



**Daffodil**  
*International*  
**University**

**Internship Report**  
**on**  
**Fellowship Training and Field Experience on**  
**Nutrition and Health**

***Submitted To***

**Dr. Md. Bellal Hossain**

Professor & Head

Department of Nutrition & Food Engineering

Faculty of Allied Health Sciences

Daffodil International University

***Submitted By***

**Barsha Sarker Nipa**

ID - 151-34-340

Department of Nutrition & Food Engineering

Daffodil International University

***Date of Submission***

**December 18, 2018**

## **LETTER OF TRANSMITTAL**

December 18, 2018

Dr. Md. Bellal Hossain

Professor & Head

Department of Nutrition and Food Engineering

Faculty of Allied Health Sciences

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,

Barsha Sarker Nipa

ID: 151-34-340

## **Letter of Authorization**

December 18, 2018  
Dr. Md. Bellal Hossain  
Professor & Head  
Department of Nutrition and Food Engineering  
Faculty of Allied Health Sciences  
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 fulfill my other course related nor it will be submitted to any other person in future.

Yours Sincerely,  
Barsha Sarker Nipa  
ID: 151-34-340

## Approval Certification

This is to certify that Barsha Sarker Nipa bearing ID: 151-34-340, 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 program of two weeks in icddr,b Mohakhali, Dhaka-1206, on Fellowship Training and Field Experience on Nutrition and Health and completed this report on November 18, 2018 under my direct report is a worth of fulfilling the partial requirements of NFE program.

Dr. Md. Bellal Hossain  
Professor & Head  
Department of Nutrition and Food Engineering  
Faculty of Allied Health Sciences  
Daffodil International University  
Dhaka.

*Fouzia Akter*  
18-12-18

Fouzia Akter  
Senior lecturer  
Supervisor  
Department of Nutrition and Food Engineering  
Faculty of Allied Health Sciences  
Daffodil International University  
Dhaka

## **Approval Certification**

This is to certify that Barsha Sarker Nipa, ID-151-34-340, 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 program of two weeks in icddr,b Mohakhali, Dhaka-1206, on Fellowship Training and Field Experience on Nutrition and Health and completed this report on November 18, 2018 under my direct report is a worth of fulfilling the partial requirements of NFE program.

**Dr Tahmeed Ahmed**

Senior Director,  
Nutrition and Clinical Services,  
icddr,b  
Mohakhali, Dhaka-1206.

## Fellowship Training and Field Experience on Nutrition and Health



## Table of Contents

<b>SL.No.</b>	<b>Topic</b>	<b>Page No.</b>
<b>1.0</b>	Introduction	1
<b>2.0</b>	Acknowledgement	2
<b>3.0</b>	icddr,b at a glance	3
<b>4.0</b>	What is nutrition and food?	4
<b>5.0</b>	What is malnutrition?	4-5
<b>6.0</b>	What is diarrhoea	5
<b>7.0</b>	Assessment of nutritional status in anthropometric techniques	5-8
<b>8.0</b>	Management of acute malnutrition in under-5 children	8-22
<b>9.0</b>	Breast feeding counselling	22-25
<b>10.0</b>	Re-lactation technique	26
<b>11.0</b>	Conclusion	26-27

## **1.0 Introduction**

Diarrhea and Malnutrition is estimated to be an 'underlying cause' of about 60% of childhood deaths. Bangladesh is one of the country that most of the children suffer from malnutrition. We studied diarrheal disease risk and malnutrition among under 5 year's children in ICDDR, B at Dhaka, Bangladesh. Diarrhoea disease is most dangerous for young children specially children under 5 years which cause a large no of nutritional losses. Children who belong low income family are suffer from dehydration and malnutrition mostly. Icddr,b plays a major role to reduce the rate of malnutrition. The invention of oral rehydration solution of icddr,b have save more than 50% of children mortality in Bangladesh. They also work for acute malnutrition and provide different type of therapeutic diet with low cost for the children to improve their nutritional status which is helps to reduce the underweight, stunting etc. icddr,b notice that, children who do not get proper breast feeding have suffer from malnutrition more than children who get exclusive breast feeding. Icddr,b provide counseling session of the mother to increase the rate of breast feeding. The protocol of icddr,b has reduce the children mortality about 50% all over Bangladesh.



## **2.0 Acknowledgement**

All praises and gratitude to almighty, the most beneficent and the merciful who manages each and everything soundly and enables me to complete in this training.

I would like to thank and acknowledge rendered by *Dr Tahmeed Ahmed*, Senior Director, Nutrition and Clinical Services, icddr,b. I would like to thanks my honorable teacher Dr. Md Bellal Hossain, and Ms. Fouzia Akter who had given me the opportunity to attend this training program. This program will help me to build my bright future carrier. It is great pleasure to express my greatfull thanks to *Dr Md Iqbal Hossain, Head Child Malnutrition Unit, Dr Sayeeda Huqe, Clinical Lead, Nutrition Unit, Ms Anowara Haider, Senior Dietician, Ms Sajeda Perveen, Breast feeding Counsellor.*

The feeling during this training was really excellent and i enjoyed it. This could only be possible for generous contribution of all icddr,b people. My achievement during this training will definitely help me in my professional field. Thanks to all icddr,b employee for their friendly co-operation.

### **3.0 icddr,b, at a glance**

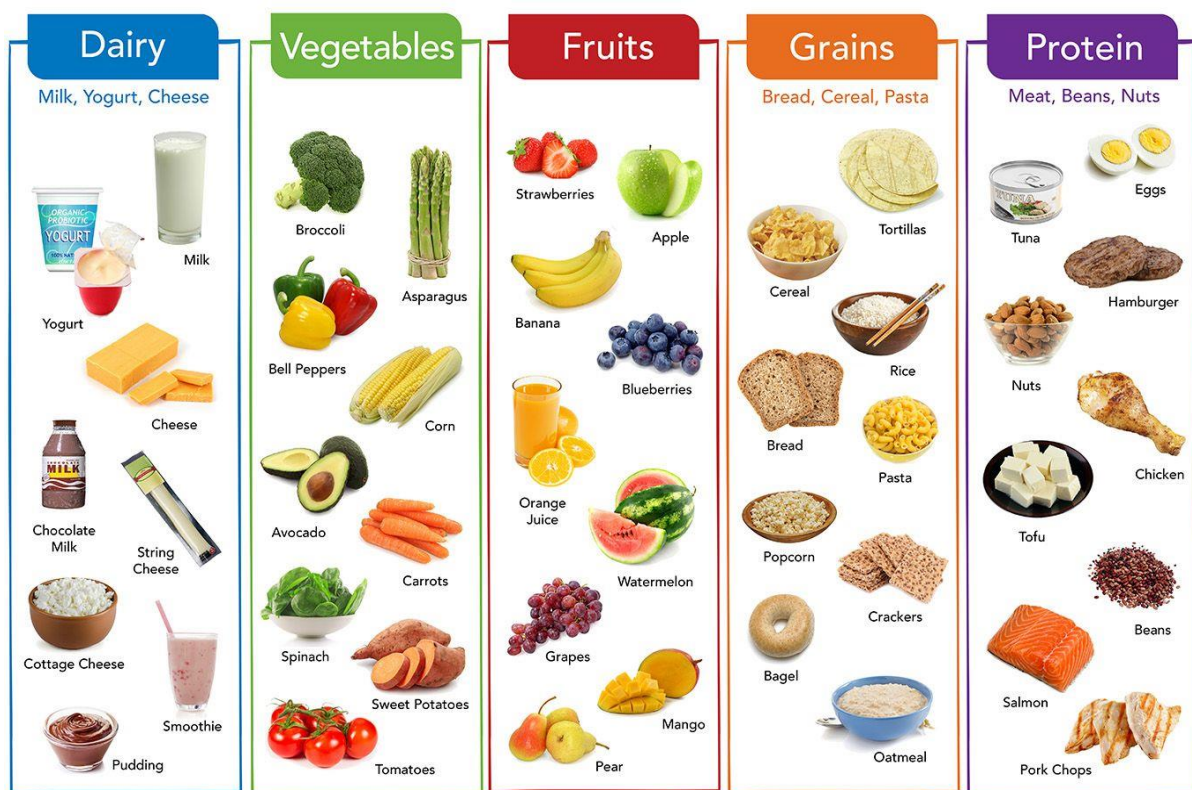
**International Centre for Diarrhoeal Disease Research, Bangladesh ( icddr,b)** is an international health research organization located in Mohakhali, Dhaka, Bangladesh. Icddr,b is an international organization which provide clinical services, training, research and free treatment. Their aim is to reduce the infectious disease and death rate as well as improve their nutritional status.

In 1960, icddr,b was established in Dhaka, Bangladesh. Now they have two hospital. The first one is located at Mohakhali and second one is at Latlab. At 1971 in Bangladesh, is was a difficult time for icddr,b but they continued their services for the public for this country. Sweden, Bangladesh, UK, USA, Canada are the main donor country of icddr,b.

Icddr,b is most popular for their non-profitable health services for diarrhoea disease, research and training .The main focus of icddr,b is on diarrhoea disease. They also work for maternal care and malnourished children. In Bangladesh more than 50% children are malnourished and suffer from different kind of infectious disease. Icddr,b with Bangladesh Government implemented nutrition project to make awareness about nutrition among public.

## 4.0 What is Nutrition and Food?

Nutrition is the process of getting nutrients from the foods that we eat. Normally, 80% of our daily energy and calorie come from fat and carbohydrates and 20% from protein containing foods. Food and nutrition are the way that we get fuels which are providing energy for our bodies. Maintaining key vitamins and minerals which are also important to maintain better health. Water, Fats, proteins, and carbohydrates are important component of nutrients. In malnourished condition all the nutrients are equally important. They may include protein, fat, carbohydrates, vitamin, minerals etc.



## 5.0 What is malnutrition?

Malnutrition is a condition that is caused by the lack of essential nutrient. Malnutrition is also caused by variety of diseases. According to WHO “malnutrition is the cellular imbalance between the supply of nutrient and energy and the body’s demand.

There are two types of malnutrition.

- Underweight malnutrition
- Over weight malnutrition



## **6.0 What is diarrhoea?**

Diarrhoea is defined as three or more liquid stool passing per day. During diarrhoea water and electrolytes (sodium, chloride, potassium and bicarbonate) are lost through liquid stools, vomit, sweat, urine. It called dehydration which is life threatening. Children who are malnourished are high risk of life threatening diarrhea.

**Types of diarrhea: There are three clinical types of diarrhea. They are**

- **Acute watery diarrhea (80% of cases)**
- **Dysentery (10% of cases)**
- **Persistent diarrhea ( 10% of cases)**

## **7.0 Assessment of nutritional status in anthropometric techniques**

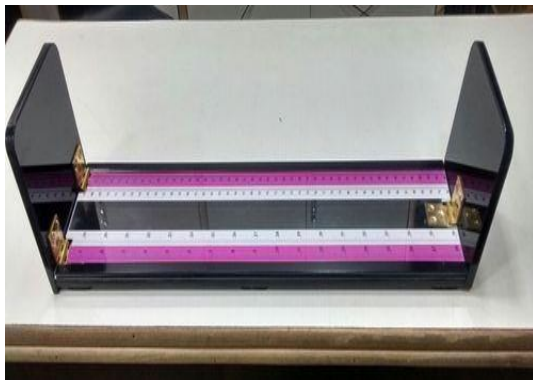
**Definition of anthropometry:** “Anthropos” means mans, “metrics” means measurement. Anthropometry means measurement of body weight and dimensions and the subsequent interpretation of the measurements of relation to appropriate reference data.

### **Building blocks of anthropometry:**

- Sex
- Age
- Weight
- Height or length
- MUAC, BMI

### **Length measurement technique:**

Up to 2 years of age and when the children is too ill to stand then recumbent length is measured to use an infantometer. Infant is placed in on infantometer. Mother or assistant are asked to keep the top of the head touching in the fixed vertically plank. Legs are fully extended to press the knee. Then record the length. For older children, use standing height machine.



**Infantometer**



**Standing Height Meter**

### **Weight measuring technique:**



**Salter and ad pan type weight machine is used for infants and young children**



**For adult and older children use foot type weight machine.**

**Measuring mid upper arm circumference (MUAC):**

MUAC is measured with a fiber glass or steel tape. Children are asked to sit with hanging the arm. It measured in left upper arm and a point is marked between shoulder and elbow. If it is <11.5cm it called severe acute malnutrition (SAM) and if 11.5-<12.5 cm this indicates moderate acute malnutrition (SAM).



**Body mass index (BMI):**

$$\text{BMI} = \frac{\text{weight in kg}}{(\text{height in m})^2}$$



**BMI ranges are underweight:**

- Under 18.5 kg/m<sup>2</sup>,
- Normal weight: 18.5 to 25,
- Overweight: 25 to 30,
- Obese: over 30.

**8.0 Management of acute malnutrition in under-5 children**

**Out patients department (OPD):** when the patients come to the hospital they first report to the outpatient department. A nurse measures the height and weight of the children. If the children are not stable condition for measurement, they immediately give them emergency treatment. During this period the children receive ORS from a nurse. In OPD, they demonstrate the preparation of ORS. They observe the stool frequency of the children there. In OPD, they also arrange a session of group health discussion. Many patients do not stay OPD more than 3-4 hours. Patients who have moderate to severe dehydration are admitted into “short stay unit” from OPD.

**Short stay unit:** A child who suffers from acute malnutrition is quickly referred to the hospital's ‘Short Stay Unit’. Before treating the child with severe acute malnutrition (SAM) they treat the diarrhoea and existing illness with moderate acute malnutrition (MAM). Some dehydration patients are also given oral rehydration solution (ORS) and severe dehydration patients give Intra venous (IV) saline. According to their nutritional condition, doctor suggests them therapeutic diet, medicine. In short stay unit they observed the children 2 days. During this 2 days if their status improves and diarrhoea is cured then discharged them. If their condition does not improve, shift them on longer stay unit.

**Longer stay Unit (LSU):** Generally malnourished children are admitted into LSU. Children with diarrhoea and severe malnutrition are kept at the unit. Weight for height and MUAC are measured to know if there is malnutrition in addition with diarrhoea.

Children whose MUAC is < 115mm, weight for height/length < -3z score they are admitted to LSU for severe acute malnutrition and diarrhoea.

Children are dividing into three categories according to the nutritional status

- Marasmus (weight for age <60%)
- Kwashiorkor (>60% and oedema)
- Marasmic kwashiorkor (<60% with oedema)

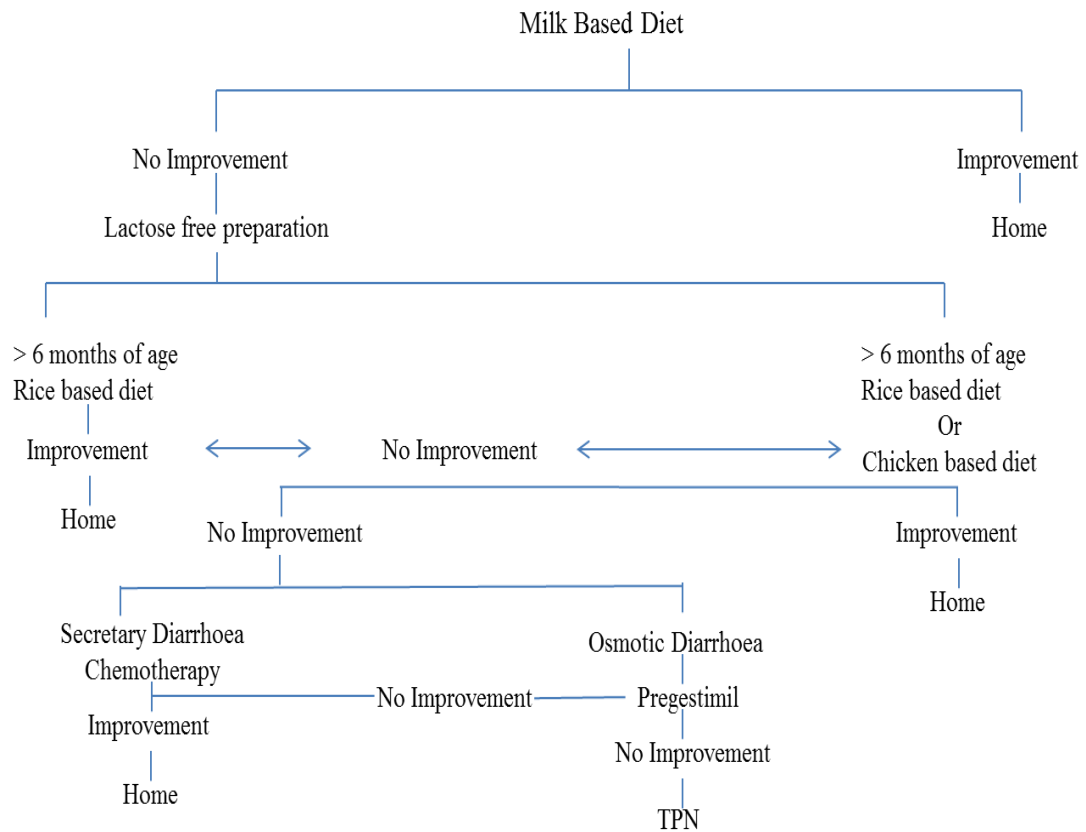
According to their nutritional status give those antibiotics, vitamin and mineral supplement and therapeutic diet. After admission immediately give those ORS and food. Every 2 hours later give them food. For marasmus and kwashiorkor patients suggest 10ml of food /kg body weight and for marasmic kwashiorkor suggest 9ml of food /kg body weight. Children who are severe malnourished give them IV saline. At first give the children milk based diet. For infant suggest infant formula and for older children suggest milk suji diet. If their condition improves with this diet then discharged them. If their condition not improves then suggest lactose free diet. For example:

- Rice based diet for > 6 months of age children.
- Soya based or chicken diet for <6 months of age children.

If the diarrhoea last 14 days and the child pass 3 or more stool per day this is called persistent diarrhoea. At longer stay unit, for persistent diarrhoea patient are given full strength rice suji diet. Patients height, weight, stool volume, stool color, stool consistency are measured every day. If their condition is not improved within 3 days then the nutritionist changes their diet and asked to follow this diet for 5-7 days. When they cure from diarrhoea and then send them to nutrition rehabilitation unit (NRU).



## Dietary manipulation for under 5 year's children at icddr, b



## Composition and Preparation of therapeutic diets (F-75, F-100, Low-lactose containing infant formula, Milk suji, Rice Suji, CC, Resomal, Khichuri and Halwa) for acute malnutrition and diarrheal diseases

### Composition of F-75 and F-100:

Ingredients	Need cooking	Does not need cooking	
	F-75	F-75	F-100
Dried Whole milk(g)/ Cow's milk(ml)	35/300	35/300	110/880
Rice powder (g)	35	-	-
Sugar (g)	70	100	50
Soya oil (g)	20	20	30
Mineral mix (ml)	20	20	20

Water to make (ml)	1000	1000	1000
Energy (kcal/100 ml)	75	75	100

**Composition of milk suji:**

<b>Ingredients</b>	<b>Milk suji</b>	<b>Milk suji 100</b>	<b>Modified infant formula</b>
Whole milk powder (g)	40	80	60
Rice powder (g)	40	50	
Sugar (g)	25	50	50
Soya oil (g)	25	25	20
MgCl <sub>2</sub> (g)	0.5	0.5	0.5
KCl (g)	1	1	1
Calcium carbonate (g)	2	0	2
After cooked volume	1000	1000	1000
Energy (kcal/100 ml)	67	100	68
Protein (g/100 ml)	1.4	2.6	1.5
PER %	8	10	9
FER %	47	40	47
Osmolality (mosm/L)	246		369

**Composition of rice suji:**

<b>Ingredients</b>	<b>Rice suji</b>
Rice powder (g)	60
Egg White (four)	100
Glucose (g)	35
Soya oil (ml)	30
MgCl <sub>2</sub> (g)	0.5

KCl (g)	1
Calcium carbonate (g)	2
Energy (kcal/100 ml)	70
Protein (g/100 ml)	1.9
PER %	10
FER %	47
Osmolality (mosm/L)	315

**Composition of community chicken:**

<b>Ingredients</b>	<b>Communitied Chicken</b>
Chicken minced (g)	180
Glucose (g)	35
Soya oil (g)	30
Onion (g)	20
Salt (g)	1
MgCl <sub>2</sub> (g)	0.5
KCl (g)	1
Calcium carbonate (g)	2
Energy (kcal/100 ml)	60
Protein (g/100 ml)	4.5
PER %	32
FER %	48
Osmolality (mosm/L)	272

### Recipe for Resomal:

Ingredient	Amount
Water (boiled & cooled)	850 ml
WHO-ORS	One 500 ml-packet
Sugar	20 gm
Electrolyte/mineral solution	16.5 ml

### Khichuri:



### Composition of khichuri :

Ingredient	Amount	Energy (Kcal)	Protein (g)
Rice	120 g	415	5
Lentil	60 g	206	15.6
Oil (soya)	70 ml	630	-
Potato	100 g	97	1.6
Pumpkin	100 g	25	1.4
Leafy vegetable	80 g	22	2
Onion	50 g	25	-

Spices	50 g	22	1
Water	1000 ml	-	-
Total weight of khichuri	1000 g	-	-
Total energy & protein / kg	-	1,442	29.6

### Preparation of khichuri:

- Rice, dal, oil, spices and water are added to a pot and boiled. 20 minutes later potatoes and pumpkins cut into pieces and spices are added in 5 minutes before when the rice is almost cooked. leafy vegetable in small pieces is added after clean. Then kept it covered during cooking. khichuri takes about 50 minutes to cook.
- Khichuri can be keep in room temperature for 6 hours. But the prepared diet will need be stored more than 2 hours should perfectly be kept in a refrigerator or reheated then allowed to cool before being served.
- This diet can keep in room temperature for 6 hours.

### Nutritional value of Khichuri:

Ingredients	Khichuri/100 gm
Energy (Kcal)	145
Protein/Energy ratio (%)	8
Fat/Energy ratio (%)	44.7
Total fat (g)	7.2
Total carbohydrate (g)	16.6
Total protein (g)	2.9

## Halwa:



### Compositon of halwa:

Ingredients	Amount	Energy (Kcal)	Protein (g)
Wheat flour (atta)	200 g	682	24
Lentil	100 g	343	26
Oil (soya)	100 ml	900	-
Molasses (brown sugar )	125 g	479	0.5
water	600 ml (to make a thick paste)	-	-
Total weight of halwa	1,000 g	-	-
Total energy & protein / kg	-	2,404	50.5

### Preparation of Halwa:

- At first soak the dal for 30 minutes and then crushed it.
- Atta is fried on a hot pan for few minutes.
- The atta, crushed dal and oil are mixed with water. Gur is melted and added to the mixture. It will help to make a thick halwa.

**Nutritional value of Halwa:**

<b>Ingredients</b>	<b>Halwa/100gm</b>
Energy (Kcal)	240
Protein/Energy ratio (%)	8
Fat/Energy ratio (%)	38.6
Total fat (g)	10.3
Total carbohydrate (g)	32.6
Total protein (g)	4.8

**Lactose free infant formula:**

<b>% Strength Rice Suji/Litre</b>	<b>Amount</b>	<b>Full strength Rice Suji/Litre</b>	<b>Amount</b>
Rice powder	40 g	Rice powder	60 g
Egg white	100 g	Egg white	100 g
Oil edible	25 g	Oil edible	30 ml
Glucose	30 g	Glucose	35 g
Salt	1 g	Salt	1 g
KCl	1 g	KCl	1 g
MgCl <sub>2</sub>	0.5 g	MgCl <sub>2</sub>	0.5 g
CaCl <sub>2</sub>	2 g	CaCl <sub>2</sub>	2 g
After cooked volume	1000 ml	After cooked volume	1000 ml
Energy	57 kcal/100 ml	Energy	70 kcal/100 ml

Protein	1.9 g/100 ml	Protein	2.1 g/100 ml
Osmolarity	296 mosm/L	Osmolarity	315 mosm/L
PER	13%	PER	12%
FER	40%	FER	39%

**Low Lactose Formula for Persistent Diarrheal Patient:**

<b>Modified Infant formula/Litre (&lt;6 months age group)</b>	<b>Amount</b>	<b>Milk Suji/Litre (&lt;6 months age group)</b>	<b>Amount</b>
Whole milk powder	60 g	Whole milk powder	40 g
Sugar	100 g	Sugar	25 g
-		Rice powder	40 g
Oil edible	20 g	Oil edible	25 g
KCl	1 g	KCl	1 g
MgCl <sub>2</sub>	0.5 g	MgCl <sub>2</sub>	0.5 g
CaCl <sub>2</sub>	2 g	CaCl <sub>2</sub>	2 g
After cooked volume	1000 ml	After cooked volume	1000 ml
Energy	68 kcal/100 ml	Energy	67 kcal/100 ml
Protein	1.5 g/100 ml	Protein	1.3 g/100 ml
Osmolarity	369 mosm/L	Osmolarity	246 mosm/L
PER	9%	PER	8%
FER	47%	FER	48%



**Oral rehydration solution:**

Composition(mmol/L)	Reduced osmolarity ORS	Standard ORS
Sodium	75	90
Potassium	20	20
Chloride	65	80
Citrate	10	10
Glucose	75	111
Osmolarity	245	311

**Nutrition rehabilitation unit (NRU):**

ICDDR,B along with World Health Organization (WHO) has developed and implemented a treatment protocol for severely-malnourished children. Implementation of the protocol reduces the mortality of severely malnourished children more than 75%. Research of ICDDR,B has shown that after discharging from hospital most of severe malnourished children are die though they following successful treatment of acute illnesses, including diarrhea and pneumonia. To reduce the death rate and to improve the nutritional status of the children ICDDR,B has develop nutrition rehabilitation unit. The aim of the NRU is to provide the low cost, culturally appropriate and locally available nutritious food to improve the nutritional status and growth of the malnourished children.

Most of the cases, the children are admitted ICDDR,B due to diarrhea disease with severe malnutrition. When they are recover from diarrhea and their height for weight remain  $-3z$  score they directly referred to the NRU unit. In NRU unit, measure the height and weight of the children and make a diet for the children. At first day, children are given halwa for test food. After 2 days milk suji diet is given. Children are given milk based diets and on 10 grams per kg of body-weight per day. Milk based diets are best diet for children but not readily available and also expensive. So during nutritional rehabilitation they decrease the milk based diet gradually and increase the khichuri and halwa diet.

NRU unit also given the health and nutrition education of the mother or caretaker of the children who are staying with them. A hospital health worker arrange a counselling session each day for an hour with all mothers of NRU. They discuss about different types of topic including

- preparation of diets used in the standardized protocol
- correct child-rearing practices

**Preparation of diets used in the standardized protocol:** the mother or the caretaker of the children is given lessons on preparation of milk suji, khichuri and halwa. Khichuri is a low-cost, nutritious food which is prepared from rice, lentils, green leafy vegetables, and soybean oil. Each gram contains 1kilo calorie of energy. Halwa, another low-cost, nutritious diet, is prepared from atta, dal, gur, and soybean oil and milk suji is a liquid diet prepared from rice-powder, milk-powder, soybean oil, and sugar.



**Mothers at icddr,b's Nutrition Rehabilitation Unit learn preparing therapeutic foods from local ingredients.**

**Correct child-rearing practices:** The mothers are advised to make different types of toys which are homemade and not expensive for the child. Show different types of picture to the baby to develop his/her brain. Mothers are encourage to talk and play with their children at home.in order to increase the child development They teach the mother how to chat or play with the child in their daily activity such as feeding, bathing. The child should be feed with the family members that will encourage their desire to eat.



**A child plays with a variety of toys that are homemade and low cost at the Nutrition Rehabilitation Unit.**



**In Nutrition Rehabilitation unit a health worker make a group discussion with mother.**

**NRU admission criteria:**

- Oedema ( any degree)
- WL/WH < -3Z score
- WA < -4 Z score of WHO standard.

**NRU discharged criteria:**

- Minimum 7 days stay at NRU.
- No oedema.
- Weight gain at least 15-20%.
- Good general condition.

A severely malnourished child is released from NRU when she gain her desire weight and height with his age and completely recover from oedema.

**Nutrition Follow Up Unit**

NFU admission criteria:

- WA < -3 Z score or WL/WH < -2 score of WHO standard.
- Children discharged from NRU.

**NFU discharged criteria:**

- WL/WH > -1 Z score.
- WA > -2 of WHO standard.





When the children gain 15% weight than before and their z score improves to -2, they will discharge from NRU. On leaving in NRU the mothers are asked to attend the Nutrition follow up unit over six months. First visit 1 week later and then after 15 days later and finally 30 days visit. The follow-up session continue up to a year to reduce the rate of malnourished children. In the NFU unit the mothers received health and nutrition education as well. When the children are come to the follow-up unit their height and weight are measured to BMI. It also helps know that after discharge from the NRU the children got proper diet. The children are advised to stay a day long in the nutrition follow-up unit. khichuri and halwa are provide to the children and observed them a day long. If the weight of the children decrease than before then referred the children to the dietician and send them NRU again.

## **9.0 Breast feeding counseling**

Breastfeeding is the natural way in which the mother feed her baby. Breast milk contains all nutrition that a baby needs first six months of life. The first milk of mother breast is called colostrum which is most important food for the new born baby. Colostrum is give the baby within one hour of birth. Colostrum is yellowish, sticky and thick liquid. world health organization has recommended an exclusive breast feeding during the 6 months of the baby could reduce the mortality and morbidity from infectious diseases. Bottle feed baby death rate due to diarrheal diseases are high than exclusive breast feeding baby. Mothers are advised to give the baby complementary food with breast feeding after 6 months.

Breast feeding is natural but it also a learning process for mother. ICDDR, B has arranged a counselling session for lactating mother to motivate her for exclusive breast feeding and also tell them the importance of breast feeding. Counselling on breastfeeding and complementary feeding contributes to lowering the incidence of diarrhea.



### **Importance of breast feeding:**

- Exclusive breast feeding fulfills the all nutrient requirement of the new born baby.
- It develops the heart and brain of the baby and also increases the immune system.
- Create the loving bond between mother and baby.
- Reduce the risk of breast cancer and ovarian cancer of the mother.
- Baby can gain weight earlier.

- It is not cost effective

**There are different types of breastfeeding and complementary feeding.**

- **Exclusive breast feeding**
- **Partial breast feeding**
- **Bottle feeding**
- **Artificial feeding**
- **Replacement feeding**
- **Complementary feeding**

**Good positioning and attachment is the key to successful breastfeeding**

Comfortable position and skin to skin attachment create loving bond between mother and baby. When the baby is closely attached to mother that will help to get high amount of milk from mother breast.

Here some tips for comfortable position

- Mother should sit comfortably with her back. Also can use pillow for support.
- Remove the entire barrier and make skin –to-skin touch with baby.
- Let the breast hang naturally.
- Let the baby find the nipple that will help to open the baby’s mouth gently as well encourage the baby to eat.
- Keep your hand on the neck and shoulder of the baby, but don’t hold your baby’s head — allow him or her to find the best position for attaching to your breast.
- Bring baby close to mother’s breast.
- When your baby opens their mouth, bring him or her quickly to breast so they take a good mouthful of breast tissue.
- Build habit to feed the baby on night because prolactin hormone produces more at night.so that the baby get good amount of milk at night.





**The way to know that the baby gets enough milk:**

- The baby gain 500gm weigh per month.
- Pass urine at least 6 times in a day.
- Feeding at least 8 times a day.

**The factors should remember when counselling a mother:**

- Keep the counselor head and mother head same level. That will help discuss comfortably.
- Attentively listen to what the mother want to say.
- Use simple or local language.
- Remove the entire barrier between counselor and mother so that they can get closer. This thing make the mother feel good.
- Don't be so hurry. Take time to touch up.
- Ask open question in which the mother can answer easily.
- Responses to her and gesture with response.
- Reflect back what the mother says.
- Show sympathy that you understand what the mother feels.
- Avoid word which sound judging.
- Build the confidence of the mother and given them support.
- Give them practical help.



## **10.0 Relactation Technique**

Breastfeeding is most important for children health, physical and mental development. WHO has recommended an exclusive breast feeding during the six month of new born baby. Breast milk contains all nutrition that a baby needs first six months of life. After six month the baby will give complementary food along with breast feeding. Breast feeding which is increase the growth and immune system of the children. At ICDDR,B we observed that some mothers are giving their baby lactogen after 15 days of birth instead of breast feeding, few mothers are unable produce enough of milk for her child. In that cases icddr,b counseling to convince the mothers. If the baby starts to feel comfort with bottle feeding it's very tough to back in breast feeding. If the baby not sucks the nipple, mothers are advised to release the milk in a pot and with the help of a dropper drop out it on the nipple. Baby will gradually try to suck the nipple. They try to teach them the importance of breast feeding for the children. If the infant do not get proper breast milk during first 6 months of life for their physical and mental growth will be hampered. The children height, weight will not be increase according to their age. Their brain will also not properly develop. So in future they would not show good performance in their education sector. The mothers are also advised that, breast milk is the best food for the baby and also inexpensive. On the other hand, lactogen is expensive but it not fulfills her baby's all nutrients. It's very tough for a middle income family to afford 2 or 3 packet lactogen every month. Few mothers are told that baby do not get enough during breast feeding. The counsellor advised them to involve the baby to suck the nipple more. The more the suck breast nipple the more milk produced. Mothers advised to build habit to feed the baby on night because prolactin hormone produces more at night. Baby gets 20% milk at night than the whole day.

## **11.0 Conclusion:**

Diarrhoea and malnutrition is one of the leading cause of children mortality and morbidity in Bangladesh. Most of the children are suffer from malnutrition in the rural area of Bangladesh. Diarrhoea and malnutrition affect the growth and immune system of the young children. icddr,b and World Health Organization work to reduce the rate of diarrhoea disease and malnourished children of Bangladesh. For this they provide free treatment in their hospital. Not only they provide treatment for diarrheal patients but also they work for improve the nutritional status of malnourished children. They teach the mother how to make nutritious food with low cost for their children. icddr,b invent some formula for malnourished children's diet like F-75, F-100, milk suji, khichuri, halwa etc. They also advised mother that,

exclusive breast feeding for under 6 month's child and discuss the importance of the breast milk for the child. In a word, the aim of icddr,b is to reduce the mortality of morbidity of children and improve their nutritional status for physical and mental growth.

