Unit (SSU):

At the short stay section ,patient are admitted for maximum 48 hours and minimum 24 hrs ,within these periods their health condition become much better than previous ,after that doctors release them for leaving the hospital. If patient's health conditions does not improve then the doctors monitor the patients for 48 hours .after 48 hours if the patient's conditions is getting better then the doctors prescribed the patients some medicine which is given by icddr,b and suggest them some diet plan .if the health condition is getting better then the doctors send them mainly in Longer stay unit where the patient need to stay for aleast 5-7days

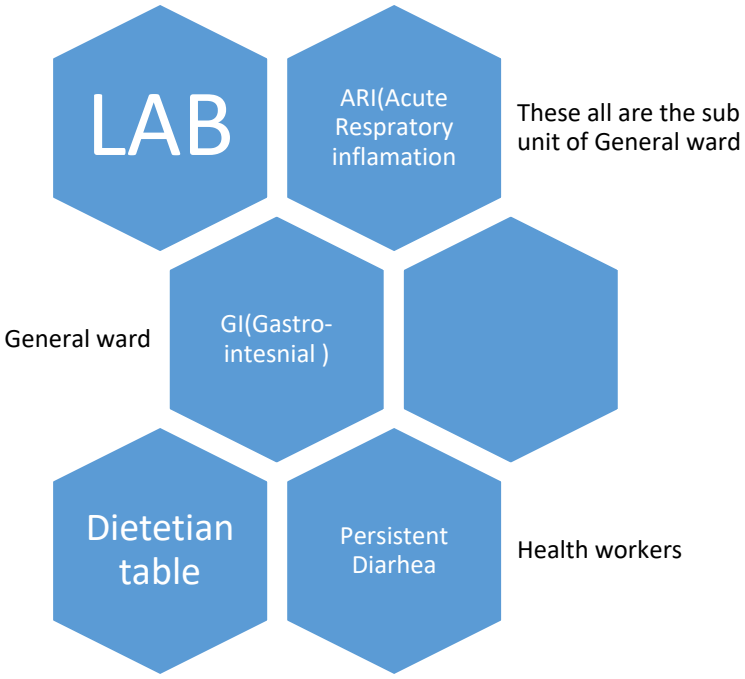
1.6:Longer Stay Unit (LSU):

At the Long stay section ,If any patient's health condition doesn't improve then doctors send them in long stay department where all the patient must stay for at least 2-7 days .if any patient requires the treatment for more than seven days then doctors send them in general ward. Basically maximum of the patient recover soon at this stage .because special care are taken at this stage special diet are also given at this stage .Though any patient does not recover then the doctor sent them to the general ward for stabilization .

1.7:General ward :

if any patient requires the treatment for more than seven days then doctors send them in general ward where all the doctors and health workers look after the patient for stabilization patient's health condition by providing various medicine and diet as well.

There are some sectors on the General ward .each and every sectors for the particular patient like



1.8:Nutrition rehabilitation unit (NRU):

Children of WH<70% and WA<50% or with nutritional edema are transferred to the NRU ,once acute phase treatment is over an diarrhea has resolved or other infections controlled .infants less than 49cm in length should be admitted if the WA<60%.At this stage the child has a stabe medical condition ,appetite has improved .and is ready for nutritional rehabilitation .A child who needs NG feeding is not fit for this unit or phase . During NRU phase .calories and protein are gradually increased in programed manner over a period of time to gain rapid growth .A weight gain of more than 10 ml/kg per day should be goal of this phase .A more key point of this NRU os that the diet given to the children should contain proteins derived

mainly from the vegetable sources .protein from the animal sources are so much expensive .the mother of these children can hardly afford these foods when continuing nutritional rehabilitation at home .

At NRU, Health workers provide 11 meal to the patients out of 12 meals. The total required calorie for the children are distributed into 11meal .Health workers or dietitian provide them 10ml food /kg of boy weight of the children per day . amount can be fluctuated depending on the patients health condition ,for example of the child is suffer from malnutrition with edema then the amount or volume of the diet will be changed .

The main diets of the NRU are ;1,Halwa 2.Kicuri ,3.Formulae -100.etc.

Admission Criteria in NRU

- Weight-for-length (WL)/weight-for-height (WH) <-3 Z score
- Weight-for-age (WA) <-4 Z score
- Edema

Discharge Criteria from NRU

- No edema
- Weight-for-length (WL)/weight-for-height (WH) <-2 Z score
- Weight gain minimum 15% to 20%

1.9:Nutrition follow up unit

Nutrition follow up unit ,Basically the aim of this unit is to prevent the relapse severe malnutrition and to ensure the proper physical and mental growth .

After discharge from the NRU, Children usally remain stunted and having poor mental development . these condition are minimized during the follow up phase,which also helps to prevent severe malnutrition .The patient of this unit are the patients who have been discharged from the NRU ,also those who are malnourished but not stayed in the NRU(WH<80%.WA<60%without edema)are controlled in Nutritional follow up unit (NFU).this out patient based nutritional rehabilitation helps to reduce the burden on inpatient services .Upon enrollment in the NFU,Children are seen at intervals of one week ,two weeks,and then one month until they WH>90% or WA>65%.this success is normally possible in 6-8 months.There after ,follow up should be twice a year and ideally continue until the child is 3yers old .the mother should be encouraged to bring the child to NFU without any appointment if the child is ill .sometimes children may not come for a follow up .these children are at increased risk of relapse of severe malnutrition and of

developing any serious illness .this failure can be minimized by proper counseling of parents at the follow up unit .

At the NFU .Child nutritional status is examined by anthropometry and physical examination .Age,Height or length ,weight gain, WH,WA and MUAC are recorded on prescribed form for follow up .Health worker discuss the overall condition of the child and the change in weight and chidl's diet.multivitamin drops ,zinc are continued for total one months ,while Iron is continued for 2-3 months in prescribed doses .

The main meal or diet in nutritional follow up unit are the Kichuri and Halua. Health workers demonstrated the preparation of kichuri and halua in front of the parents or mother,they teach them how to prepare kichuri and halwa .and then served these meal to all members of the family .

After that ,at the NFU there is advice unit .when patients are released from thee NFU ,health workers or nutritionist give them several advice about taking care of their child ,and also provide some medicine if needed .

Chapter 2

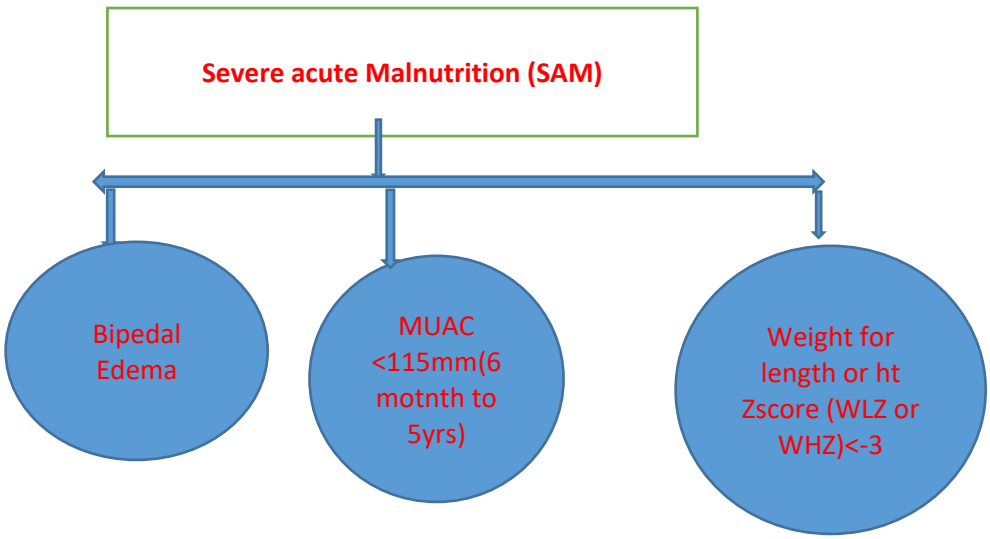
Diet Unit

2.1 :Overview of diet unit :We know that diet unit is very important part for any kind of hospital like as ICDDRB .In ICDDRB llthe diet unit plays an essential role to recover a patient .we know that at ICDDRB maximum of the patient come here whose are suffering from diarrheal diseases .For diarrheal diseases ,a proper diet is very much important to make the patient well. Now I am going described about the diet unit at ICDDRB where I worked on so closely with the ICDDRB's dietitian. There are some activities exist before providing any diet to the patient .

There is term "Anthropometry " which is consist of mainly two word .Anthrops means MAN and metrics means Measurement . Measurement of the body weight and dimensions and the subsequent interpretation of the measurement of in relation to appropriate reference value is called Anthropometry .

Before that we have to know about the Severe acute malnutrition(SAM): Severe acute malnutrition is defined by a very low weight for height (below -3z scores of the median WHO growth standards), by visible severe wasting, or by the presence of nutritional oedema. Decreasing child mortality and improving maternal health depend heavily on reducing malnutrition, which is responsible, directly or indirectly, for 35% of deaths among children under five.

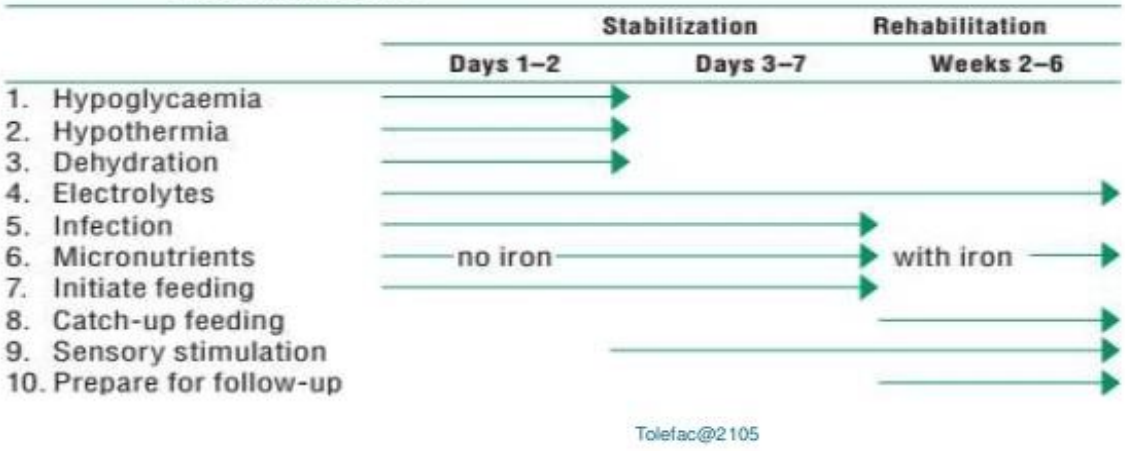
2.2:



Management: 3 Phases

20

Table 21. Time frame for the management of a child with complicated severe acute malnutrition



>Hypoglycaemia : Hypo means low and glycaemia means the level of glucose.that means the low of pf glucose in the blood is called hypoglycaemia .it is very known complications in our country specially in the children under 5years

>Hypothermia :When the rectal temperature is <35.5C(96F) or axillary (under arm) temperature <35C(95),the this is called Hypothermia .the child should be wrapped in blankets .For providingwarmth ,an electric lamp may be placed close to the body but sufficiently away to burns .

>Dehydration :the low level water in the body.huge amount of water or fluid secret from the body due to serious diarrhea .it causes serious complications in the body .even it causes death when dehydration is in serious or severe stage .

>Electrolyte : there are different types of electrolyte are needed for the patient specillay for the diarrheal patient and severely acute malnutrition patient .electrolyte like sodium, potassium, calcium ,Mg, Zn etc .these all are needed to resolve the malabsorption in the body .

>Infection :Due to the multiplication of diseases causing agent ,they form a reaction in the body which produce toxin in the body .that causes several complications in the body .Infectious diseases also known as Communicable diseases .

>Micronutrient : Micronutrient are those which are required for our body in small portion .but the requirement of the micro nutrient is very essential for human body .micronutrient like Vitamins ,minerals ,different electrolytes etc

2.3:Anthropometry depends on some indicator these are ,

1.Age

2.Sex

3.Weight

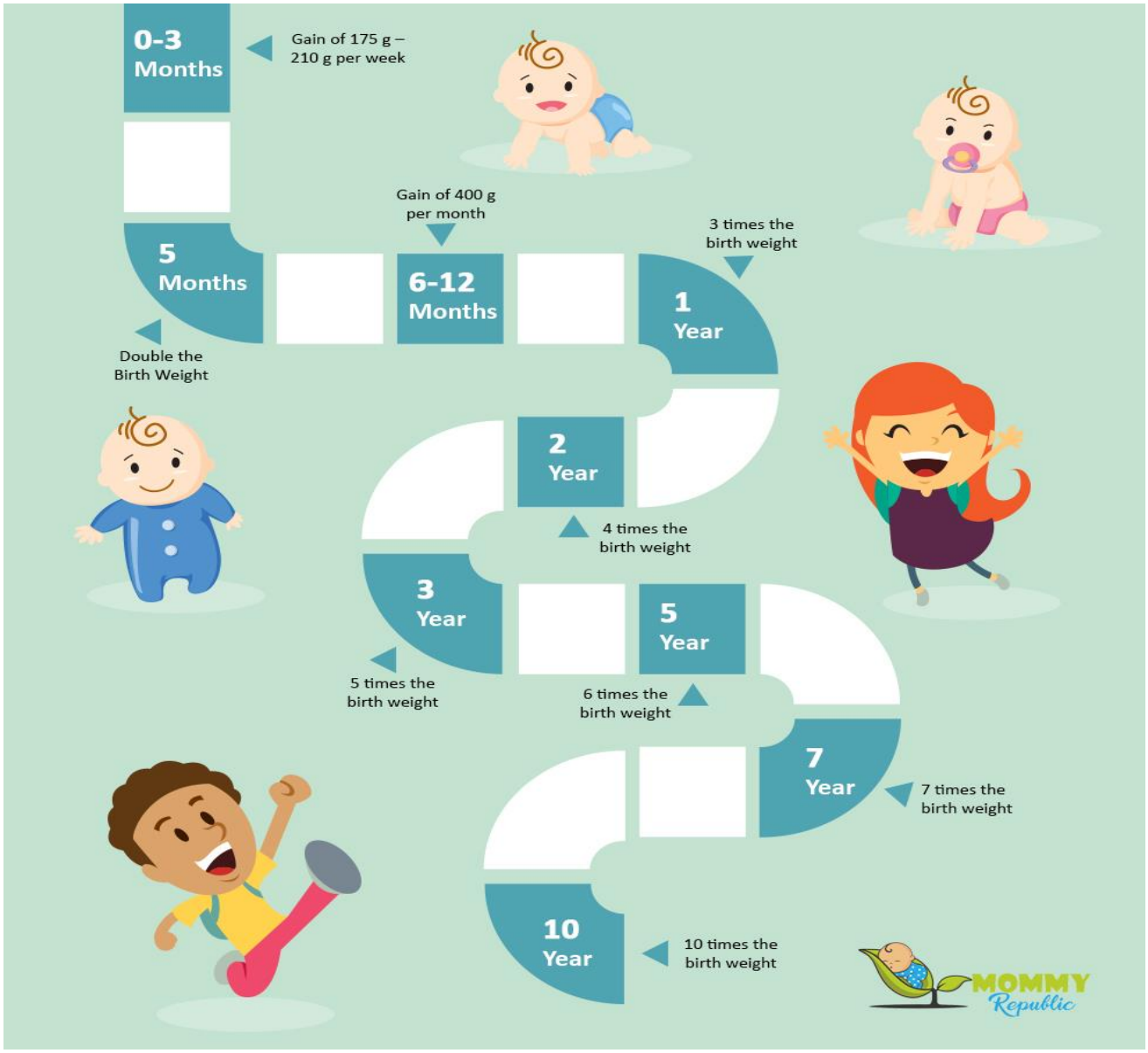
4.Height or length

Together these are called “INDEX”

Some indices that are used for infant and children :

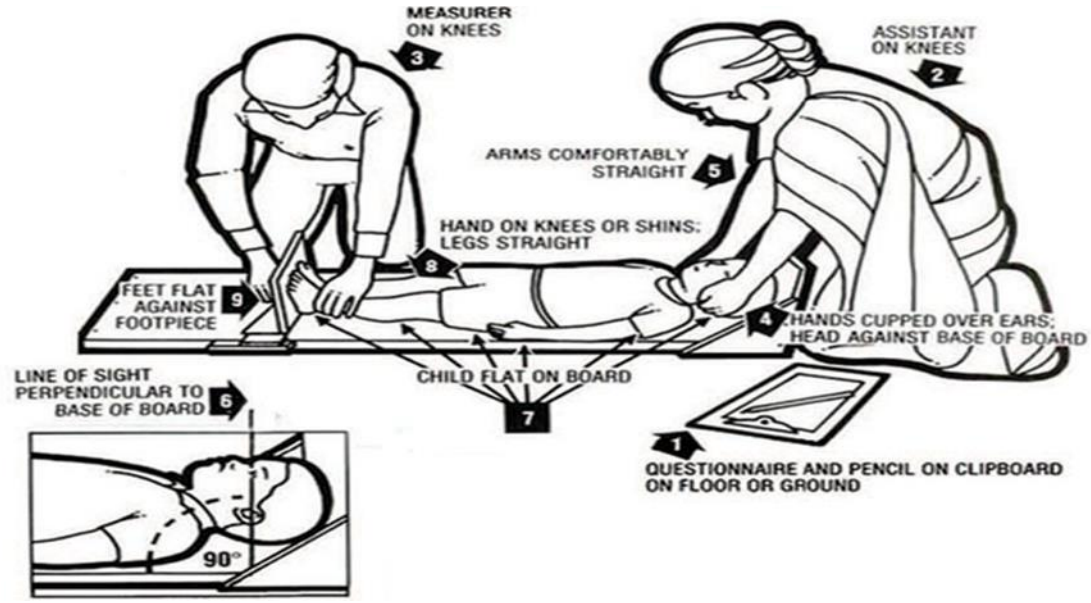
2.3. **1.Weight for Age :** if any infant or child has low weight for age that indicates these childs or infants are “UNDERWEIGHT” it is mix of long term and short term.

For Example : At any specific area where any infant or child has lower weight for age compared to the standard weight at definite age with the same sex then this kind infant or child are addressed as Underweight infant or children .

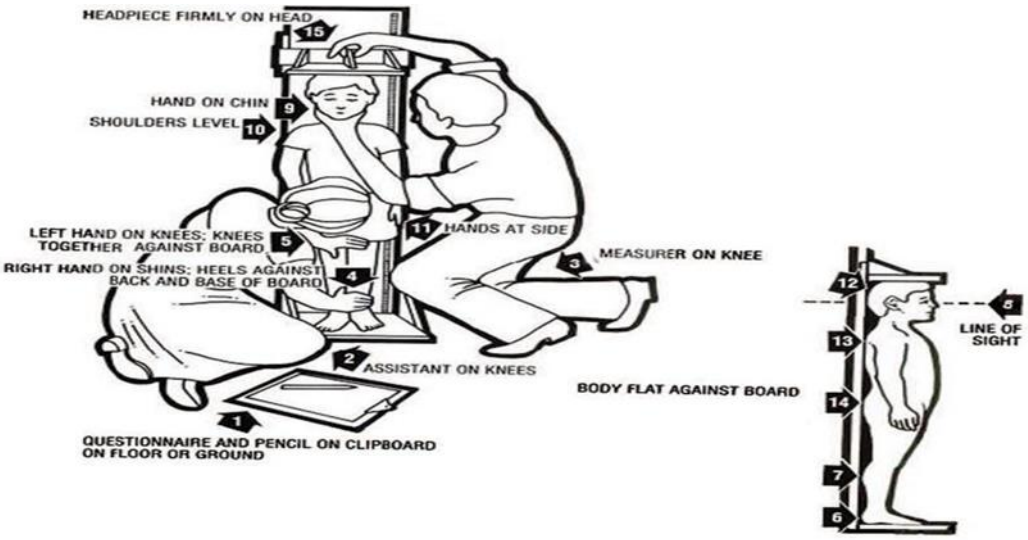


2.3.2.Height for Age : When any infant or child has low height for age which indicates that these kind of infant or children are become stunted infant or child .

For example : some children in costal area where all the child can not able to get the proper nutrition from the proper meal because poverty ,socio-economic condition ,or for natural disaster . for this reason maximum of the children at costal area are low at height for age compared standard height at this specific age with the same sex .so this kind of child are called stunted child .



This is length measuring scale by which we can measure the length for under 2yeays child or if anyone too much ill to stand ,then we use this scale with 0.1cm precision.



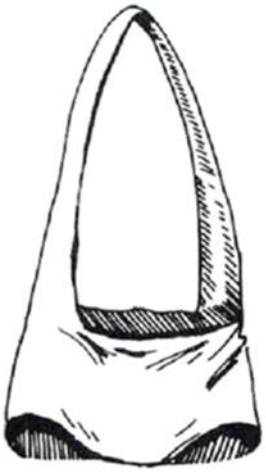
We use this height board to measure the height for children greater than 2years with 0.1cm precision

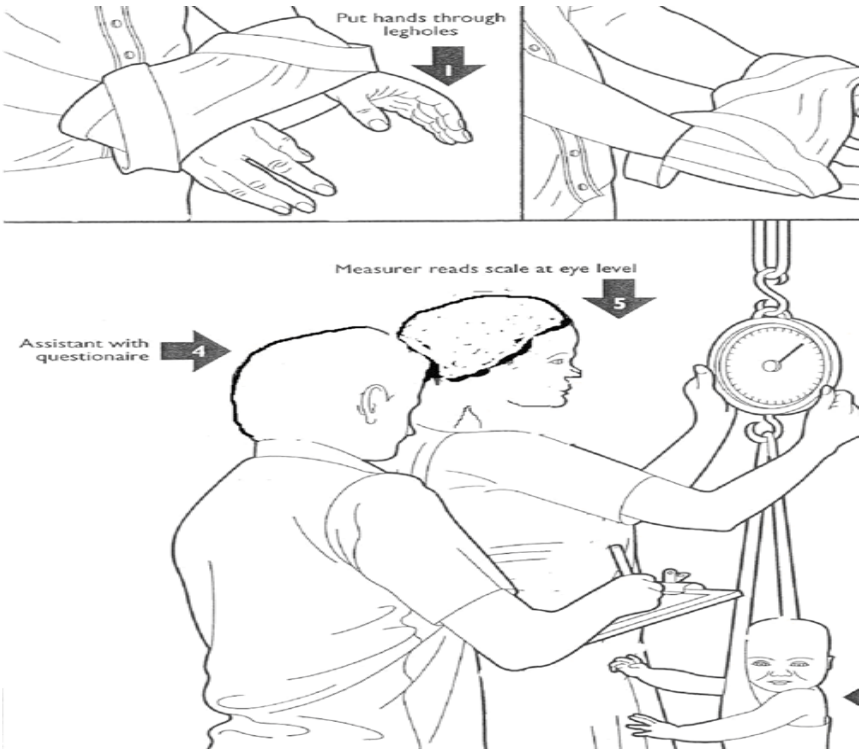
2.3.3.Weight for Height or Weight for length :

Low weight corresponding to age height or length is deficit. Because it is expected, that weight should in normal range according to their height of a person in same sex. Otherwise, it will consider as 'WASTING'.

Length is taking for the children who are equal to 2years or less then 2years (WL≥2yrs). Height is taking for whose age is greater than 2years. If anyone is unable to stand then his or her length is considered.

- This method is useful when exact age is difficult to determine.
- Acute/recent undernutrition
- Appropriate for examining short-term effect.





This is salter scale that is used for the weighing the infant and children .

By this scale we measure up to 25 kg with 100g accuracy.it is mainly used for the child who are not able to stand .

This is another floor type scale which precision is 1g

This is floor type weighing scale by which we can measure up to 150 kg with 100g accuracy or precision

2.3.4:Other Indices : 1.Body mass Index(BMI)

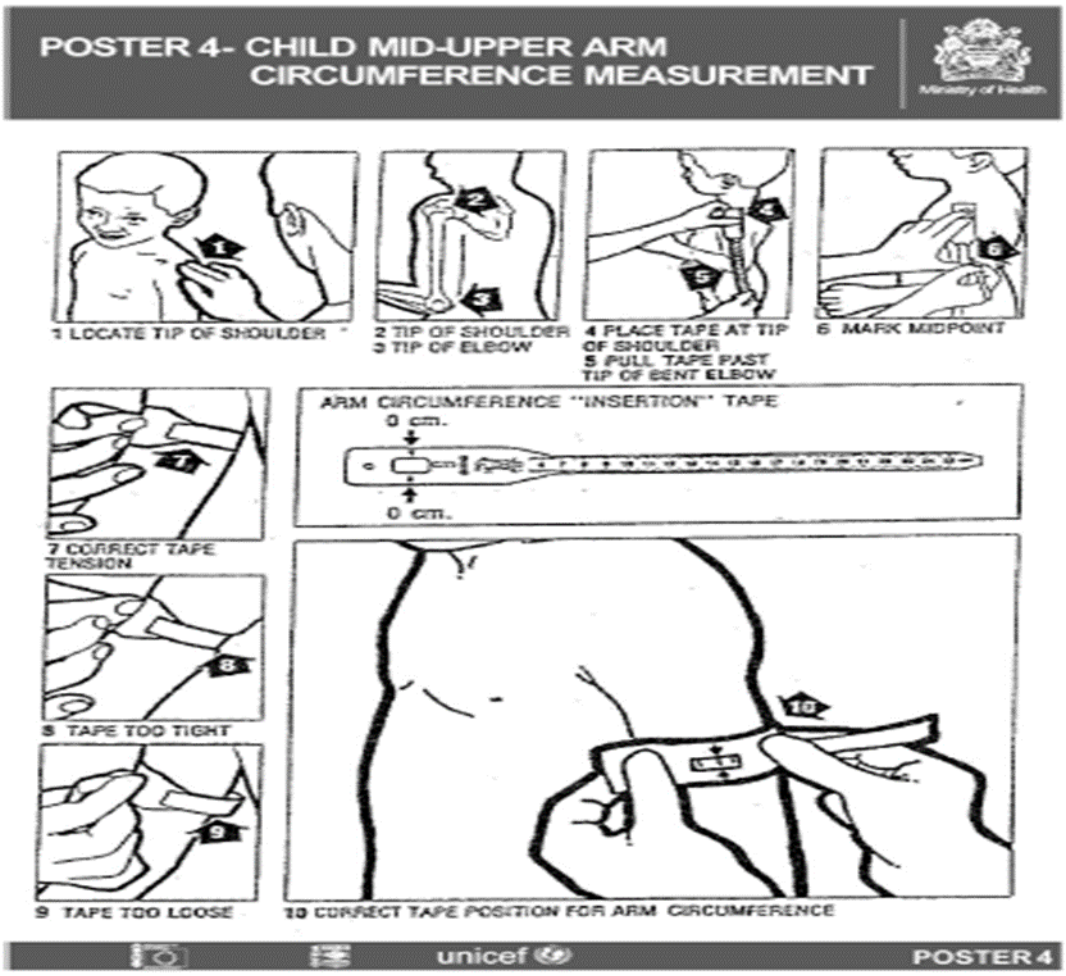
2.MUAC(Mid under -arm circumference)

Measuring mid-arm-circumference (MUAC).it is very useful in screening and in the community .

From 6month to five years :

1.if any child's MUAC is less han 11.5 which indicates severe acute malnutrition

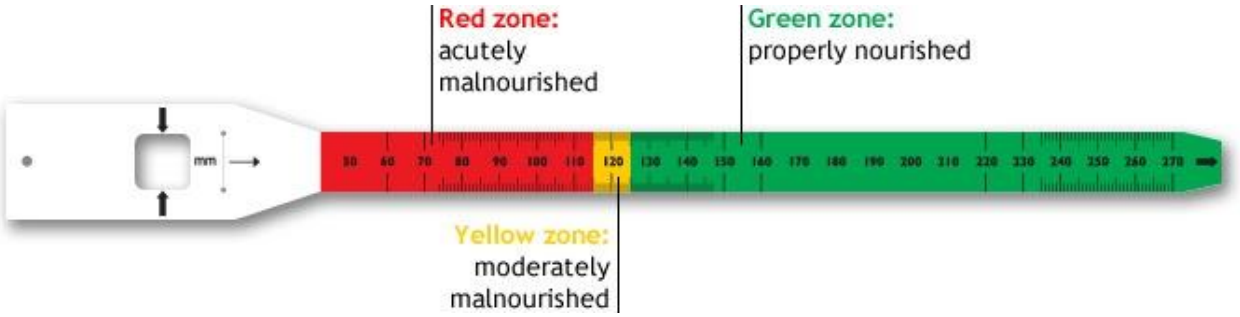
2.if it from 11.5 to <12.5 then it is referred as moderate acute malnutrition .



Weight (kg)	Height Only (cm)		MUAC SEVERE (MUAC < 115 mm)		MUAC MODERATE (115 ≤ MUAC < 125 mm)		MUAC NORMAL (MUAC ≥ 125 mm)	
	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
2	48.8	52.6	47.1	51.7	43.5	48.4	47.5	51.4
3	52.7	56.4	51.8	56.4	48.5	53.2	51.5	55.3
4	56.5	60.2	56.5	61.0	53.3	58.1	55.4	59.2
5	60.3	63.9	61.1	65.6	58.2	63.0	59.3	63.0
6	64.0	67.7	65.7	70.3	63.1	67.9	63.1	66.9
7	67.8	71.5	70.4	74.9	68.0	72.7	67.0	70.8
8	71.6	75.2	75.0	79.5	72.8	77.6	70.9	74.7
9	75.3	79.0	79.6	84.2	77.7	82.5	74.8	78.5
10	79.1	82.8	84.3	88.8	82.6	87.3	78.6	82.4
11	82.9	86.6	88.9	93.4	87.4	92.2	82.5	86.3
12	86.7	90.3	93.5	98.1	92.3	97.1	86.4	90.2
13	90.4	94.1	98.2	102.7	97.2	102.0	90.3	94.0
14	94.2	97.9	102.8	107.3	102.1	106.7	94.1	97.9
15	98.0	101.7	107.4	112.0	106.8	111.7	98.0	101.8
16	101.8	105.4	112.1	116.6	111.8	116.6	101.9	105.7
17	105.5	109.2	116.7	121.2	116.7	121.4	105.8	109.6
18	109.3	113.0	121.3	125.9	121.5	126.3	109.7	113.4
19	113.1	116.7	126.0	130.5	126.4	131.2	113.5	117.3
20	116.8	120.5	130.6	135.1	131.3	136.1	117.4	121.2
21	120.6	124.3	135.2	139.8	136.2	140.9	121.3	125.1
22	124.4	128.1	139.9	144.4	141.0	145.8	125.2	128.9
23	128.2	131.8	144.5	149.0	145.9	150.7	129.0	132.8
24	131.9	135.5	149.1	153.7	150.8	155.5	132.9	136.7
25	135.6	139.4	153.8	158.3	155.6	160.4	136.8	140.6

Caution: Extrapolation should be limited (indicated by gray shading) to 15% above (i.e. 126.5 cm) and 15% below (i.e. 43 cm) database height and to the lower limit of database weight (i.e. 3 kg).

doi:10.1371/journal.pone.0159260.t004



❖ 2.3.5:Body Mass Index (BMI)

Body mass index can be calculated by:

BMI= weight in kg/ (height in m) ^{2}

BMI is normally used for adult people.

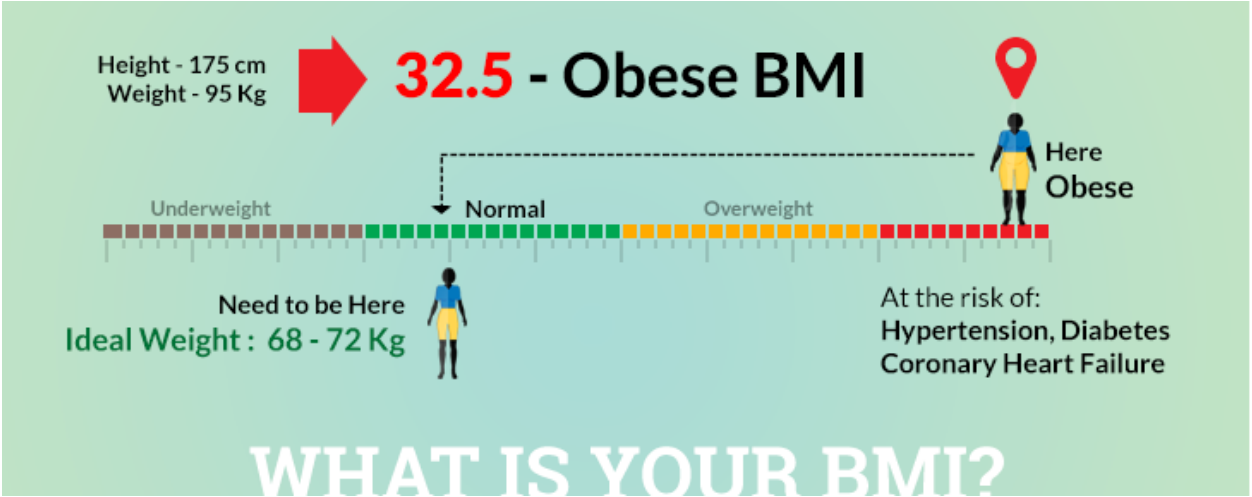
Normal range of BMI= 18.5-25

Undernutrition

- Marginal= 17-18.5
- Moderate= 16-17
- Severe= less than 16

Over weight/obese

- Over weight= 25-30
- 1° (mild) obese= 30-35
- 2° (moderate) obese= 35-40
- 3° (severe) obese= greater than 40



2.3.6: Z score or SD Score

The second way to express the distance between an individual child's weight and the average weight of comparable children in the reference population is by z-score. This is a bit more complex but has certain advantages over percent of median and is widely used to present survey results. Some background is necessary before discussing anthropometric z-score.

Calculation of Z score : For example a patient whose measure value is 8cm and Reference value is 10.2 cm where the Sd of the reference population is 0.8 .lets have look the equation that isputed below.

$$\frac{\text{Measured value} - \text{Average value in the reference population}}{\text{Standard deviation of the reference population}}$$

$$\frac{8.0-10.2}{0.8} = -2.75$$

Here is observed value = 8.0cm

Reference value = 10.2

SD =0.8

Height (cm)	-3 SD weight	-2 SD weight	Median weight (kg)	Standard deviation
78.5	7.7	8.4	9.9	0.8
79.0	7.8	8.4	10.0	0.8
79.5	7.8	8.5	10.1	0.8
80.0	7.9	8.6	10.2	0.8
80.5	8.0	8.7	10.3	0.8
81.0	8.1	8.8	10.4	0.8
81.5	8.2	8.9	10.6	0.9
82.0	8.3	9.0	10.7	0.9
82.5	8.4	9.1	10.8	0.9
83.0	8.5	9.2	10.9	0.9

Classification	Z-score Values
Normal	-2.0 < z-score
Moderately malnourished	-3.0 < z-score < -2.0
Severely malnourished	z-score < -3.0 or edema

Age (yrs)	n	Height (cm)	Height Z-score	Weight (kg)	Weight Z-score	BMI (kg/m^2)
Boys						
5–6	12	110.9±4.3	−0.2±1.0	19.5±3.3	0.0±0.2	15.7±1.6
6–7	10	116.1±3.7	−0.3±0.7	20.6±2.0	0.0±0.1	15.3±1.1
7–8	12	122.5±5.0	−0.2±0.9	23.3±3.5	0.0±0.6	15.5±1.5
8–9	12	128.6±6.2	0.2±1.3	27.3±6.2	0.3±0.9	16.4±3.1
9–10	14	134.9±5.3	0.4±1.0	30.3±5.0	0.3±0.7	16.6±2.6
10–11	6	138.7±4.4	0.3±0.6	32.6±7.2	0.2±0.8	16.9±3.0
11–12	10	145.7±5.9	0.4±0.9	39.6±9.5	0.6±1.1	18.5±3.6
12–13	12	160.0±5.7	0.4±0.6	46.2±7.0	0.8±0.7	20.0±2.8
13–14	16	157.0±7.0	0.1±0.9	44.7±6.4	0.1±0.8	18.1±1.8
14–15	17	165.0±4.6	0.4±0.7	49.2±3.9	0.1±0.5	18.1±1.8
15–16	15	166.5±7.6	0.1±1.3	52.7±5.7	0.1±0.8	19.0+1.8
16–17	12	169.1±4.4	0.1±0.8	55.1±4.4	0.0±0.6	19.3±1.3
17–18	16	172.0±4.5	0.5±0.9	55.8±6.1	−0.2±1.0	18.9±2.1
18–19	10	170.6±4.8	0.2±0.9	60.0±6.6	0.4±1.1	20.5±1.5
Girls						
5–6	11	109.1±3.9	−0.4±1.0	17.0±1.0	−0.4±0.4	14.3±0.8
6–7	12	115.7±6.4	−0.4±1.3	19.5±2.9	−0.2±0.8	14.5±1.6
7–8	12	123.6±4.4	0.3±0.8	23.7±3.7	0.3±0.7	15.5±2.0
8–9	18	124.9±6.7	−0.4±1.1	24.5±4.3	0.0±0.7	15.6±1.5
9–10	13	132.9±5.8	0.1±0.9	30.9±6.7	0.4±0.8	17.3±2.6
10–11	15	144.4±5.4	0.6±0.7	36.8±5.1	0.5±0.6	17.6±1.7
11–12	11	150.5±4.2	1.0±0.6	39.5±5.8	0.5±0.8	17.4±2.4
12–13	18	151.3±6.5	0.1±1.2	41.1±6.1	0.1±0.7	17.9±2.0
13–14	16	155.5±5.6	0.4±1.1	44.5±5.5	0.2±0.8	18.4±2.4
14–15	13	157.7±3.8	0.5±0.8	49.2±5.9	0.5±0.9	19.8±1.9
15–16	12	156.9±4.7	0.1±0.9	49.7±6.1	0.4±1.0	20.1±2.1
16–17	17	157.1±4.1	0.1±0.8	48.7±5.5	0.1±0.9	19.7±1.9
17–18	12	157.5±4.3	0.1±0.9	49.9±5.0	0.2±0.8	20.2±2.1
18–19	13	157.7±6.7	0.2±1.4	50.4±4.3	0.3±0.7	20.4±2.6

doi:10.1371/journal.pone.0097218.t001

When a patient admit into the hospital ,dietitian is taking the patient's last 7-10days diet history .after that they calculate their z score .depending on the z score they categorize the patients present condition .if the patient's Z score is -2<z-score is normal ,then dietitian provide them normal diet with oral saline . If patients are under 6months then they suggest only breast milk and saline. if thee z score -3<z score<-2 is considered as moderately malnourished .if the patient's z score is >-3 or edema then it is referred to as severely malnourished ,then dietitian provide different therapeutic diet like F-75 ,F-100,modified infant formula(low lctose), milk suzi (low lactose) , Milk suzi -100 and special milk .

2.4: Preparation of therapeutic diets Diet:

2.4.1: F-75

Ingredients	Amount
The dried Milk	35g
sugar	100g
oil	20g
Water	To make 1000ml solution

Measure properly all the ingredients .and stir the ingredients with the spoon for making homogenous mixture then add some cool boiled water into ingredients and then blend it for 2-3 seconds make sure that no foam make during the blending .then add cooled boil water into mixture for upto 1000ml or 1liter .after that start to blend it for few seconds .after few seconds F-75 formula is prepared which contain 75kcal.0.9g protein of 100ml

2.4.2:F-100

Ingredients	Amount
Milk	110g
sugar	50g
oil	30ml
Water	To make 1000ml fluid solution

Measure properly all the ingredients .and stir the ingredients with the spoon for making homogenous mixture then add some cool boiled water into ingredients and then blend it for 2-3 seconds make sure that no foam make during the blending .then add cooled boil water into mixture for upto 1000ml or 1liter .after that start to blend it for few seconds .after few seconds F-100 formula is prepared which contain 100kcal.2.4 protein of 100ml

2.4.3: Milk Suzi

Ingredients	Amount
Milk	80g
sugar	50g
Rice powder	50g
Oil	25ml
Potassium chloride (KCL)	1g
Magnesium chloride (Mgcl2)	0.5g

After measuring all the ingredients properly .keep them into sauce pan .before using sauce pan .must be weighted the weight of the pan .then keep all the ingredients into the sauce pan .after that add 200ml water for making homogenous mixing with help of the spoon .after that add cooled boil water to make 1000ml mixture .in this formulae add some extra water like 50ml because evaporation loss .after that place sauce pan with ingredients into the stove .start to heat ,and continuously stir the mixture with the spoon for better homogenous mixture . when it started to boil or evaporate the low the intensity of the fire ,then again increase fire of the stove .overall process take 15 to 20 minutes .when the mixture is going to thick enough ,then stoped the fire and remove the sauce pan from the stove.inn these way Milk suzi-100 can be prepared which contain 100kcal of energy of 100ml ,2.4g protein of 100ml.
For lactating women ,ICDDRB provide some nutrient rich food for producing breast milk in mother body's . We know that ,Lactating period is much crucial periods for mothers and baby as well. Because the RDA of a mother during lactating period is quite high than the pragnency .if a mother consume or intake highly nutritious food ,that helps to produce more nutrient rich breast milk that is so much important for every children . for this reason ICDDR,B provide some nutrient rich meal to lactating mother .

2.4.4: Kichuri

Ingredients	Amount
Rice	135g
Lentils+mung dhal (18+18)	36g
Egg, Whole	50g
Oil edible	30g
Potato,chopped	40g
Onion ,chopped	40g
Spice per taste	
After cooked volume	1000g

2.5:Calorie Calculation :

Patient name: Zisan

Age: 5months 8days

Weight : 6kg

Suggesting diet : Milk suzi(Lactose free)

Now Calculate his Calorie requirement

As Zisan suffering from marasmus diseases .so we have to provide him 10ml of milk suzi per his body weight .as his body weight is 6kg so the amount of milk suzi that he needs =6x10=60ml of milk suzi in each meal after evevry two hours

As we give him each meal after two hours so we have to provide 12timea in a day.

So the full day the meal requirement is =12x60=720 ml for whole day

The dietary fluid volume = 720ml/day/6kg of body weight =120 ml/kg/day

Now thw calorie comes from milk suzi is 67kcal in 100ml

So I ml of milk suzi contain 0.67kcal

So the 720ml of milk suzi contain =720x0.67=482kcal

So the total calorie requirement for zisan is =482/6=80.4kcal/kg/day

So zisan's total calorie requirement is 80.4kcal per kg of his body weight per day .

All the diet is given to the patient depending on their complications.if any patient suffer from marasmus then dietitian provide them 10ml/kg of patient's body weight of 100ml fluid solution

For example if the patient's weight is 9kg ,then should provide them (10x9)=90ml of fluid which is provided after each 2hrs

If any patients suffer from kwashiorkor or marasmic-kwashiorkor then they provide the patient 9ml/kg of body weight of 100ml of milk suzi or milk fluid

For example if the patient's weight is 9kg ,then should provide them (9x9)=81 ml of fluid which is provided after each 2hrs

Dietitian should be given 1st class protein which comes from animal sources .if any patient consume protein from plant sources which is called non essential amino acid is kind of harmful for human body if consume excessively .because if any patient consume too much protein from plant sources ,our body can not utilize all the protein from plant sources ,some proteins are remaining in our body which are produces urea ,creatinine in our body which is very harmful for our body .because it affects our heart . kidney etc. we every patient should consume or intake 1st class protein which come from animal sources like lysine ,tryptophan, histidene , arginine etc

Chapter 3

Persistent Diarrhea:

3.0 Persistent Diarrhea :

Diarrhea is a digestive condition that causes loose or watery stools. Many people in the world experience diarrhea at some point. These bouts are often called acute and it resolves in a couple of days with no complications. Other people, live with diarrhea that persists for more than two to four weeks(At least 14 days). This is called chronic diarrhea or persistent diarrhea .

Acute, or short-term, diarrhea usually isn't serious like chronic . But chronic diarrhea loose, watery stools can lead to problems if left untreated. So it's important to understand the cause of this type of diarrhea and treat any underlying ocondition.Too much wateris secret from the body which causes severe dehydration in the body .if it is continue without proper treatment then it causes death .

3.0.1:Symptoms of persistent diarrhea

The main symptom of persistent diarrhea is loose or watery stools that persist for weeks. These stools may or may not be accompanied by a sense of urgency. You may have other symptoms as well, such as:

- abdominal cramps
- bloating
- nausea
- Dehydration
- Hypokalmia
- Cold skin
- Fever
- Inability to drink
- Dysponea
- Abdominal distension
- Leathery or drowsiness
- Severe malnutrition
- Hypothermia
- Presence of systematic infections etc

3.0.2:What are the Causes of Persistent Diarrhea and Malabsorption?

Diarrhea lasting more than fourteen days can be caused by a number of different problems, including:

- Celiac disease (an allergy to protein in wheat, rye and barley)
- Enzyme deficiencies (like lactose intolerance)
- Toddler's diarrhea
- Infection (parasites such as Giardia, Cryptosporidium)

- Food allergy
- Pancreatic disorders (like cystic fibrosis, pancreatic insufficiency)
- Inflammatory bowel disease (Crohn's disease, ulcerative colitis)
- Too much laxative intake
- After-infection (after an acute diarrhea episode, diarrhea may continue for weeks)
- Other medical conditions (such as overactive thyroid)

3.0.3:How can we Persistent Diarrhea and Malabsorption beTreated?

Treatment for the persistent diarrhea is based on the underlying cause of the diarrhea or malabsorption, and it may include specific medications or the avoidance of certain foods. Contact your child's physician before beginning any anti-diarrhea medicine.

If any patients suffer from diarrhea for up 14days ,then we consider it as persistent diarrhea .i show so many sign and symptoms of persistent diarrhea above this page .

Now I am going to describe about diet for persistent diarrhea patients .

There are mainly 4 kinds of diet which are given to the persistent diarrhea patients .

1.Milk based diet(Low lactose)

2.Rice based diet (lactose and sucrose free)

3.Chicken based diet (lactose ,sucrose ,maltose free) or soybean based diet

3.1: Preparation of diet for the persistent diarrheal patients :

3.1.1:Modified infant milk formula (<6months age group)

Modified infant milk formula (<6months age group)	amount
Whole milk	60g
sugar	50g
Edible oil	20g
magnesium	0.5g
Potassium chloride Calcium carbonate	1g 2g
water	Upto 1000ml

3.1.2:Milk suzi(>6months age group)

Milk suzi(>6months age group)	Amount
Whole milk Rice powder	40g 40g
sugar	25g
Edible oil	25g
Magnesium chloride	0.5g
Potassium chloride	1g
Calcium carbonate	2g
Water	Upto 1000ml

3.1.3:¾ strength rice suzi/liter

¾ strength rice suzi/liter	Full strength rice suzi/liter
Rice powder	40g
Edible oil	25g
Egg white	100g
Glucose	30g
Salt	1g
Potassium chloride	1g
Magnesium chloride	0.5g
Calcium carbonate	2g
After cook volume	1000ml

3.1.4:Full strength rice suzi/liter

Full strength rice suzi/liter	Amount
Rice powder	60g
Edible oil	30g
Egg white	100g
Glucose	35g
Salt	1g
Potassium chloride	1g
Magnesium chloride	0.5g

Calcium carbonate	2g
After cook volume	1000ml

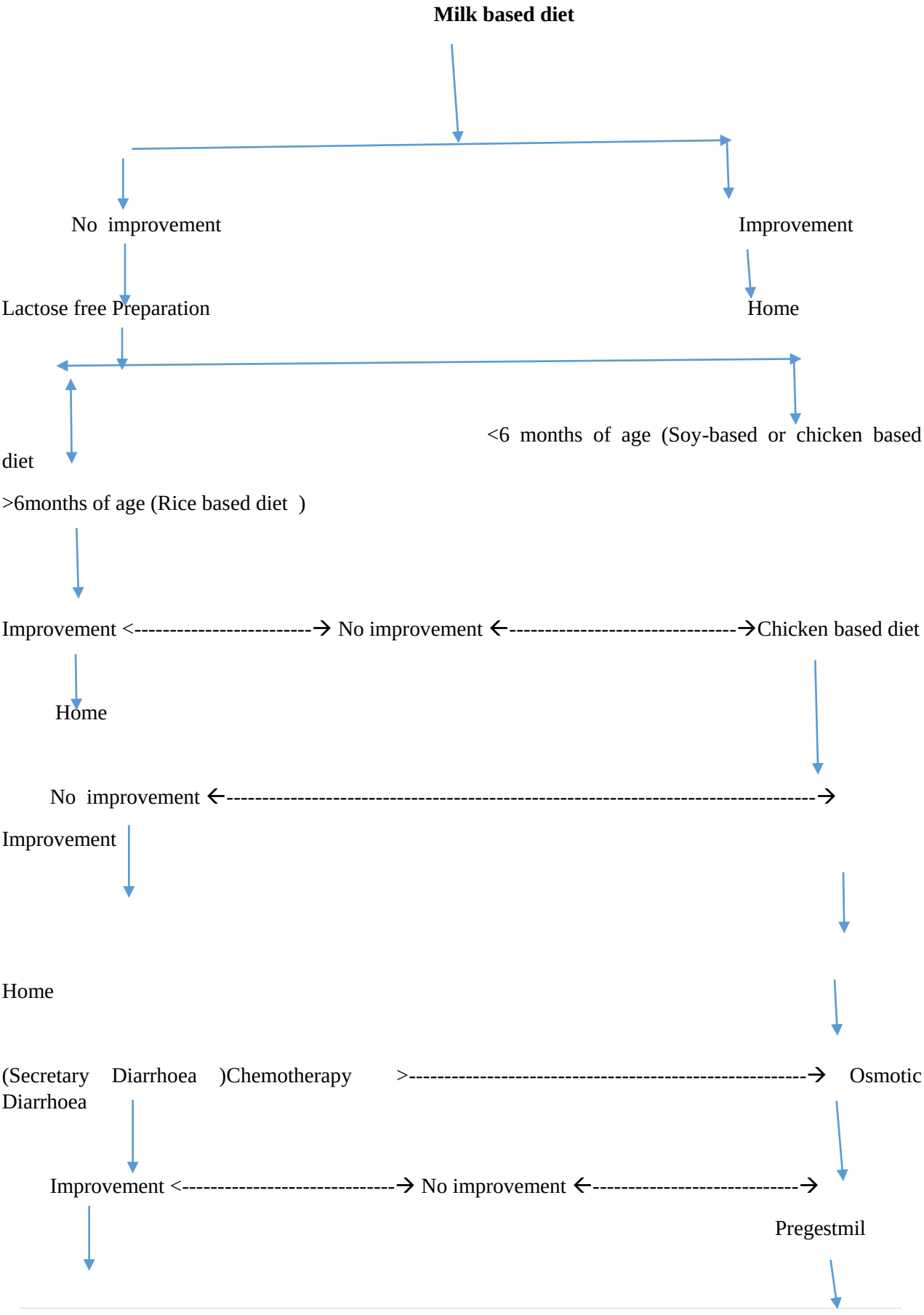
3.1.5:¾ strength comminuted chicken

¾ strength comminuted chicken	amount
Chicken ,minced	150g
Edible oil	20g
glucose	30g
onion	10g
salt	1g
Magnesium chloride	0.5g
Potassium chloride	1g
Calcium carbonate	2g
After –cooked volume	1000ml

3.1.6:Full strength comminuted chicken

Full strength comminuted chicken	amount
Chicken ,minced	180g
Edible oil	30g
glucose	35g
onion	10g
salt	1g
Magnesium chloride	0.5g
Potassium chloride	1g
Calcium carbonate	2g
After –cooked volume	1000ml

3.1.7:Dietary Manipulation



Home No improvement

Total parental nutrition

This is dietary manipulation .if we see it we are able to know that ,All the patient whose age is under 6 months ,dietitian provide the patient milk based diet that is low lactose formulae .if there is no changes of patient's health condition after 3 to 4 days then dietitian provide them Rice based suzi that is so much effective diet among the all diet.because research has been said that ,85% of the patient get recover soon by consuming or intaking tis rice based diet .But if any patient's health conditions doesn't improve after consuming this diet for 3-4 days .then dietitian provide chicken based diet which mainly protein based diet .more over if any patient still doesn't improve his or sickness then they provide pregistmill to this kind pf patient where all the macronutrient are in their end products from like Carbohydarte in Glucose form ,Protein in Amino acid form, and fat in fatty acid and glycerol form .If any patient stiil doesn't recover ,then the final step is TPN (total parental nutrition) by which all the macro and micro nutrient are given into the patient's vein through the IV.they can also provide the nutrient rich fluid through NG.

Before providing any diet to patient ,dietitian and health worker take the patient's diet history .for taking a past diet history ,we have to prepare a proper questionnaire by which we are able to know the patient's past diet history . now I am going to describe how a dietitian or health workers take the patient's past diet history .

1.Name

2.Date of Birth

3.height

4.weight

5.Weight for Age z score

6.height for age z score

7.Patient's diet history before diarrhea

9.Patient's diet history during diarrhea diseases

10.lactating Mother's diet history before diarrhea diseases

11.Lactating mother's diet history during diarrhea diseases

12.Parent's economic conditions

13. Duration of diarrhea. etc

These all are the matter of assessment for knowing about the patient's present conditions .A dietitian or health worker must assess these factors to provide the patient proper diet and proper medicine as well

3.2 Oral Dehydration saline :

1.Glucose ORS (reduced osmolarity)/liter

Ingredient	Amount
Glucose	13.5g

Sodium chloride	2.6
Trisodium citrate	2.9
Potassium chloride	2.5
Total osmolarity	245mosm/liter

3.2.2.Rice ORS(Reduced osmolarity)/liter :

Ingredient	Amount
Rice	50g
Sodium chloride	2.6g
Trisodium citrate	2.9g
Potassium chloride	2.5
Total os-molarity	170mosm/liter

Preparation of RICE ORS:

1. One liter water to betaken on a pot or saucepan
2. Then added 50ml more water for cooking loss
3. Now cut down the both packets and to pour into saucepan or in the pot
4. Afterrt that mix thoroughly and cook to make it solution ,it requires 1 minute whwn bubbles come out
5. 5.stirring continuously
6. Now the solution is ready to serve
7. Solution can be kept for 6hrs in room temperature during summer season and 8 hrs in winter season

Shelf life of the RICE ORS packet :1.Two month in rainy season

2.Three months in dry season

3.2.3:Different Cereal based ORS Studied in ICDDR,B:

Ingredients	Amount
Rice	50g/liter
MAIZE	60g/liter
MILLET	60mg/liter
SORGHUM	60g/liter

WHEAT	60g/liter
POTATO	200g/liter
GN.PLANTAIN	250g/liter

These all saline are suggested by the doctors and health workers of the ICDDR,B .when a patient get discharge from the hospital.then the heath workers ,dietitian train the mother of the patient how to make this Oral saline practically .They demonstrate to mother how to measure ,how many times add ingredient ,for how long heat is given .mother learn this lesson form the dietitian very sincerely to know how to prepare this kind of saline .without this mother also learn how to make milk suzi, kichuri ,halwa that are needed for the baby even after diarrhea .Dietetian provide some medicine ,oral saline fully free of cost so that mother can feed their child when they will be in their home .some measuring cup is given by the icddr,b that helps all the mother catch the knowledge about the ingredients measurement .

TRAIN THE MOTHERS:as we all know saline is very much important for every patient who are suffering from diarrheal diseases .so icddr,b provides some training to the all mothers to teach them how to prepare these saline or the other diet .how they train them:

1.fist of all they call the mothers in their diet room

2.then introduce them all the ingredient which are needed to make the diet

3.after that the dietitian said them which ingredient is required in which portion or amount

4.after that the dietitian provide a transparent plastic mug that is used as a measuring cup so that mother will not face any problem to measure the ingredient .

5.dietitian measure all the ingredients by using their weighing scale place them into the mug and mark them with a permanent marker .that help the mothers to know which point indicates which amount .

6.and finally teach them how to cook .how many times bubbles should come out, when the heat should be stopped etc.

7.And also said them how many meal they should provide their child in a whole day .

Chapter 4
Breastfeeding Counselling

4.1 :Breastfeeding department

As we know what is breast milk , and its importance .Breast milk is the milk that is produced in breast of female which is very essential for every child new born bay .because all the nutrient that are required for baby are remain in mother's breastmilk. Easch and every food is harmful form child who is under 6month of age except the mother's breast milk . so we can think tat how important the breast milk for her baby .

4.1.1:Three types of breastmilk. These are:

- **Colostrum is the milk that is look like yellowish breastmilk that is produced for first 3 to 4days after baby's birth after this normal lactation is begin. This milk is especially rich in nutrients and antibodies. Antibody helps body to protect from disease and pathogen. Therefore, it is highly recommended that to introduce and feed breastmilk with newborn baby as much as possible.the baby's who is deprive of drinking colostrum mil is suffering from many complications in the long run .**
- **Foremilk is the milk that is first drawn during a feeding. Normally it is thin and lower in fat. It helps a baby to satisfying thirst and liquid needs.**
- **Hindmilk is the milk, which follows foremilk during a feeding. This milk provide high calorie and rich in fat. This fat and calorie is helpful for health growth and development.**

Different types of Infant feeding :

1.Exclusive breast feeding

2.Predominant Breastfeeding

3. Partial Feeding

4.Bottle feeding

1.Exclusive breast :Means giving a baby only breast milk .must not give any other liquid or solid .Not even water .But drops or syrups consisting of vitamin and minerals supplement or medicine are permitted

2.Predominant breastfeeding : means Breast feeding a baby but also giving small amount of water base drinks such as juice and honey or other liquid staffs etc

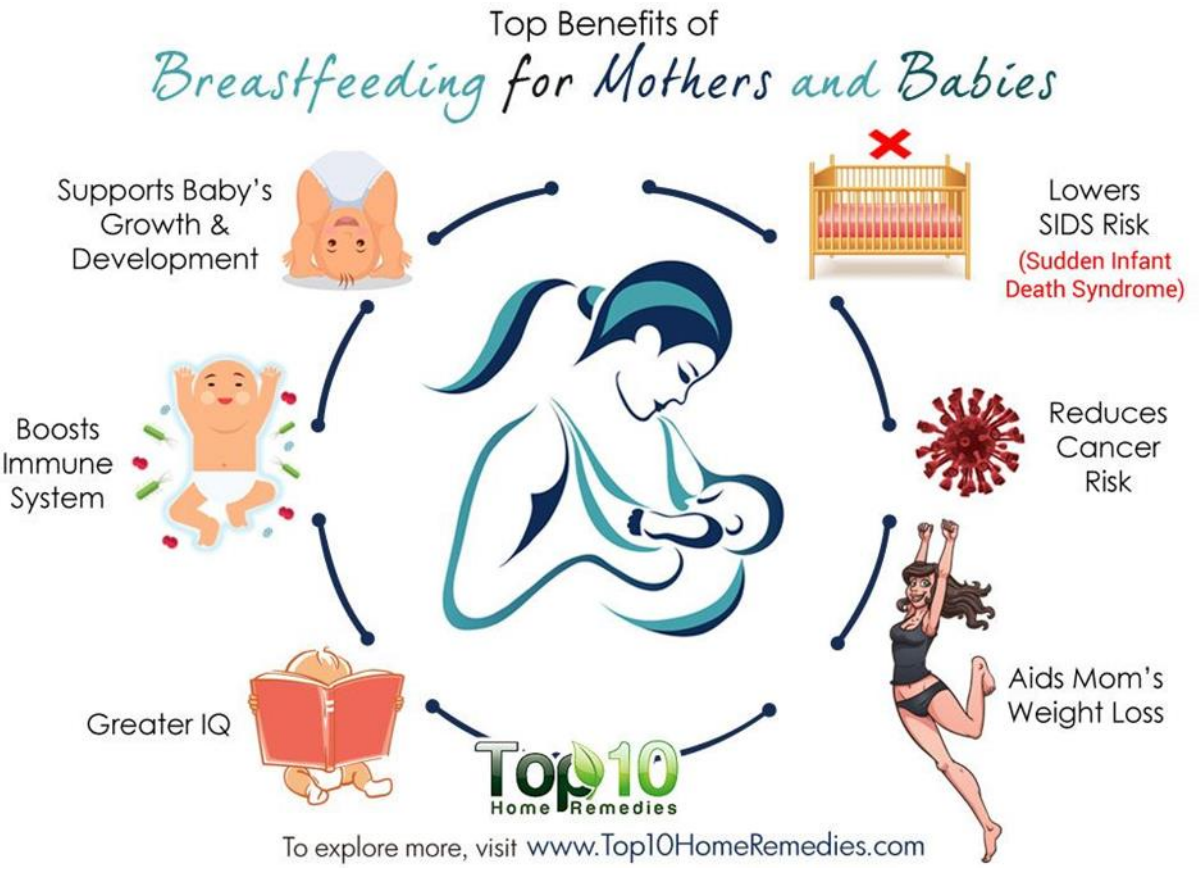
3.Partial Feeding :means giving a baby some breast feed and some artificial feeds either milk or cereals or other food staff

4.Bottle feeding : Means Feeding a baby from the bottle .Whatever is in the bottle including express breast milk. This kind of bottle feeding are highly bad for any infant for several reasons .

4.1.2:Importance of breast milk:

***exclusive** means 100% breastmilk, no water, no solid food, nothing else.

4.1.3: Why breast milk is essential :



Without these :

1.bulding up relation btween mother and baby

2.strong the disease prevention ability

3.Prevention diarrhea

4.prevention asthma

5.prevention of diabetes and so on

4.1.4 Disadvantages Of artificial feeding :

1.Interfeing with bonding

2.More diarrhea and persistent diarrhea

3.More frequent respiratory infections

4.Malnutrition

5.Obesity

6.Lower score on IQ test

7.Mother may become may pregnant sooner

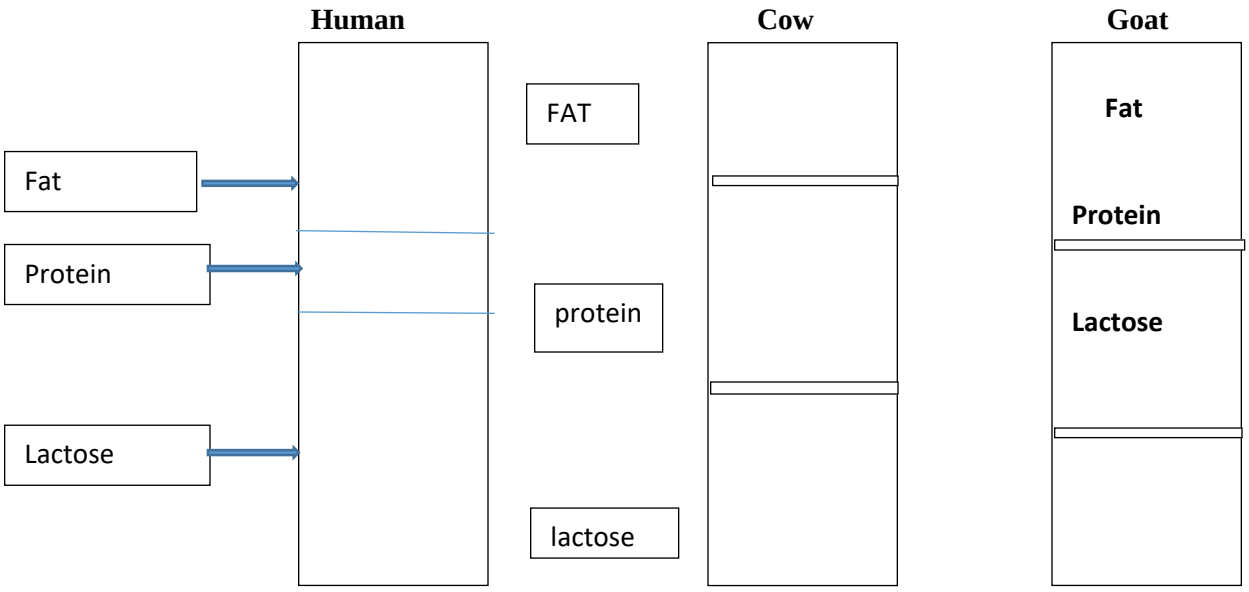
8.ovarian cancer

9.Brest cancer

10.Allergy and milk intolerance

11.Developing eczema

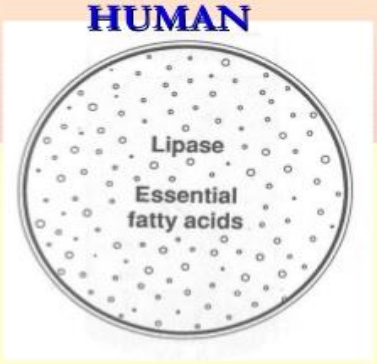
4.1.5 :Composition of Human, Cow and Goat milk



Fats of Human Milk vs Cow's Milk .

Differences in the Fats of Different Milks

HUMAN

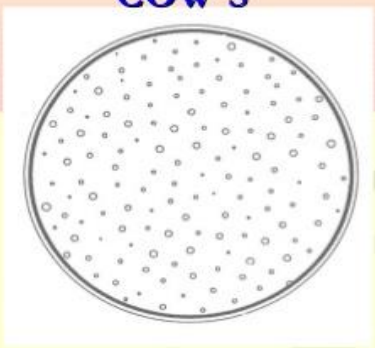


Contains

Essential Fatty Acids,

Enzyme Lipase

COW`S

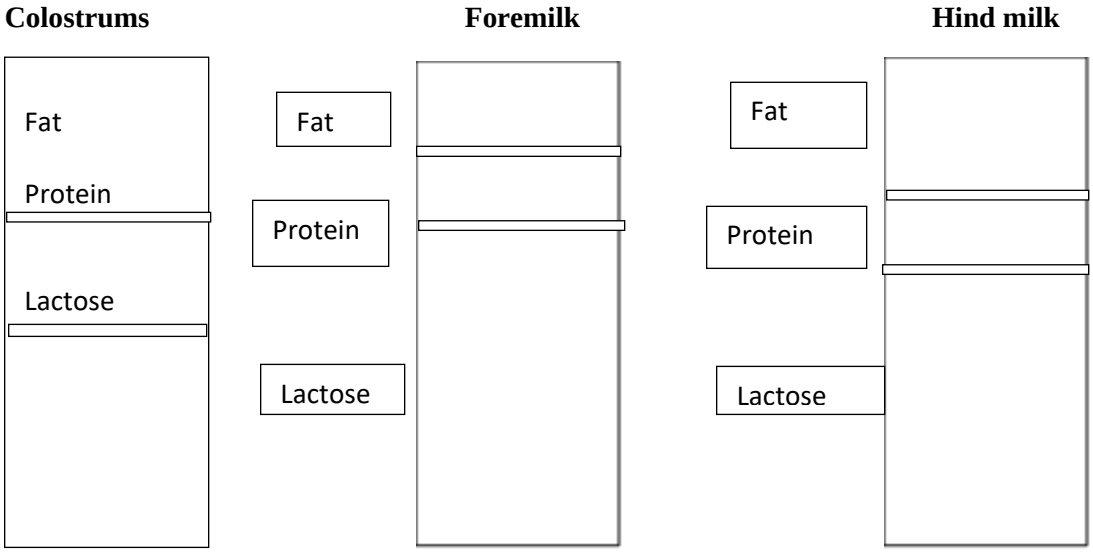


Contains

No Essential Fatty Acids

No Enzyme Lipase

Differences between colostrums and mature milk



Why Breastmilk is so important ?

4.2: Counseling

Counselling is the way of working with the people in which we try to understand how they feel and help them to decide or make them best that what they think is best to do in their situation

Listening and Learning Skills :

1.We should keep our head level so that mother can create a comfort zone with us

2.we should pay attention

3.we should remove barriers First

4.we should take time touch properly

5.We ask open question

6.we should reflect back what the mother says

7.we make them understand that we feel their feeling or situation

8.we must avoid word which sounds like judging

Building Confidence and giving support

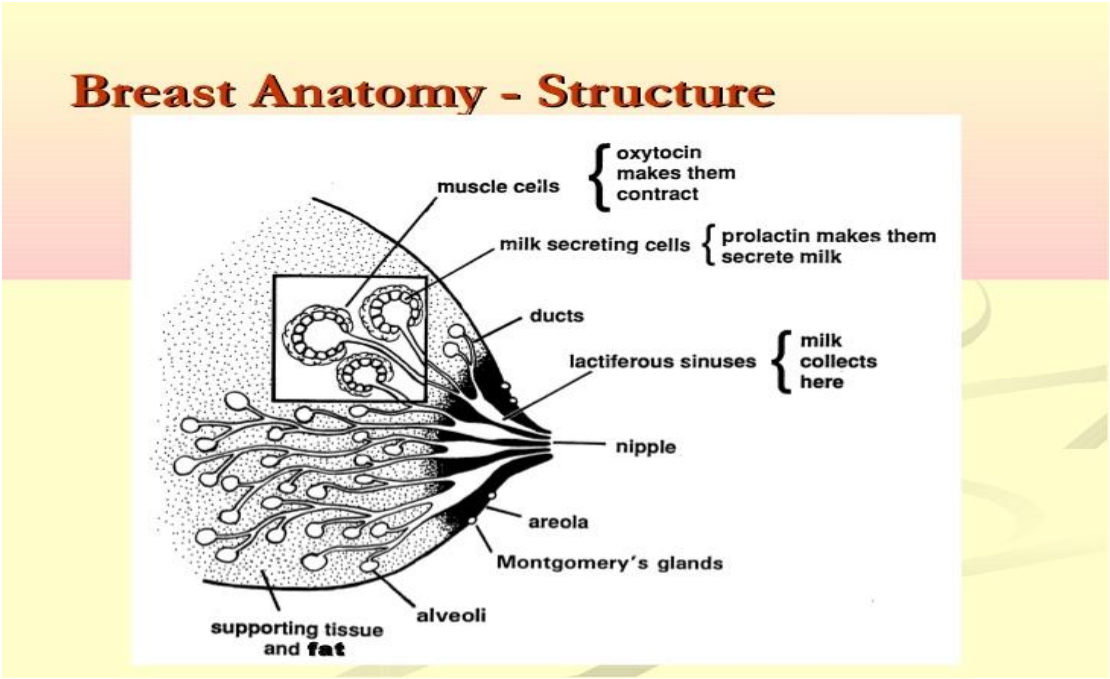
1.First thing first we should accept what a mother thinks and feels

2.we must recognize and praise what a mother and baby are doing right

3.we should give practical help

4.we must not use hard language

4.2.1:Anatomy Of Breast milk :



BDHS data of of 2014

Exclusive breast feeding (<6months)	**55%**
Breastfed within one hour after birth	**51%**

PRBF of Bangladeshi children receive a pre-lacteal feed	**27%**
Breast feeding for 1 year	**96%**
BF for 2years	**87%**
Clostrum feeding (CF) within 6-23 months	**23%**

Key Points Of Position :

Positioning is very important for a baby .because Proper position make the baby to drink more breast milk from the mother

1.Baby's whole body almost facing his or her mother and his or her nose opposite of mother breast's nipple

2.Keep that in mind baby's body must close to mother

3.Baby's head and body in a straight line

4.Mother support baby's bottom for first few month.

4.2.1: Re-lactation :

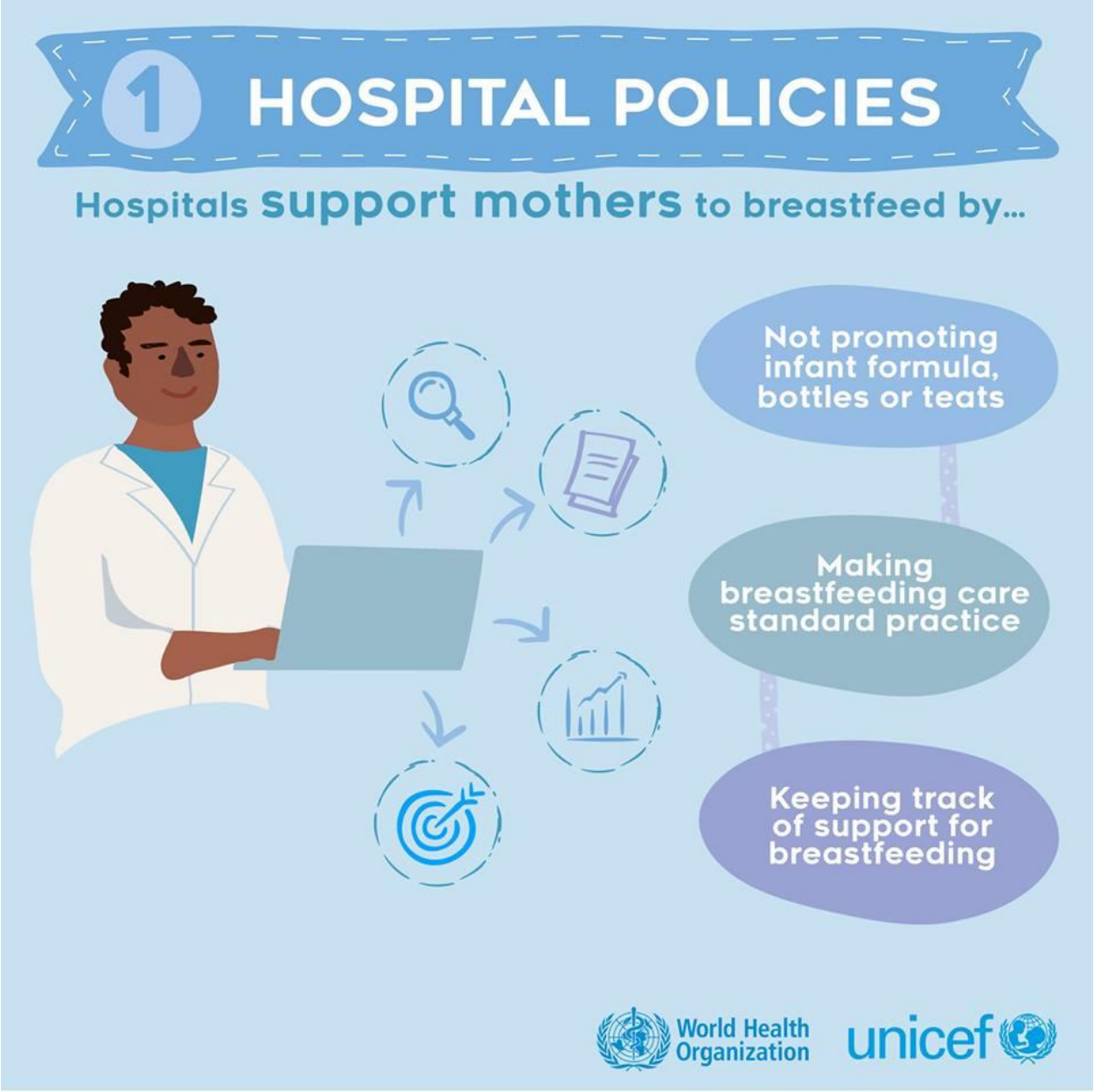
If a mother stopped breast feeding .but she again wats to start breastfeeding ,then this is called relactation .Relactation is very difficult and ittaked longer time for counselling .the mother must be well motivated and need a lot of support to succeed .

Re-lactation rate at Dhaka Hospital 2016 and 2017

Breast Feeding status	2016				2017			
	Admission	Discharge			admission	Discharge		
		PTBF	EBF	NBF		PTBF	EBF	NBF
NBF	110	95	04	11	81	65	01	16

4.3 Ten Steps to Successful Breastfeeding

1st step: every health care must have a written policy that is routinely communicated to all



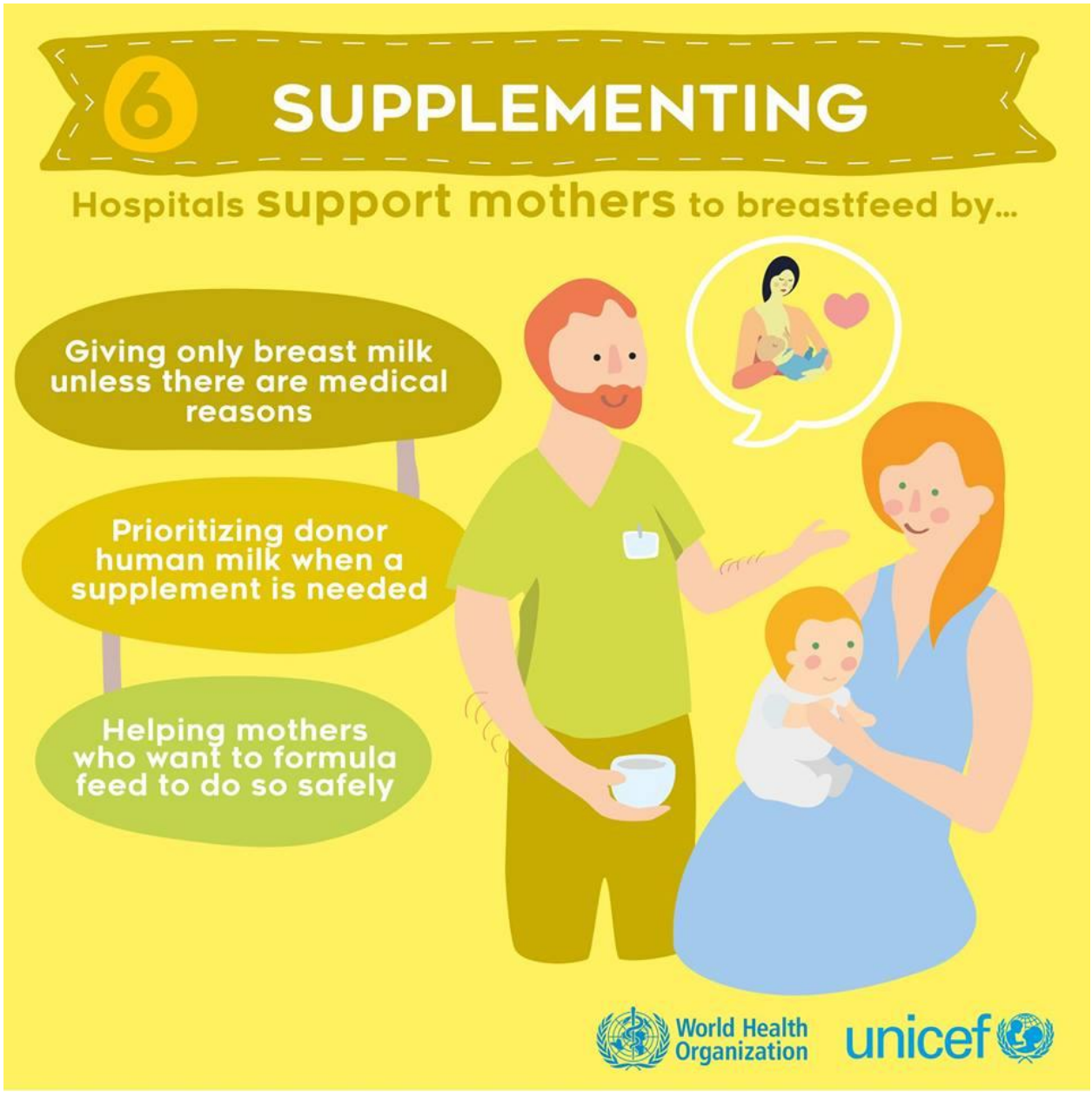
2nd step: all the health care staff must be wel trained so that they can execute the policy properly .

3rd step:health worker must inform all the pregnant woment about the benefits and management of breast feeding .

4th step:must help mother initiate breastfeeding within half an hour of birth

5th step : must show the mother how to breast feed , how to maintain the lactation even if they are separated from their children .

6th step:never give any kindof food or drink to the new born baby other than only breastmilk,unless medically indicated .



7th step : Practise rooming-in - that is, allow mothers and infants to remain together - 24 hours a day.

8th step: should be encouraged breastfeeding on demand

9th step : must not give any kind of artificial teats or pacifiers to breastfeeding infants

10th step: Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic

Chapter 5
Case Study

5.1:A Case History

Sheema's mother died when she she was born. She born with a so many child birth complications . Her father re-married after her mother had died, and thereafter her aunt started to look after her. Lack of proper care and repeated bouts of diarrhoea made her malnourished. When she was 2 years old, she became very ill and was admitted by her aunt to the Dhaka hospital of ICDDR,B. She was suffering from profound malnutrition, pneumonia, and diarrhoea. As soon as her pneumonia and diarrhoea improved, Sheema was sent in the Nutrition Rehabilitation Unit by the doctors where nutritional rehabilitation was started using local, low-cost diets which was very needed for shema . She recovered from the state of acute malnutrition and was discharged after five weeks. Her aunt was responsive to the health and nutrition education provided to her while she stayed with Sheema in the NRU. She brought Sheema to the Nutrition Follow-up Unit, which proved to be rewarding. At the end of follow-up stage after five 5 months, Sheema was a normal, healthy child. There so many shema are admitted in the ICDDR,B who are getting their normal life again because of the ICDDR,B.Indeed millions of life are saved in each year because of ICDDR,B treatment .Shema is one of the best example .

5.2: A case that was handled by us :

We monitored a patient who was admitted in icddr,b because of his serious diarrheal illness .now I am going describe about this case .

1Name: Zisan

2.ID: P-1364829

3.Dateof birth : 9th august -2017

4.z score (WL) = -2.57

5.Z score (WA)= -2.88

6.Height = 72.3cm

7.weight =7.92kg

8.Complication : Diarrhea

9.sign and symptoms : watery stool and vomiting and fever as well

10.prescribed diet ; Kichuri ,rice and milk suzi

11.adimitted in hospital last 7days

12 improvement : gaining some weight rather than past

Taking history before diarrhea and his family background too:

Zisan used to eat poor diet in his family because of his socio economic conditions ,his fater and mother works in garments .he always used to eat mashed potato ,kichuri etc.one or two times eat fish in a whole week or even ina month .after asking his mother she told us that because of her work pressure she was not able to feed her boy in time .she also was not able to breastfed her boy in on time when her boy's age was under 6 month .now she stopped giving her baby breast milk when her boy's age is 1year 6 months .aftertaking all the history we are able to understand that the poor diet pattern and zisan's family socio economic conditions is not better .and his mom's bad decision about the stop giving breast milk to his baby .these are the main reason for zisan's diarrhea .

Chapter 5

Conclusion

6.0 conclusion

This training at ICDDRB was well organized as well as helpful. I felt that I was benefited with the knowledge received symptoms about severe diarrhoea and severe malnutrition and therapeutic diet , breastfeeding counselling and re-lactation
.preparation of diets for malnourished children and diarrheal patient .this trainings was a great opportunity for me to learn about nutritional situation at ICDDRB in Bangladesh and South Asia .