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# MALNUTRITION/INFECTION CONTROL PROJECT

## PART I

## INSTRUCTION MANUAL FOR TEACHER/SUPERVISORS TO VILLAGE HEALTH AGENTS

Prepared by: Paul G. Rusby
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USAID
Kabul, Afghanistan

June 1, 1975

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# CHAPTER I

## INTRODUCTION

This manual is the principal tool for a project designed to convey a nutrition/infection control curriculum to village mothers thru the use of para-trained village health agents. The project goal is to deliver a unit of health care to 70% of the Afghan population beyond the reach of basic health centers presently existing or planned to be in operation within the next eight years. The specific project purpose is to field-test (and modify as required) within three years a methodology whereby this unit of minimal health assistance can be effectively delivered. Because the project purpose is to develop a methodology, this manual is a starting point. It introduces a variety of visual aids and a range of material which will undergo refinement during the testing period.

Three basic assumptions operated during the development of the manual. The first assumed a training team of literate, high school-educated instructors to convey the material; the second assumed that these teachers, after the formal course was given, would become supervisors to their erstwhile students; the third assumed that the Village Health Agents themselves would be illiterate. Therefore, a series of skills, related specifically to this assumption of illiteracy, are included in the records and reports curriculum (e. g. counting, reading, writing to 100). Only after experience has been gained in the identification and selection of female, village-resident, health agents will we know if the illiteracy assumption was valid.

Finally, a word about the classroom use of the manual. The full text is directed to the teachers/supervisors as an instruction and reference manual for themselves. The major points of each chapter are summarized at the chapter's end. These chapter "summaries", along with the Charts, Figures, field equipment, and other visual aids are considered the minimum to be learned by the Village Health Agent. As the methodology developes through experience in the field, knowledge will be gained as to how much of the detailed text also can be absorbed by the Village Health Agent.

The charts and figures for this text were prepared by Mr. Mohammad Jon Momand.

# CHAPTER II

## NUTRITION

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# NUTRITION

## I. THE CLASSIFICATION OF FOODS BY PURPOSE

### A. Description of The Three Food Types

The three (3) types of foods required by the body are:

1- Growth foods
2- Protective foods
3- Energy foods

### B. Definitions and Illustrations of the Three Food Types

#### 1. Growth Foods Chart #1

The growth foods cause growth and renewal of body tissue (muscle, bone, teeth, enzymes, nails, hair). A particularly important body tissue which growth foods promote is brain tissue.

-Illustrations of growth foods are:
Animal growth foods-eggs, and meat, poultry, milk&milk products.

Vegetable growth foods-cereals (wheat, rice, barley) legumes (mungbean, chickpea, cowpea, lentils, beans) and nuts (almonds, walnuts, pistachio).

-The principal nutrient common to all growth foods is protein.

#### 2. Protective Foods Chart #2

Protective foods protect the body from disease and regulate the bodily functions (muscle tonus, nervous system responsiveness, defecation, respiration, etc).

-Illustrations of protective foods are vegetables (particularly the colored vegetables-carrots, beets, turnips, spinach) and fruits (-oranges, dates, figs, apples, mulberries).

-The principal nutrients common to all protective foods are vitamins, minerals, and water.

#### 3. Energy Foods Chart #3

Some foods provide energy which keeps the body warm and enables the body to do work.

-Illustrations of high energy foods are:
Animal energy foods-butter, lard, cream.
Vegetable energy foods-cottonseed oil, corn oil, margarine. These foods are called fats and oils.

-Other vegetable sources providing energy (but less energy than fats and oils) are the vegetable growth foods mentioned earlier.

-The quantitative measurement of energy found in foods is the calorie.

4. Figure # 1 summarizes this section on the classification of foods. Figure #'s 2 (a) and (b) provide a detailed analysis of fifty Afghan foods by food classification and nutrient value.

C. Summary

1. The body requires food for growth, for protection from disease and for regulating bodily functions, and for energy.

2. We equate growth foods with proteins, protective and regulatory foods with vitamins and minerals, and energy foods with calories.

3. The body can store proteins (as muscle) energy foods (as fat) and some (fat soluble) vitamins and some minerals.

4. The body cannot store the water soluble vitamins and these must be secured from a daily intake of fresh vegetables and fruit.

D. Visual Aids

1. Chart # 1 Growth Foods

2. Chart # 2 Protective Foods

3. Chart # 3 Energy Foods

4. Figure # 1 The Classification of Foods

5. Figure #'s 2 a+b List of 50 Afghan Foods with Nutrient Values

## THE CLASSIFICATION OF FOODS

| CLASS | PURPOSE/FUNCTION | GENERIC NAME | KINDS OF FOODS PROVIDING THESE NUTRIENTS | EXAMPLES OF SPECIFIC FOODS PROVIDING THESE NUTRIENTS |
|---|---|---|---|---|
| Growth Foods | Grow and renew tissue (muscle, bone, teeth, enzymes, nails, hair) Brain development | Protein | Meat<br>Poultry<br>Diary products<br>Eggs<br>Legumes<br>Cereals<br>Nuts | Liver, heart, lamb, beef,<br>Chicken, duck,<br>Milk, cheese, crude<br>Eggs<br>Beans, peas, chickpeas, mungbeans<br>Wheat, rice, corn<br>Almonds, walnuts |
| Protective Foods | Regulate body operations and protect body from disease | Vitamins | Vegetables & fruits | Carrots, spinach, turnip greens orange juice |
| | | Minerals | Vegetables, fruits, and cereals | Carrots, raisins, rice bran, wheat bran |
| | | Water | | |
| | | Water dissolves & transports | | |
| | | Vita B 1 (Thiamin) | | Rice bran, cowpeas |
| | | B 2 Riboflavin | | Liver, kidney, heart |
| | | Niacin | | Rice bran, liver, wheat bran |
| | | B complex | | |
| | | Folic Acid | | |
| | | Vita C | | Horse radish, turnip green, cauliflower, onion top, orange juice |
| | | (These vitamins are not stored in the body) | | |
| Energy Foods | Provide energy (to work) and heat (to live). | Fats<br>Fats help to transport & dissolve Vitamins A, D, E, K. These fat-soluble vitamins are stored in the body | Fats & Oils | Butter, lard & other animal fats, sesame, cottonseed & other vegetable oils |
| | | Carbohydrates | Cereals<br>Legumes<br>Roots & Tubers | Brown rice, cornmeal, wheat bran<br>Cowpea, chickpea, mungbean, lentils<br>Gur, sugar, molassas, honey |

Figure # 1

## GROWTH FOODS

### Protein (GM/100 Grams)

| Code # | | N Value | Cost Afs/ Kg |
|---|---|---|---|
| 0010 | Almond Meal* | 39 | 180 |
| 0510 | Crude* | 34 | 22-30 |
| 0682 | Chicken | 32 | 120 |
| 1276 | Liver, Lamb | 32 | 60 |
| 1271 | Liver, Chicken | 26 | - |
| 1117 | Heart, Chicken | 25 | - |
| 0482 | Broad Beans | 25 | 4.5-7 |
| 1253 | Lentils* | 25 | 16 |
| 0179 | Mung Beans* | 24 | 16 |
| 0903 | Cow Peas* | 23 | 6-10 |
| 0753 | Chick Peas* | 20 | 14 |
| 2032 | Sesame* | 18 | 23 |
| 2446 | Wheat Bran* | 16 | 4 |
| 1880 | Rice Bran* | 13 | - |
| 1533 | Peas, Mature* | 8 | 24 |
| 1869 | Rice, Brown* | 8 | 14 |
| 0627 | Carrots, Dehyd* | 7 | 24 |

### Calcium (MG/100 Grams)

| Code # | | N Value | Cost Afs/ Kg |
|---|---|---|---|
| 0510 | Crude* | 1250 | 22-30 |
| 2032 | Sesame* | 1160 | 23 |
| 0010 | Almond Meal* | 425 | 180 |
| 0527 | Carrots, Dehyd* | 256 | 24 |
| 2355 | Turnip Green | 184 | 4 |
| 0753 | Chick Pea* | 150 | 14 |
| 1135 | Horse Radish | 140 | 3 |
| 1367 | Mustard Green | 138 | 5 |
| 2446 | Wheat Bran* | 119 | 4 |
| 0179 | Mung Beans* | 113 | 16 |
| 1253 | Lentils* | 79 | 16 |
| 1880 | Rice Bran* | 76 | - |
| 0903 | Cow Peas* | 74 | 6-10 |
| 1869 | Rice, Brown* | 32 | 14 |
| 1533 | Peas* | 11 | 24 |

## ENERGY FOODS

### Calorie (Ca/100 Grams)

| Code # | | N Value | Cost Afs/ Kg |
|---|---|---|---|
| 1401 | Oils | 880 | 60 |
| 0505 | Butter | 716 | 90 |
| 2421 | Walnuts | 659 | 80 |
| 2032 | Sesame Seed* | 582 | 23 |
| 7034 | Gur(sugar,crude,R | 389 | 20 |
| 0510 | Crude | 387 | 22-30 |
| 2230 | Sugar* | 385 | 24 |
| 0753 | Chick Peas* | 350 | 14 |
| 1869 | Rice Brown* | 360 | 14 |
| 0883 | Corn Meal* | 355 | 7 |
| 0903 | Cow Peas* | 343 | 10 |
| 0627 | Carrots, Dehyd* | 341 | 15 |
| 0179 | Mung Bean* | 340 | 16 |
| 1253 | Lentils* | 340 | 16 |
| 0482 | Broad Beans* | 338 | 7 |
| 1880 | Rice Bran* | 276 | - |
| 1533 | Peas, Mature* | 115 | 24 |

### Carbohydrate (GM/100 Grams)

| Code # | | N Value | Cost Afs/ Kg |
|---|---|---|---|
| 2230 | Sugar* | 99 | 24 |
| 1134 | Honey | 82 | 90 |
| 0627 | Carrots, Dehyd* | 81 | 15 |
| 1869 | Rice Brown* | 77 | 14 |
| 1215 | Raisins | 77 | 30 |
| 0883 | Corn Meal* | 74 | 7 |
| 1007 | Figs | 69 | 10 |
| 2446 | Wheat Bran* | 62 | 4 |
| 0903 | Cow Peas* | 62 | 10 |
| 0753 | Chick Peas* | 61 | 14 |
| 0179 | Mung Bean* | 60 | 16 |
| 1253 | Lentils* | 60 | 16 |
| 1880 | Rice Bran* | 51 | - |
| 1809 | Potato Chips | 50 | 5 |
| 1533 | Peas, Mature* | 21 | 24 |

### Iron (MG/100 Grams)

| Code # | | N Value | Cost Afs/ Kg |
|---|---|---|---|
| 1880 | Rice Bran* | 19 | - |
| 1276 | Liver, Lamb | 18 | 60 |
| 2446 | Wheat Bran* | 15 | 4 |
| 2032 | Sesame* | 12 | 23 |
| 1271 | Liver, Chicken | 8 | - |
| 0179 | Mung Beans* | 8 | 16 |
| 0482 | Broad Beans* | 7 | 7 |
| 0753 | Chick Peas* | 7 | 14 |
| 1253 | Lentils* | 7 | 16 |
| 0627 | Carrots, Dehyd* | 6 | 15 |
| 0903 | Cow Peas, Matur* | 6 | 10 |
| 1533 | Peas, Mature* | 2 | 24 |
| 1869 | Rice, Brown* | 2 | 14 |

Nutrition - Figure # 2 a

# PROTECTIVE FOODS

## Riboflavin (MG/100 Grams)

| Code # | Item | N Value | Cost Afs/Kg |
|---|---|---|---|
| 1276 | Liver, Lamb* | 5 | 60 |
| 1160 | Kidney, Beef | 4 | 60 |
| 1271 | Liver, Chicken* | 2 | - |
| 1121 | Heart, Cook, Lamb | 1 | 60 |
| 0627 | Carrots, Dehyd* | .3 | 24 |
| 1880 | Rice, Bran* | .3 | - |
| 1253 | Lentils* | .2 | 16 |
| 0179 | Mung Beans* | .2 | 16 |
| 0903 | Cow Peas* | .2 | 10 |
| 1533 | Peas, Mature* | .1 | 24 |
| 1869 | Rice, Brown* | .1 | 14 |

## Phosphorus (MG/100 Grams)

| Code # | Item | N Value | Cost Afs/Kg |
|---|---|---|---|
| 1880 | Rice Bran* | 1386 | - |
| 2446 | Wheat Bran* | 1275 | 4 |
| 0510 | Crude* | 970 | 30 |
| 2032 | Sesame Seed* | 600 | 23 |
| 1626 | Nuts, Pistachio | 500 | 80 |
| 0903 | Cow Peas* | 426 | 10 |
| 1253 | Lentils* | 377 | 16 |
| 0179 | Mung Bean* | 340 | 16 |
| 0753 | Chick Pea* | 300 | 14 |
| 0701 | Chicken* | 260 | 120ea |
| 0627 | Carrots, Dehyd* | 234 | 24 |
| 1869 | Rice Brown* | 221 | 14 |
| 1533 | Peas, Mature* | 89 | 24 |

## Vitamin A (I.U./100 Grams)

| Code # | Item | N Value | Cost Afs/Kg |
|---|---|---|---|
| 0627 | Carrots Dehyd* | 100,000 | 15 |
| 1276 | Liver, Lamb* | 74,000 | 60 |
| 1271 | Liver, Chicken* | 12,300 | 60 |
| 0619 | Carrots, Raw/Cook | 11,000 | 5 |
| 2170 | Spinach* | 8,100 | 4 |
| 2355 | Turnip Green* | 6,300 | 4 |
| 0695 | Heart, Chick. Cook | 5,700 | - |
| 0393 | Beet Green | 5,100 | 5 |
| 0506 | Butter Oil | 4,000 | 90 |
| 1417 | Onion Top* | 4,000 | 10 |
| 0505 | Butter | 3,300 | 90 |
| 1415 | Onion, Whole* | 2,000 | 5 |
| 1259 | Lettuce | 1,900 | 4 |
| 0975 | Eggs, Omlet | 1,000 | 2.5 |
| 0179 | Mung Bean* | 80 | 16 |
| 1253 | Lentils* | 60 | 16 |
| 1533 | Peas, Mature* | 40 | 24 |
| 0903 | Cow Peas, Mature* | 30 | 10 |
| 1869 | Rice Brown* | - | 14 |
| 1880 | Rice Bran* | - | - |

## Thiamin (MG/100 Grams)

| Code # | Item | N Value | Cost Afs/Kg |
|---|---|---|---|
| 1880 | Rice Bran* Raw* | 2 | - |
| 0903 | Cow Peas, Mature* | 1 | 10 |
| 2032 | Sesame Seed* | 1 | 23 |
| 2446 | Wheat Bran* | 1 | 4 |
| 0482 | Broad Bean | 1 | 7 |
| 1276 | Liver, Lamb* | .5 | 60 |
| 1434 | Orange Juice* | .4 | 10 |
| 0179 | Mung Bean* | .4 | 16 |
| 1253 | Lentils* | .4 | 16 |
| 1869 | Rice, Brown* | .3 | 14 |
| 0627 | Carrots, Dehyd* | .3 | 24 |
| 1533 | Peas, Mature* | .2 | 24 |

## Ascorbic Acid (MG/100 Grams)

| Code # | Item | N Value | Cost Afs/Kg |
|---|---|---|---|
| 1135 | Horse Radish Raw* | 81 | 3 |
| 2355 | Turnip Green* | 69 | 4 |
| 0531 | Cauliflower, Cook | 55 | 10 |
| 1417 | Onion, Top* | 51 | 10 |
| 1425 | Orange Juice* | 50 | 10 |
| 1367 | Mustard GreenRaw | 49 | 5 |
| 0512 | Cabbage, Raw | 47 | 10 |
| 7005 | Mulberry | 39 | 12 |
| 0513 | Cabbage, Cook | 33 | 15 |
| 1415 | Onion, Whole* | 32 | 5 |
| 2262 | Tangerines | 31 | 10 |
| 2170 | Spinach, Cook* | 28 | 10 |
| 1844 | Radishes, Red | 26 | 15 |
| 2283 | Tomato | 24 | 10 |
| 0627 | Carrots, Dehyd* | 15 | 24 |
| 0179 | Mung Bean* | - | 16 |
| 0903 | Cow Peas, Mature* | 0 | 10 |
| 1869 | Rice, Brown* | 0 | 14 |
| 1880 | Rice Bran* | 0 | - |
| 1253 | Lentils* | - | 16 |
| 1533 | Peas, Mature* | - | 24 |

## Niacin (MG/100 Grams)

| Code # | Item | N Value | Cost Afs/Kg |
|---|---|---|---|
| 1880 | Rice Bran* | 30 | - |
| 1276 | Liver, Lamb* | 25 | 60 |
| 2446 | Wheat Bran* | 21 | 4 |
| 0701 | Chicken Cook* | 14 | 120ea |
| 1115 | Heart, Calf, Cook* | 8 | 60 |
| 1869 | Rice, Brown* | 5 | 14 |
| 0627 | Carrots, Dehyd* | 3 | 24 |
| 0179 | Mung Bean* | 3 | 16 |
| 0903 | Cow Peas Mature* | 2 | 10 |
| 1253 | Lentils* | 2 | 16 |
| 1533 | Peas, Mature* | 1 | 24 |

## Potassium (MG/100 Grams)

| Code # | Item | N Value | Cost Afs/Kg |
|---|---|---|---|
| 0627 | Carrots, Dehyd* | 1944 | 24 |
| 0510 | Crude* | 1600 | 30 |
| 1880 | Rice Bran* | 1495 | - |
| 0179 | Mung Bean* | 1028 | 16 |
| 0903 | Cow Peas* | 1024 | 10 |
| 0753 | Chick Peas* | 800 | 14 |
| 1790 | Potato, Fried | 775 | 10 |
| 1253 | Lentils* | 790 | 16 |
| 1846 | Raisins | 760 | 30 |
| 2032 | Sesame* | 725 | 23 |
| 1135 | Horse Radish* | 564 | 3 |
| 1533 | Peas, Mature* | 296 | 24 |
| 1869 | Rice, Brown* | 214 | 14 |

Figure # 2 -b

## II. FOOD QUANTITIES AND SHAPES FOR DIFFERENT AGES (Chart # 4

Your new born infant cannot eat shishkabob because it has no teeth. Likewise its stomach is too small to eat a man sized portion of rice. A man who plows a field all day cannot survive on a glass of milk. Chart # 4 illustrates this point. All human beings have different food quantity and food shape requirements according to their different stages of life. Examples of this fact follow.

### A. From Birth to Two Years

The infant has no teeth, its muscles are incompletely formed, its digestive system is not mature. Consequently the infant requires mother's milk exclusively until 4 months, thereafter supplement with fruit juices and crushed fruit, vegetable paree, eggs, soup, and meat mashes including liver. With the appearance of teeth chopped foods are given. Finally at 2 years a wide ranging diet similar to adults is suitable but do not feed spices to the baby. Because the infants stomach is small, frequent feedings (5 times per day) are required.

### B. From 2 to 14 Years

The child's stomach has grown larger, the number of feedings may be reduced to four times a day and increase the quantity consumed at each feeding.

### C. Working Man's Food

The body is fully developed and attention is no longer directed to the special shapes of foods, instead, the quantity and quality of food required to provide energy requirements and restoration of muscle tissue is the principal concern.

### D. Pregnant/Lactating Mother's Food

The specialized requirement here is food in adequate quantity and quality to meet mother's normal requirements plus those requirements placed on her body by nutrients taken by the fetus or nursing infants.

### E. Summary

1. Infants, children, working men and pregnant/lactating mothers all require the full range of nutrients provided by growth foods, protective foods, and energy foods. It is the quantity of these nutrients which differ in each special case.

2. Infants from birth to age 2 years because they are not fully matured require modification in the shape of their food (different from an adult) if they are to absorb the full range of nutrients specified in #1 above. This is the principal justification for the development of a weaning food.

3. Infants from birth to 2 years, because their stomach are not large, require more frequent feedings each day than do adults.

F. Visual Aids

Chart # 4 Different Foods for Different Ages

## III. INFANT FEEDING AND THE WEANING PROCESS

### A. Breast Feeding

1. Advantages of Breast Feeding

The advantages of breast feeding are:

1. Breast milk is almost the perfect food up to age 4 months. It contains almost all the necessary nutrients.

2. Breast feeding is the most sanitary (clean) way to feed the infant. There are no dirty bottles or polluted water to give the baby diarrhea.

3. Breast feeding is convenient. There are no dishes to wash or food to cook.

2. Length of Breast Feeding

Infants should be breast fed at least to age two years. This has many nutritional advantages for the infant. It also reduces the chances of another pregnancy.

3. Frequency of Breast Feeding

New born infants should be breast fed on a demand schedule (whenever they want it). From 4 to 12 months they should be breast fed at least six times a day.

4. Food for Pregnant/Lactating Mothers (Chart # 5)

During pregnancy the fetus grows and requires the full range of growth, protective and energy nutrients. Much of this material is supplied by the mother's own daily food intake. Whenever shortages exist, however, the fetus will call upon mother's nutrient stores.

It is essential that the mother's body reserves are maintained during pregnancy to safeguard the formation of the fetus and provide milk supply after birth.

Vitamin D is manufactured in the body with the exposure of skin to sunlight. The pregnant mother should have a good exposure to the sunlight every day. (Chart # 5)

During lactation the food requirements for the mother are the same as regards quality. The quantity of food intake should be increased and snacks between meals are desirable. Plentiful fluids are essential for a good lactation.

The subject of malnutrition during pregnancy will be discussed in Section V.

5. Personal Hygiene & Breast Feeding Chart # 6

A previous paragraph mentioned cleanliness as one advantage of breast feeding. Subsequent paragraphs will discuss the perils of infection during the weaning process. At this time we emphasize the need for great cleanliness during breast feeding.

Rules for mother's cleanliness during breast feeding include:

1. Wash hands with soap every time before giving breast to the infant.

2. Wash hands with soap every time after defecation.

3. Wash breasts carefully once each day.

4. Keep mother's hand away from baby's mouth.

B. The Weaning Process

1. Weaning Defined

The child has been "weaned" when breast feeding is stopped.

2. Duration of Breast Feeding

(a) The infant should be breast fed from birth to at least two years.

(b) Supplements to breast feeding should start at 4 months.

(c) The regular diet is supplemented by breast feeding from one to two years of age. The number of breast feeds per day will be progressively reduced until breast feeding is stopped (the child is weaned) at age 2 years.

3. Why Weaning Is Necessary

Mother's milk is a near perfect food requiring no supplementation until age 4 months. Thereafter additional foods providing (a) some missing nutrients (iron and vitaC) and (b) more solid consistency for continued growth are required as supplements to mother's milk. As the child's physical structure increases in size, and his energy requirements increase, the mothers milk alone without supplementation is no longer sufficient.

4. Weight & Increments

A steady increase in weight month after month is the simplest and surest sign that the child's nutrient intake is adequate.

The subject of infant weights will be discussed in great detail in a later chapter.

5. Perils of the Weaning Process

Breast feeding is the most sanitary feeding procedure if the mother follows the rules of hygiene described in Chart # __6__. When supplements to breast feeding are started, the risk of infection from dirty water, dirty utensils, and mother's dirty hands increases greatly.

The mother may suggest, therefore, that the weaning process be delayed to avoid the inevitable infection. Let us answer this by considering the consequences of not commencing the weaning process at four months. If the infant remains on mother's milk only, after four months the following may happen:

1. The infant teeth will not appear as they should at about 9 months.

2. The infant will not have strength to walk at about 12 months.

Consequently, the answer to the question of delayed weaning is that normal, natural, human development including that perilous procedure of the weaning process should not be delayed. Furthermore, as will be discussed in a section on the interaction of malnutrition and infection, if the child has been provided with the proper food, he will have the strength to overcome the infection and therefore to survive to adulthood.

The mother's best guarantee to avoid infection during the weaning process is to follow carefully the guidance of the village health agent on the rules for sanitation and personal hygiene.

C. Summary

1. From birth to 4 months, breast feeding is the simplest, safest, and most nutritious infant feeding procedure.

2. Breast feeding should continue to age two years, but supplements to breast milk must be started at 4 mos.

3. The full range of growth, protective, and energy foods must be consumed by the mother during pregnancy. Commencing with lactation, the quantity of these foods consumed by the mother must increase.

4. Vitamin D is essential to the good health of mother and infant. Vita D is manufactured by posing the skin to sunlight every day.

5. A mother's learning the rules of personal hygiene and sanitation is the best insurance against infant infection during the weaning process.

6. A steady increase in weight from month to month is the simplest indicator that infant growth and development is progressing satisfactorily.

D. Visual Aids

1. Chart # 5 Importance of Sunlight

2. Chart # 6 Four Hygiene Rules for Breast Feeding

IV. FEEDING METHODS AND FOODS

A. 0-2 Years

1. Recommended Daily Allowance (RDA)

Scientists have determined the quantity (weight) of each nutrient required daily by the human to maintain good health. We call these quantities Recommended Daily Allowance (RDA). As by now you should guess the RDA differs for different age groups and different levels of activity.

2. Weaning Food Recipies

Figure #'s 3 thru 8 Show 6 standard weaning foods with which you will become very familiar. The format of these six figures is the same in each case and is described as follows:

Target = The RDA (for age group 1-2 years) but we will strive to reach this commencing with infants 6 month of age.

Nutrients = 14 principal nutrients essential to good health (protein, carbohydrates, fats, minerals and vitamins).

Weight Units
- GM = grams
- MG = milligrams
- I.U. = International Units

Food Components = Foods we use to make this particular weaning food.

Total Nutrients = Sum of all nutrients contributed by all foods in the formula.

Percent of Target = The degree to which this formula provides RDA.

Formula Weight = Total weight of food required to provide RDA this %.

| Target | RDA → | | | 1100 | 25 | 6 | 60 | 700 | 700 | 15 | 280 | 600 | 2000 | 0.6 | 0.6 | 8 | 40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Formula #1 | Cost/ .kg Afs. | Grams | Cost of 182 gms Afs. | Energy CAL | Protein GM | Fat GM | Carbo. Total GM | Cal-cium MG | Phos-phorus MG | Iron MG | Sodium MG | Potas-sium MG | Vitamin A I.U. | Thia-min MG | Ribo-flavin MG | Niacin MG | Ascorbic Acid MG |
| Components | | | | | | | | | | | | | | | | | |
| Wheat Gern | 17 | 40.0 | .68 | 145.0 | 10.6 | 4.36 | 18.68 | 28.8 | 447.2 | 3.76 | 1.20 | 330.8 | 0.0 | 0.80 | 0.27 | 1.68 | 0 |
| Wheat Bran | 3.5 | 20.0 | .07 | 42.6 | 3.2 | 0.92 | 12.38 | 23.8 | 255.0 | 2.98 | 1.80 | 224.0 | 0.0 | 0.14 | 0.07 | 4.20 | 0 |
| Mung Bean | 9 | 39.3 | .35 | 133.6 | 9.5 | 0.51 | 23.69 | 46.4 | 133.6 | 3.03 | 2.36 | 404.0 | 31.4 | 0.15 | 0.08 | 1.02 | 0 |
| Salt | 6 | 0.7 | .004 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 0.0 | 0.0 | 271.3 | 0.28 | 0.0 | 0.0 | 0.0 | - | 0 |
| Sub-Total | | 100.0 | 1.10 | 321.2 | 23.3 | 5.79 | 54.75 | 100.7 | 835.8 | 9.77 | 276.66 | 959.08 | 31.4 | 1.09 | 0.42 | 7.08 | 0 |
| Supplementary | %RDA | | | 29.2% | 93.0% | 96.0% | 91% | 14.4% | 119% | 65% | 98% | 159.9% | 1.5% | 181% | 70% | 88% | 0 |
| Turnip Grn. | 3 | 52 | .15 | 10.4 | 1.14 | 0.10 | 1.87 | 95.68 | 19 24 | 0.57 | - | - | 3276 | 0.078 | 0.12 | 0.31 | 35.88 |
| Sesame | 22 | 30 | .66 | 168.9 | 5.58 | 14.73 | 6.48 | 348.0 | 184.8 | 3.15 | 18.0 | 217.5 | 9.0 | 0.294 | 0.07 | 1.62 | - |
| Grand Total | | 182 | 1.92 | 500.5 | 30.02 | 20.62 | 63.10 | 544.38 | 1039.84 | 13.49 | 294.65 | 1176.58 | 3316.4 | 1.45 | 0.61 | 9.01 | 35.88 |
| | % RDA | | | 45.4% | 120.0% | 333% | 105% | 77.7% | 148.5% | 90% | 105% | 196% | 165% | 241% | 100% | 112.6% | 90% |

2/15/75

Figure # 3

| Target | RDA | —— | | 1100 | 25 | 6 | 60 | 700 | 700 | 15 | 280 | 600 | 2000 | 0.6 | 0.6 | 8 | 40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Formula #2 | Cost/ kg Afs. | Grams | Cost of 174 gms Afs. | Energy CAL | Protein GM | Fat GM | Carbo Total GM | Cal-cium MG | Phos-phorus MG | Iron MG | Sodium MG | Potas-sium MG | Vitamin A I.U. | Thia-min MG | Ribo-flavin MG | Niacin MG | Ascorbic Acid MG |
| Components | | | | | | | | | | | | | | | | | |
| Wheat Bran | 3.5 | 55.0 | 0.19 | 117.15 | 8.8 | 2.53 | 34.04 | 65.45 | 701.8 | 8.19 | 4.95 | 616.5 | 0 | 0.393 | 0.19 | 11.5 | 0 |
| Broad Bean | 4.5 | 29.3 | 0.13 | 99.0 | 7.35 | 0.49 | 17.05 | 29.88 | 114.56 | 2.08 | - | - | 20.5 | 0.150 | 0.087 | 0.73 | 0 |
| Butter Milk Dried(Crude | 23 | 12.0 | .27 | 46.4 | 4.12 | 0.63 | 6.0 | 147.6 | 116.4 | 0.07 | 60.84 | 192.7 | 26.4 | .03 | 0.21 | 0.11 | 0 |
| Salt | 6 | 0.7 | .004 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 0.0 | 0.0 | 271.30 | 0.28 | 0.0 | 0.0 | 0.0 | 0.0 | 0 |
| Turnip Grn. | 3 | 52.0 | .15 | 10.4 | 1.14 | 0.10 | 1.87 | 95.68 | 19.24 | 0.57 | - | - | 3,276 | 0.078 | 0.12 | 0.31 | 35.88 |
| Sesame | 22 | 25.0 | .55 | 140.75 | 4.65 | 12.27 | 5.40 | 290.0 | 154.0 | 2.62 | 15.0 | 181.25 | 7.5 | 0.245 | 0.05 | 1.35 | 0.0 |
| Total | | 174.0 | 1.30 | 413.70 | 26.03 | 16.06 | 64.36 | 630.3 | 1106.0 | 13.53 | 352.09 | 990.73 | 3,330.4 | 0.88 | 0.66 | 14.0 | 35.88 |
| | | %RDA | | 37.6% | 104.2% | 267.0% | 107.2% | 90.0% | 158.0% | 90.2% | 125.7% | 165.1% | 166.5% | 146.5% | 110.0% | 175.0% | 90.0% |

2/15/75

Figure # 4

| Target | RDA | → | | 1100 | 25 | 6 | 60 | 700 | 700 | 15 | 280 | 600 | 2000 | 0.6 | 0.6 | 8 | 40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Formula #3 | Cost/ kg in Afs. | Grams | Cost of 195 gms Afs. | Energy CAL | Protein GM | Fat GM | Carbo. Total GM | Cal-cium MG | Phos-phorus MG | Iron MG | Sodium MG | Potas-sium MG | Vitamin A I.U. | Thia-min MG | Ribo-flavin MG | Niacin MG | Ascorbic Acid MG |
| Components | | | | | | | | | | | | | | | | | |
| Wheat Bran | 3.5 | 55.0 | .19 | 117.2 | 8.8 | 2.50 | 34.0 | 65.45 | 701.8 | 8.20 | 4.95 | 616.5 | 0.00 | 0.39 | 0.19 | 11.55 | 0 |
| Broad Bean | 4.5 | 29.3 | .13 | 99.0 | 7.35 | 0.49 | 17.05 | 29.88 | 114.5 | 2.1 | - | - | 20.5 | .15 | .08 | .73 | 0 |
| Cow Peas | 7.0 | 15.0 | .10 | 51.45 | 3.42 | 0.23 | 9.25 | 11.10 | 63.9 | 0.87 | 5.25 | 153.6 | 4.5 | 0.1[illegible] | 0.03 | 0.33 | - |
| Salt | 6.0 | 0.7 | .004 | 0.0 | 0.0 | 0.0 | 0.0 | 1.70 | 0.0 | 0.0 | 271.30 | .28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Turnip Grn. | 3.0 | 50.0 | .15 | 10.0 | 1.1 | 0.10 | 1.8 | 92.0 | 18.5 | 0.55 | - | - | 3150 | .07 | 0.12 | 0.3 | 34.5 |
| Carrot(Dhyd) | 24.4 | 10.0 | .24 | 34.1 | 0.66 | 0.13 | 8.1 | 25.6 | 23.4 | 0.6 | 26.8 | 194.4 | 10,000 | .03 | 0.03 | 0.3 | 1.5 |
| Sesame | 22 | 35.0 | .77 | 197.05 | 6.51 | 17.18 | 7.56 | 406.0 | 215.6 | 3.67 | 21.0 | 253.75 | 10.5 | .34 | .08 | 1.89 | 0 |
| Total | | 195.0 | 1.59 | 508.8 | 27.84 | 20.63 | 77.76 | 631.73 | 1137.7 | 15.99 | 329.3 | 1218.53 | 13,185.5 | 1.14 | 0.54 | 15.1 | 36.0 |
| | | % RDA | | 46.2% | 111.3% | 343% | 129.6% | 90.2% | 162.5% | 106.6% | 117.6% | 203% | 659% | 190% | 90% | 188% | 90% |

2/15/75

Figure # 5

| Target | RDA | → | | 1100 | 25 | 6 | 60 | 700 | 700 | 15 | 280 | 600 | 2000 | 0.6 | 0.6 | 8 | 40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Formula #4 | Cost/ Kg Afs. | Grams | Cost of 160.5 gms Afs. | Energy CAL | Protein GM | Fat GM | Carbo. Total GM | Cal-cium MG | Phos-phorus MG | Iron MG | Sodium MG | Potas-sium MG | Vitamin A I.U. | Thia-min MG | Ribo-flavin MG | Niacin MG | Ascor bic Acid MG |
| Components | | | | | | | | | | | | | | | | | |
| Wheat Bran | 3.4 | 50 | .17 | 105.5 | 8.0 | 2.30 | 30.95 | 59.5 | 638.0 | 7.45 | 4.5 | 560.5 | 0 | 0.35 | 0.17 | 10.5 | 0 |
| Butter Milk, Dried (Crude) | 22 | 15 | .33 | 58.05 | 5.14 | 0.79 | 7.5 | 187.2 | 145.5 | 0.09 | 76.05 | 240.9 | 33.0 | 0.04 | 0.25 | 0.13 | - |
| Sesame | 22 | 30 | .66 | 16[illegible].9 | 5.58 | 14.75 | 6.48 | 348 | 184.8 | 3.15 | 18.0 | 237.5 | 9.0 | 0.29 | 072 | 1.62 | 0 |
| Liver Lamb | 65 | 25 | 1.62 | 65.25 | 8.07 | 3.10 | 0.70 | 4.0 | 143.0 | 4.47 | 21.25 | 82.75 | 18625 | 0.122 | 1.27 | 6.22 | 9.0 |
| Turnip Green | 3 | 40 | .12 | 8.0 | 0.88 | .03 | 1.44 | 73.6 | 14.8 | 0.44 | - | - | 2520 | 0.06 | 0.096 | 0.24 | 27.6 |
| Salt | 6 | 0.5 | .004 | 0.0 | 0.0 | 0.0 | 0.0 | 1.27 | 0.0 | 0.0 | 193.75 | .02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total | | 160.5 | 2.91 | 406.7 | 27.67 | 21.00 | 47.07 | 673.57 | 1126.1 | 15.60 | 313.55 | 1101.67 | 21,187.0 | 0.86 | 1.85 | 18.71 | 36.6 |
| | % RDA | | | 37.0% | 110% | 350% | 80% | 96% | 160% | 104% | 111.9% | 183% | 1059% | 143% | 308% | 233% | 91.4% |

2/19/75

Figure # 6

| Target | RDA → | | | 1100 | 25 | 6 | 60 | 700 | 700 | 15 | 280 | 600 | 2000 | 0.6 | 0.6 | 8 | 40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Formula #5 | Cost/ Kg Afs. | Grams | Cost of 165.5 gms Afs. | Energy CAL | Protein GM | Fat GM | Carbo. Total GM | Cal-cium MG | Phos-phorus MG | Iron MG | Sodium MG | Potas-sium MG | Vitamin A I.U. | Thia-min MG | Ribo-flavin MG | Niacin MG | Ascor-bic Acid MG |
| Components | | | | | | | | | | | | | | | | | |
| Wheat Bran | 3.5 | 40 | .14 | 95.2 | 6.4 | 1.84 | 24.76 | 47.6 | 510.4 | 5.96 | 3.6 | 448.4 | 0 | 0.28 | 0.14 | 8.4 | 0 |
| Butter Milk, Dried (Crude) | 22 | 15 | .33 | 58.05 | 5.14 | 0.79 | 7.5 | 187.2 | 145.5 | 0.09 | 76.05 | 240.9 | 33.0 | 0.039 | 0.25 | 0.13 | - |
| Lentils | 16 | 20 | .32 | 68.0 | 4.94 | 0.22 | 12.02 | 15.8 | 75.4 | 1.36 | 6.0 | 158.0 | 12.0 | 0.074 | 0.044 | 0.4 | 0 |
| Sesame | 22 | 30 | .66 | 168.9 | 5.58 | 14.73 | 6.48 | 348.0 | 184.8 | 3.15 | 18.0 | 217.5 | 9.0 | 0.29 | 0.072 | 1.62 | 0 |
| Liver Lamb | 65 | 15 | .97 | 39.15 | 4.84 | 1.86 | 0.42 | 2.4 | 85.8 | 2.68 | 12.75 | 49.65 | 11175 | 0.073 | 0.76 | 3.73 | 5.4 |
| Turnip Green | 3 | 45 | .13 | 9.0 | 0.99 | .09 | 1.62 | 82.8 | 16.65 | 0.49 | - | - | 2835 | 0.057 | 0.108 | 0.27 | 31.05 |
| Salt | 6 | 0.5 | .004 | 0.0 | 0.0 | 0.0 | 0.0 | 1.27 | 0.0 | 0.0 | 193.75 | .02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 |
| Total | | 165.5 | 2.56 | 429.3 | 27.89 | 19.53 | 52.8 | 685.07 | 1018.55 | 13.73 | 310.15 | 1114.47 | 14,054.0 | 0.8 | 1.36 | 14.55 | 36.45 |
| | % RDA | | | 39% | 111.5% | 325% | 88% | 97% | 145% | 91.5% | 110% | 185.7% | 703% | 133% | 226% | 181% | 91.1% |

2/22/75

Figure # 7

| Target | RDA | → | | 1100 | 25 | 6 | 60 | 700 | 700 | 15 | 280 | 600 | 2000 | 0.6 | 0.6 | 8 | 40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Formula #6 | Cost/ Kg Afs. | Grams | Cost of 178.5 gms Afs. | Energy CAL | Protein GM | Fat GM | Carbo. Total MG | Calcium MG | Phos-phorus MG | Iron MG | Sodium MG | Potas-sium MG | Vitamin A I.U. | Thia-min MG | Robo-flavin MG | Niacin MG | Ascor-bic Acid MG |
| Components | | | | | | | | | | | | | | | | | |
| Wheat Bran | 3.5 | 60 | .21 | 127.8 | 9.6 | 2.76 | 37.14 | 71.4 | 765.6 | 8.94 | 5.4 | 672.6 | 0.0 | 0.42 | 0.21 | 12.6 | 0 |
| Butter Milk | 22.0 | 16 | .35 | 61.9 | 5.47 | 0.84 | 8.0 | 199.6 | 155.2 | 0.10 | 81.12 | 253.0 | 35.2 | 0.04 | 0.26 | 0.14 | - |
| Sesame | 22.0 | 20 | .44 | 112.6 | 3.72 | 9.82 | 4.32 | 232.0 | 120.2 | 2.10 | 12.0 | 145.0 | 6.0 | 0.196 | 0.048 | 1.05 | 0 |
| Mung Bean | 11.0 | 30 | .33 | 102.0 | 7.26 | 0.39 | 3.09 | 35.4 | 102.0 | 2.31 | 1.8 | 305.4 | 24.0 | 0.114 | 0.033 | 0.78 | - |
| Turnip Green | 3.0 | 52 | .15 | 10.4 | 1.14 | 0.10 | 1.87 | 95.6 | 19.24 | .57 | - | - | 3276.0 | 0.078 | 0.12 | 0.31 | 35.88 |
| Salt | 6.0 | 0.5 | .004 | 0.0 | 0.0 | 0.0 | 0.0 | 1.27 | 0.0 | 0.0 | 193.75 | .02 | 0.0 | 0 | 0.0 | 0.0 | 0.0 |
| | | 178.5 | 1.48 | 414.7 | 27.19 | 13.91 | 69.42 | 635.2 | 1165.2 | 14.02 | 294.07 | 1382.08 | 3341.2 | 0.83 | 0.69 | 14.91 | 35.88 |
| | | %RDA | | 37.7% | 108.7% | 231.6% | 115.7% | 90.7% | 166.4% | 93.4% | 105.0% | 230.4% | 167.0% | 138.3% | 115.0% | 186% | 90% |

2/24/75

Figure # 8

Formula Cost = Approximate cost per kg to buy the food components for this formula. Divide by 100 to get the cost per 100 grams.

3. Bulk Considerations

Frequently we refer to an earlier section entitled "Food Quantities & Shapes for Different Ages". A big problem in devising these weaning food formulae, is to pack the RDA nutrient into a quantity of food small enough for baby to consume in one day. Up to 1 year the baby will probably not consume more than 100 gram. Consequently these 100 grams need to be carefully selected and carefully prepared to allow baby to consume the RDA.

4. Infection Considerations

Section VII of this chapter will tell you exactly how to prepare these formulae including how to clean and serve the food to avoid infection (diarrhea) of baby. Item C below tells you what tools to use for feeding baby and how to clean and store them to avoid infection.

5. How Long to Use These Formulae

4-12 Months

These formulae may be used as a formula from 4 months to 12 months or approximately to the time the baby gets some teeth.

12-18 Months

The same formula used as a formula can be used to 18 months by changing only the courseness of the components ground and decreasing the fluidity.

18-24 Months

By 18 months the child will demand greater quantities of food. Because we chose the RDA to 2 years, these same food components chopped in courses grade or cooked separately can be used. Regardless of the courseness, the nutrient RDA will be present.

B. 2-5 Years

1. Post Weaning Foods

Weaning will take place at about 2 years. Up to this time the weaning food components and mix will be followed with increasing courseness of grind and decreasing water content (fluidity).

After 2 years increase the quantity of foods, increase the variety of foods, and do not use the weaning food formula as a formula.

Refer to the three food classification charts (growth, protective and energy foods). Serve the growing child a variety of foods and at least one from each food group at every meal. Avoid spices.

2. Recommended Daily Allowances

The RDA will be satisfied by increasing the quantity of of foods served.

3. Infection Considerations Chart # 7

At two years the healthy child has been walking for some time which increases his exposure to infection. Mothers will save themselves much worry, work and labor if they teach their children at very early age to

1. Defecate and urinate at latrines

2. Wash hands frequently (especially before eating).

3. Place only clean food and water in the infant's mouth; do not put fingers and other trash in the baby's mouth.

C. Selection and Sanitary Use of Minimal Feeding Tools Chart # 8

1. Feeding Tools Required

Chart # 8 describes the simplest feeding equipment required for the baby. One spoon, one cup and one plate all contained in a glass jar with a screw cap lid. If the jar lid is wide enough, the jar lid itself can be used as the plate. Alternatively, a plastic container with pressure type lid can be used.

2. Cleanliness & Storage of Feeding Tools

The baby's feeding tools should be washed in water after each meal and stored in the glass jar; add tea and used tea leaves to cover the tools in the jar; cover with the screw cap lid and turn upside down.

3. Re-use of Feeding Tools

Wash hands before touching baby feeding tools, open lid carefully to avoid dropping tools on ground, do not touch hands to parts going in baby's mouth; do not wash feeding tools with water until after you have fed baby.

D. Summary

1. You have 6 weaning food recipies which are useful to age two years. These recipies provide the RDA.

2. After 12 months the courseness and solidity of weaning food can be increased as well as the quantity.

3. After 18 months the components of the weaning food formulae can be chopped (instead of made into a gruel) and fed separately.

4. When breast feeding is supplemented with weaning foods, the chances of infection increase greatly. This does not mean you delay supplementation; instead you apply the rules of hygiene.

5. You were given a suggestion how to select, store, sterilize and use a simple kit of baby's feeding tools.

E. Visual Aids.

| | | | | | |
|---|---|---|---|---|---|
| Figure # 3 | Weaning Food Formula | | | #1 | (Mungbean) |
| Figure # 4 | " | " | " | #2 | (Broadbean+Crude) |
| Figure # 5 | " | " | " | #3 | (Broadbean+Cowpea) |
| Figure # 6 | " | " | " | #4 | (Crude+Sesame) |
| Figure # 7 | " | " | " | #5 | (Crude+Lentils+Sesame) |
| Figure # 8 | " | " | " | #6 | (Mungbean+Sesame) |
| Chart # 7 | Three Rules for Infant Hygiene | | | | |
| Chart # 8 | Infant Feeding Tool Kit | | | | |

Game - Let mothers select different food pictures from the three food classification charts (chart # 1, 2 and 3) to assemble the weaning food components.

# V. NUTRITION DURING PREGNANCY & LACTATION

## A. The Nutritional Requirements of Pregnancy

### 1. Diagram of Fetus (Chart # 9 )

(a) Uterus

(b) Placenta

(c) Fetal membrane

(d) Amniotic cavity

(e) Umbilical cord

(f) Fetus

Practically all of the nutrition requirements for mother, fetus, and placenta must be supplied by the mother's diet.

### 2. The Mother's Nutrient Requirements

The mother requires growth, energy, and protective foods not only to maintain her own good health but also to supply fetus and placenta.

### 3. The Fetal Nutrient Requirements

The fetus, like its mother, gains weight by storing nutrients and water and calls upon them as they are needed.

### 4. The Placental Nutrient Requirements

The placenta also requires nutrients for its development and maintenance.

The replacement of fetal stores come from the mother's reserves. For the mother, present nutrition is important but also past nutrition is equally important to create stores which provide the fetus with nutrients it needs when it needs them. The mother must have sufficient reserves. Therefore, we can now understand that:

a. The near-starving mother may give birth to a healthy child, but

b. Repeated pregnancies do not provide her time to replenish nutritional stores, hence, subsequent births result in high infant mortality and also mothers die pre-maturely.

### 5. The Transfer of Nutrients From Mother to Fetus

The umbilical cord connects fetus to placenta. Inside the umbilical cord are blood vessels which carry blood between placenta and fetus. During 9 months of growth the placenta

plays on important role in providing nutrition to the fetus. Attached to the uterine wall, the placenta permits the blood streams of mother and fetus to be very close to each other although the two blood streams never touch, and the blood in each remains separate. Oxygen and nutrients pass thru the placenta, from the blood stream of the mother to the fetus; waste products pass in reverse direction from the fetus into the blood stream of the mother.

The mechanism for the transfer of growth, protective, and energy foods is as follows:

1. Proteins-Proteins per se are not transferred from mother to fetus; however, amino acids which are the building blocks of protein are transferred from the mother to the fetus blood stream where proteins are made.

2. Minerals and Vitamins-These are taken from the mother, stored in the placenta, and called upon when needed by the fetus.

3. Calories and Fats-Fats are manufactured by the placenta and are not transferred from the mother. Calories are acquired by absorbing glucose from the mother, storing it in the placenta and the fetus calls for it as required.

6. Hormones and Antibodies

(a) The placenta secretes a hormone which acts on the pituitary thus preventing the ovary from releasing additional eggs. Thus pregnancy blocks ovulation and prevents conception.

(b) The placenta also products lactogen which prepares the mother's breast to produce milk.

(c) Antibodies are passed from mother to fetus hence the fetus acquires (for a limited time) all of the immunological defenses of the mother.

B. The Nutritional Requirements of Lactation

1. Requirements for Milk Production

Milk production is initiated by secretion of lactogen from the pituitary gland which assists in development of the breasts.

The amount of milk produced is determined by the mother's diet and the frequency of new born nursing.

The average mother produces 850-1000 of milimeters of breast milk per day (about one quart).
Human milk is the best for the infant and it avoids troublesome consequences of bottle feeding. Except for iron and vita D, mothers milk contains all the necessary nutrients for the new born until age 4 months. To produce a

satisfactory milk supply the mother must consume daily 2800 calories, 85 grams of protein, 3 grams of calcium, 21 milligrams of iron, and 7000 I.U. of vitamin A. Very few diets in the developing world contain this quantity of nutrients hence some of these nutrients must come for the mother's reserves. Consequently, close repetition of pregnancies prevents the mother from recovering the nutrient losses with the result that successive children suffer and often die.

2. Consequences of Inadequate Breast Feeding

Throughout the world the trend is a shortened breast feeding time. The consequences of this are:

(a) Clean nutritious mothers milk is replaced with contaminated food.

(b) Starchy weaning foods are substituted for the natural protein of mother's milk.

(c) The absence of lactation shortens mother's non-fertile period and there is danger of new pregnancy. This is a threat to the survival of the second child (now carrying). Specifically, in a close-together series of pregnancies:

(a) The first child risks being suddenly weaned and dying from inadequate food.

(b) The second child she is carrying does not give mother time to resupply (store ) nutrients

(c) Consequently the mothers health suffers, hence that of the fetus she is carrying.

C. The Recuperative Period

The reproductive cycle is not terminated with delivery. It includes lactation and recuperation. This later period is the time required for the physiology of the women to adjust to the non-pregnant status.

What the length of the recuperative period should be is not know. All studies, however, indicate that the optimum space between births is 3 years. Shorter as well as longer intervals mean increased risk of mortality for mother and child. To reduce infant mortality, mothers need 3 years to recuperate.

D. The Results of Malnutrition

1. On the Mother

Poor nutrition may cause the mother to experience serious complications of pregnancy and delivery making her incapable of properly breast feeding her child or

serving the needs of a new fetus if she becomes pregnant again. Maternal mortality and morbidity increase with the number of births (parity). Mortality is twice as high for mothers giving 5 and a greater number of births as it is for 2-4 births.

Diabetes and many other diseases occur with high parity.

2. On the Child

For the child, the most important consequence of failure to meet the nutritional requirements of pregnancy and lactation is infant mortality. High infant mortality rates are correlated with low birth weight, high parity, inadequate infant and preschool feeding, low daily caloric and protein intake of the mother, and low per capita national income.

1. The Importance of Birth Weight

If the diet supplies the needed requirements the healthy pregnancy results in good wieght of the fetus at delivery.

Birth weight is the single most important factor in neo-natal mortality.

2. Infant Mortality and Parity

Infant and early child mortality increases steadily with parity. In short, the chances of wasting pregnancies increase significantly after the third birth.

3. Infant Mortality and Closely Occurring Births

An interval between births is generally accepted as beneficial to the health of mother and child. Too short intervals and occasionally too long intervals are believed to be health hazards. An optimum interval between births is thought to be around 3 years.

4. Malnutrition and Mental Development

(a) From the second trimester of pregnancy to birth the brain cells multiply rapidly. At birth the process slows down thru the eight month of age after which there is little cell division. This increasing number of brain cells is called hyperplasia. Malnutrition at this stage can interfere with cell division resulting in fewer cells in the brain which is a permanent effect. From 8 months of age to approximately two years of age brain cells numbers cease to multiply and brain growth occurs by increase in the size of brain cells. This is called hypertrophy.

(b) By the end of first year of life, the brain has assumed 70% of its adult weight, and by the end of the second year its growth is almost complete.

Malnutrition during hyperplasia and hypertrophy can seriously limit the genetic potential of human brain development.

E. Summary

1. During pregnancy, practically all of the mother and fetal nutritional requirements are met by the daily diet.

2. During pregnancy, when mother's daily diet is inadequate, the fetus draws upon mother's reserves (stores) of food.

3. Repeated pregnancies (less than 3 year intervals) do not permit the mother to rebuild her stores. Consequently the life of mother and fetus are endangered.

4. At the time of delivery, certain harmones are secreted which initiate production of mother's milk.

5. During lactation, the infant always consumes more nutrients than the mother's daily diet supplies and mothers reserves are called upon.

6. During lactation harmones are secreted which prevent further pregnancy.

7. Inadequate breast feeding

   (a) Increases tendency to infection from unclean foods.

   (b) Increases tendency to non-nutritious foods (unless you use our weaning food formulae).

   (c) Shortens mother's non-fertile period-increases chances of another pregnancy.

8. A recuperative period between pregnancies helps to insure a healthy mother and healthy baby. The best time space between pregnancies is 3 years.

9. The results of malnutrition on the mother are increased chances to become sick or die.

10. The results of malnutrition on the child are inadequate brain growth hence low intelligence.

11. Too many pregnancies and too frequent (closely spaced) pregnancies will increase the chances of infant's & mother's death.

12. To have healthy children wait three years between pregnancies.

F. Visual Aids

1. Chart # 9 Diagram of Fetus (After 14 Weeks)

OUTLINE OUTLINE OUTLINE

VI. THE ECONOMICS OF FAMILY FEEDING

A. Food availability in your village and family

1. From 50-food list determine from interviews in village

(a) What foods are available*
(b) What is their cost
(c) What foods are purchased
(d) What foods are not available

B. Analysis of foods presently purchased

1. By cost
2. By nutrients

C. Suggestions for an improved diet

1. Nutrient improvement generally
2. Nutrient improvement - infant only
3. What would it cost to make a change in purchasing practices
4. Implications of the change

(a) The change can be made at no increased cash cost
(b) To a minor extent the family learns to eat different foods and greater variety.

D. Bringing new foods to the village

1. Will vendors stock new foods to sell?
2. Will husband buy new foods at weekly bazaar?
3. Does family have land to plant seeds?

E. Summary

VII. UTILIZATION OF FIFTY (50) AFGHAN FOODS

A. Six (6) standard food procedures-the "how to" series

1. Procure
2. Clean
3. Shape
4. Cook
5. Store
6. Serve

B. General principles of cooking the 50 foods

Cleanliness (food hygiene)
Vitamin loss
Use cooking liquors for soup
Development of bacteria
Safe storage
Safe cooking
Reheating of foods

* Figure #__9___ Availability of basic commodities as well as a wide range of fruits and vegetables as reported monthly to Da Afghanistan Bank from 47 stations throughout Afghanistan. (Dates for year 1352; 1-12 = commodities are available from the first thru twelfth Afghan months.)

# ESSENTIAL COMMODITY AVAILABILITY (1952)

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | [illegible] | 1-12 | — | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | — | 1-12 | — | 1-12 | 6-12 | — | — | 1-4 | — | 1-12 | — | — | — | 9-12 | 9-12 | 1-12 | — | 6-12 | — | 1-12 | 1-12 | | |
| 2 | [illegible] | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | 1-12 | 1-6 | 1-12 | 1-12 | 1-12 | 1-12 | 1-6 | 1-12 | 1-12 | — | — | — | — | 1-12 | 9-12 | 7-12 | — | 7-12 | 7-12 | 1-12 | 1-12 | — | 2-3 | 1-12 | 1-12 | | |
| 3 | [illegible] | 1-12 | 1-4 | — | 1-12 | 1-2 | 1-12 | 1-12 | — | 1-12 | — | — | 1-12 | — | 1-12 | 7-12 | — | — | — | — | 1-12 | — | — | — | — | — | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | | |
| 4 | [illegible] | 1-12 | 1-2 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | — | 1-12 | — | 1-12 | 1-12 | 7-9 | 6-8 | 6-8 | — | — | 1-12 | — | 1-12 | — | — | — | — | 6-12 | — | 1-12 | 1-12 | — | 1-12 | 1-12 | | |
| 5 | [illegible] | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | 11-12 | 1-12 | 1-2 | 6-12 | 9-12 | 4-6 | — | — | — | 1-12 | — | 8-12 | — | 8-12 | 8-12 | 1-12 | 1-12 | 8-9 | — | 1-12 | 1-12 | | |
| 6 | [illegible] | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 6-7 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 6-12 | 3-8 | 3-8 | 4-8 | 4-5 | 1-12 | — | 7-11 | — | 1-12 | — | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | | |
| 7 | [illegible] | 1-12 | — | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | — | 1-12 | — | — | 1-12 | — | 6-12 | 6-12 | — | — | — | — | — | 1-12 | — | — | — | — | 1-12 | 1-12 | — | — | 1-12 | 1-12 | | |
| 8 | [illegible] | 1-12 | — | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | — | 1-12 | — | — | 1-12 | — | 9-12 | 8-12 | 3-6 | — | 1-12 | — | 1-12 | — | 6-9 | — | — | — | 1-12 | 1-12 | 1-9 | — | | | | |
| 9 | FAGAN | 1-12 | 1-3 | 1-12 | 2-10 | 1-3 | 1-12 | 1-12 | — | 1-12 | — | 3-10 | 1-12 | — | — | — | — | — | — | — | 1-3 | — | 7-9 | — | — | — | 1-12 | 1-12 | 1-3 | — | | | | |
| 10 | [illegible] | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | 1-12 | 3-4 | 1-12 | — | — | 1-12 | 3-6 | 1-12 | 7-12 | 4-6 | — | — | — | — | — | 6-12 | 3-6 | 3-7 | — | 1-12 | 1-12 | 1-12 | — | | | | |
| 11 | [illegible] | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | — | 1-6 | 1-12 | 1-8 | 1-12 | 7-12 | 3-6 | — | — | — | 1-12 | 1-12 | 7-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | | |
| 12 | [illegible] | 2-3 9-12 | — | 2-3 9-12 | — | 2-3 9-12 | 2-3 9-12 | 2-3 9-12 | — | 2-3 9-12 | — | — | 2-3 9-12 | — | — | — | — | — | — | — | — | — | — | — | — | — | 2-3 9-12 | 2-3 9-12 | 2-3 | — | 2-3 9-12 | 2-3 9-12 | | |
| 13 | [illegible] | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | 1-12 | — | 1-12 | 3-6 | 2-6 9-12 | 1-12 | 8-12 | 8-12 | 8-12 | — | 3-5 | 2-8 | 7-8 | 1-12 | — | 6-9 | 3-4 | — | — | 8-11 | 1-12 | 1-12 | — | 1-12 | 1-12 | | |
| 14 | [illegible] | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | — | 1-12 | | 1-12 | 1-12 | — | 8-9 | 5,10,12 | 3-7 | 2-6 | 1-12 | — | 1-12 | — | 8-12 | 3-4 | 8-12 | — | 1-12 | 1-12 | 1-12 | — | | | | |
| 15 | [illegible] | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | 1-12 | 1-3 | 1-12 | — | — | 1-12 | — | 8-12 | 9-12 | — | — | — | — | 2,6 | 2 | 5 | — | — | — | 2-3 | 1-12 | — | — | | | | |
| 16 | [illegible] | 1-12 | 1-12 | 1-12 | 4-12 | 1-2 | 7-12 | 1-12 | — | 1-12 | — | 1-12 | 1-12 | 6-12 | 9-12 | 9, 11 | 5-7 | — | — | — | 3-12 | — | 5-11 | — | 1-12 | — | 1-12 | 1-12 | — | — | | | | |
| 17 | [illegible] | 1-12 | — | 1-12 | 4-6 | 1-12 | 1-12 | 1-12 | — | 1-12 | — | — | 1-12 | 1-12 | 9-12 | — | 6,12 | 5,6,12 | 1-12 | 2,3 | 1-12 | — | 5,6 | — | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | | | | |
| 18 | [illegible] | 1-12 | 1-12 | 1-12 | 4-12 | 1-12 | 1-12 | 1-12 | 1-2 | 1-12 | — | — | 1-12 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1-12 | — | — | | | | |
| 19 | [illegible] | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | 1-12 | 1-3 | 1-12 | 2-12 | 1-6 | 1-12 | 1-2 | 7,12 | 7-12 | 3-8 | — | — | 3-5 | 1-12 | — | 6-12 | — | 3-5 9-12 | 1-12 | 1-12 | 1-12 | 1-12 | 2-12 | | | | |
| 20 | [illegible] | 1-12 | 1-12 | 1-12 | — | — | 8-12 | 1-12 | — | 1-12 | 9-12 | 1-3 | 1-12 | 5-12 | 9-11 | 9-11 | — | — | — | — | — | — | — | — | — | — | — | 1-12 | — | — | | | | |
| 21 | [illegible] | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | 1-12 | — | 1-12 | — | 1-6 | 1-12 | 8-12 | 9-12 | 5-12 | 2-6 | — | — | — | 1-12 | — | 5-9 | 2-5 | — | — | 1-12 | 1-12 | 1-12 | — | | | | |
| 22 | [illegible] | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | 1-12 | 2-3 | 1-12 | 1-12 | 1-12 | 1-12 | 6-7 | 6-12 | 9-12 | 5-6 | 5-6 | 3-7 | — | 1-12 | — | 6-9 | — | 4-11 | 5-12 | 1-11 | 1-12 | [illegible] | 3 | | | | |
| 23 | [illegible] | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | 1-12 | 1-6 | 1-12 | — | — | 1-12 | — | — | — | — | — | — | — | — | — | — | — | — | — | 1-12 | 1-12 | — | — | | | | |
| 24 | [illegible] | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-2 | 1-12 | 1-12 | 1-12 | 1-12 | 12,7-12 | 1-12 | 6-12 | 3-8 | — | 1-9 | 2-6 | 1-12 | 1-7 | 7-12 | — | 1-12 | 1-5 | 1-12 | 1-12 | 1-12 | 6-12 | 1-12 | 1-12 | | |
| 25 | [illegible] | 1-12 | 1-12 | 1-12 | 3-11 | 1-12 | 1-12 | 1-12 | 2-3 | 1-12 | — | — | 1-12 | 1-2 | — | — | 4-6 | 6-8 | 2-6 | 3-4 | 1-6 | — | 5-9 | 3-4 | — | — | 1-12 | 1-12 | 1-12 | — | | | | |
| 26 | [illegible] | 1-12 | 1-12 | 1-12 | 5-12 | 1-12 | 1-12 | 1-12 | — | 1-12 | — | 1-12 | 1-12 | 4-12 | 7-11 | 7-11 | 3-5 | — | 1-12 | 4-7 | 1-12 | — | 6-12 | — | — | — | 1-12 | 1-12 | 1-8 | — | | | | |
| 27 | LOGAR | 1-12 | 1-12 | 1-12 | 2-3 | 2-12 | 2-12 | 2-12 | 2-3 | 2-12 | 2-3 | — | 2-12 | — | 8-12 | 8-9 | 4-6 | — | — | — | 6 | — | 4-9 | — | — | — | 2-12 | 2-12 | — | — | | | | |
| 28 | [illegible] | 1-9 | — | 1-12 | — | 1-12 | 1-12 | 1-12 | — | 1-12 | — | — | 1-12 | — | 9-9 | — | 4-6 | — | — | — | 1,5,7 | 1,4-12 | — | — | — | — | 1-12 | 1-12 | — | — | | | | |
| 29 | [illegible] | 1-12 | 1-12 | 1-12 | 1-6 | 1-12 | 1-12 | 1-12 | 3,6 | 1-12 | 1-12 | 5-12 | 1-12 | 1,2 | 1-12 | 8-12 | 4,5 | 6,8 | 1-12 | 7 | 1-12 | — | — | — | 5-12 | 6-12 | 1-12 | 1-12 | 1-12 | — | | | | |
| 30 | [illegible] | 1-5 | 1-5 | 1-5 | 1-5 | 1-5 | 1-5 | 1-5 | 1-5 | 1-5 | 1-5 | 1-5 | 1-5 | 1 | 1 | — | — | 2-5 | 1-5 | 3-6 | 1-3 | — | 4-5 | 3 | 1-5 | 1-5 | 1-5 | 1-5 | 1-5 | 1-5 | | | | |
| 31 | [illegible] | 1-12 | 1-12 | 1-12 | 5-6 | 1-12 | 1-12 | 1-12 | 2-4 | 1-12 | — | — | 1-12 | — | 1,9-12 | 10,11 | 4-6 | — | — | — | 1-12 | 1-8 | 7-8 | 3-4 | — | — | 1-12 | 1-12 | — | — | | | | |
| 32 | [illegible] | 1-12 | 1-3 | 1-12 | — | — | 6-12 | 1-12 | — | 1-12 | — | 2-6 | 1-12 | 1-3 | — | — | — | — | — | — | 1,9,12 | — | 3 | 3-5 | — | — | 1-12 | 1-12 | — | — | | | | |
| 33 | [illegible] | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1,7-12 | 1-12 | 1-12 | 1-12 | — | 1-8 | 1-12 | 1,8-12 | 1,8-12 | 1,8-12 | 1-10 | 3-12 | — | 1-10 | 1-12 | 1-10 | 6-10 | 3,9 | 1-10 | — | 1-12 | 1-12 | — | 1-10 | | | | |
| 34 | [illegible] | 1-12 | 1-5 | 1-12 | — | 1-12 | 1-12 | 1-12 | — | 1-12 | — | 2-3 | 1-12 | 1-5 | 1-12 | 7-12 | 6 | 7-12 | 8-12 | 7 | 7-12 | 1,7,9,12 | 7-8 | — | — | — | 3-12 | 1-12 | — | — | | | | |
| 35 | [illegible] | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | 1-12 | — | 1-12 | — | — | 1-12 | — | 9-12 | 9 | 5 | — | — | — | — | — | 8,9 | — | — | — | 1-12 | 1-12 | — | — | | | | |
| 36 | [illegible] | 1-12 | 1-12 | 1-12 | 1-6 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 3-12 | 1-12 | 1-12 | 3-7 | 1-12 | 1,7-12 | 3-7 | 3,7-12 | 3-6 | — | 2,7-12 | 2-11 | 1-12 | 4-5 | 3-12 | — | 1-12 | 1-12 | 1 | 6 | | | | |
| 37 | [illegible] | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 2-4 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 4 | 1-4 | 1-12 | 4,8 | 1-12 | 1-3,10-12 | 1-12 | 3-4 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-5 | | | | |
| 38 | [illegible] | 1-12 | 1-12 | 1-12 | 9-12 | 1-12 | 1-12 | 1-12 | 1-2 | 1-12 | — | — | 1-12 | 9-12 | 7-12 | 7-12 | 4-5 | — | — | — | 1-5 | 10-12 | 11-12 | — | — | — | 1-12 | 1-12 | 10-11 | — | | | | |
| 39 | [illegible] | 1-12 | 1-12 | 1-12 | 6-12 | 1-12 | 1-12 | 1-12 | 1-2 | 1-12 | 1-12 | 1-4 | 1-12 | 1-2 | 9-12 | 7-12 | 5-7 | 3,5 | 4-5 | — | 1-12 | — | 7-10 | 1-6 | 1-12 | 1-12 | 1-12 | 1-12 | 6-12 | 4-6 | | | | |
| 40 | [illegible] | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | — | 1-12 | 1,7 | 1,9,10 | 8-11 | 5-8 | 5,6,10-12 | 1-9 | 5 | 1-4,7-12 | — | 7-9 | 3 | 1-12 | — | 1-12 | 1-12 | 1-12 | — | | | | |
| 41 | [illegible] | 1-12 | 3-12 | 1-12 | — | 8-12 | 6-12 | 1-12 | — | 1-12 | — | 2 | 1-12 | 8-12 | 9-12 | 9-12 | 5 | — | — | — | — | — | 6-10 | — | — | — | 4-6 | 1-12 | — | — | | | | |
| 42 | [illegible] | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | 1-12 | — | 1-12 | 1-12 | 1-12 | 1-12 | 1-3 | 7-12 | 7-12 | 2-8 | 4-12 | 1-10 | 3-9 | 1-12 | 11-12 | 4-11 | 4,9,12 | 1-12 | 1-9 | 1-12 | 1-12 | 1-12 | — | | | | |
| 43 | [illegible] | 1-11 | — | 1-12 | — | — | 3-6 | 1-12 | — | 1-12 | — | — | 1-12 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 1-12 | 3-9 | — | | | | |
| 44 | [illegible] | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-3 | 1-12 | 1-12 | 2,9 | 1-12 | 1-5 | 7-12 | 7-12 | 4-7 | — | — | 4-6 | 1-12 | 3 | 7-12 | 3,10-12 | — | — | 1-12 | 1-12 | 3,9,10 | — | | | | |
| 45 | [illegible] | 1-12 | 1-12 | 1-12 | — | — | — | 1-12 | — | 1-12 | — | — | 1-12 | — | — | — | — | — | — | — | 11-12 | — | — | — | — | — | — | 1-12 | — | — | | | | |
| 46 | [illegible] | 1-12 | 1-12 | 1-12 | — | — | 6-12 | 1-12 | — | 1-12 | — | — | 1-12 | 6-12 | 9-12 | — | 2-6 | — | — | — | 6-8 | — | 2,9,10 | 3-6 | 6-12 | — | 8-12 | 1-12 | 6-12 | — | | | | |
| 47 | [illegible] | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | 1-3 | 1-12 | 1-12 | 1-12 | 1-12 | 1-3 | 6-12 | 5-12 | — | — | 1-12 | — | 1-12 | 9-12 | 3-11 | — | 1-12 | 1-12 | 1-12 | 1-12 | 1-12 | — | | | | |

FIGURE #9

C. Six (6) weaning food formulae

Analysis and feasibility of the formulae

Minimal daily requirements
Points where supplementation required
Availability of food components
Cost verification

How to prepare-step by step procedure
When to prepare-advance weekly and daily preparation
How to supplement
Frequency of feeding

D. Summary

E. Visual Aids

| | |
|---|---|
| Appendix II | -Movies and film strips |
| Appendix III | -Charts of the "how to" series |
| Figure # 2 | -List of Fifty (50) Afghan Foods With Nutrient Values |

NOTE: Tentative arrangements have been made for Mrs. Mary MacMakin to write the text against the preceeding outline for Sections VI and VII. The proposed purchase order to permit Mrs. MacMakin to do this work is attached as Appendix III.

## VIII. EIGHT NUTRITION-RELATED DISEASES

### A. The Chart of Eight Nutrition-Related Diseases

Figure # 10 a+b+c lists the eight (8) most prevalent nutrition diseases in Afghanistan. Use this chart to memorize names of the diseases and their symptoms, causes, treatment and prevention.

### B. Nutrient Inter-Dependence

Scientists have learned that many nutrients do not act independently but instead are influenced by other nutrients Examples of this, particularly important for Afghanistan, are as follows:

1. Sunlight and Vitamin D (Chart # 5 )

Calcium and phosphorus are poorly absorbed by the body in the absence of Vitamin D. The body manufactures Vitamin D by the exposure of skin to sunlight. Therefore, even if your diet contains enought calcium and phosphorus, it may not be properly utilized without sunlight.

In Afghanistan the sun shines very brightly-much more so than in many other countries. Afghanistan is very rich in sunlight. However, women in chadri and heavily bundled babies must remove these covers from some of the body and expose the arms, face, hands, and legs to the mid day sunlight at least a full hour every day. Rickets in children and osteomalacia in adults are diseases which come from lack of sunlight.

2. Protein and Vita A

Another interdependency exists between protein and vitamin A. Scientists now tell us that our body may not use the protein it has stored, if there is not also adequate vitamin A. In Afghanistan adults have good protein from wheat and meat. Infants must get their protein principally from well-prepared weaning foods containing high protein legumes and cereals. Both adults and infants may not use this protein to full advantage, if they do not also eat foods containing vita A. (Refer to Figure 2 - b to remind yourself what foods contain vitamin A.)

### C. The Road to Health Charts (Chart 10, 11, 12, 13)

To conclude this chapter on nutrition we should ask how it is possible to know that our baby is getting enough growth, protective and energy foods. The simple answer to this is: Scientists have decided that a continuous steady increase in body weight month after month is the single most important indicator of good health. Failure of the infant to show a steady gain in weight is an early indicator that malnutrition and/or infection is retarding the infant's physical and mental development. Charts 10 & 11 (Figure 11) are samples of an infant age weight record card. Charts 12, 13 & 14 are actual weight histories of infants who incurred various diseases and infections. These chart demonstrate how weights are effected by the onset of disease, & conversely, how periodic recording of weights can provide a signal of ill-health. Chapter five deals with infant weights in great detail.

## THE EIGHT MOST IMPORTANT NUTRITION RELATED DISEASES

** K Formula
* Diarrhea Mixutre

| SERIAL | DISEASE NAME | SYMPTOMS | CAUSES | TREATMENT DO | TREATMENT DON'T | PREVENTION |
|---|---|---|---|---|---|---|
| 1. | Weaning Diarrhea | Liquid & frequent stools<br>Weakness<br>Dehydration | 1/ Intestinal infections<br>2/ Improper food<br>3/ Hunger | Breast feed<br>Give food & water<br>Give diarrhea mixture* | Give laxitive<br>Stop food<br>Stop water | Breast feed exclusively to 4 mos<br>Observe sanitation rules<br>Provide highly nutrition diet |
| 2. | Marasmas | General emaciation & weakness | General starvation of both protein & calories<br>Prolonged breast feeding without supplementation | 1/ Restoration of full diet starting with milk<br>2/ Prevention of disease | | Adequate diet after 4th month<br>Prevention of disease |
| 3. | Kwashiorkor | 1/ Always Present<br>Edema, growth, failure, misary, weakness & over lying subcutaneous fat.<br>2/ Sometimes Present<br>Hair thinness & Change of color lightness of skin particularly on face<br>3/ Occasionally Present<br>Flaky-paint rash on skin ulcers & open sores on skin | 1/ Protein deficiency in post weaning stages of infancy.<br>2/ Infections | 1/ Dietary<br>Give protein in easily digestable from (milk) & keep patient worm<br>Give Kwashiorkor formula<br>Follow with broad nutrient diet<br>2/ Nutrition education to mother | | 1/ Nutrition education<br>2/ Prevention of disease<br>**<br>3/ Time interval between births |
| 4. | Avitaminosis A | 1/ Skin - Dry & rough skin<br>2/ Eye - Lesions of eye, ulceration/perforation of eye, soap-foam eye (Bitot's spot) night blindness (cannot see in dark) | Lack of Vitamin A | Large doses Vita A | | Diet containing Vita A |

Figure # 10 - a

Figure # 10 - a

| | | | | | |
|---|---|---|---|---|---|
| 5. | Beriberi (Vita B-1) | 1/ Chronic constipation<br>2/ Gastro intestinal troubles<br>3/ Degeneration of heart muscles<br>4/ Non-function or paralysis of lower<br>5/ Muscular & nervous fitague | Thiamin (B-1) deficiency | Therapeutic doses thiamin | Diet containing Th thiamin |
| 6. | Ariboflavinase (Vita B-2) | 1/ Eye- burning sansation, redness, fatigue<br>2/ Lips -swollen, craking, peeling, lesions in corner mouth<br>3/ Tangue - burning, pain & cracking<br>4/ Face-accumulation of grease around corners of nose, eyes, behind ears | Riboflavin (B-2) deficiency | Therapeutic doses riboflavin | Diet containing riboflavin |
| 7. | Scurvy (Vita C) | 1/ Occurs between 6th & 8th month<br>2/ Restlessness, loss of weight & appetite<br>3/ Sore mouth & bleeding gums<br>4/ Loose teeth, weakness (In children) hemorrhage in gum near erupting teeth, gums are swollen & dark red<br>5/ Irritability, aches & pains in joints & muscles | Vita C deficiency | Vita C tablets & food | Diet containing ascorbic acid |
| 8. | Rickets (Vita D) | 1/ Bowed bones & skeletal mal-formation (called osteomalacia in adults)<br>2/ In infants -poor classification<br>-bones are plaible, malformed & distarted<br>-enlarged wrists/ ankles & bowed legs or knock knees | Lack of sunlight | Diet rich in calcium, phosphorus, and sunlight | |

Figure # 10 - b



Figure # 10 - b

تغیرات موی
پرخونی
چهره گرد
عضلات ضعیف
باموجودیت شکم
آماس
کم وزنی

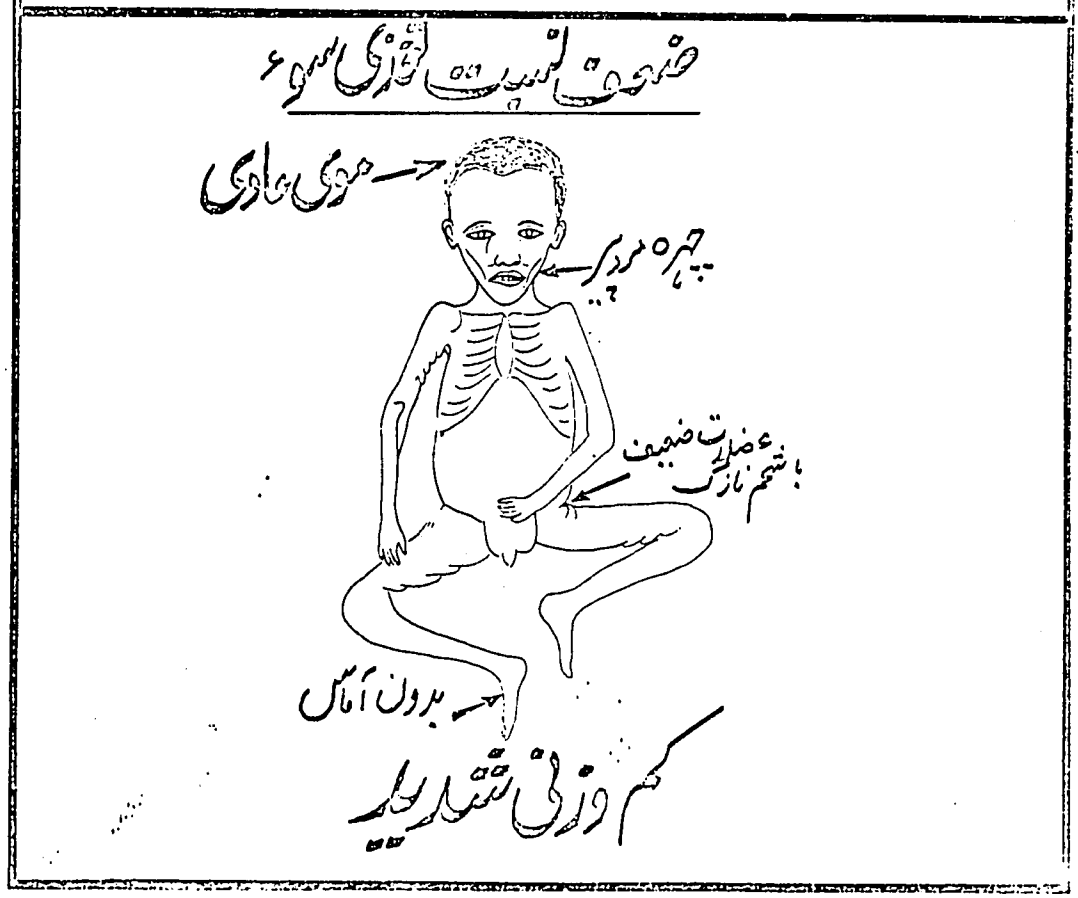
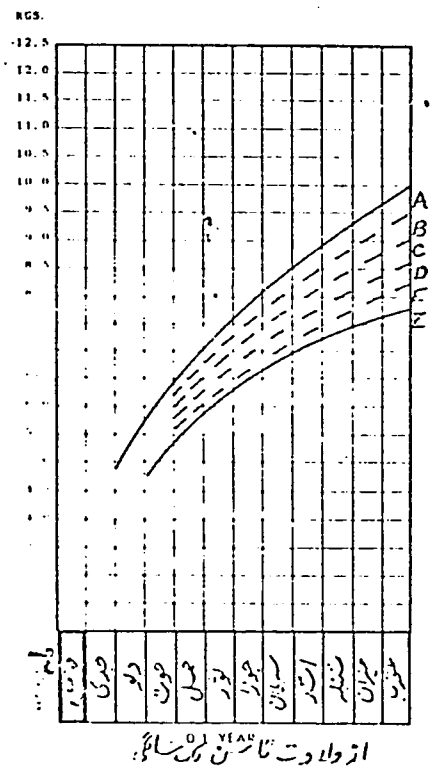

ضعف تغذیه
موی عادی
چهره مردی
عضلات ضعیف
باشکم نازک
بدون آماس
کم وزنی شدید

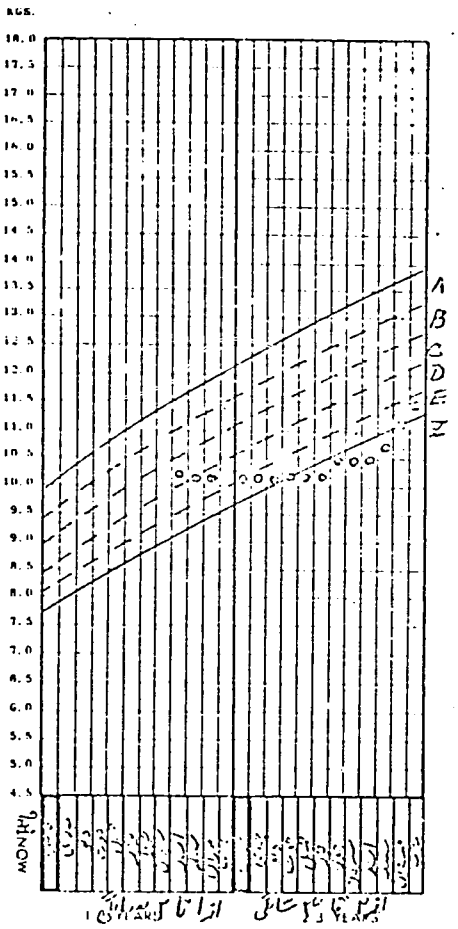
FIGURE # 10-C

# CHILD'S HEALTH AND WEIGHT RECORD OVER FIRST FIVE YEARS

MAJOR ILLNESSES TO BE ENTERED ON CHART

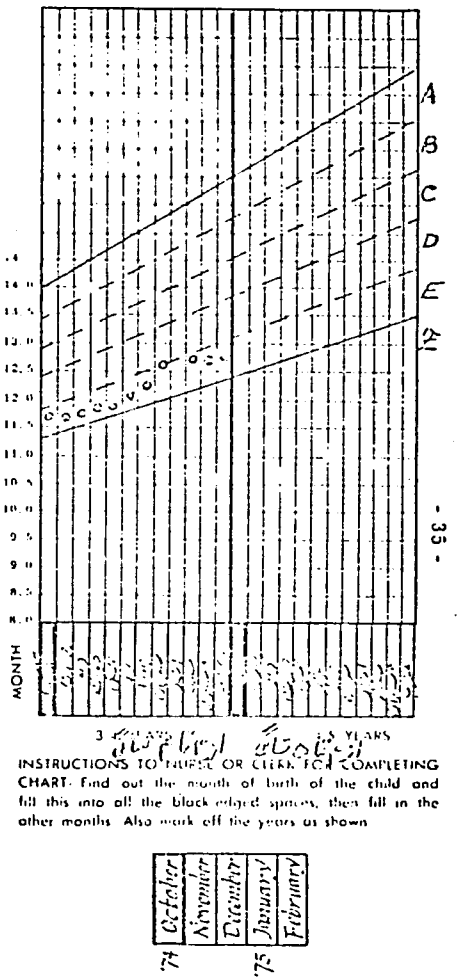



## PRE-SCHOOL HEALTH PROGRAM




UPPER LINE This represents the average weight of healthy and well fed children

LOWER LINE The weight of children should be above this line A steady upward progress of the weight record is more important than its position




INSTRUCTIONS TO NURSE OR CLERK FOR COMPLETING CHART: Find out the month of birth of the child and fill this into all the black edged spaces, then fill in the other months Also mark off the years as shown

| October | November | December | January | February |
|---|---|---|---|---|
| '74 | | | '75 | |

When the child comes for weighing make a large dot in that month's column against the weight Connect this with the last dot

Figure 11

In your job of providing better health care to villages, you will place very heavy reliance on monthly wieghts of infants.

D. Summary

1. Review Figure # 10 and recall the principal symptoms, causes, and treatment of the eight nutrition-related diseases.

2. Sunlight is necessary to manufacture vita D in the body.

3. Vitamin D is necessary for the body's absorption of calcium and phosphorus.

4. Infants and their mothers should expose their arms, faces, hands and legs to sunlight each day.

5. A balanced diet containing all of the nutrients in growth foods, protective and regulatory foods, and energy foods is necessary for good health. (Chart #'s 1, 2, 3)

6. Because of nutrient inter-dependence, the absence of one nutrient may prevent proper use of other nutrients even though they are available in the foods we eat.

E. Visual Aids

Figure # 10 a+b+c Eight Nutrition Related Diseases

Chart #'s 1, 2, 3, Growth, Protective, and Energy Foods

Figure #'s 2 a+b List of Fifty (50) Afghan Foods with Nutrient Values

Figure # 11 Infant's Age/Weight Chart

Chart # 12 Onset of Dieases After Termination of Breast Feeding

Chart # 13 Nutritional Deterioration After Onset of Whooping Cough

Chart # 14 Intections of a Village Girl Leading to Death

## IX. THE OLD AND NEW MEDICAL SYSTEMS

2500 years ago in Arabia and Greece man thought diseases were caused by hot, cold, dry and moisture. They applied this classification to their food. The concepts of hot, cold, dry and moist, were called Unani or Dushi medicine. Later, when man travelled to India, the Ayurvadeci concepts of medicine were added to Dushi medicine because the climate and herbs of India differed from those in Greece and Arabia.

Unani medicine taught that meat, fish, and eggs were hot foods and when they acted well they stimulated the body to grow and have strength. When these same foods acted badly they produced diarrhea, vomiting, stomach ache, and death. The cold foods were fruits, vegetables, curds and milk. When they acted well they calmed the nerves, gave healthy skin and eyes and good stomach condition. According to Unani medicine when you have a cold, sore throat and headache you should not eat these cold foods. Neutral foods according to Unani were wheat, rice, maize, butter, ghee, oil, and sugar.

Commencing little more than 100 years ago modern medicine developed the microscope and the concepts of germs and bacteria. When harmful bacteria and germs enter the body we get sick. By the same token, when bacteria and germs fall on meat fish and eggs they eat these foods, multiply in number, and when humans eat spoiled meat, fish, and eggs they too get sick.

Summary

Modern medicine:

1. Broadened man's knowledge to include germs and bacteria and from this developed rules for personal hygiene and sanitation.

2. Recognized that the highly perishable animal proteins, unless they were refrigerated, soon become contaminated with germs and bacteria and if consumed would produce illness.

3. Identified what nutrients humans require and the nutrient composition of foods to meet these requirements.

4. Classified these foods into growth, protective and energy foods.

Just as science has brought to Afghanistan the airplane as a modern way to travel, so science has brought to Afghanistan modern ways to develop and maintain good health for mothers and babies.

# CHAPTER III

## SANITATION

I INTRODUCTION

II THE SELECTIVE USE OF WATER AND THE TOPOGRAPHIC PLACEMENT OF WATER USE FACILITIES

- A SELECTIVE USE OF WATER
- B THE TOPOGRAPHIC PLACEMENT OF WATER USE FACILITIES
- C SUMMARY
- D VISUAL AIDS

III WASTE DISPOSAL

- A HUMAN WASTE DISPOSAL
- B ANIMAL WASTE DISPOSAL
- C GARBAGE AND TRASH DISPOSAL
- D SUMMARY
- E VISUAL AIDS

IV INSECT AND RODENT CONTROL

- A INSECTS
- B RODENTS

V WATER PURIFICATION

- A WELLS FOR DRINKING WATER
- B RUNNING VERSUS STAGNANT WATER
- C PURIFICATION OF WATER
- D THE WASHING AND STORAGE OF EATING UTENSILS
- E SUMMARY
- F VISUAL AIDS

# CHAPTER III

# SANITATION

## I INTRODUCTION

Improved health through better nutrition and personal hygiene requires changes in behavior which each individual family is capable of achieving. If you so decide, your infant's health can be improved even though your neighbor chooses not to follow; your infant's exposure to illness can be reduced if you and your family decide to change your personal hygiene habits.

On the other hand, improved sanitation requires a concerted action by all villagers; a polluted stream, an unsealed latrine, and unburied trash affect the health of all the people living in the same village. Total village cooperation is required if progress is to be made on improved sanitation. Improvement in village sanitation will not be easy but it is definitely within the power and means of villagers to achieve. In this chapter, and the next, the Village Health Agent is provided information about how to control infection.

## II THE SELECTIVE USE OF WATER AND THE TOPOGRAPHIC PLACEMENT OF WATER USE FACILITIES

Before we discuss the details of how to improve village health through better sanitation, two fundamental principles need to be illustrated. These are (1) the selective use of water resources, and (2) the placement of water use facilities in the compound and village.

### A. SELECTIVE USE OF WATER

Humans require water to drink, bathe, for their animals, irrigate their fields and to dispose of human waste. These uses are listed in the sequence of water purity, i.e. the purest water obtainable should be used for drinking; the least clean water can be used for the disposal of human waste. Figure III-1-A, B and C illustrate how we should select various sites along a river or stream to utilize water for our various needs.

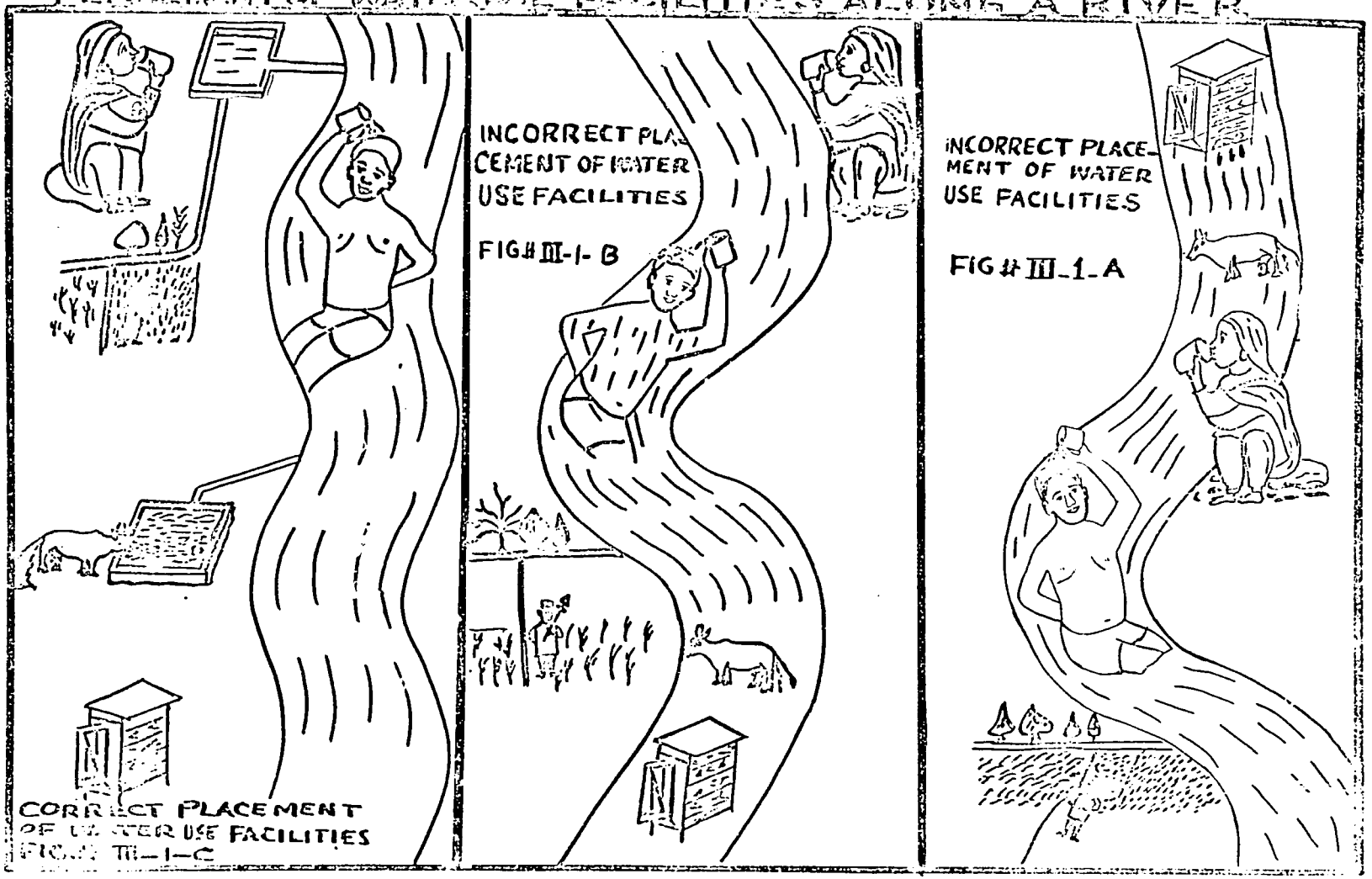
### B. THE TOPOGRAPHIC PLACEMENT OF WATER USE FACILITIES

By topographic placement we mean where do we place the latrine, drinking well, bathing site, and animal watering facility in relation to one another and in relation to the slope of the land. A word about surface water and ground water resources will explain the point.

1. Surface Water Resources - A rainstorm washes the earth's dirty surface and the dirt flows into the nearest river or juie. The surface run-off contains microbes and these pollute the rivers and juie. Therefore we wish to avoid as much as possible dirt and microbes washing into our rivers. How this may be accomplished is illustrated in Figure III-1-C.

2. Ground Water Resources - In addition to surface water, there are also streams of water moving underground. Sometimes these are kariz and sometimes they are movements of water along different strata of soil and rock. Either system can become contaminated by soil seepage. Figure III-2-A illustrates the principle of water seepage. Figure III-2-B explains the fact that seepage is always in the direction of ground water flow. Therefore, from Figure III-2-C we can learn that the placement of our drinking well must also take into consideration the soil seepage.

# PLACEMENT OF WATER USE FACILITIES ALONG A RIVER



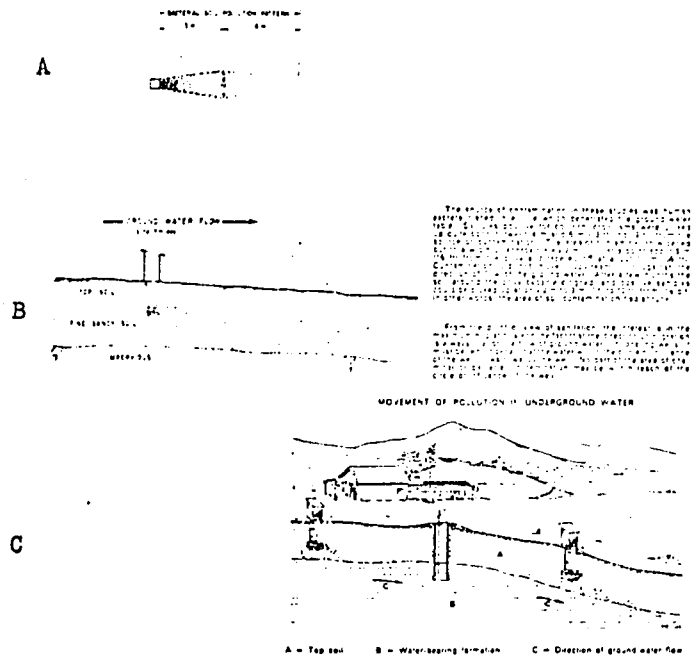



FIGURE III - 2

C. SUMMARY

The following principles emerge from this discussion:

1. Improved nutrition and personal hygiene can be achieved by a family even though other villagers do not wish to cooperate. Improved sanitation, (clean water, waste disposal), on the other hand, requires the cooperation of the whole village.

2. We require water to drink, to bathe, for our animals, to irrigate our fields and to dispose of human waste. On a river or along a juie the village should allocate special places for each of these activities preserving the cleanest water for drinking and bathing and the dirtiest water for human waste disposal.

3. Water availability is classified as surface water and ground water. Surface water is that which comes from rain, brooks, and rivers and irrigation runs; ground water is that which runs underground following kariz and the strata of soil and rock.

4. Infectious agents (microbes) are transmitted by surface water from the ground's dirty surface. Microbes and other infectious agents also are transmitted by ground water along kariz and earth strata for limited distances.

5. Seepage (migration) of microbes is always moving in the direction of the ground water flow. Therefore, the location of a drinking water well relative to the location of a latrine should be determined after considering ground water seepage into the well.

D. VISUAL AIDS

Figure III-1-A, B, C Selection of Water-Use Sites Along a River

Figure III-2-A, B, C Principles of Water Seepage and Placement of Drinking Water Well

# III WASTE DISPOSAL

## A. HUMAN WASTE DISPOSAL

If human feces is not properly disposed of it can cause serious infection and illness. A good disposal system for human waste is a sanitary latrine and this is possible to construct in a village. The way to build and maintain a sanitary latrine and its physical location in relation to the house and other water use systems follows:

### 1. How to Build a Latrine

(a) Latrine Components - A latrine consists of:

(i) a deep hole to catch the feces
(ii) a concrete slab with hole to cover the floor
(iii) a small house (shed) to provide privacy during defecation.

Figure III-3 illustrates the various parts of a sanitary latrine. Figure III-4 illustrates various shed models.

(b) Latrine Characteristics - Characteristics of a good latrine are:

(i) the hole is dark which discourages flies
(ii) the shed and concrete slab are flyproof
(iii) the shed and concrete slab can be moved when the hole is filled
(iv) the shed has a roof ventilator to reduce heat and odor

Figure III-5 and Appendix VI describe how to build a water-seal (flyproof) concrete slab.

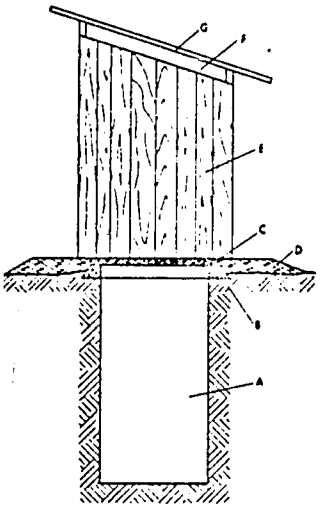
(c) Location of a Latrine

(i) the latrine should be located some distance from the house so that flies and insects which enter the latrine will not go to the house, nor will the smell of the latrine reach the house.
(ii) the latrine should not drop into the river nor drain toward the river - this would pollute the water for other families; the latrine should be located in a dry part of the property where there will be minimum seepage.
(iii) according to the flow of ground and surface water, the latrine should be located "downstream" from these other water use facilities.

(d) Maintenance of Latrine Cleanliness

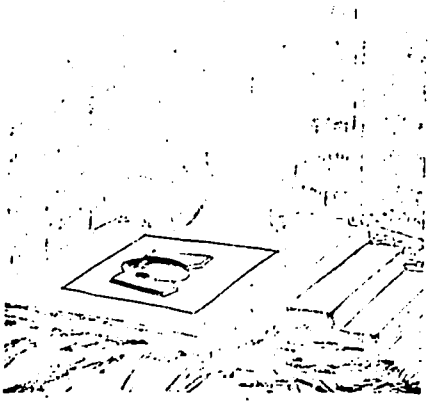
(i) construct the latrine to make it fly proof
(ii) paint/whitewash the inside of the latrine shed
(iii) wash the inside of the latrine with soap, water and dettol once every week
(iv) keep a container of water and a bar of soap inside the latrine so you can wash your hands and flush the latrine immediately after defecation.
(v) cover the hole with plenty of dirt when you move the latrine
(vi) never use human feces to fertilize your garden

VARIOUS PARTS
OF A SANITARY PRIVY




A = Pit
B = Base
C = Floor
D = Mound
E = House, includi g door
F = Ventilation
G = Roof

FIGURE III - 3



SKETCH OF FENESHED PREVY

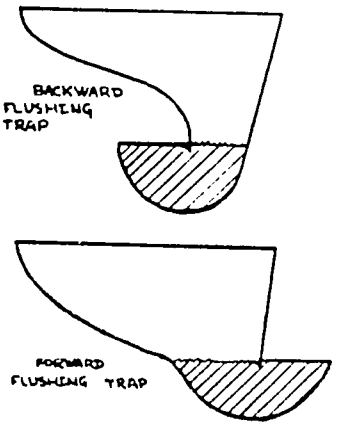
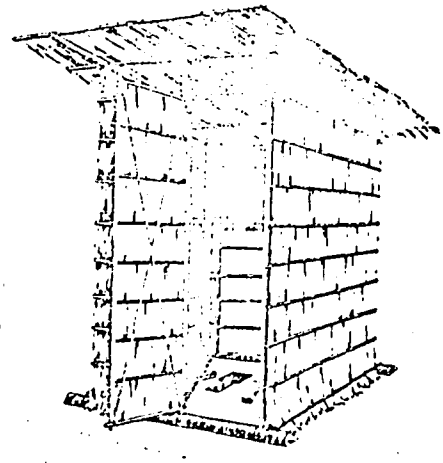


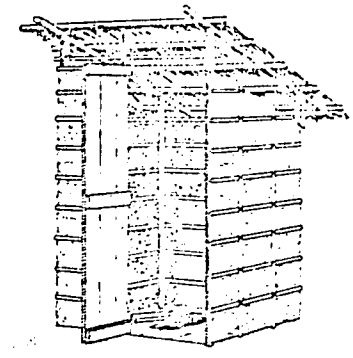

FIGURE 2 WATER SEAL TRAPS

FIGURE III - 5

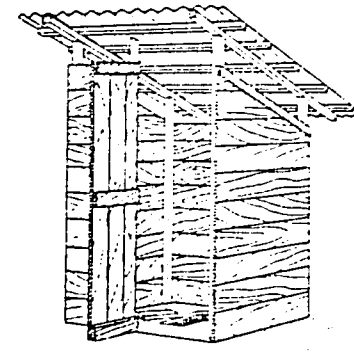
COMPLETED PRIVY, SHOWING PALM THATCH WALL AND ROOF COVERING



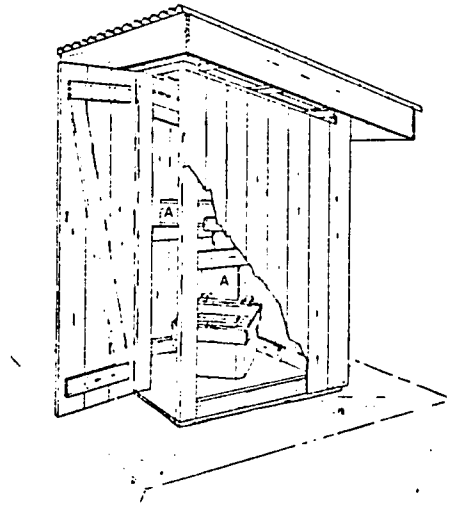
WATTLE HOUSE WITH PALM THATCH ROOF



HOUSE OF CUT LUMBER WITH CORRUGATED METAL OR ASBESTOS CEMENT ROOF



TYPE OF SUPERSTRUCTURE RECOMMENDED BY US PUBLIC HEALTH SERVICE




A = Vent pipe with lateral outlet

HOUSE OF BRICK WITH TILE ROOF

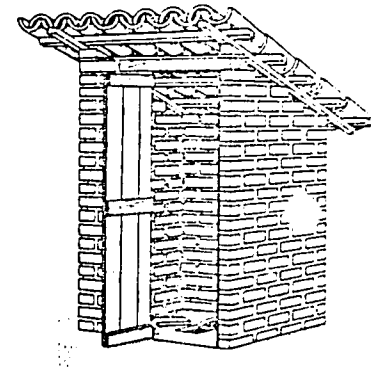


FIGURE III - 4

B. ANIMAL WASTE DISPOSAL

Animals should be located as far from the house as possible. Their location should be such that their feces does not drain toward the human water supply either by surface water drainage or ground water seepage. Animal feces dropped near the house or in the village street should be removed immediately to avoid the attraction of flies and the transfer of microbes. Dead animals should be buried as soon as possible to get them away from flies; dead animals should never be thrown into the river or irrigation ditch.

C. GARBAGE AND TRASH DISPOSAL

Garbage consists of food waste such as peelings, scraps and bones; trash consists of paper, tin cans, weeds, broken dishes and rags. The system for disposal of garbage is different from the system for disposal of trash because garbage disintegrates much faster than does trash.

1. Garbage Disposal - Garbage can be fed to animals, used as fertilizer, or buried in the ground. Only fresh garbage should be given to animals; no garbage should be allowed to stand around; every precaution should be taken to keep flies away from garbage. If not fed to animals, it is best to bury garbage in a pit far from the house and river and downhill from the drinking water supply. While garbage is stored in the house it should be kept in a tin can with a tight lid to avoid flies; after taking it to the burial ground garbage should be covered with dirt. Flies are the principle problem with trash and garbage.

2. Trash Disposal - Trash should be buried or burned. Trash may include tin cans, and broken dishes or glass which collect rainwater and thus provide a breeding place for flies and mosquitoes. Trash should be separated between that which can be burned and that which must be buried. Trash burial can be near to but not on the same pit with garbage. The burial place, like that for gargage, should be downhill from the drinking water supply and never put trash in the river or irrigation ditch. While trash is stored in the house, it should be kept in a tin can with a tight lid to avoid collection of flies.

D. SUMMARY

1. Human waste if not properly disposed of can cause serious infection and illness.

2. A good disposal system for human waste is a water-seal latrine.

3. A latrine consists of a deep hole, a concrete slab, and a small shed to provide privacy during defecation.

4. Characteristics of a good latrine are that the hole is dark, the shed and slab are fly proof, the shed and slab can be moved, and the shed has a ventilator to reduce heat and odor.

5. A latrine should be located away from the house, not drain into the river and not seep into the drinking water supply.

6. We can maintain latrine cleanliness by constructing it so no flies can enter, paint or whitewash the inside of the latrine, wash the inside of the latrine with dettol once each week, keep a container of water in the latrine to wash the hands and flush the latrine after use, cover the hole with dirt when we move the latrine to a new location, not use human feces as fertilizer for the gardens.

7. Animals should be kept away from the river, water supply, and from the house; their feces should not be allowed to drain into the river or seep toward the human drinking water supply.

8. Garbage and trash attract flies; it should be buried separately to avoid flies. Garbage provides compost after disintergration.

E. VISUAL AIDS

Figure III-3 The Components of a Sanitary Latrine

Figure III-4 Some Latrine Shed Models

Figure III-5 Illustration of a Water-Seal Latrine

IV INSECT AND RODENT CONTROL

A. INSECTS - Flies, lice, and mosquitoes are attracted to and feed upon substances which are harmful to humans. The tsetse fly transmits sleeping sickness; the mosquito transmits malaria; the housefly transmits pediculosis. But the greater danger of insects is their mechanical transmission of disease microbes by feeding, crawling and breeding in human feces and then transmitting to humans the microbes which cling to their sticky feet, pads and hairy legs. The principal defence against insects is to (a) eliminate their breeding places, (b) destroy the adults by spraying, and (c) protect the humans by cleanliness, preventive inoculations and sanitary measures at home.

B. RODENTS - Rats transmit bubonic plague and typhus fever. Also they contribute a significant economic loss to the family and to the nation because of the huge quantities of grain they steal from non rat-proof godowns. Like insects, the principle defence against rodents is to destroy their habitat and source of food. The removal of garbage and food sources by rat-proofing godowns is the most effective measure to control rodents.

V WATER PURIFICATION

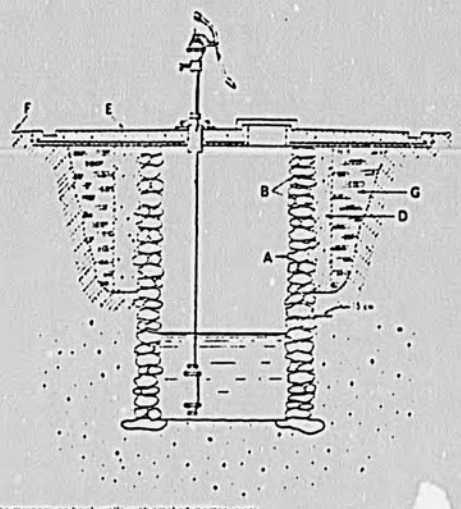
A. WELLS FOR DRINKING WATER

1. Construction - A properly constructed (dug) well has the following characteristics:

(a) it is lined with stone
(b) the top ten-foot section of stone is set in concrete
(c) behind the concrete is a foot of clay extending down to the same level as the concreted stone
(d) the well is covered with a concrete cap which:
  (i) slopes away from the well
  (ii) contains a peripheral drain
  (iii) has a concrete manhole cover with a raised edge (lip)

Figure III-6 illustrates these points of a properly constructed well.

2. Location of the Well - According to the rules we have previously discussed, the well is used for human drinking and perhaps bathing and thus has the highest priority for purity. Consequently the well must be free from all surface water and ground water contamination through seepage or run off. Figure III-7 illustrates the correct positioning of a well relative to the house and the latrine.




A = Existing masonry or brick walls with cracked mortar joints
B = Old mortar removed with chisel as far back as possible
C = Stone or bricks dug out to provide key for new concrete lining
D = New concrete lining built to a depth of at least 3 m (10 ft) below outside ground level, or to low water level in well. For concrete use pea-sized gravel and wire mesh for temperature reinforcement
E = New concrete well top, incorporating sanitary features (manhole with raised edges, slope for proper drainage, proper pump installation, etc.)
F = Outside ground level (adequate drainage being provided for excess water or surface run-off)
G = Backfill with clay, well tamped in layers 15 cm (6 in.) thick

FIGURE III - 6

FIGURE III - 7.

## B. RUNNING VERSUS STAGNANT WATER

One requirement, but not the only requirement, of a drinking water source is that the water be moving not stagnant. It is the stagnant water which provides the breeding places for amoeba, protozoa and insect larvae to reproduce. A sample of stagnant water placed under a microscope will show the animal life contained in stagnant water.

## C. PURIFICATION OF WATER

A great deal of water purification is achieved by the seepage of water through layers of earth and particularly through clean sand. Man makes use of this fact in producing his own purification system using sand. Here are two systems which any village family can follow to purify their drinking water.

1. Small Family Drinking Water Filter - Figure III-8 illustrates this simple device made from two earthen jars of different sizes. The details of how to construct this simple filter are given in Appendix VII.

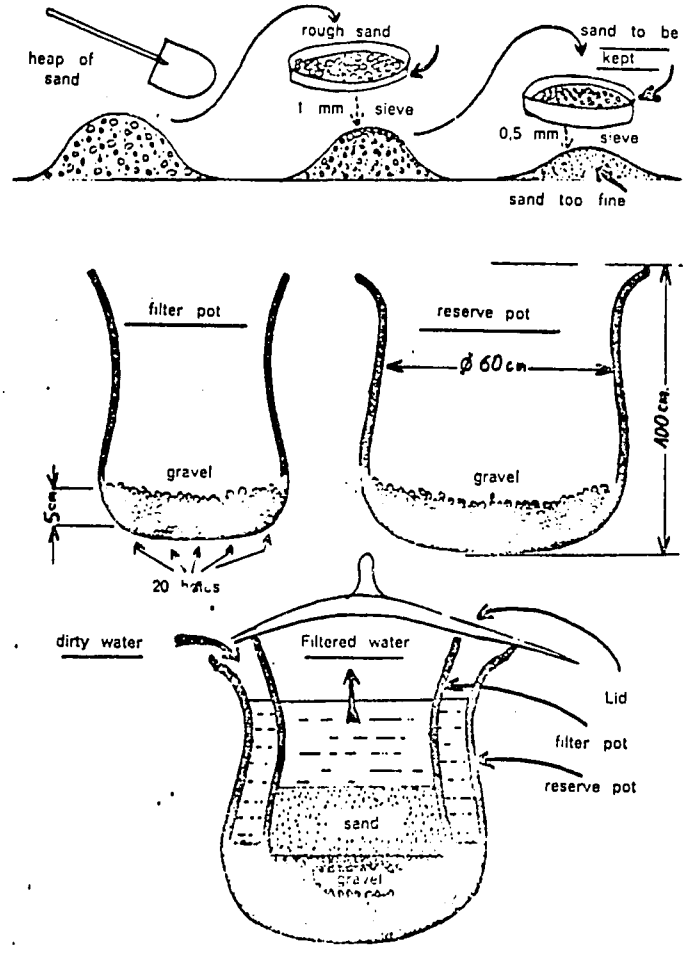



FIGURE III - 8

2. Large Family Gravity Flow Drinking Water Filter - One liter per minute capacity. This is another simple mechanism using a fifty-five gallon steel drum which produces a large quantity of filtered water. Figure III-9 illustrates the system and Appendix VIII provides the details to construct this water purification system.

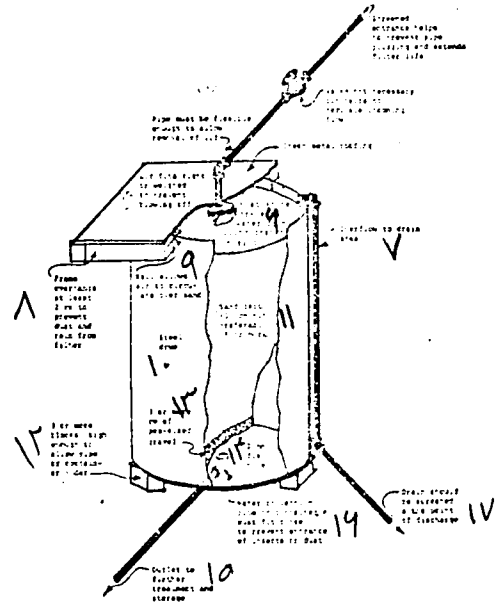


FIGURE III - 9

3. The Uses of Charcoal and Boiling to Purify Drinking Water -

(a) Charcoal - Every village has charcoal. If the filtered water you produce has a murky color or a bad odor, the addition of several pieces of charcoal will remove the odor and make the water colorless.

(b) Boiling Water - To make very pure water particularly for infants commencing the weaning process, after the filtration, and charcoal procedures have been taken, boil the water at a bubbling rate for 20-30 minutes. This will kill the most powerful microbes and provide fine water for the infant.

D. THE WASHING AND STORAGE OF EATING UTENSILS

When washing dishes -

(i) wash the dishes with soap and water
(ii) rinse the dishes with hot clear water
(iii) dry the dishes in the air, do not dry them with a cloth
(iv) store the dishes during the drying process in an insect-proof cabinet which you can easily make at home.

E. SUMMARY

1. Flies transmit disease principally by their breeding and feeding on human feces which carry microbes which cling to their sticky feet and hairy legs.

2. The principle defence against flies is to eliminate their breeding places, destroy the adults by spraying, and to protect humans by personal hygiene, inoculations and sanitation around the house.

3. The principle defence against rodents is to destroy their homes and sources of food.

4. A properly constructed well is lined with stone, the upper section of stone is set in concrete, the upper section behind the stone is fixed with clay, and the well has a concrete cap designed to run off surface water.

5. A correctly located well will avoid contamination by surface water run off and ground water seepage.

6. Stagnant water breeds ameoba, protozoa and insect larvae which cause illness.

7. Two earthen jars and some sand make an effective water filter; a larger filter using sand can be made from a fifty-five gallon drum.

8. Charcoal chunks can be placed in filter to reduce cloudiness and bad odor from drinking water.

9. Eating utensils should be washed with soap and water, rinsed with boiling water, and air dried inside a fly proof cabinet. Do not dry eating utensils with a cloth - this spreads disease.

F. VISUAL AIDS

Figure III-6 Components of a Properly Constructed Well

Figure III-7 The Correct Location of a Well Relative to the House and Latrine

Figure III-8 Two Earthen Jars Provide a Good Water Filter

Figure III-9 A Fifty-five Gallon Drum Provides Abundant Filtered Drinking Water

# CHAPTER IV

## PERSONAL HYGIENE

I INFECTION

- A INTRODUCTION
- B INFECTION DEFINED
- C WHAT KINDS OF LIVING THINGS CAUSE INFECTION
- D HOW DO MICROBES GET INTO THE BODY
- E HOW ARE MICROBES DESTROYED OUTSIDE THE BODY
- F THE BODY'S DEFENCES AGAINST INFECTION
- G SOME COMMON INFECTIOUS DISEASES
- H SUMMARY

II BATHING AND PERSONAL CLEANLINESS

- A DESCRIPTION OF THE SKIN
- B CARE OF THE SKIN
- C CLEAN CLOTHES
- D SUMMARY
- E VISUAL AIDS

III WASHING THE HANDS AND CLEANING THE FINGERNAILS

- A FOUR TIMES TO WASH THE HANDS (SUMMARY)

IV CARE OF THE HAIR

V CARE OF THE TEETH

- A DESCRIPTION OF THE TEETH
- B MAINTENANCE OF GOOD TEETH
- C SUMMARY
- D VISUAL AIDS

VI PERSONAL HYGIENE AND THE MENSTRUAL CYCLE

- A THE FEMALE REPRODUCTIVE ORGANS
- B THE MENSTRUAL CYCLE
- C SAMPLE CALENDARS OF THE MENSTRUAL CYCLE
- D METHODS OF CONTRACEPTION
- E DO'S AND DON'TS DURING MENSTRUATION
- F SUMMARY
- G VISUAL AIDS

VII COUGHING AND SPITTING

- A INTRODUCTION
- B AIRBORNE DISEASES
- C MECHANISM OF TRANSFER BY AIR
- D SUMMARY

VIII PROTECTION OF THE INFANT FROM INFECTION

- A REVIEW OF THE HEALTH RULES APPLICABLE TO EVERYONE
- B CARE OF THE BABY'S EATING UTENSILS

IX HYGIENIC PROCEDURES IN THE TREATMENT OF SICK PEOPLE

- A TEN RULES FOR DEALING WITH SICK PEOPLE (SUMMARY)
- B DISINFECTION PROCEDURES (SUMMARY)

# CHAPTER IV

# PERSONAL HYGIENE

## INFECTION

### A INTRODUCTION

At birth the newborn infant commences a five to six year period of extraordinarily high exposure to viruses, germs and parasites brought about by an unhealthy environment and exposure to other persons carrying infectious diseases. While some diseases are mild, others can be fatal especially if the infant is weakened by malnutrition. In Afghanistan the liklihood of an infant reaching five or six years of age has been estimated by some to be 50 percent.

The objective of this project is to demonstrate the Village Health Agent's ability to sharply reverse this tragic loss of life thru a two-pronged attack on malnutrition and infection. In Chapter II we discussed in detail how to provide a good nutritional base for the first five years of life; in this chapter we will continue to develop the second attack - the control of infection.

### B INFECTION DEFINED

Infection is the invasion of the body by a plant or animal disease-producing organism. This disease-producing organism may frequently be a microbe (because it is too small to be seen without a microscope) or a plant or animal large enough to be seen without a microscope.

### C WHAT KINDS OF LIVING THINGS CAUSE INFECTION

1. Bacteria - These are microscopic organisms of different shapes which produce poison or live in your body tissues and produce symptoms such as fever, cough, diarrhea, or pain.

2. Protozoa and Ameoba - These are one-celled animals which can be seen under the microscope. Malaria is caused by a protozoa; ameobic dysentery is caused by an ameoba.

3. Viruses - These cannot be seen with a microscope. The common cold, polio and influenza are caused by viruses.

4. Parasitic Worms - Hookworm, tapeworm, and trichina are parasitic worms. Hookworm enters the body directly from the soil thru your toes; tapeworm and trichina are caused by improperly cooked meat; trichina is carried mostly by rats.

### D HOW DO MICROBES GET INTO THE BODY

1. By Air - Microbes in the air enter the body when we breathe. Spray thrown from the nose and throat of sick people when they cough can enter another person standing close by; spit and feces which dries on the road and is picked up as dust enters our mouth and lungs when we breathe.

2. By Water - Bacteria live in water. Water washes the ground surface and so it is a source of infection. You cannot tell by the looks or the taste of water whether it is clean. Cholera and dysentery are spread by unclean water.

3. By Insects - Flies legs are covered with tiny hairs. The fly lands on piles of garbage, filth, animal manure and human feces; then flies to your food or to your face. Mosquitoes carry malaria.

4. By Direct Contact - If a sick mother kisses her baby (especially on the lips) it is very likely the baby will catch the disease. Clothing or eating utensils when touched by a sick person can become contaminated and infect a well person.

5. By Animals - Rabies can enter a human if he is bitten by a rabied dog; the trichina worm gets into a person's body when he eats improperly cooked meat; tuberculosis can pass from a cow to a human through impure milk.

E HOW ARE MICROBES DESTROYED OUTSIDE THE BODY

All living things must have food, warmth, moisture and oxygen. The human body provides all of this for microbes. That is why the human body is a good breeding place for microbes. So microbes should be killed before they enter the body.

1. Heat kills microbes. That is why milk is pasteurized and why water is boiled for thirty minutes to make it safe.

2. Sunlight kills many microbes; this is one reason why people should sit in the sun for some time each day Bedclothes and blankets should be aired in the sun every day.

3. Chemicals like DDT kill mosquitoes and flies; lye or lime kill microbes in human feces so we use lye or lime in latrines; chlorine kills microbes in water.

F THE BODY'S DEFENCES AGAINST INFECTION

But if we cannot keep the air, water, insects and animals completely free from microbes, then the body has several defences against infection which are:

1. The Body's Mechanical Defences Against Infection

(a) The skin and mucous membrane - The oil glands in the skin keep it moist, soft, and flexible so it does not crack. When the skin cracks microbes may enter the skin. The oil of the skin catches microbes so they cannot spread. Likewise the mucous membrane lining the nose, throat, and trachea catch microbes; when we cough, sneeze, or blow our nose we throw out these microbes.

(b) Hairs and Cilia - There are hundreds of short hairs in your nose which filter out the dust and microbes carried by dust. Consequently, we should use these filters by breathing through our nose and not through our mouth. Cilia are tiny hair-like projections in the mucous membrane. The cilia beat continuously and carry the mucous upward out of the lungs and into the mouth and throat. The microbes caught in the sticky mucous are carried away from the lungs.

(c) "Cell-Eating" Corpuscles - White corpuscles in the blood stream eat microbes when they enter the blood stream. The skin becomes red and hot and sore at the point where the fight takes place between the microbes and the white corpuscles.

When the body is well nourished it is strong and will not let microbes spread from a local area to all parts of the body; when the body is under-nourished, infection may spread throughout the body and we get a fever.

2. The Body's Chemical Defences Against Infection

(a) Stomach Juices - These are acid and a powerful killer of microbes.

(b) Antibodies - These are chemical agents (produced by the body) and carried in the bloodstream. Some antibodies are present in the blood when the microbe arrives; other antibodies do not start to develop until the microbe has started its infectious work.

We say you are immune to scarlet fever when your blood contains so many antibodies that the scarlet fever microbe cannot infect you. Mother's milk contains antibodies which provide immunity against many diseases but as the infant grows older the immunity provided by the mother's milk is lost.

3. Inoculation Against Disease

Vaccination is the process of inoculating a person with dead or weakened microbes (or with substances these microbes produce) in order to make the body produce the antibodies. The inoculated person is made slightly ill or not ill at all. We say a person has active immunity when his own body has manufactured the antibodies; we say a person has passive immunity when he is inoculated with a vaccine containing antibodies produced by another animal. Scientists have learned to make people immune to:

| | | |
|---|---|---|
| smallpox | rabies | yellow fever |
| diptheria | tetnus | cholera |
| typhoid fever | typhus | whooping cough |

4. Chemicals Used to Fight Disease

In addition to the body's chemical and mechanical defences against disease, and in addition to man's ability to inoculate against disease, there are some chemicals (medicines or drugs) which prove useful in killing microbes. Some of these are the sulfa drugs, and drugs such as penicillin, streptomycin, and tetracycline.

G SOME COMMON INFECTIOUS DISEASES

1. The ordinary cold is the most common infectious disease. Colds are very contageous and may lead to more serious diseases such as influenza and pneumonia. Colds are carried by viruses which attack the nose and throat. The best treatment for a cold is bed rest and good food.

2. Sore throat is commonly caused by infected tonsils and adenoids but sore throat may also occur after tonsils and adenoids have been removed. The best treatment for a sore throat is hot salt water gargle.

3. Influenza is commonly called flu or grippe; influenza attacks the whole body and produces a fever and the body aches. Fortunately most persons recover without treatment provided they are well nourished.

4. Pneumonia is caused by a virus or bacteria attacking the lungs. Penicillin and the sulfa drugs are helpful in treating pneumonia.

H SUMMARY

1. Some persons estimate that a new-born infant delivered in a typical Afghan village has about a 50 percent chance of surviving to age five or six years.

2. The two principal causes for this tragic loss of life are malnutrition and infection.

3. Infection is defined as an invasion of the body by a bacteria or microbe which produces the sickness. Other organisms, amoeba, viruses and worms can cause sickness.

4. These microbes or germs get into the body thru the air, impure water, by insects, by direct bodily contact and by animals who pass them on to humans.

5. We can help ourselves by destroying these microbes outside the body by heat, sunlight and chemicals.

6. We can avoid getting them in our bodies by: (a) avoiding people who are sick; (b) protecting food from dirt; (c) using clean water; and (d) washing our hands.

7. If we fail to keep ourselves free of these microbes, the body has mechanical and chemical systems to protect itself from these microbes. The body's mechanical defences are (a) the skin and mucous membrane; (b) hair in the nose and cilia in the mucous membrane; and (c) "cell-eating" corpuscles.

8. The body's chemical defences against microbes which succeed in entering the body include (a) stomach acids, and (b) antibodies.

9. Through inoculations (vaccinations and injections) we can acquire active or passive immunity to many diseases.

10. Drugs including penicillin, sulfa and streptomycin are helpful when all of the body's natural defences have failed to prevent infection. The body's natural defences against infection are made possible by good nutrition.

## II BATHING AND PERSONAL CLEANLINESS

### A A DESCRIPTION OF THE SKIN

The skin prevents the entrance of dirt and microbes into the blood stream and inner tissue of the body. The external (visible) skin is mostly dead. The skin grows from underneath and pushes a thin layer of cells to the surface. These cells die, dry out, and scale off. Consequently we are continually shedding our skin. Proper bathing helps to get rid of the dead skin and the dirt (holding microbes) collected on it.

**Model of the Skin** shows the many structures that lie beneath its surface.

FIGURE IV - 1

1. Composition of the Skin - Figure IV-1 is a cross section model of the skin showing the following important components:

(a) Epidermis - the outer skin layer which is very very thin. The epidermis has no blood vessels and nerves; it is continually shedding off.

(b) Dermis - The inner skin layer containing blood vessels, nerves, muscle tissue and glands.

(c) Sebaceous Glands - They manufacture oil which lubricates the skin and the hair.

(d) Sweat Glands - They pour perspiration on to the skin surface through openings in the skin called pores. The sweat glands are little tubes coiled into a little ball at the dermis end. Many tiny blood vessels surround each coil. Water and salt pass from the blood to the sweat glands, then as perspiration they pour onto the surface of the body.

2. Function of the Skin

(a) Heat Regulator - when the body becomes heated you perspire; several pints of sweat (water and salt) may be given off thru the pores as perspiration. When perspiration evaporates the water changes from liquid to vapor and in this process heat is taken from the skin. When perspiration evaporates too quickly your body may become chilled. When cold air strikes your skin millions of tiny blood vessels contract (get smaller) and therefore less blood flows thru them; when less blood is near the surface of the skin, less heat is given off and the body conserves heat or becomes warmer.

(b) Sensory Reaction - blushing is caused by the rush of blood to the skin surface; paleness is caused by the rush of blood away from the skin surface. In both cases the nerves in the skin control the muscles which expand and contract the blood vessels. The brain sends a message along the nerves telling the muscles to act. Gooseflesh is caused by the contraction of tiny (hair erector) muscles at the hair roots in the skin. This is the reaction to cold or fear or excitement.

B CARE OF THE SKIN

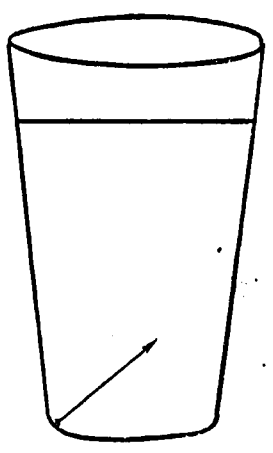
1. The Accumulation of Oil and Dirt. The sebaceous glands produce oil which reaches the surface, hardens and collects dirt. The pores produce perspiration (water and salt) which wets the oil and produces more dirt. In the absence of frequent bathing, this combination of oil, perspiration, and external dirt (containing microbes) causes the body to smell.

2. The Action of Soap and Water

(a) Properties of Water - Did you know that you can drop a straight pin on a glass of water and it will float? The reason for this is that the surface of the water is tighter than is the water deeper in the glass. This is caused by uneven molecular forces on the water's surface. This action is called "surface tension."

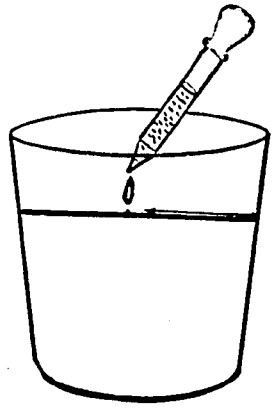
Now put a drop of liquid soap on the water where the pin is floating. Immediately the pin sinks. This is because the soap has disturbed (broken) the uneven surface tension of the water. Figure IV-2 A & B illustrates this point.

# SURFACE TENSION



SINKING PIN

FIG# IV-2 B



FLOATING PIN

FIG# IV-2 A

FIGURE IV - 2

From this experiment you can understand the action of soap and water in the cleansing process. Therefore, you can understand the importance of soap in cleaning the body and cleaning our clothes and dishes.

RULE - Soap destroys the surface tension of water, breaks it up into smaller segments, thereby causing it to permeate more deeply into the dirt. The dirt particles (along with the microbes) are then floated away by the washing action. Figure IV-3 illustrates the cleansing action of soap and water. Appendix IX tells you how to make soap at home. Hot water cleans better than cold water. Appendix X tells you how to make hot water by solar (sun) heat.

**The Cleansing Action of Soap** can be seen in this drawing. At the far left the skin is covered with a layer of oil and dirt. The brush is rubbing off the dead outer cells of the skin. The soap breaks up the oily material and dissolves it. The many soap bubbles pick up the dirt particles. At the right the skin is clean, and oil is again spreading over the surface.

FIGURE IV - 3

3. The Frequency of Bathing

Now we have discussed the origin of infection, the functions and infection prevention properties of the skin, and the action of soap and water in cleansing the skin and preventing infection.

The frequency of bathing mother and child will be determined by the time of year. In summer when water is more plentiful and temperatures are favorable, the mother should take a full bath at least once every other day - preferably daily. Likewise the child should be carefully bathed every day taking care so the child will not chill or take cold. The Village Health Agent will show the mother how to wash the infant correctly.

In wintertime the problem of bathing is more difficult but a spong bath covering sequentially every part of the body should be accomplished by every member of the family at least twice a week.

Both for the sponge bath and the full bath, the importance of soap (either made in the home or purchased) is essential to prevent infection.

Finally, the nursing mother should take particular care to sponge the breasts with soap and water before nursing.

C. CLEAN CLOTHES

From what we have said about the action of soap and water in cleansing the body, and the action of the sebaceous and sweat glands in the function of the skin, it is readily apparent that dirty clothes on a clean body are a hazard. When clothes are worn without washing them, not only do they become contaminated and may infect the clean body, but also they become brittle and coarse. When this happens the body may be chaffed in places, the skin is worn off and the area can be more easily infected.

Therefore, it is important to wear clean clothes every time after you take a bath.

D. SUMMARY

1. The skin prevents the entrance of dirt and microbes into the blood and inner tissue. Proper bathing with soap and water removes the dirt and microbes which collect on the skin.

2. The epidermis, dermis, sebaceous glands and sweat glands are important parts of the skin.

3. The sebaceous glands produce oil which lubricates the skin and the hair but this oil also collects dirt. The sweat glands produce perspiration (water and salt) and this too helps to collect dirt. Only proper bathing with soap and water will remove these substances.

4. Soap breaks down the surface tension of water, permeates the dirt and breaks it up. Water floats away the dirt and microbes.

5. In the summertime the mother should take a full bath at least once every other day and the infant should take a full bath every day. In wintertime the mother and infant should take a sponge bath at least twice every week.

6. The nursing mother should sponge her breasts with soap and water before nursing the infant.

7. Clean clothes should be put on every time a bath is taken.

8. Your family can make hot water from the sun. See Appendix X.

E. VISUAL AIDS

Figure IV-1 Composition of the Skin
Figure IV-2-A (and demonstration) Surface Tension Floating Pin
Figure IV-2-B (and demonstration) Surface Tension Sinking Pin
Figure IV-3 Cleansing Action of Soap and Water

## III WASHING THE HANDS AND CLEANING THE FINGERNAILS

This subject has been made a special section because it is so important. Like the face, our hands are exposed to dirt in the air nearly all of the time. Furthermore, most everything we touch is dirty, hence our hands are apt to be the dirtiest part of our body. Therefore, unless we are careful about the cleanliness of our hands and where we put our hands (not in our mouth for any reason) we can infect ourselves and others. This is especially important for mothers to know in the care of their infants and in the preparation of meals for their entire family.

Your nails are the protective covering for your fingers and toes. They grow directly from the skin. The fingernails are an excellent collector of microbes and dirt which cause infection. Clean the nails carefully; cut the nails straight across and do not round the nails when cutting.

Certainly it is obvious that microbes will gain entrance to the blood stream and cause serious illness when dirty hands with dirty fingernails are put into the mouth, in the eyes, and in the ears, and into other body ortifices.

FOUR TIMES TO WASH THE HANDS

There are four times particularly when you should wash your hands and these are:

1. after defecation
2. before preparing meals
3. before eating meals
4. before breast feeding or spoon feeding the infant

## IV CARE OF THE HAIR

Good health, cleanliness and frequent brushing will produce good-looking hair. Good health comes from good nutrition and the prevention of infection. Clean hair comes from adequate washing with a proper soap to remove oil and dirt. Frequent brushing stimulates hair growth, gives the hair a lustre, and improves blood circulation through the scalp.

## V CARE OF THE TEETH

A. DESCRIPTION OF THE TEETH

1. Sets of Teeth - Each human has two sets of teeth in a lifetime. The first (baby) set consists of 20 teeth which begin to appear at 6 months of age and are lost by about 10 years of age. The second set of (permanent) teeth are completed at 16 to 18 years of age.

2. Function of the Teeth - Teeth are required to chew food before it is swallowed. Chewing requires three actions: (1) to bite off food; (2) to tear the pieces to bits; and (3) to grind the bits to pulp.

Our teeth have different shapes to accomplish these functions. Our front teeth (incisors) cut off the food; our corner teeth (cuspids and bicuspids) tear the food to bits; our molars grind the food to pulp. Figure IV-4 is a diagram of the upper and lower jaw containing 32 teeth.

**The Teeth of an Adult** are of four general kinds. Each kind is useful and necessary to health.

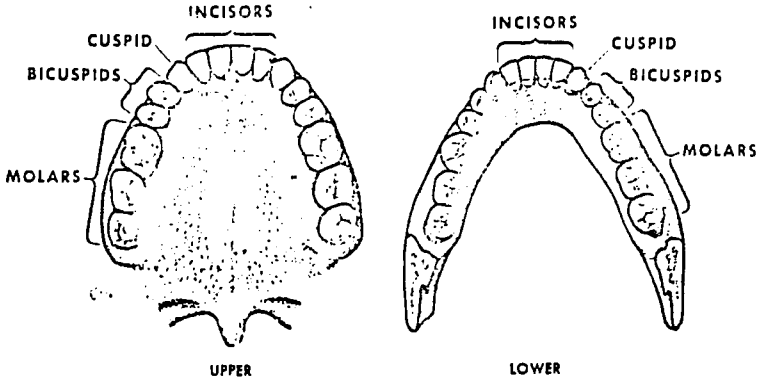



FIGURE IV - 4

3. Structure of the Teeth - Each tooth has three parts - the crown, the neck and the root. Enamel covers the crown and neck; cement covers the root; dentine is the soft material comprising most of the tooth and is similar to bone; pulp is inside the dentine and contains blood vessels and nerves. Figure IV-5-A is a diagram of a healthy tooth.

**How a Tooth Decays** is shown in these drawings. The molar at the left is sound. The one at the right has decayed. A dentist can stop decay in its early stages, but he would have to extract a tooth like this.

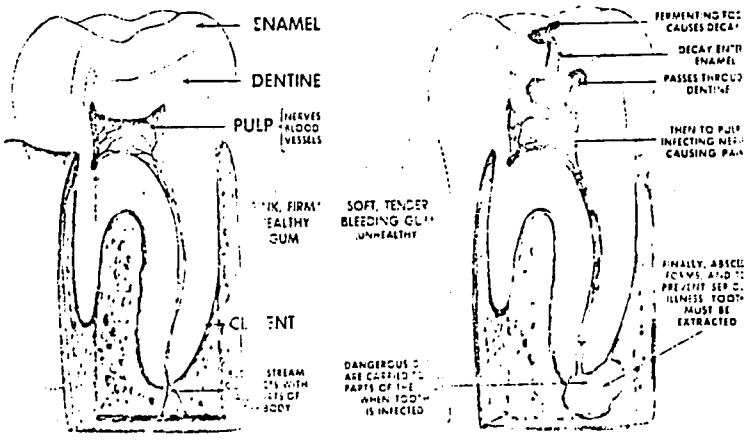



FIGURE IV - 5 - A

FIGURE IV - 5 - B

B. MAINTENANCE OF GOOD TEETH

1. Why Good Teeth are Necessary - If not cared for properly the teeth will decay and without proper teeth we cannot satisfy our nutritional requirements and therefore we cannot maintain good health.

2. Why Teeth Decay - Teeth will decay if we do not eat the right kinds of foods (well balanced diet) and if we do not keep the teeth clean. How a tooth decays is illustrated in Figure IV-5-B.

3. How to Clean the Teeth - There are different methods to clean the teeth depending upon the resources available:

(a) Rinse the mouth with clean water or hot tea immediately after eating.

(b) Brush the teeth with a soft stick (Moswak tree) and salt water.

(c) Brush the teeth with a toothbrush and salt water. Do not clean the teeth with fingers - this will cause infection.

4. How to Brush the Teeth with a Maswak Stick or Toothbrush - Upper jaw-brush downward across and away from the gums toward the tips of the teeth. Brushing the gums stimulates blood flow and emergizes the gums.

Lower jaw-brush upwards and away from the gums towards the tips of the teeth.

C. SUMMARY

1. Each human being gets two sets of teeth; 20 baby teeth and 32 permanent teeth.

2. Teeth are required to bite off food, tear it to bits, and grind it to pulp.

3. Teeth will decay if they are not properly cleaned.

4. Ways to clean the teeth are: with hot water or tea after each meal; brush the teeth with a Maswak stick and salt water; brush the teeth with a toothbrush and salt water; do not clean the teeth with your fingers - this will cause infection.

5. How to brush the Teeth - Brush the upper teeth downward and across the gums - brush the lower teeth upward and across the gums.

D. VISUAL AIDS

Figure IV-4 The upper and lower jaw

Figure IV-5-A A Healthy Tooth

Figure IV-5-B How a Tooth Decays

VI PERSONAL HYGIENE AND THE MENSTRUAL CYCLE

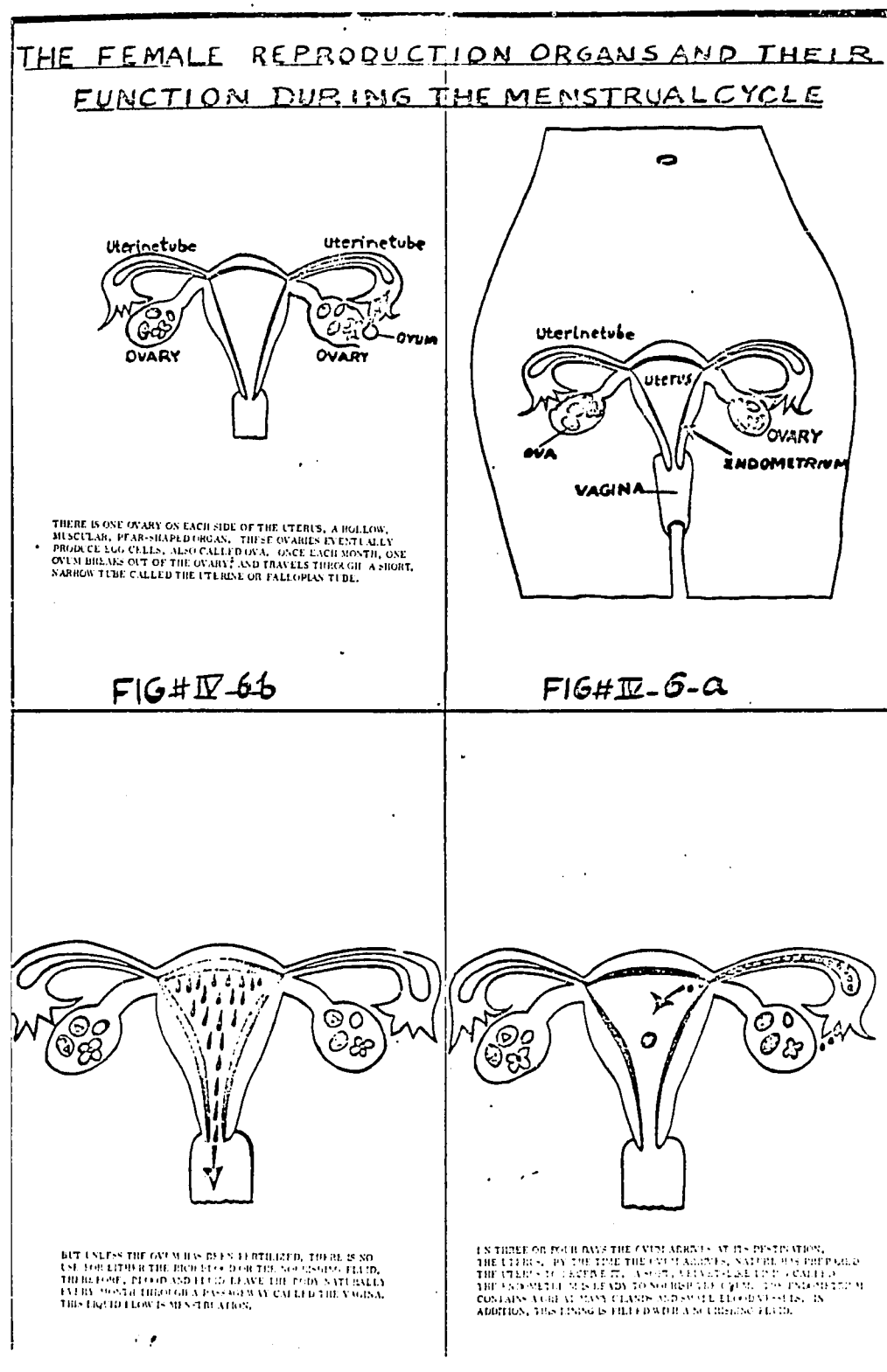
Boys bodies equip them to become fathers of the human race; girls bodies equip them to become mothers of the human race. One of the most important physiological processes which makes girls able to become mothers is menstruation.

## A. THE FEMALE REPRODUCTIVE ORGANS

The reproductive organs of the female are the ovaries, uterine tube, uterus and vagina.

## B. THE MENSTRUAL CYCLE

Figures IV-6-A, B, C and D illustrate the female reproductive organs and their function during the menstrual cycle.



## C. CALENDAR OF THREE MENSTRUAL CYCLES

A woman is most fertile at the time of ovulation (when the ovary expells an ovum) and therefore most likely to become pregnant. An ovum dies after two or three days if not fertilized, and a sperm dies after about three days. This means that an ovum can be fertilized by a sperm which enters the uterine tube 2 or 3 days before and for as long as 2 or 3 days after ovulation. This, and the knowledge that the menstrual cycle varies in different women, are two very important facts to remember when advising on family planning. A few examples of the fertile and safe periods in 26, 28 and 30 day menstrual cycles are shown in Figure IV-7.

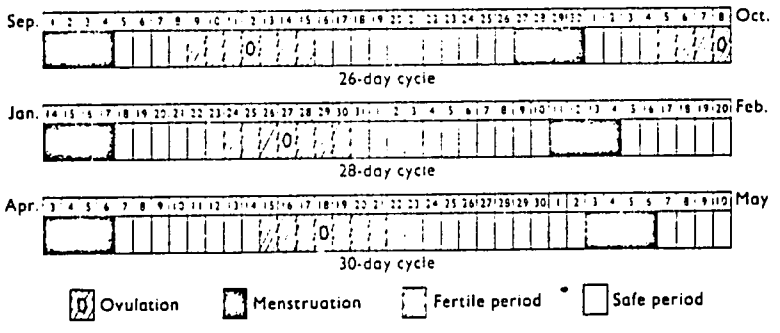



FIGURE IV - 7

## D. METHODS OF CONTRACEPTION

1. Rhythm Method - From Figure IV-7 it is evident that sexual intercourse could occur without conception (a) during the 4, 6 and 8 days immediately after menstruation in the case of 26, 28 and 30 day menstrual cycles, respectively, and (b) during the eleven days immediately preceding the onset of the next menstruation. To explain it another way, count backwards 15 days from the expected onset of the next menstruation and abstain 3 days before that 15th day and three days after that 15th day or abstain for a total of seven days.

This selection of safe periods is called the thythm method of contraception. It depends exclusively upon a very accurate knowledge of a particular woman's menstrual cycle length and upon an accurate plotting of the days in the cycle. On the other hand, mechanical means of contraception (condoms, diaphrams, loops); chemical contraception (foam tablets, jellies, and cream); oral contraception (the pill); and sterilization (vasectomy or tubectomy) are systems of contraception which permit intercourse regardless of the particular day in the menstrual cycle. The Village Health Agent has more information about these methods.

## E. DO'S AND DON'TS DURING MENSTRUATION

Women should be encouraged to continue their normal activities during menstruation including normal workload and normal exercise. Because of the menstrual discharge women should be particularly careful to have frequent baths during menstruation.

Each woman should provide herself with seven cotton pads in preparation for her menstrual cycle. The pad should be changed at least once each day and twice a day during the heavy flow. The woman should wash her vagina with soap and water each time she changes the pad. Careful cleaning of the pads after use is particularly important to prevent infection. Hot water and soap should be used to clean the pads and they should be dried in the hot sun to kill microbes. During menstruation -

do not treat yourself as an invalid
do not stay in bed
do not undertake extraordinarily heavy exercise

F. SUMMARY.

1. The female reproductive organs are the ovaries, uterine tube, uterus and vagina.

2. The menstrual cycle includes the following phases:

a. breakout of the ovum from the ovary
b. ovum passes along uterine tube
c. entry of ovum into the uterus
d. passage of the ovum from the uterus
e. breakdown of the soft endometrium containing blood and fluid and the passage of this menstruate from the vagina.

3. Safe periods for sexual intercourse are 11 days before the commencement of the next menstruation and 4, 6 or 8 days following the completion of the last menstruation. Unsafe periods are 3 days before and three days after ovulation or a total of seven days. This is called the rhythm method of contraception.

4. Other methods of contraception are: mechanical-condom, diaphram loop; chemical foam, jellies and cream; oral contraception - the pill; sterilization - tubectomy and vasectomy.

5. A woman's daily behavior should not change during menstruation, except that special precautions about cleanliness should be observed during menstruation.

6. Each woman should prepare seven pads for preparation for menstruation.

7. Menstrual pads should be washed very carefully with soap and water after use, and put into the sun to dry to kill microbes and avoid infection.

8. Menstrual pads should be changed at least once every day and the vagina washed with soap and water at the same time.

G. VISUAL AIDS

Figure IV-6, A, B, C, D - the Menstrual Cycle

Figure IV-7 - Three Typical Calendars of the Menstrual Cycle

## VII COUGHING AND SPITTING

### A. INTRODUCTION

This chapter commenced with a discussion of infection - what it is, how it is caused, how it is transmitted, and finally, the body's defences against infection. Although water is probably the greatest carrier of infection, the second most common carrier of microbes is the air we breathe. The purpose of this section is to discuss how we can reduce infection from the air.

### B. AIRBORNE DISEASES

These include: chicken pox, influenza, measles, pneumonia, tuberculosis, and meningitis.

### C. MECHANISM OF TRANSFER BY AIR

The mouth, throat, bronchi and lungs are the most common sites of infection. Because coughing represents one of the body's mechanisms for relieving itself of these infections, sick people provide a source of infection to others. The agents of some diseases die quickly when exposed to the air and sunlight, but when we stand close to another sick person, the droplets of cough and sneeze pass directly from the sick to the well person via the air. Secondly, spittal and cough discharge from the throat when they fall to the ground, attach to dust particles, dry out, and when the wind blows these dust particles go into the air and are inhaled. This makes another source of infection. Thirdly, spittal and discharge from the throat may fall into our drinking water.

### D. SUMMARY

The purpose of this section is to show you that if everyone in his village suddenly understood the mechanism for transfer of infections by air, and consequently no longer coughed or spit into the atmosphere, the heavy infection by this route in your village could be eliminated immediately. So here are the rules to reduce infection in your village by elimination of coughing and spitting:

1. When you cough, cough into a clean handkerchief or into some other clean cloth; or into your hand. Do not cough into the open air and never cough directly into another person's face.

2. Never spit on the floor of your house or in the public street. If you must spit, spit into a clean handkerchief or into a waterseal latrine or dig a small hole with your foot and spit into that hole and cover it up again.

3. Remember the rules of sanitation of the preceding chapter - anything which attracts flies is a menace to your health. Cover garbage, trash, human feces and remove animal feces from the streets so that this does not dry up and blow into your face when you breath.

## VIII PROTECTION OF THE INFANT FROM INFECTION

A. REVIEW OF HEALTH RULES WHICH ARE APPLICABLE TO EVERYONE. In this chapter we have discussed infection, its causes and prevention; the skin and how it accumulates dirt and how to keep it clean; the special importance of washing the hands; the care of the hair and the teeth; the menstrual cycle, and the transmission of diseases by coughing and spitting. In short, we have examined the prevalence of microbes in our environment and how to protect ourselves from these infectious agents. What is applicable to us as adults is also applicable to the infant. Here are some simple rules to keep baby free from infection. They were first given in Charts 6, 7, 15 a and 15 b and they are repeated here:

1. Use the latrine, do not defecate in the house or the street.

2. Wash your hands after defecation, wash the baby's hands after it defecates.

3. Wash your hands before preparing food.

4. Wash your hands and breasts before nursing baby, wash the baby's face and hands.

5. Use a spoon or cup to feed baby; do not use a bottle and do not use your fingers.

6. Wash your hands before eating and before feeding baby; wash baby's hands before it eats.

7. Do not kiss the baby on the lips, kiss him on the cheek.

8. Do not clean baby's face, eyes, nose with your dirty sari; clean baby's face and nose with a clean cloth and soap and water; wash the cloth every day.

9. Confine the baby to a clean enclosed play area; do not let the baby run freely in the house or yard.

10. Feed fresh, warm food to the baby, do not feed cold left-over food to the baby.

B. CARE OF THE BABY'S EATING UTENSILS

1. Wash all dishes including baby's dishes with hot water and soap.

2. Rinse the dishes with boiling water and let them air dry do not dry dishes with cloth.

3. Use the infant feeding kit illustrated in Chart 8.

IX HYGIENIC PROCEDURES IN TREATMENT OF SICK PEOPLE

A. NINE RULES FOR DEALING WITH SICK PEOPLE

1. Isolate the patient with highly infectious disease.

2. Arrange for family members to have inoculations.

3. Isolate and wash separately the bedclothes and dishes.

4. Wash with soap and water, boil and disinfect utensils which have come in contact with sick people.

5. Wear a gown if possible when treating sick people(leave the gown in the sick person's room).

6. Infected feces and urine should be covered with disinfectant for an hour before disposal in the latrine.

7. All left-over food and contaminated dressings should be burned.

8. Teach the family how to care for the sick patient and especially how to avoid infection.

9. If the disease is preventable, teach the family the preventive measures, including (a) use of mosquito nets; (b) regular spraying of house with DDT; (c) protect food and utensils from flies; (d) safe drinking water; (e) proper disposal of feces; (f) killing rodents and vermin; (g) after patient recovers from illness, linen, utensils, and bed should be scrubbed with soap and water and put into the sun for several hours; and (h) keep family inoculations up to date.

B. DISINFECTION PROCEDURES

Disinfection is the destruction of disease producing organisms we have called microbes. There are three ways to disinfect - by boiling, sunlight and chemicals. Contaminated articles such as dishes should be washed with hot water and soap and then boiled for 30 minutes after the water begins to boil. Articles like bed linen and beds should be put in the sun for several hours. Articles exposed to highly infectious diseases should be burned. Articles which cannot be boiled such as sharp instruments and thermometers can be immersed in chemicals. Chemicals should also be put on highly infected feces of the sick patient and on the village latrine every day. Some of these chemicals are: chlorinated lime; lime; lye; carbolic acid or phenol; tricresol; and dettal.

# CHAPTER V

## DEMOGRAPHIC MAPPING, RECORDS & REPORTS

I. INTRODUCTION

- A. Standard Records and Reports
- B. 'HA's Standard Reference Data
- C. mographic Mapping
- D. Relationship our Demographic Data to Malaria Control
- E. Summary
- F. Visual Aids

II. RECORDS-DESCRIPTION AND OPERATION

- A. Family Data Record Card (FDRC)
- B. Infant Age/Weight Record Card (A/WRC)
- C. Summary
- D. Visual Aids

III. REPORTS-DESCRIPTION AND OPERATION

- A. Village Statistical Progress Report (VSPR)
- B. Village Behavioral Progress Report (VBPR)
- C. Project Chiefs Quarterly Progress Report
- D. Summary
- E. Visual Aids

IV. RECAPITULATION

- A. First Visit to House
- B. Establishing Control Documents
- C. Recurrent Visits to the Home
- D. End of Day Recapitulation
- E. End of Month Recapitulation
- F. Summary

# DEMOGRAPHIC MAPPING, RECORDS & REPORTS

## I. INTRODUCTION

### A. Standard Records and Reports

The purpose of this nutrition/infection control activity is to demonstrate how improved health may be delivered to the villagers. No empty or unverified claims to success will be made; instead the project achievements will be supported by verifiable data.

The records and reports signifying project success (or failure) are only three in number and these are exhibited as follows (discuss each chart):

1. Family Data Record Card (Incomplete) (Chart # 16 ) (Figure # 12 )
2. Infant Age/Weight Record Card (Complete) (Chart # 10, 11 ) (Figure # 11 )
3. Village Statistical Progress Report (Incomplete) (VHA's Cross Reference-House # to Name) (Chart # 17 )

### B. VHA's Standard Reference Data

In order to simplify and speed her work and reduce her incidence of error, certain reference material is carried by the VHA exclusively for her own use. These VHA reference materials are: (Discuss each chart).

1. VHA's Monthly Workload Control (Incomplete (Chart # 17 ) (Figure # 13 )
2. VHA's Weight Category Finder (Figure # 14 a+b )
3. VHA's Infant Age-Rapid Calculator (Figure # 15 )
4. VHA's Behavioral Practice Code (Chart # 16 )
5. VHA's Cross Reference-House # to Name (Chart # 17 ) (Figure # 17 )
6. VHA's Cross Reference-Name to House # (Figure # 18 )

### C. Demographic Mapping

After we have completed the Family Data Record Card and the Infant Age/Weight Record Card for every family and every infant below 5 years of age, we will have completed what is called a "demographic map" of the village.

The data (information) which we collect on our first visit (about age, sex, weight, and behavioral practices regarding sanitation, personal hygiene, nutrition and family planning)

# FAMILY DATA RECORD CARD

VILLAGE NAME

COMPOUND OR AREA

HOUSE NUMBER

FAMILY NAME

DATE OF OPENING THIS CARD

| Family Members Name (List Adults First Children thereafter) | Sex | Date of Birth | Relationship | At Time of Opening Card: Age | Weight | 1/11 | 2/12 | 3/1 | 4/2 | 5/3 | 6/4 | 7/5 | 8/6 | 9/7 | 10/8 | 11/9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | S | | | | | | | | | | | |
| | | | | | P | | | | | | | | | | | |
| | | | | | N | | | | | | | | | | | |
| | | | | | FP | | | | | | | | | | | |
| | | | | | month JAN | JAL | HOO | HAM | SAU | JAU | SAR | ASA | SUN | MIZ | AQR | QAU |
| | | | | | 10 | | | | | | | | | | | |

BEHAVIORAL PRACTICES NOTATIONS

VITAL DATA

J Married into family

D Departed fam

M Moved from village

X=Death+date+cause

P=Pregnancy+date

B=Birth+date

I=Illness+cause

T=Termination

Figure # 12

## V.H.A.'s MONTHLY WORKLOAD CONTROL

_____ Village Name

_____ Province Name

_____ VHA's Name

Month_____

Year _____

| House No. | No. Infants | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 46 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 47 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 53 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Figure 1 18

# VHA'S WEIGHT - CATEGORY FINDER

AGE IN MONTHS

| KILOGRAMS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | KILOGRAMS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 14.5 |
| 14.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 14.0 |
| 13.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 13.5 |
| 13.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | A | 13.0 |
| 12.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | A | A | B | 12.5 |
| 12.0 | | | | | | | | | | | | | | | | | | | | | | | | | A | A | A | B | B | C | 12.0 |
| 11.5 | | | | | | | | | | | | | | | | | | | | | A | A | A | | | B | B | C | C | D | 11.5 |
| 11.0 | | | | | | | | | | | | | | | | | | A | A | A | B | B | B | C | C | C | C | D | D | E | 11.0 |
| 10.5 | | | | | | | | | | | | | | | | A | A | B | B | B | C | C | C | D | D | D | D | E | E | | 10.5 |
| 10.0 | | | | | | | | | | | | | | A | A | B | B | C | C | C | D | D | D | E | E | E | E | | | | 10.0 |
| 9.5 | | | | | | | | | | | | A | A/B | B | B | C | C | D | D | D | E | E | E | | | | | | | | 9.5 |
| 9.0 | | | | | | | | | | A | A/B | B | C | C | C | D | D | E | E | E | | | | | | | | | | | 9.0 |
| 8.5 | | | | | | | | | A | B | C | C/D | D | D | D/E | E | E | | | | | | | | | | | | | | 8.5 |
| 8.0 | | | | | | | | A/B | B/C | C/D | D | E | E | E | | | | | | | | | | | | | | | | | 8.0 |
| 7.5 | | | | | | | A/B | C | D | E | E | | | | | | | | | | | | | | | | | | | | 7.5 |
| 7.0 | | | | | | A/B | C/D | D/E | E | | | | | | | | | | | | | | | | | | | | | | 7.0 |
| 6.5 | | | | | A/B | C/D | E | | | | | | | | | | | | | | | | | | | | | | | | 6.5 |
| 6.0 | | | | | C/D | E | | | | | | | | | | | | | | | | | | | | | | | | | 6.0 |
| 5.5 | | | | | E | | | | | | | | | | | | | | | | | | | | | | | | | | 5.5 |
| 5.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 5.0 |
| 4.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4.5 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | |

1 - 30 Months

Figure # 14 - a

Figure # 14 - a

AGE IN MONTHS →

| KILOGRAMS | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | KILOGRAMS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 20.0 |
| 19.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 19.5 |
| 19.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 19.0 |
| 18.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 18.5 |
| 18.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 18.0 |
| 17.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | A | A | A | 17.5 |
| 17.0 | | | | | | | | | | | | | | | | | | | | | | | | | A | A | A | A | A | B | 17.0 |
| 16.5 | | | | | | | | | | | | | | | | | | | | | | A | A | A | A | B | B | B | B | B | 16.5 |
| 16.0 | | | | | | | | | | | | | | | | | | | A | A | A | A | A | B | B | B | B | B | B | C | 16.0 |
| 15.5 | | | | | | | | | | | | | | | A | A | A | A | A | A | B | B | B | B | B | C | C | C | C | C | 15.5 |
| 15.0 | | | | | | | | | | | | | A | A | A | A | A | B | B | B | B | B | C | C | C | C | C | C | D | D | 15.0 |
| 14.5 | | | | | | | | | | | A | A | A | B | B | B | B | B | C | C | C | C | C | C | D | D | D | D | D | D | 14.5 |
| 14.0 | | | | | | | | A | A | A | B | B | B | B | C | C | C | C | C | C | D | D | D | D | D | D | E | E | E | E | 14.0 |
| 13.5 | | | | A | A | A | A | A | B | B | B | C | C | C | C | D | D | D | D | D | D | D | E | E | E | E | E | E | E | | 13.5 |
| 13.0 | A | A | A | A | A | B | B | B | B | C | C | D | D | D | D | D | D | D | E | E | E | E | E | E | E | | | | | | 13.0 |
| 12.5 | A | B | B | B | B | C | C | C | C | D | D | D | D | E | E | E | E | E | E | | | | | | | | | | | | 12.5 |
| 12.0 | B | C | C | C | C | D | D | D | D | E | E | E | E | E | | | | | | | | | | | | | | | | | 12.0 |
| 11.5 | C | D | D | D | D | E | E | E | E | | | | | | | | | | | | | | | | | | | | | | 11.5 |
| 11.0 | D | E | E | E | E | | | | | | | | | | | | | | | | | | | | | | | | | | 11.0 |
| 10.5 | E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 10.5 |
| | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | |

3/3/75

31 - 60 Months

Figure # 14 b

# VHA'S INFANT AGE - RAPID CALCULATOR

MONTH IN WHICH INFANT WAS BORN

| | HAM | SAU | JAU | SAR | ASA | SUN | MIZ | AQR | QAU | JAD | DAL | HOO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H | 11 | 39 27 15 3 / 3 | 40 28 16 4 / 4 | 41 29 17 5 / 5 | 42 30 18 6 / 6 | 43 31 19 7 / 7 | 44 32 20 8 / 8 | 45 33 21 9 / 9 | 46 34 22 10 / 10 | 47 35 23 11 / 11 | 12 | 0 |
| D | 10 | 40 28 16 4 / 4 | 41 29 17 5 / 5 | 42 30 18 6 / 6 | 43 31 19 7 / 7 | 44 32 20 8 / 8 | 45 33 21 9 / 9 | 46 34 22 10 / 10 | 47 35 23 11 / 11 | 12 | 0 | 1 |
| J | 9 | 41 29 17 5 / 5 | 42 30 18 6 / 6 | 43 31 19 7 / 7 | 44 32 20 8 / 8 | 45 33 21 9 / 9 | 46 34 22 10 / 10 | 47 35 23 11 / 11 | 12 | 0 | 1 | 2 |
| Q | 8 | 42 30 18 6 / 6 | 43 31 19 7 / 7 | 44 32 20 8 / 8 | 45 33 21 9 / 9 | 46 34 22 10 / 10 | 47 35 23 11 / 11 | 12 | 0 | 1 | 2 | 3 |
| A | 7 | 43 31 19 7 / 7 | 44 32 20 8 / 8 | 45 33 21 9 / 9 | 46 34 22 10 / 10 | 47 35 23 11 / 11 | 12 | 0 | 1 | 2 | 3 | 4 |
| M | 6 | 44 32 20 8 / 8 | 45 33 21 9 / 9 | 46 34 22 10 / 10 | 47 35 23 11 / 11 | 12 | 0 | 1 | 2 | 3 | 4 | 5 |
| S | 5 | 45 33 21 9 / 9 | 46 34 22 10 / 10 | 47 35 23 11 / 11 | 12 | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| A | 4 | 46 34 22 10 / 10 | 47 35 23 11 / 11 | 12 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| S | 3 | 47 35 23 11 / 11 | 12 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| J | 2 | 12 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| S | 1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| H | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

CURRENT YEAR

FIGURE # 15

# VHA'S BEHAVIORAL PRACTICES CODE

## SANITATION

1. Installed latrine
2. Family uses latrine
3. Animal waste removed from courtyard
4. Garbage and trash properly disposed
5. Insects are minimal
6. Rodents are not visable
7. Practive selective water usage
8. Water wells are covered and surface area is dry
9. Drinking water in house is covered

## PERSONAL HYGIENE

1. Mother and children wash hands after defecation
2. Mother washes hands before preparing meals and feeding infant
3. Mother bathes regularly and breasts are clean
4. Baby appears clean
5. Mother does not kiss baby on lips
6. Mother does not wipe baby's face with dirty cloth
7. Baby feeding kit is used
8. Soap is available in house for washing

## NUTRITION

1. Weaning food (a good one) is used more than once a day
2. Weaning food started at four months
3. Weaning food is premixed several days in advance
4. Mother keeps weight chart handy for VHA
5. Baby gets wheat or rice bran
6. Baby gets liver or heart or chicken
7. Baby gets greens + carrots
8. Baby gets crude + sugar/honey
9. Baby gets turnip green or cauliflower, onion top, orange juice or cabbage

## FAMILY PLANNING

1. Mother is interested in Family Planning
2. Father is " " "
3. Family practices Family Planning

Figure # 16

# VILLAGE STATISTICAL PROGRESS REPORT
(VHA'S CROSS REFERENCE - HOUSE # TO NAME)

_____ Province  Year 1354

_____ Village  V.H.A.'s Name _____

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| House | Family Name | Participating Infants Name | Sex | Date of Birth | Program Termination Date | Weight for Age Curve Position | | | | | | | | | | | |
| | | | | | | HAM | SAU | JAU | SAR | ASA | SUN | MIZ | AQR | QAU | JAD | DAL | HOO |
| 1 | Tayeb | Ali | M | 1/50 | 2/55 | 14 C | 14.5 C | 15 B | 15 B | 15.5 B | | | | | | | |
| | | Shazia | F | 2/54 | 3/59 | → | B | 4.5 | 5 | 5.5 E | | | | | | | |
| | | Alam | M | 10/52 | 11/57 | 9 C | 9.5 C | 10 B | 10 B | 10.5 B | | | | | | | |
| 2 | Ansari | Najiba | F | 1/49 | 2/54 | 15 D | T | ← | | | | | | | | | |
| | | Shazia | F | 1/50 | 2/55 | 14 C | 14.5 C | 14.5 C | 15 B | 15 B | | | | | | | |
| | | Jon | M | 0/51 | 10/56 | 11.5 B | 12 B | 12 B | 12.5 A | 12.5 A | | | | | | | |
| | | Hasan | M | 10/52 | 11/57 | 6 Z | 6 Z | X | ← | | | | | | | | |
| | | Hamida | F | 7/53 | 8/58 | 6.5 C | 7 C | 7.5 C | 8 B | 8.5 B | | | | | | | |
| | | Ali | M | 2/54 | 3/59 | → | B | 5 | 5 | 5.5 E | | | | | | | |
| | | Zafar | M | 10/50 | 11/55 | → | | J 13.5 B | 13.5 B | 14 B | | | | | | | |
| 3 | Hasan | Jon | M | 11/49 | 12/54 | 15.5 A | 15.5 B | 15.5 B | 15.5 B | 15.5 B | | | | | | | |
| | " | Zafar | M | 10/52 | 11/57 | 9 C | 9 D | 9 D | 8.5 E | 8 Z | | | | | | | |
| | | Shazia | F | 7/53 | 8/58 | 6 D | 6.5 D | 7 D | 7.5 C | 8 C | | | | | | | |
| 4 | Yacob | Hamida | F | 2/50 | 3/55 | 15 A | 15 B | 15 B | 15.5 A | 16 A | | | | | | | |
| | | Hasan | M | 6/53 | 7/58 | 7.5 A | 7.5 B | 8 B | 8 C | 8.5 C | | | | | | | |
| 5 | Nazir | Najiba | F | 3/50 | 4/55 | 14.5 B | 15 A | 15 B | 15.5 A | 15.5 A | | | | | | | |
| | | Shazia | F | 7/51 | 8/56 | 12 B | 12.5 A | 12.5 B | 13 A | 13 A | | | | | | | |
| | | Asef | M | 12/52 | 1/58 | 8.5 C | 9 C | 9.5 B | 9.5 C | 10 B | | | | | | | |
| 6 | Raofi | Jon | M | 2/51 | 3/56 | 11.5 D | 11.5 E | 11.5 E | 11.5 E | 10 Z | | | | | | | |
| | | Ali | M | 9/52 | 10/57 | 9 D | 9 D | 8.5 E | 8 Z | 7 Z | | | | | | | |
| | | Zafar | M | 12/53 | 1/59 | 4 | 4.5 | 4.5 E | 4 Z | 4 Z | | | | | | | |
| | | Shazia | F | 12/53 | 1/59 | 5 | 5.5 | 6 A | 6 A | 6 B | | | | | | | |
| | | | | | Figure # | 17 | | | | | | | | | | | |

we call initial or baseline data. Over the three year methodological phase of the project, many changes will take place in the families like births, deaths, marriage, and changes in behavior with respect to nutrition, personal hygiene, sanitation and family planning. The starting or baseline data measured against the same question three years later will tell us to some degree, the changes brought about by the project. The use of control villageswill improve our assessment of that progress for which the project is responsible versus that progress brought about by other causes.

D. Relationship of Our Demographic Data to Malaria Control Data

1. House Numbers and Demographic Maps

The original demographic mapping of our villages was done by the malaria control teams and the house numbers we use are those established by malaria control. Likewise, the family composition data was originally established by malaria control.

2. Cooperation Between Malaria & Nutrition/Infection Control Project

The malaria surveillance officer is required once each year to correct (update) his demographic map. The VHA is required to keep her information up to date throughout the year. It follows then, that nutrition/infection control and malaria control will work together cooperatively, each helping the other over the period of this project.

E. Summary

1. The nutrition/infection project reporting is based on two records and one report. These three documents are:

(a) Family Data Record Card (FDRC)

(b) Age/Weight Record Card (A/WRC)

(c) Village Statistical Progress Report (VSPR)

2. To facilitate the work of the VHA she will carry for her own use six additional reference sheets. These are:

(a) VHA's Monthly Workload Control

(b) VHA's Weight Category Finder

(c) VHA's Infant Age-Rapid Calculator

(d) VHA's Behavioral Practice Code

(e) VHA's Cross Reference-House # to Name

(f) VHA's Cross Reference-Name to House #

3. A good working relationship must exist between this project and malaria control. House number and family composition number are largely the work of malaria control.

F. Visual Aids

Chart # 16 Family Data Record Card (FDRC)

Chart # 10, 11 Infant Age/Weight Record Card (A/WRC)

Chart # 17 Village Statistical Progress Report (VSPR)

Chart # 18 VHA's Monthly Workload Control

Figure # 14 a+b VHA's Weight Category Finder

Figure # 15 VHA's Infant Age-Rapid Calculator

Figure # 16 VHA's Behavioral Practice Code

Figure # 17 VHA's Cross Reference-House # to Name

## II. RECORDS-DESCRIPTION AND OPERATION

A. Family Data Record Card (Chart # 19 )

1. Contents and Their Purpose

The Famil. Data Record Card will constitute a perfect record of family births, deaths, infant weights, etc. for the life of the project. (Infant health improvement will be clearly evident if the family adopts the project's infant health improvement program). This record card is the basis for most project reports. Data is recorded directly into this record at the time of each home visit. The VHA carries the record to and from the home.

2. Opening the Family Data Record Card (Chart # 19 )

The Following Data Will Be Entered on First Visit

1. Village name
2. Compound or area
3. House number
4. Family name
5. Date of opening this card - day + month + year
6. Subsequent eleven (11) months

# FAMILY DATA RECORD CARD

VILLAGE NAME Farah

COMPOUND OR AREA B/S

HOUSE NUMBER 9

FAMILY NAME 1 Alam

DATE OF OPENING THIS CARD 10/8/53

BEHAVIORAL PRACTICES NOTATIONS

S
P
N
FP

| Family Members Name (1st Adults First Children thereafter) | Sex | Date of Birth | Relationship | At Time of Opening Card: Age | At Time of Opening Card: Weight | 1/11 DAL | 2/12 HOO | 3/1 HAM | 4/2 SAU | 5/3 JAU | 6/4 SAR | 7/5 ASA | 8/6 SUN | 9/7 MIZ | 10/8 AQR | 11/9 QAU | Civil Status: J=Married in family; D=Departed to; M=Moved from village; X=Death+date+cause; P=Pregnancy+date; B=Birth+date; I=Illness+cause; T=Termination |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alam | M | 1/23 | Husband | | | | | | | | X | | | | | | X - 1/11/54 |
| Razia | F | 3/27 | Wife | | | | | | | | | | | | | | |
| Najiba | F | 1/44 | Dau | 57 | 14.5 D | 14.5 D | 15 D | 15 D | T | ← | → | D C | | | | | T - 2/5-4 D - 4/5-4 Kabul To? |
| Shazia | F | 1/50 | Dau | 45 | 13 D | 13.5 D | 13.5 D | 14 C | 14.5 C | 14.5 C | 15 B | 15 B | | | | | |
| Jan | M | 9/51 | Son | 25 | 11 B | 11.5 B | 11.5 B | 11.5 B | 12 B | 12 B | 12.5 B | 12.5 B | | | | | |
| Hasan | M | 10/52 | Son | 12 | 7 Z | 6 Z | 6 Z | 6 Z | 6 Z | X | | | | | | | X - 3/5/53 Communicable |
| Hamida | F | 7/53 | Dau | 3 | 4.5 Z | 4.5 Z | 4.5 Z | 6.5 C | 7 C | 7.5 C | 8 B | 8.5 B | | | | | |
| Ali | M | 2/54 | Son | | | | | | → B | 5 | 5 | 5.5 | | | | | B - 2/11/54 |
| Dost | M | 10/50 | Step Son | 36 | | | | | | → J 13.5 D | 13.5 B | 14 B | | | | | J - 3/5-4 From Kabul |

Figure # 18

7. Family member names

   1. If the family is large, adults can be listed 2 per line; enough space should remain on front of the card for all children plus one birth in the first 12 months.

   2. List adults first, and oldest children thereafter, Children should be entered in descending age sequence (last child listed on page should be youngest).

8. Sex - M or F

9. Date of birth - 21/1/66

10. Relationship - father, mother, daughter, son

11. Age- Age is to be shown in months for children only Ages of children exceeding 60 months should be shown in years. Figure # 15 VHA's Infant Age-Rapid Calculator provides you a rapid method for calculating infant age.

12. Weight - Show weight + weight code for each child under 60 months of age.

13. Vital Data - The most important data to be collected on opening the card is the mother's pregnancy and date of conception.

14. Behavioral practices notations (Figure # 16 )

3. Maintaining the Family Data Record Card (Chart # 19 )
(Figure # 18 )

The following data will be entered on the card during each subsequent visit to the home.

(a) VHA Visit Date & Initials - In the month box, show the number of the day of the month you are visiting; show your initials in the numbered box just above the month.

(b) Infant Weight & Category - Weigh and record the weight and category of each child up to five years of age (60 months and less).

(c) Vital Data - Births, deaths, terminations, departures, & arrivals.

Births - Enter the new family member on the card
- Enter "B" in the month column when you recorded this new member; draw a line thru prior months to show you collected no data previously.

Deaths - Enter "X" in the month box when you recorded this death.
- Provide date of death and apparent cause (communicable, diarrheal, respiratory, accidental).
- Draw a line through the remaining months to indicate no need for additional data collection on this family member.

Terminations
- Enter "T" in the month box when you determine the infant reached 60 months of age last month and this is the first month weight is not taken.

Departures
- Enter "D" in the month box when you recorded this departure, provide details of the departure, draw a line through the remaining months to show no need for further data collection.

Arrivals
- Enter "J" in the month box when you recorded this arrival; add the name of the new arrival to the adult or infant section of the card; draw a line thru prior months to show you collected no data prior to this.

(d) Nutrition/Infection Behavioral Practices - Refer to your Behavioral Practices Code. In the column for the month of your visit record the code numbers of practices as you have observed them or as they are reported to be practiced by family members. Circle those practices you have personally observed. This data will confirm the Behavioral Practices Interview made quarterly.

B. Infant Age/Weight Record Card (Chart # 10&11)

1. Units of Measure

(This section will be taught if VHA's educational level requires it).

(a) Counting 1-100 (Pharsi)

(b) Writing 1-100 (Arabic)

(c) Horizontal units

(d) Verticle units

(e) Graph paper - horizontal (age)
- verticle (weight)

(f) Months of year-name & number

(g) Writing-month/day/year

(h) Writing-name and initials

(i) Write-ABCDEZ

(j) Calculate age in months

2. Contents & Purpose of Age/Weight Chart

(a) Chart side

(1) Similarity to Graph Paper

The three, colored, weight charts look very similar to graph paper.

(2) Horizontal Scale

The horizontal scale is age in months. In fact you now see that the three charts cover 5 years or 60 months.

(3) Verticle Scale

The verticle scale is kilograms and 1/2 kilograms of infant body weight.

(4) The Curve

This is the "Road to Health". The curve represents a roadway which if followed probably indicates good health. The roadway represents a statistical study of healthy children in the U.S. Afghan children in good health probably follow approximately the same roadway or curve.

(5) The Curve Gradations or Weight Categories (A, B, C, D, E, Z)

It is very important for our project objective to measure gains and losses of weight. Thereafter, we have subdivided the road to health into 5 weight categories. This way, when an infant gains weight (from improved nutrition and improved sanitary measures) we can note the progress even though it is small. Also, if

an infant incurs an infection, your examination of the data will tell you something is wrong. when you note a drop from one category of the curve to the next. "Z" is a signal that the infant has fallen off the curve.

(6) Purpose of the Chart

(1) Relationship Between Nutrition & Infection

We spoke earlier, about the relationship of malnutrition and infection. There is a direct relationship between malnutrition and infection.

In the nutrition section we spoke about antibodies or antigens. These are protein bodies manufactured in the fetus from amino acids passed from the mother. They are the body's warriors who fight disease when disease germs enter the body. After birth, protein digestion produces muscle tissue, etc. and antibodies to fight disease arising from germs entering the body. We might think of the protein antibodies as ammunition to fight the germs and energy as the gun required to shoot the ammunition. So the body requires protein and energy to kill germs which enter the body.

A strong (muscle tissue) and healthy (some stored fat for energy) body has reserves of protein and energy to fight germs which enter the body. In most cases the germs are overcome and no disease (illness) develops from the germs.

A weak (poor muscle tissue) and unhealthy (little or no energy reserves) body does not have the protein and energy to fight germs. Frequently, therefore when germs enter the body, they have easy ability to increase in number, cause illness, and possibly death. Now you can see again why good nutrition means good health.

(2) The Age/Weight Chart Is An Excellent Tool to Measure Health

There are very complicated and costly instruments and machines which could measure the number of germs in the body. It would take many doctors to perform preventive medicine if we all depended

upon these machines. Instead, scientists and doctors have decided that the age/weight chart is the most effective single and simple indicator of good health.

(3). Importance Age/Weight Chart For This Project

We will depend almost exclusively upon the age/weight chart to tell us when infants and children to age 60 months (five years) are in good or poor health. The A - Z gradations of the road to health will improve our ability to detect changes in health status.

(4) Posting Kilos and Half Kilos to the Age/Weight Chart

The verticle scale of age/weight chart shows kilograms and 1/2 kilograms. It is very easy to make the postings and very important that they he made correctly.

E X A M P L E S (Chart # 20 )
(Figure # 19 )

| An Infant Who Weighs Exactly | Is Posted to the Chart As |
|---|---|
| 10.5 kg | 10.5 |
| 10.0 kg | 10.0 |
| 9.5 kg | 9.5 |

| An Infant Who Weighs More Than | But Less Than | Is Posted to Chart As |
|---|---|---|
| 10.5 kg | 11.0 kg | 11.0 |
| 10.0 kg | 10.5 kg | 10.5 |
| 9.5 kg | 10.0 kg | 10.0 |
| | | 9.5 |

Figure # 19

(5) How to Write Months and Years to the Age/Weight Chart

The Dari month in which the infant was born is written in the first (scored) box of the first age/weight chart. Eleven (11) more Dari months are written in sequence in the remaining spaces of the first age/weight chart. The Dari year (1353 for example) is written below the month box of the birth date. The next Dari year (1354 for example) is written below the first month of the new year.

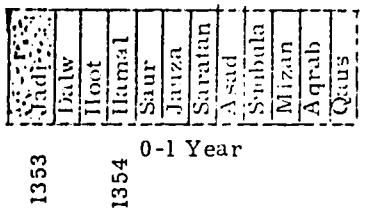



Figure # 20

(b) The Identification Side of Age/Weight Chart (Chart # 10 )

(1) Identification Data

This side of the card contains house #, child name, sex, father & mother's name, date of infant's birth, date of opening card (date first seen) name of village and compound, and names of brothers and sisters and their dates of birth.

(2) Immunization Data

The card also provides an opportunity to record immunizations, anti malarial drugs, vitamin A and other preventive measures.

3. Operation of the Weighing Machine (Chart # 21 )

(This section to be taught first with dummy and thereafter with actual weighing machine.)

(a) Units of Measure

Just like the age/weight chart, the weighing machine specifies kilograms and half kilograms. It also marks 1/10 of a kilogram. We will read, but not record, the 1/10 kilograms.

(b) Reading the Units of Measure

If we record weights to the nearest 1/2 kg., what do we record when the machine shows other fractional weights? The rule is, when more than half, go to the next number; when less than half, go back to the last number. The following diagrams (and your practice on the machine) will provide a clear understanding about this rule:

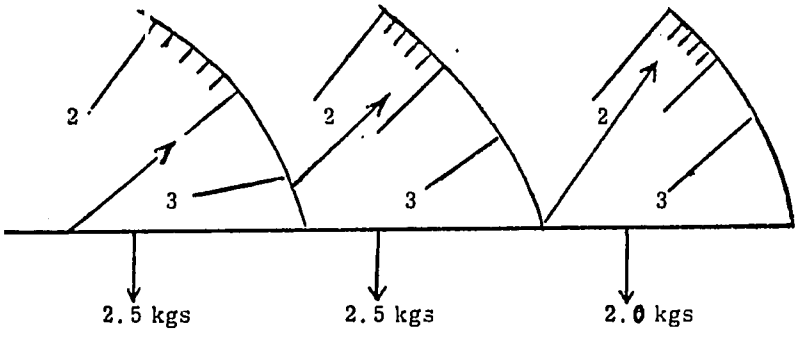



Figure # 21

(c) Hanging the Machine

The machine is hung by a nylon cord to the roof of the house. On your first visit a place suitable to the family should be designated for hanging the machine. It will save you much time on subsequent visits if the hanging place for your machine is determined on the first visit.

(d) Adjusting the Machine

After hanging, the machine should register zero with the (empty) infant suit attached. A change in weather or temperature may require you to adjust the machine to zero.

Adjust the machine by gently turning the knob which is located between 6 and 7 kgs on the machine.

In winter time, heavy infant clothing, if not adjusted, will cause over-weight recordings. After experience you can estimate the infant clothing weights. Subtract the weight of infant clothing by adjusting the machine to minus zero when the infant sling is hanging on the machine.

(e) Infant Weighing Sling

Each weighing machine is equipped with a sling in which to strap the infant or child before weighing. This sling must be carefully fastened to avoid injury to the infant. The sling enables the infant to hang freely on the weighing machine and facilitates accurate measurement of infant. weights.

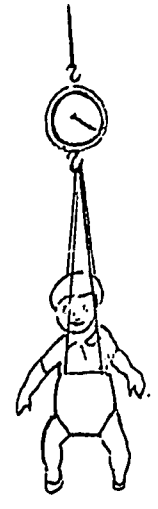


Figure # 22

The infant sling must be attached to the weighing machine before adjusting it to zero.

4. Opening the Age/Weight Record Card (Chart # 10, 11 )

One Age/Weight Record Card is prepared for each child in the family below 60 months of age. The card is to be opened on the first visit.

VHA's will find it convenient to establish (open) the Age/Weight Record Card after completing the Family Data Record Card. This sequence of card preparation will also provide a double check of the weight category (13. 5-B) written on the Family Data Record Card, when the infant weight is posted to the Age/Weight Record Card.

The month (and year) sections of the weight chart and full identification on the reverse side should be completed on the first visit. Such action will speed the subsequent monthly visits of the VHA.

5. Benefits of Parental Retention of the Age/Weight Record Card

After opening the card on the first visit, it should be carefully folded, placed in its polyethylene envelope and presented to the mother as her property. This an important event, which should be accompanied with some words of congratulation and encouragement to the mother. The following are some advantages to the system of families retaining custody of the weight card:

(1) Mother will take pride in infants health progress when she retains the card.

(2) Cards are seldom lost when retained by mothers.

(3) Cards are quickly found at the home, but sometimes lost in the health center.

(4) The ready availability of card showing infant weight readily confirms good or poor health.

(5) Cards are mobile, as families move so do the cards.

(6) Cards speed up home visits and make the VHA's work easier.

6. Maintenance of the Age/Weight Record Card (Chart# 10, 11 and Figure # 11 )

On return visits to the home, the VHA rapidly weighs the infant, records the weight and category on Family Data Record Card and on the Age/Weight Record Card. Again, the weight category (A through Z) written on the Family Data Card, is easily confirmed by sight when posting the weight to the Age/Weight Card.

Figure #14 a+b the VHA's Weight Category Finder will also be useful in determining weight categories.

Immunization, Vita A capsules, and other health measures are recorded on the age/weight card.

VHA's Monthly Workload Control (Chart # 22 )

This document is a record of the VHA's accomplishment each day. [illegible] completing her work each day, the VHA records the number of children weighed opposite the house number and in the column for that date. When the number of infants actually weighed equals the number of registered infants in that family, circle the house number. A rapid visual examination of this column tells the VHA about her progress for the month.

C. Summary

1. Review content, purpose, opening and maintenance of the FDRC (Chart # 19 ).

2. Review and test for

   (a) Counting and writing number

   (b) Posting to age/weight grid

   (c) Name, number, and how to write days, months and years and how to calculate age in months.

   (d) Writing ABCDEFZ

3. Review content, purpose, opening and maintenance of A/WRC (Chart # 10, 11 ).

4. Review and test for operation of the weighing machine.

D. Visual Aids

Chart # 19 (Completed) Family Data Record Card (FDRC)

Chart # 11 (Completed) Age/Weight Record Card (A/WRC)

Chart # 20 (Completed) Posting Kilos & Half Kilos to A/WRC

Chart # 10 (Completed) Identification Side of Age/Weight Card

Chart # 21 Reading Model Weighing Machine

Chart # 22 (Completed) VHA's Monthly Workload Control

III. REPORTS -DESCRIPTION AND OPERATION

A. Village Statistical Progress Report (VHA's Cross Reference- House Number to Name (Chart # 22 )

1. Explanation and Purpose

The Village Statistical Progress Report (VPR) is a master list of village infants arranged in house number order. It is retained in the VHA's home (not carried from house to house). At the close of each days work, data is transcribed to the VSPR from the Family Data Record Card (FDRC).

The VSPR constitutes a village check list and progress report beneficial to VHA's; the incomplete blanks in a particular month column indicate infants still to be weighed that month.

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MISSING

(d) VHA's Cross Reference-Name to House Number

Once the VSPR has been opened the VHA will find another useful cross reference sheet is VHA's Cross Reference Name to House Number. Figure # 22 illustrate this cross reference.

VHA'S CROSS REFERENCE-NAME TO HOUSE NUMBER

_____ Province  Year _____ 1354 _____

_____ Village  V.H.A.'s Name_____

| Name | House # | Name | House # | Name | House # |
|---|---|---|---|---|---|
| Ansari | 2 | | | | |
| Hasan | 3 | | | | |
| Nazir | 5 | | | | |
| Raofi | 6 | | | | |
| Tayeb | 1 | | | | |
| Yacob | 4 | | | | |

Figure # 23

3. Maintaining the VSPR

Each day, from the FDRC, post data gathered on the infants that day. The data includes infant births, deaths, weight, category, transfer from the village and terminations from the program (for those having completed age 60 months).

For program terminations, draw a straight line thru the empty month columns after the last month of participation in the program. (i.e. after last weight taken on 60th month).

Blank spaces in the current month column represent unfinished work.

End of Month and Quarterly Summation (Chart # 24 & # 25 )

The reverse side of VSPR reports the results of VHA efforts. It is here that we record in summary fashion the number of weight gains and losses. The twelve month spread (12 columns) on the front side of VSPR, enables us to compare the position this month from the position last month. These changes from month to month are the project's progress indicators. These are recorded on the reverse side (summation) of VSPR. Figure 24

# VSPR SUMMARY

| Control Data — TOTAL THIS PAGE | HAM | SAU | JAU | SAR | ASA | SUN | MIZ | AQR | QAU | JAD | DAL | HOO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Weight drop A→B | | 3 | 2 | | 1 | | | | | | | |
| 2. B→C | | | | 2 | | | | | | | | |
| 3. C→D | | 1 | | | | | | | | | | |
| 4. D→E | | 1 | 1 | 1 | | | | | | | | |
| 5. E→Z | | | | 2 | 2 | | | | | | | |
| 6. Total weight drops (1 thru 5 = 6) | | 5 | 3 | 5 | 3 | | | | | | | |
| 7. Weight gains Z→E | | | | | | | | | | | | |
| 8. E→D | | | | | | | | | | | | |
| 9. D→C | | | | 1 | | | | | | | | |
| 10. C→B | | | 3 | 2 | 1 | | | | | | | |
| 11. B→A | | 2 | | 4 | | | | | | | | |
| 12. Total weight gains (7 thru 11 = 12) | | 2 | 3 | 7 | 1 | | | | | | | |
| 13. Off curve no change | | 1 | 2 | | 2 | | | | | | | |
| 14. On curve no change | | 10 | 11 | 8 | 14 | | | | | | | |
| 15. Not weighed -Omitted | | | | | | | | | | | | |
| 16. -Death | | | 1 | | | | | | | | | |
| 17. -Departed/Termin. | | 1 | | | | | | | | | | |
| 18. Total registered last month | | 19 | 20 | 20 | 20 | | | | | | | |
| Change Data | | | | | | | | | | | | |
| 19. Births weighed + | | 2 | | | | | | | | | | |
| 20. Arrivals weighed + | | | 1 | | | | | | | | | |
| 21. Terminations not weighed - | | 1 | | | | | | | | | | |
| 22. Departures not weighed - | | | | | | | | | | | | |
| 23. Deaths not weighed - total - | | | 1 | | | | | | | | | |
| 24. Diarrheal - | | | | | | | | | | | | |
| 25. Communicable - | | | | | | | | | | | | |
| 26. Respiratory - | | | | | | | | | | | | |
| 27. Accidental - | | | | | | | | | | | | |
| 28. Total registered this month + | | 19 | 20 | 20 | 20 | | | | | | | |
| Figure # 24 | | | | | | | | | | | | |

Examine the detail (front) side of VSPR and record on the back side data as follows:

Control Data

(Line 1 thru line 5) the number of weight drops from A to B, B to C, etc.

(Line 6) the total number of weight drops (the sum of line 1 thru line 5 = line 6).

(Line 7-11) the number of weight gains B to A, C to B, etc.

(Line 12) the total number of weight gains (line 7 thru 11=12)

(Line 13) off curve - no change = the total number of infants who remained off the curve from one month to the next.

(Line 14) on curve - no change = the total number of infants who remained on curve but did not change from one category to another.

(Line 15) infants not weighed although they are present.

(Line 16) infants not weighed because they died.

(Line 17) infants not weighed because they departed the village or terminated project participation.

(Line 18) total infants registered last month. This is the same figure as line 28 last month. This completes the control section of the report. The data to this line covers infants who were also weighed last month and for which we can make a comparison.

Change Data

The following data reflects changes in the participating infant population which took place during the month (which was recorded for the first time this month).

(Line 19) new born infants weighed.

(Line 20) new arrivals to the village weighed.

(Line 21) program terminations -those infants who reached 70 month of age last month and this is the first month their weight is not taken.

(Line 22) infants who departed the village (moved away). (Same as line 17).

(Line 23) total deaths among participating infants. (Same as line 16)

(Line 24 thru 27) reason for death.

(Line 28) the arithmetical sum of lines 18 thru 23. This is the same figure as line 18 next month. This completes the change section of the report. The data in this section represents infants who were weighed for the first time (arrivals to the village-births) and infants who will not be weighed again (program terminations for age, departure from the village, and infant deaths).

The data for each villages will be compared to other villages at the end of each month and quarter. Project progress will be assessed from an examination of individual and consolidated village reports each month and each quarter.

B. Village Behavioral Progress Report (VBPR)

Reference was made earlier to a behavior questionnaire. This will be applied at the time of first interview and periodically thereafter (probably quarterly). The observed behavioral changes noted on the FDRC by the VHA will confirm the correctness of the answers provided by the family in the periodic behavioral report.

C. Project Chiefs Quarterly Implementation Report

On the basis of progress reflected in the monthly VSPR the project chief will prepare periodic reports for USAID and GOA-MPH.

D. Summary

1. Review content, purpose, opening and maintenance of the VSPR (Chart # 23 ).

2. Review content, purpose, and completion of the VSPR monthly summation (Chart # 25 ).

3. On the first visit to the home and periodically thereafter the project will apply a questionnaire on personal and family behavior with respect to nutrition, personal hygiene, sanitation and family planning. Progress in family acceptance of improved practices will be one measure of VHA job effectiveness.

4. Periodically the project chief will prepare a report for USAID and the GOA the data for which will come from reports 1-3 above.

E. Visual Aids

Chart # 23 (Complete) Village Statistical Progress Report (VSPR)
Chart # 25 (Complete) VSPR Summary

## IV. RECAPITULATION

### A. First Visit to House

On the first visit to the house (during the phase called demographic mapping) the VHA will:

1. Complete Family Data Record Card (FDRC)
2. Complete Infant Age/Weight Card
3. Apply Behavioral Questionnaire

### B. Establishing Control Documents

After the first visit to the home, and on the basis of the information in the FDRC, the following four office control documents must be established:

1. Village Statistical Progress Report
2. VHA's Monthly Workload Control
3. VHA's Cross Reference - House # to Name
4. VHA's Cross Reference - Name to House #

The four documents establish the village participating infant population.

### C. Recurrent Visits to the Home

On each subsequent (monthly) visit to the home, the VHA:

1. Records infant weight on the -Infant Age/Weight Card
   -Family Data Record Card (FDRC)
2. Records vital data on the FDRC
3. Records behavioral data on the FDRC

### D. End of Day Recapitulation

At the end of each day, and on the basis of the FDRC, the VHA:

1. Records weights and vital data to VSPR
2. Reports her days accomplishment on VHA's Monthly Workload Control by
   (a) Circling the house numbers visited where all infants were weighed. (The VHA will return to the house on a subsequent visit the same month to weigh those infants not present on the first visit.)
   (b) Placing x in the day of month column on which visit was made.
   (c) Draws a straight vertical line down the date column for non-working days of month.

E. End of Month Recapitulation

At the end of the last day of the working month the VHA completes the VSPR Summary for the month.

F. Summary

1. On the first visit to the family the VHA opens the FDRC and A/WC. The behavioral questionnaire is also applied. The two cards and the questionnaire constitute the baseline data or starting point of the project.

2. On the basis of data collected on first house visit, the VHA is able to establish the VSPR, and her own worksheets including VHA's monthly workload control and VHA's house # and name cross reference sheets.

3. On each recurrent visit the VHA record weights, vital data, and behavioral data on the FDRC.

4. At the end of each day, VHA transcribes weight data to VSPR and completes her workload report. At the end of each month VHA completes the summary side of VSPR.

# اغذیه تنریم و نمو

| | | | | | |
|---|---|---|---|---|---|
| پروتئین | بادام | گوشت مرغ | جگر | قلب | باقلی |
| | عدس | ماش | مشنگ | نخود | گیلاس شیر |
| | | | | | تخم مرغ |
| کربوهیدرات | شوت | کنجد | زردک خشک شده | شلغم | بنی |
| | | | شرشم | گیلاس شیر | |

# اغذیه مر فعالیت های حیاتی و وقایوی

| | | | | | |
|---|---|---|---|---|---|
| آهن<br>اسفورس<br>تیامین<br>نیاسین | سبوس برنج | سبوس آرد گندم | جگر | فروت | مشنگ |
| | دانه نخود | گوشت مرغ | باقلی | قلب ها | بادام |
| آ<br>ریبوفلاوین<br>ویتامین<br>پرولاین | زردک خشک و تازه | جگر | پالک | قلب ها | شلغم |
| ویتامین سی | شلغم | ملی | کلمی | برگهای نوش پیاز | آب مالته |
| ویتامین | زردک خشک | فروت | سبوس برنج | ماش | مشنگ |

CHART-12

# اغذیہ مولد انزی

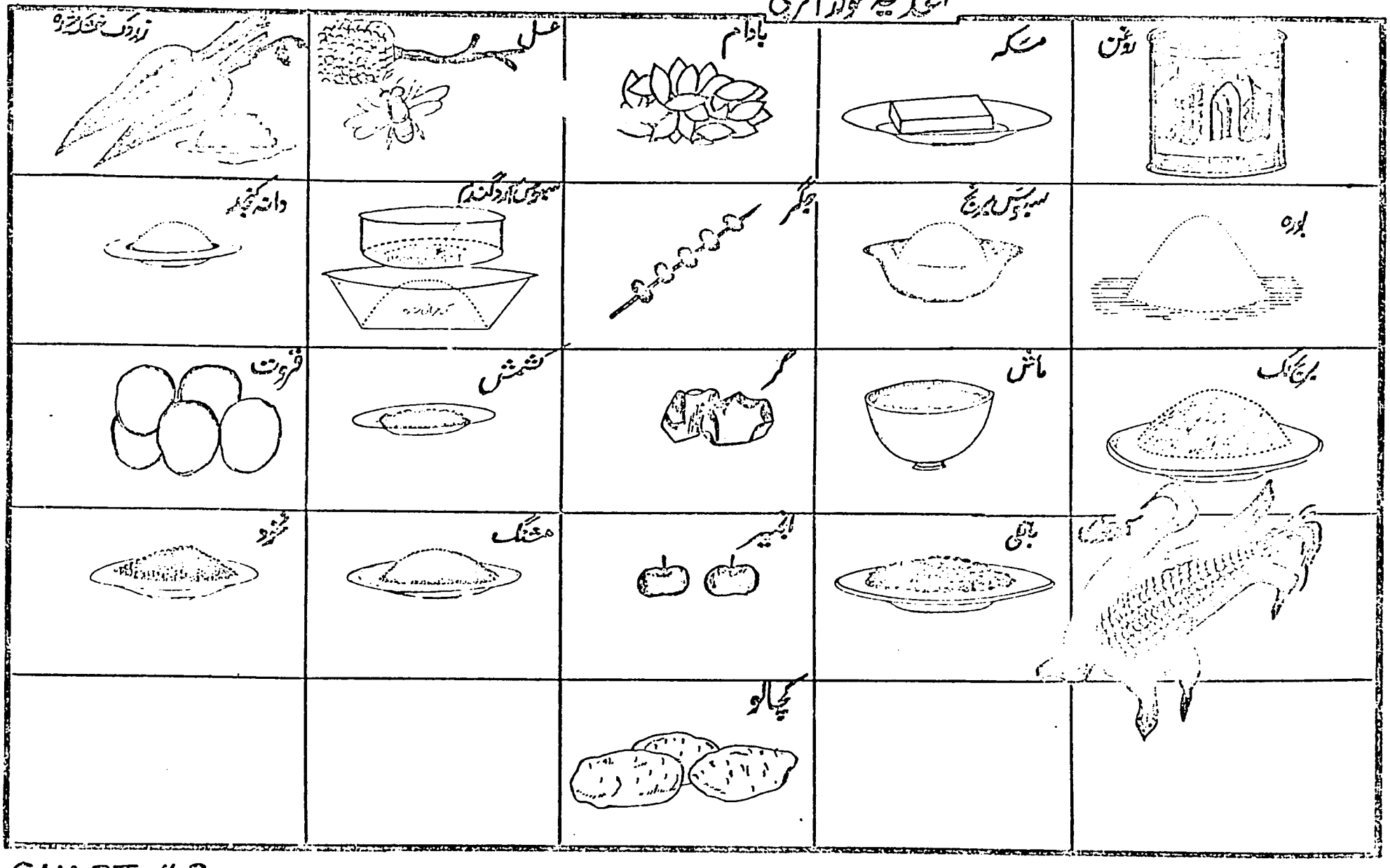



CHART # 3

سنین و فعالیت های مختلف، نیاز غذائی مختلف میباشد

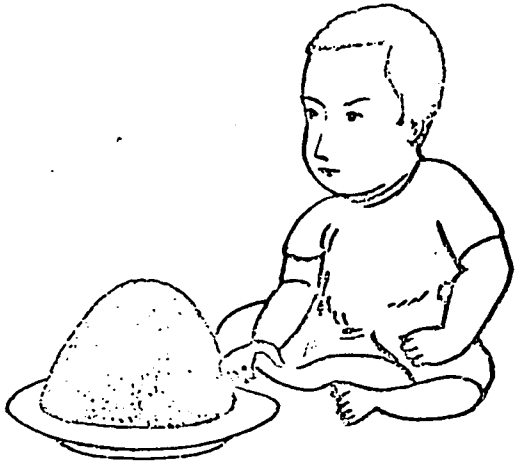
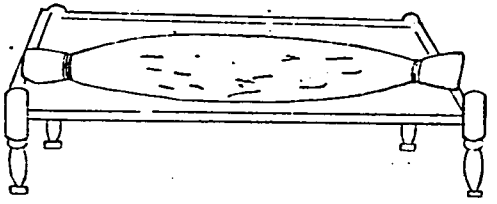
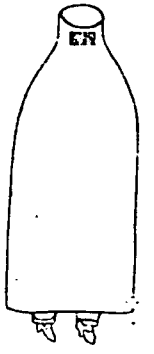
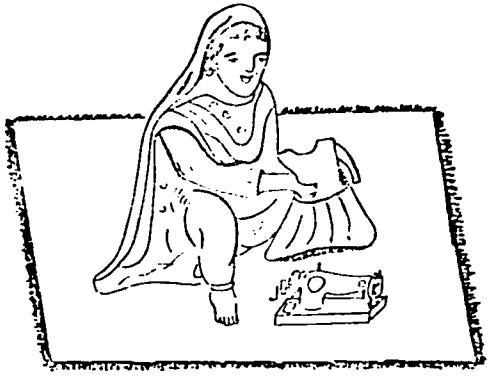


CHART # 4

# اہمیت روشنی آفتاب







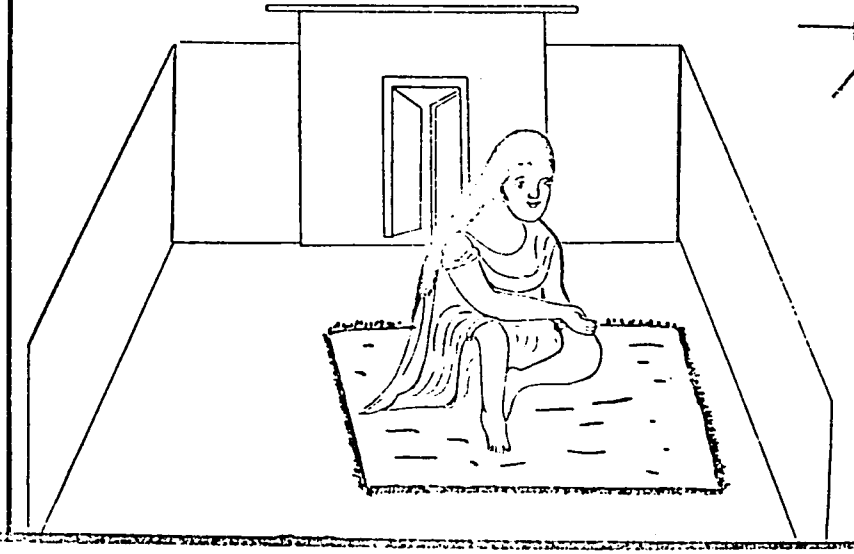


CHART # 5

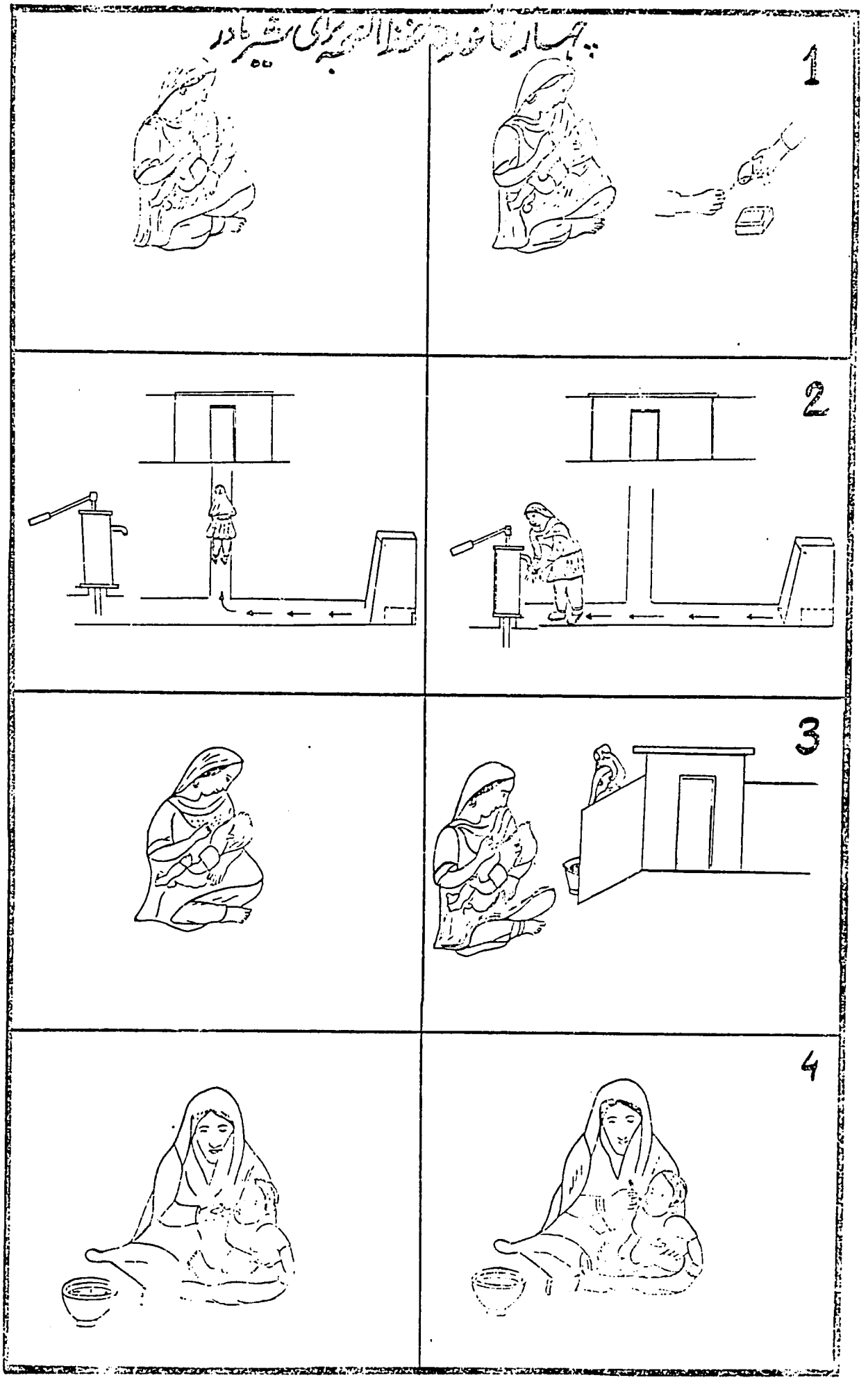



CHART #6

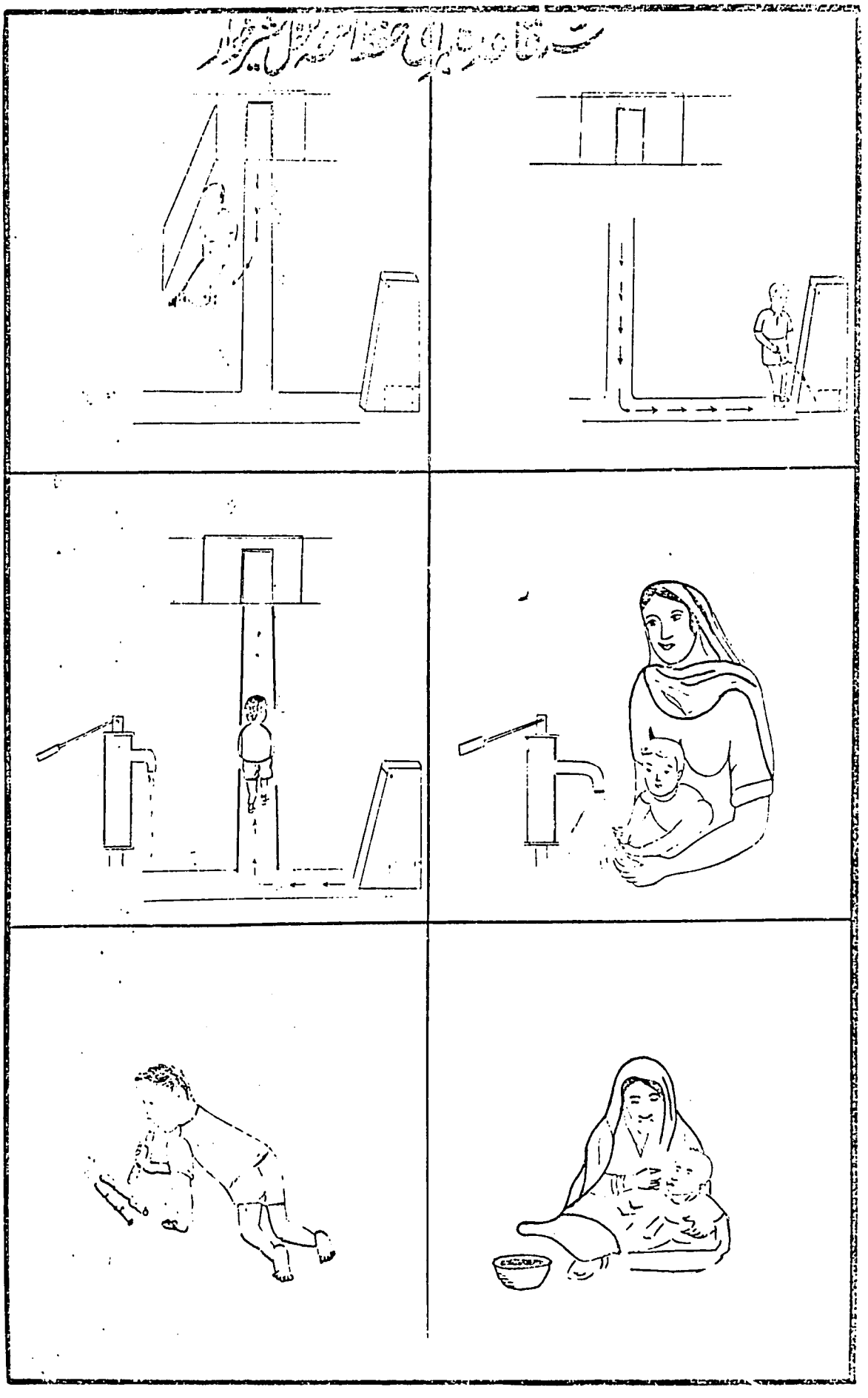


CHART 7

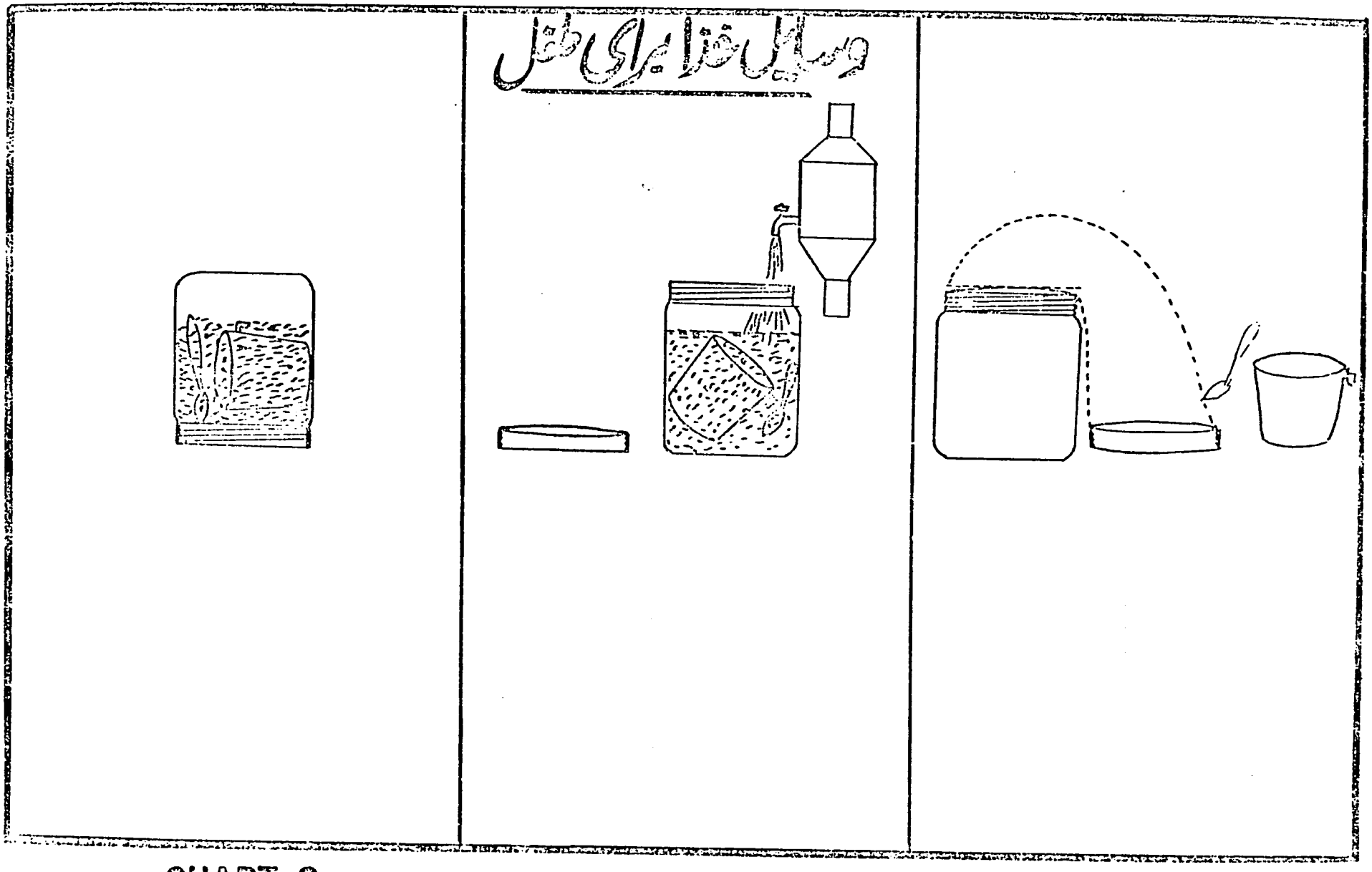



CHART 8

# حاملگی بعد از ۱۴ هفته

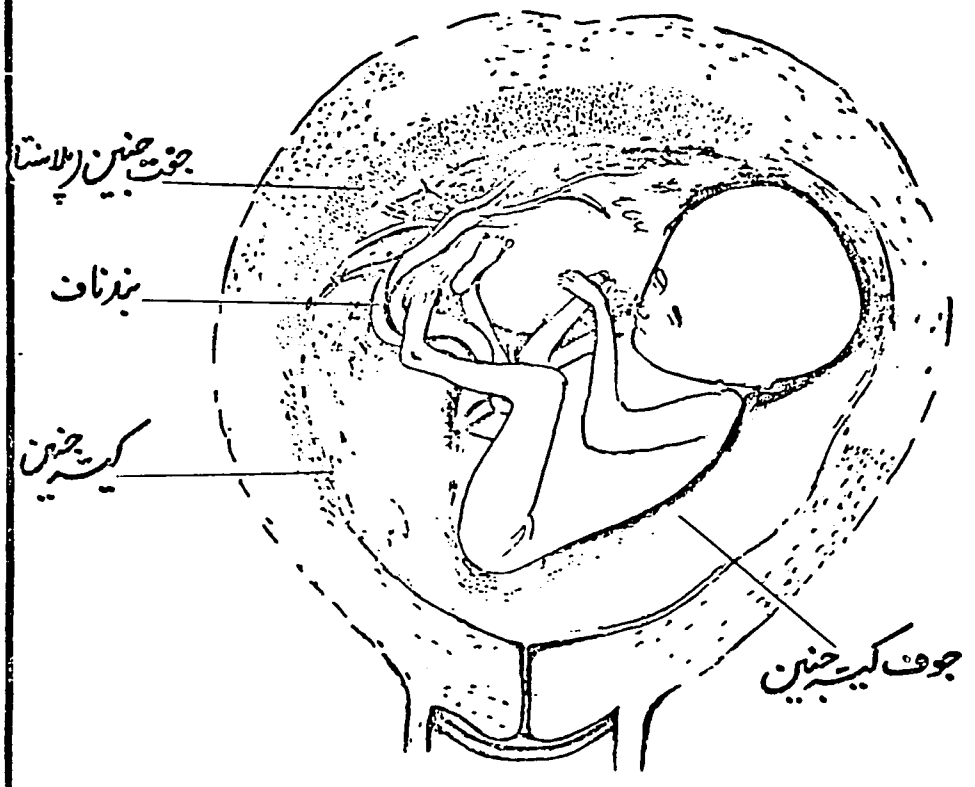



CHART 9

| | |
|---|---|
| نمبر خانه: 2 | مرکز مرکزی، فونا ه |
| جنس: مذکر | نام طفل: جان |
| نام پدر: عالم انصاری | |
| نام مادر: رضیه انصاری | |

| | |
|---|---|
| تاریخ اولین مراجعه: 1351/8/8 | تاریخ تولد: 1351/8/6 |
| نام قریه یا قلعه: بست | |

| برادران و خواهران | | |
|---|---|---|
| علامات | جنس | سال تولد |
| نجیبه | مونث | 1349/1 |
| شازیه | " | 1350/1 |
| حسن | مذکر | 1352/10 |
| حمیره | مونث | 1353/7 |
| علی | مذکر | 1354/2 |
| ظفر (نجیب الدین) | مذکر | 1355/10 |

## یاداشتها

| | |
|---|---|
| وفات آ | 1353/11/8 |

CHART 10

# در راه بسوی صحت: چارت وزن بسن

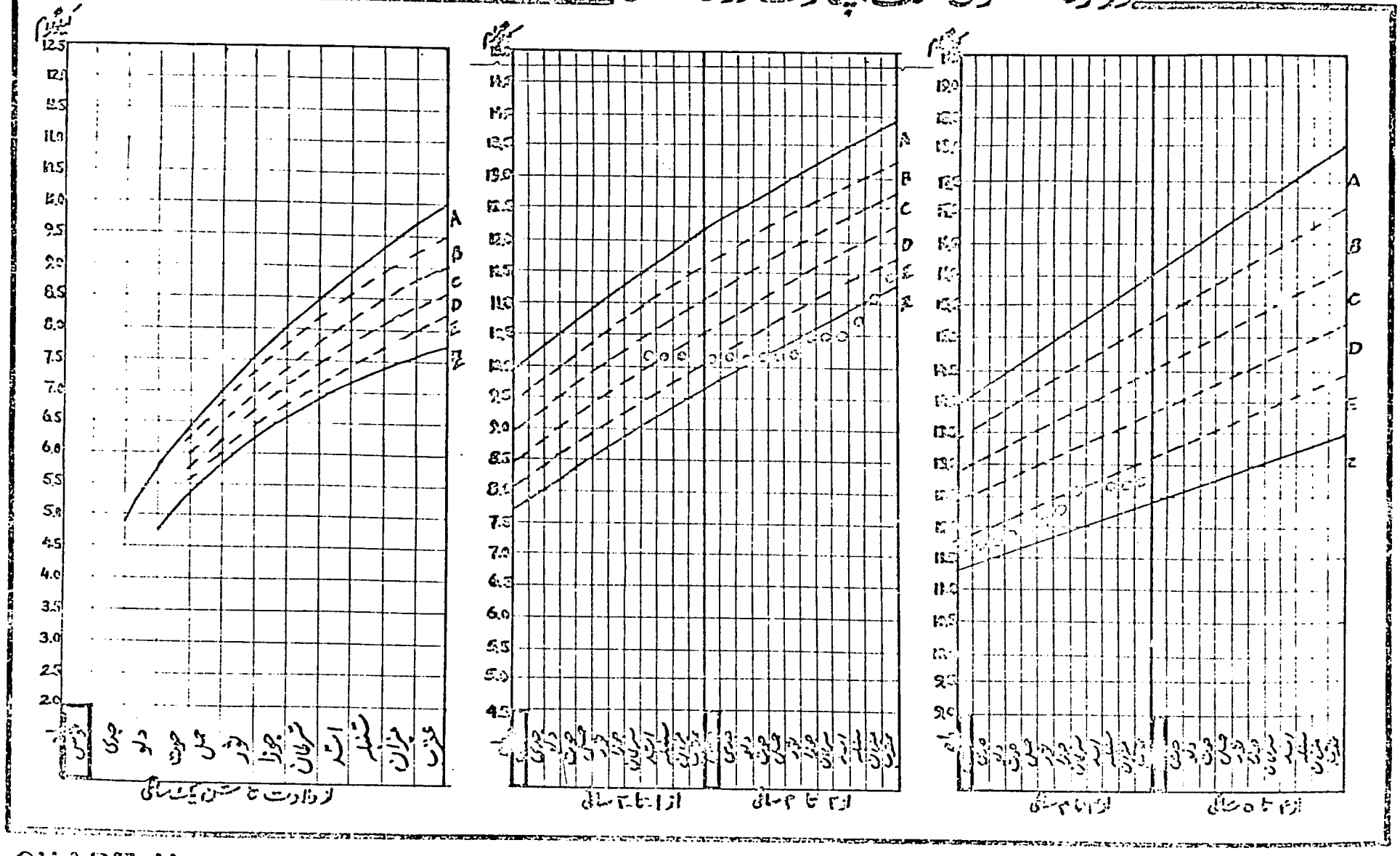



CHART II

# رکارد وزن نوزادان که شروع امراض را بعد از جدائی از شیر مادر نشان میدهد

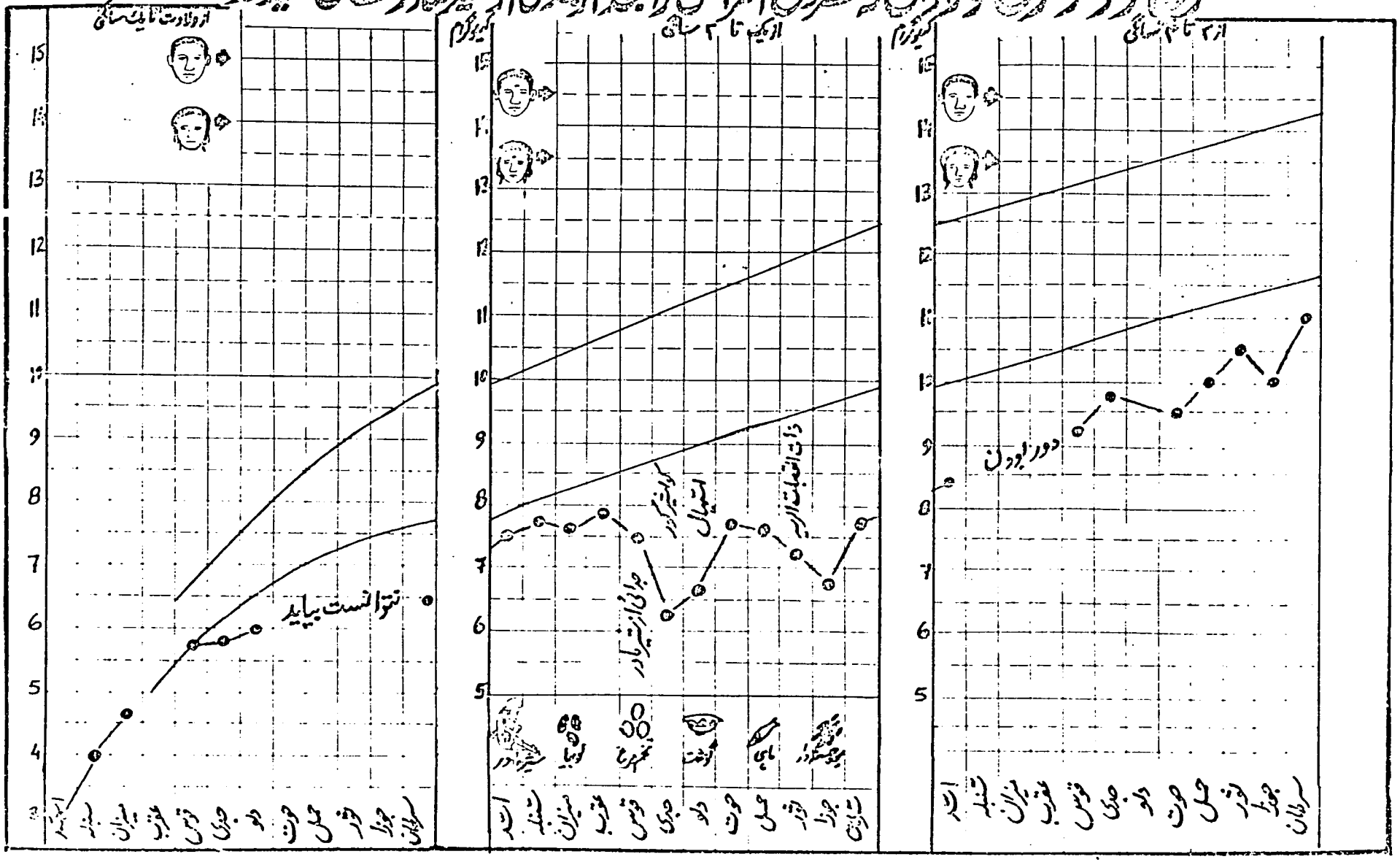



CHART 12

# خرابی وضع تغذیه در یک بچه بعد از حمله سیاه سرفه

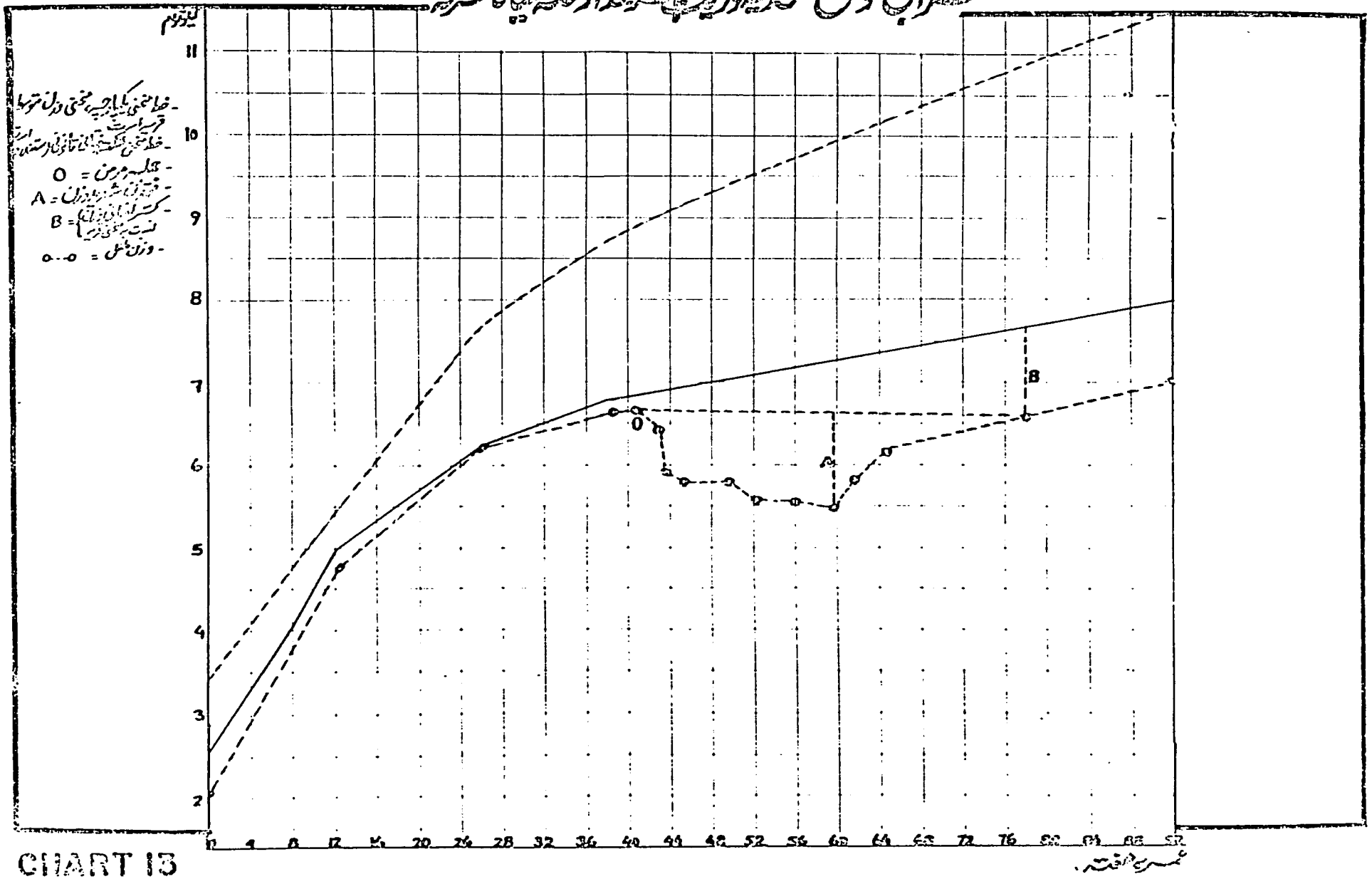



CHART 13

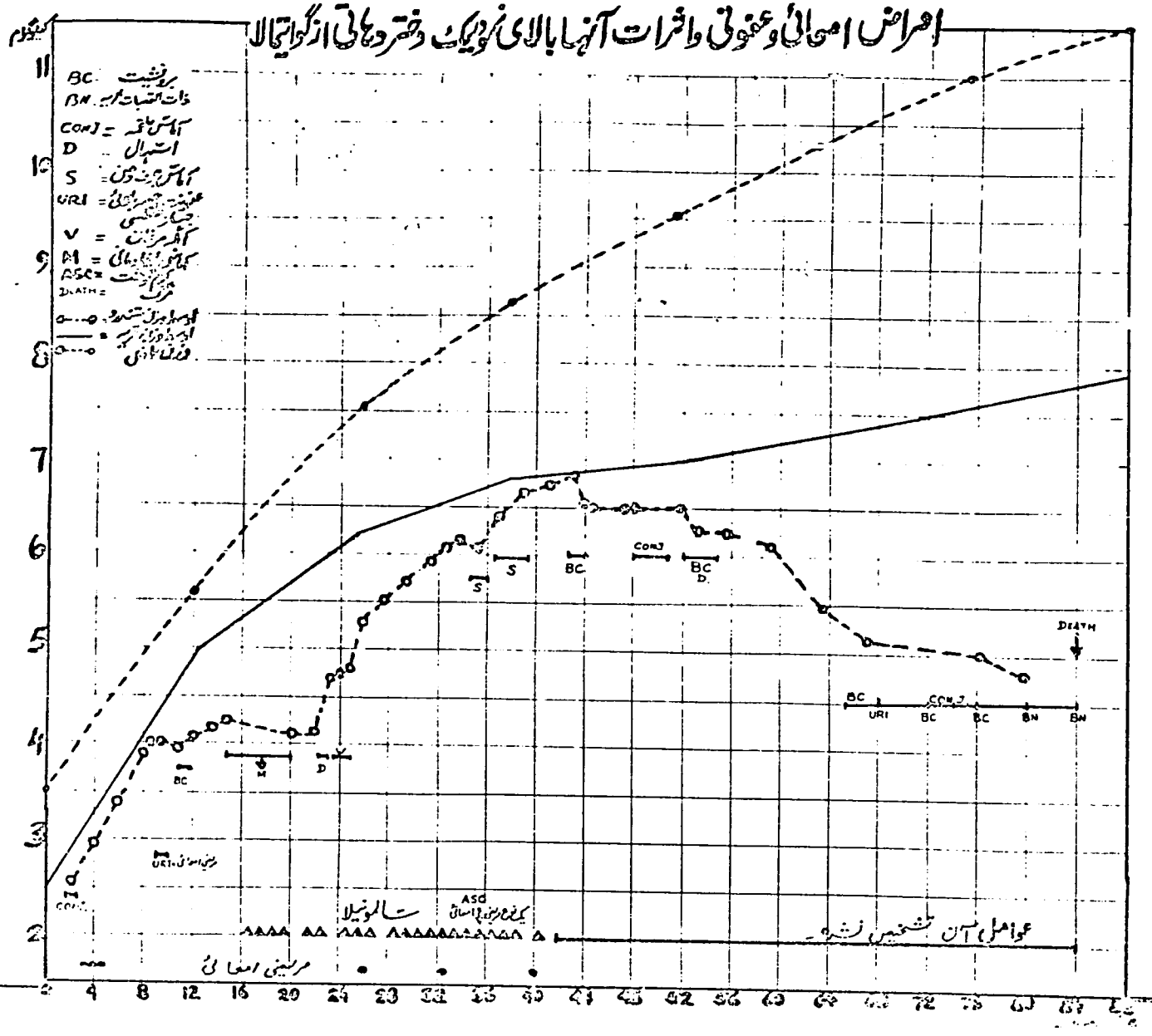

امراض اسهالی و عفونی و اثرات آنها بالای نمودیک دختر دهاتی از گواتیمالا
کیلوگرام
BC = برونشیت
BN = ذات الشعب الرئه
CONJ = آماس ملتحمه
D = اسهال
S = آماس حلق
URI = عفونت
V = آماس مزمن
M = سرخک
ASC = آسکاریس
DEATH = مرگ
مرگ
URI
BC
M
D
S
CONJ
BN
ASC
سالمونیلا
مرگ اسهالی
عوامل آسان تشخیص نشده

CHART 14

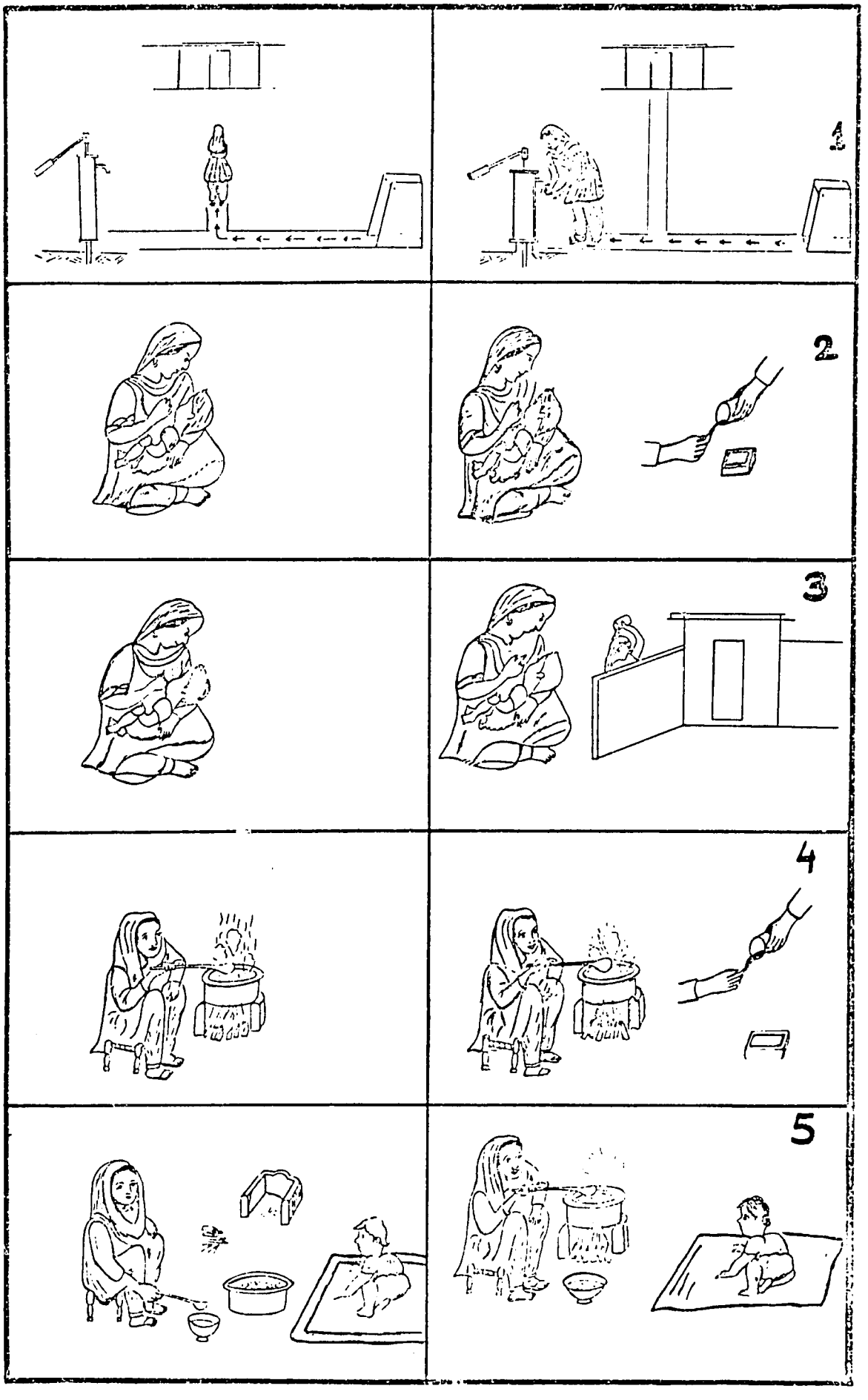



CHART 15A

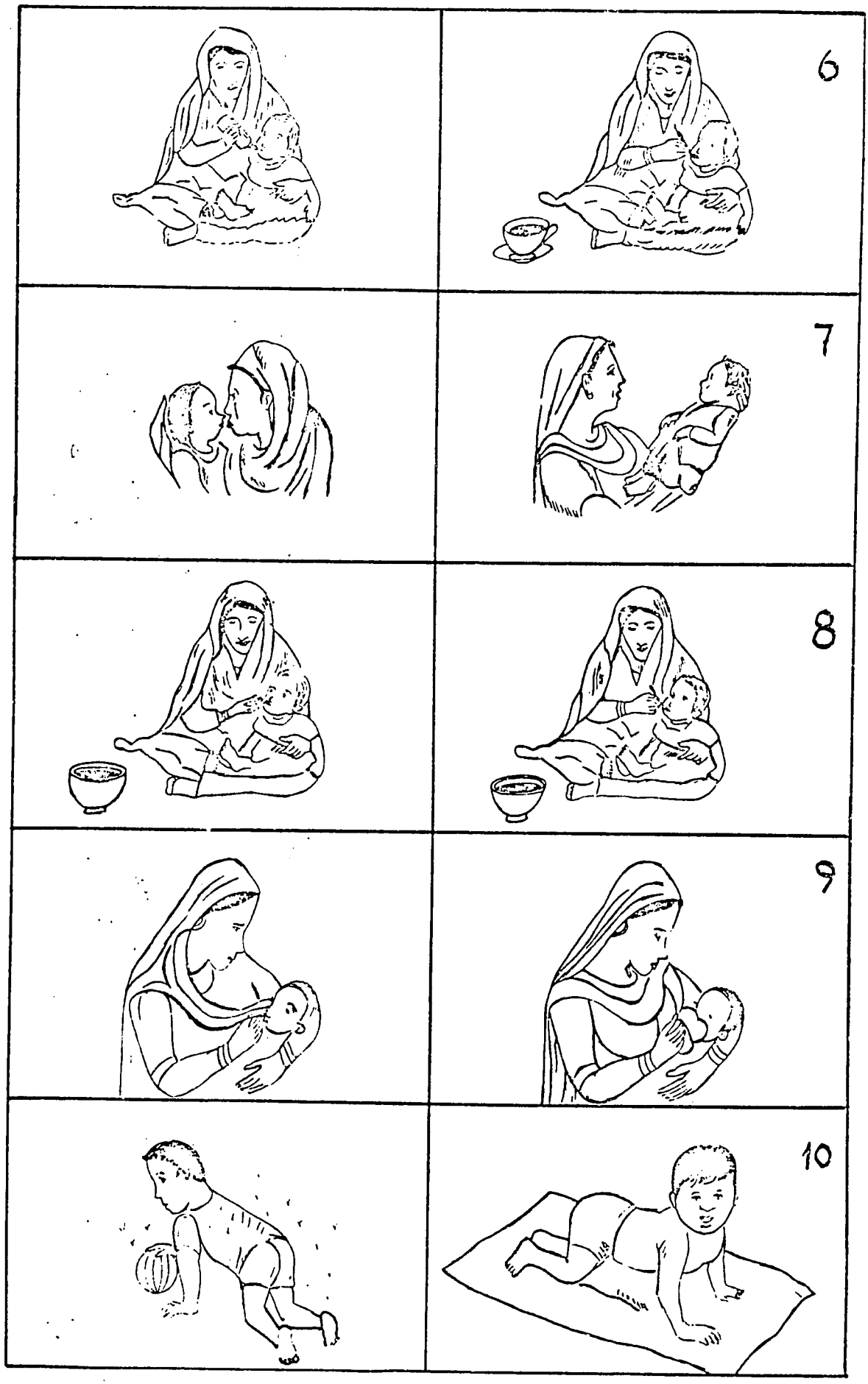



CHART 15B

# FAMILY DATA RECORD CARD

VILLAGE NAME

COMPOUND OR AREA

HOUSE NUMBER

FAMILY NAME

DATE OF OPENING THIS CARD

| BEHAVIORAL PRACTICES NOTATIONS | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | | | | | | | | | | | | |
| P | | | | | | | | | | | | |
| N | | | | | | | | | | | | |
| F.P | | | | | | | | | | | | |

VITAL DATA

J = Married into family
D = Departed family
M = Moved from village
X = Death + date + cause
P = Pregnancy + date
B = Birth + date
I = Illness + cause
T = Termination

| FAMILY MEMBERS NAME (LIST ADULTS FIRST CHILDREN THEREAFTER) | SEX | DATE OF BIRTH | RELATIONSHIP | AT TIME OF OPENING CARD MONTH JADI / AGE / WEIGHT | 1/11 | 2/12 | 3/1 | 4/2 | 5/3 | 6/4 | 7/5 | 8/6 | 9/7 | 10/8 | 11/9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 10 | D | H | H | S | J | S | A | S | M | A | Q |
| | | | | | A | O | A | A | A | A | S | U | I | Q | A |
| | | | | | L | O | M | U | U | R | A | N | Z | R | U |

CHART 16

# VILLAGE STATISTICAL PROGRESS REPORT

(V.H.A'S CROSS REFERENCE. HOUSE NUMBER TO NAME)

PROVINCE _____ YEAR _____

VILLAGE _____ V.H.A'S NAME _____

| HOUSE | FAMILY NAME | PARTICIPATING INFANT | SEX | DATE OF BIRTH | PROGRAM TERMINATION DATE | WEIGHT FOR AGE CHART POSITION | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | HAM | SAH | JAU | SAB | ASA | SUH | MIZ | AQB | BAU | JAD | DAL | HOO |

# V.H.A'S MONTHLY WORKLOAD CONTROL

_____ VILLAGE NAME

_____ PROVINCE NAME

_____ V.H.A'S NAME

MONTH _____

YEAR _____

| House No | No Regis. Pregnant Infants | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 46 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 47 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 53 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

CHART 18

# FAMILY DATA RECORD CARD

VILLAGE NAME: FONA

COMPOUND OR AREA: B/S

HOUSE NUMBER: 2

FAMILY NAME ANSARI, ALAM

DATE OF OPENING THIS CARD 10/8/53

**VITAL DATA**

J = Married into family
D = Departed family
M = Moved from village
X = Death + Date + Cause
P = Pregnancy + date
B = Birth + date
I = Illness + cause
T = Termination

| FAMILY MEMBERS NAMES (LIST ADULTS FIRST, CHILDREN THEREAFTER) | SEX | DATE OF BIRTH | RELATIONSHIP | AT TIME OF OPENING CARD MONTH JADI / AGE / HEIGHT | 1/11 DALE | 2/12 HODR | 3/1 HAMS | 4/2 SAUR | 5/3 JAUR | 6/4 SAIF | 7/5 ASAR | 8/6 SUNS | 9/7 MLZR | 10/8 AQRR | 11/9 QAU | VITAL DATA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALAM | M | 1/23 | HUSBAND | | | | | | | X | | | | | | X = 1/18/54 |
| RAZIA | F | 3/27 | WIFE | | | | | | | | | | | | | |
| NAJIBA | F | 1/49 | DAUGHTER | 57 14.5 | D 14.5 | B 15 | D 15 | D T | | | D | | | | | T = 2/54 D = 4/54 To Kabul |
| SHAZIA | F | 1/50 | DAUGHTER | 45 13 | D 13.5 | D 13.5 | D 14 | C 14.5 | C 14.5 | C 15 | B 15 | B | | | | |
| JON | M | 9/51 | SON | 25 11 | B 11.5 | B 11.5 | B 11.5 | B 12 | B 12 | B 12.5 | A 12.5 | A | | | | |
| HASAN | M | 10/52 | SON | 12 7 | Z 6 | Z 6 | Z 6 | Z 6 | Z | X | | | | | | X – 3/5/53 Communicable |
| HAMIDA | F | 7/53 | DAUGHTER | 3 4.5 | Z 4.5 | Z 5.5 | E 6.5 | C 7 | C 7.5 | C 8 | B 8.5 | B | | | | |
| ALI | M | 2/54 | SON | | | | | B | 5 | 5 | 5.5 | | | | | |
| ZAFAR | M | 10/50 | STEP SON | 36 | | | | | J 13.5 | B 13.5 | B 14 | B | | | | J = 3/54 From Kabul |

CHART 19

## چطور میتوان کیلوگرام نیم کیلوگرام را درج نمود

یک طفلی که وزن وی چنین باشد:-

10.5 کیلوگرام
10.0 "
9.5 "

وزن وی در چارت چنین ثبت میشود

10.5
10.0
9.5

یک طفلی که وزن وی

بیشتر از 10.5 کیلوگرام اما کمتر از باشد

11.0
10.5
10.0

وزن وی در چارت چنین ثبت میشود

11.0
10.5
10.0
9.5

CHART 20

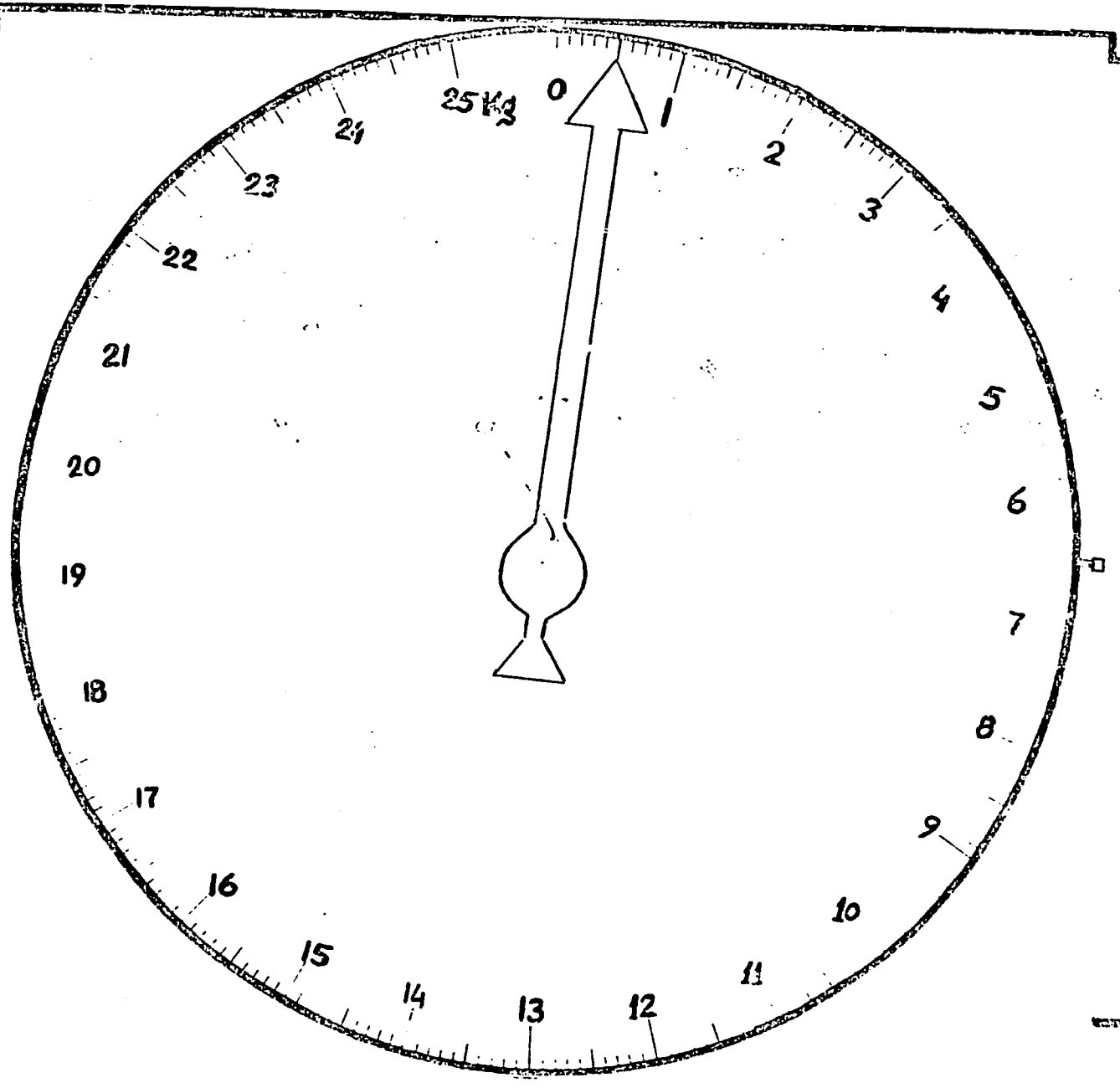



CHART 21

# V.H.A.'S MONTHLY WORKLOAD CONTROL

Faizah — VILLAGE NAME
[illegible] — PROVINCE NAME
[illegible] — VHA'S NAME

MONTH ASAD
YEAR 1356

| House No | No Aged Pregnant Infants | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 3 | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | |
| 2 | | 5 | | | | | | | | | | | | | | | | | | | 5 | | | | | | | | | | | |
| 3 | | 4 | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | |
| 4 | | 5 | | | | | | | | | | | | | | | | | | | 5 | | | | | | | | | | | |
| 5 | | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | 3 | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | |
| 7 | | 3 | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | |
| 8 | | 4 | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | |
| 9 | | 5 | | | | | | | | | | | | | | | | | | | 5 | | | | | | | | | | | |
| 10 | | 4 | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | | | |
| 11 | | 4 | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | | | |
| 12 | | 3 | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | | | |
| 13 | | 4 | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | | | |
| 14 | | 5 | | | | | | | | | | | | | | | | | 5 | | | | | | | | | | | | | |
| 15 | | 1 | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | |
| 16 | | 3 | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | | | |
| 17 | | 2 | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | | | |
| 18 | | 3 | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | | | |
| 19 | | 2 | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | |
| 20 | | 2 | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | |
| 21 | | 4 | | | | | | | | | | | | | 4 | | | | | | | | | | | | | | | | | |
| 22 | | 5 | | | | | | | | | | | | | 5 | | | | | | | | | | | | | | | | | |
| 23 | | 4 | | | | | | | | | | | | | 4 | | | | | | | | | | | | | | | | | |
| 24 | | 3 | | | | | | | | | | | | | 3 | | | | | | | | | | | | | | | | | |
| 25 | | 2 | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | |
| 26 | | 1 | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| 27 | | 4 | | | | | | | | | | | | | 4 | | | | | | | | | | | | | | | | | |
| 28 | | 1 | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | |
| 29 | | 2 | | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | |
| 30 | | 4 | | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | | |
| 31 | | 6 | | | | | | | | | | | | | | | | | | 6 | | | | | | | | | | | | |
| 32 | | 0 | | | | | | | | | | | | | | | | | | 0 | | | | | | | | | | | | |
| 33 | | 3 | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | | |
| 34 | | 3 | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | | |
| 35 | | 4 | | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | | | |
| 36 | | 3 | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | | | |
| 37 | | 1 | | | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| 38 | | 2 | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | |
| 39 | | 3 | | | | | | | | | | | | 3 | | | | | | | | | | | | | | | | | | |
| 40 | | 4 | | | | | | | | | | | | 4 | | | | | | | | | | | | | | | | | | |
| 41 | | 2 | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | |
| 42 | | 2 | | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | |
| 43 | | 4 | | | | | | | | | | | | 4 | | | | | | | | | | | | | | | | | | |
| 44 | | 5 | | | | | | | | | | | | 4 | | | | | | | | | | | | | | | | | | |
| 45 | | 4 | | | | | | | | | | | | 4 | | | | | | | | | | | | | | | | | | |
| 46 | | 3 | | | | | | | | | | | | 3 | | | | | | | | | | | | | | | | | | |
| 47 | | 4 | | | | | | | | | | | 4 | | | | | | | | | | | | | | | | | | | |
| 48 | | 3 | | | | | | | | | | | 3 | | | | | | | | | | | | | | | | | | | |
| 49 | | 2 | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | |
| 50 | | 2 | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | |
| 51 | | 3 | | | | | | | | | | | 3 | | | | | | | | | | | | | | | | | | | |
| 52 | | 4 | | | | | | | | | | | 4 | | | | | | | | | | | | | | | | | | | |
| 53 | | 3 | | | | | | | | | | | 3 | | | | | | | | | | | | | | | | | | | |
| 54 | | 2 | | | | | | | | | | | 2 | | | | | | | | | | | | | | | | | | | |
| 55 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

CHART 22

# VILLAGE STATISTICAL PROGRESS REPORT

PARWAN PROVINCE (VSPR) YEAR 1354

FONAH VILLAGE V.H.A'S NAME RAOFI

| HOUSE | FAMILY NAME | PARTICIPATING INFANT NAME | SEX | DATE OF BIRTH | MOOD BAN FORMA NATIONAL DATE | WEIGHT FOR AGE CURVE POSITION 4 SAUM | 5 AUG | 6 SEPT | 7 OCT | 8 NOV | 9 DEC | 10 JAN | 11 FEB | 12 MAR | 13 APR | 14 MAY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TAYEB | ALI | M | 1/50 | 2/55 | 14 C | 14.5 C | 15 B | 15 B | 15.5 B | | | | | | |
| | | SHAZIA | F | 2/54 | 3/59 | — | B | 4.5 | 5 | 5.5 E | | | | | | |
| | | ALAM | M | 10/52 | 11/57 | 9 C | 9.5 C | 10 B | 10 B | 10.5 B | | | | | | |
| 2 | ANSARI | NAJIBA | F | 1/49 | 2/54 | 15 D | T | — | — | — | — | — | — | — | — | — |
| | | SHAZIA | F | 1/50 | 2/55 | 14 C | 14.5 C | 14.5 C | 15 B | 15 B | | | | | | |
| | | JON | M | 9/51 | 10/56 | 11.5 D | 12 B | 12 B | 12.5 A | 12.5 A | | | | | | |
| | | HASAN | M | 10/52 | 11/57 | 6 E | 6 E | X | — | — | — | — | — | — | — | — |
| | | HAMIDA | F | 7/53 | 8/58 | 6.5 C | 7 C | 7.5 C | 8 B | 8.5 B | | | | | | |
| | | ALI | M | 2/54 | 3/59 | — | B | 5 | 5 | 5.5 E | | | | | | |
| | | ZAFAR | M | 10/50 | 11/55 | — | — | J 13.5 D | 13.5 B | 14 B | | | | | | |
| 3 | HASANZADAH | JON | M | 11/49 | 12/54 | 15.5 A | 15.5 B | 15.5 B | 15.5 B | 15.5 B | | | | | | |
| | | ZAFAR | M | 10/52 | 11/57 | 9 C | 9 D | 9 D | 8.5 E | 8 Z | | | | | | |
| | | SHAZIA | F | 7/53 | 8/58 | 6 D | 6.5 D | 7 D | 7.5 C | 8 C | | | | | | |
| 4 | YACOBI | HAMIDA | F | 2/50 | 3/55 | 15 A | 15 B | 15 B | 15.5 A | 16 A | | | | | | |
| | | HASAN | M | 6/53 | 7/58 | 7.5 A | 7.5 B | 8 B | 8 C | 8.5 C | | | | | | |
| 5 | NAZIRI | NAJIBA | F | 3/50 | 4/55 | 14.5 B | 15 A | 15 B | 15.5 A | 15.5 A | | | | | | |
| | | SHAZIA | F | 7/51 | 8/56 | 12 B | 12.5 A | 12.5 B | 13 A | 13 A | | | | | | |
| | | ASEF | M | 12/52 | 1/58 | 8.5 C | 9 C | 9.5 B | 9.5 C | 10 B | | | | | | |
| 6 | RAOFI | JON | M | 2/51 | 3/56 | 11.5 D | 11.5 E | 11.5 E | 11.5 E | 10 Z | | | | | | |
| | | ALI | M | 9/52 | 10/57 | 9 D | 9 D | 8.5 E | 8 Z | 7 Z | | | | | | |
| | | ZAFAR | M | 12/53 | 1/59 | 4 | 4.5 | 4.5 E | 4 Z | 4 Z | | | | | | |
| | | SHAZIA | F | 12/53 | 1/59 | 5 | 5.5 | 6 A | 6 A | 6 D | | | | | | |

CHART 23

# VSPR SUMMARY

TOTAL THIS PAGE

| | CONROL DATA | HAM | SAU | JAU | SAR | ASA | SUH | MIZ | AOR | OAU | TXD | DAL | HOO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Weight drop A → B | | | | | | | | | | | | |
| 2 | B → C | | | | | | | | | | | | |
| 3 | C → D | | | | | | | | | | | | |
| 4 | D → E | | | | | | | | | | | | |
| 5 | E → Z | | | | | | | | | | | | |
| 6 | Total Weight drops (1 thru 5 = 6) | | | | | | | | | | | | |
| 7 | Weight gains Z → E | | | | | | | | | | | | |
| 8 | E → D | | | | | | | | | | | | |
| 9 | D → C | | | | | | | | | | | | |
| 10 | C → B | | | | | | | | | | | | |
| 11 | B → A | | | | | | | | | | | | |
| 12 | Total Weight gains (7 thru 11 = 12) | | | | | | | | | | | | |
| 13 | Off Curve no Change | | | | | | | | | | | | |
| 14 | On Curve no Change | | | | | | | | | | | | |
| 15 | Not Weighed - Omitted | | | | | | | | | | | | |
| 16 | - Death | | | | | | | | | | | | |
| 17 | - Departed | | | | | | | | | | | | |
| 18 | Total registered last month | | | | | | | | | | | | |
| | CHANGE DATA | | | | | | | | | | | | |
| 19 | Births Weighed | | | | | | | | | | | | |
| 20 | Arrivals Weighed | | | | | | | | | | | | |
| 21 | Terminations not Weighed | | | | | | | | | | | | |
| 22 | Departures not Weighed | | | | | | | | | | | | |
| 23 | Deaths not Weighed - Total | | | | | | | | | | | | |
| 24 | Diarrheal | | | | | | | | | | | | |
| 25 | Communicable | | | | | | | | | | | | |
| 26 | Respiratory | | | | | | | | | | | | |
| 27 | Accidental | | | | | | | | | | | | |
| 28 | Total registered this month | | | | | | | | | | | | |

CHART 24

# VOPP SUMMARY

| | TOTAL THIS PAGE | HAM | SAU | JAU | SAC | ASA | SUN | MIZ | IDR | GAU | JAD | DAL | HCO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | → CONTROL DATA | | | | | | | | | | | | |
| 1 | Weight drop A → B | | 3 | 2 | | 1 | | | | | | | |
| 2 | B → C | | | | 2 | | | | | | | | |
| 3 | C → D | | 1 | | | | | | | | | | |
| 4 | D → E | | 1 | 1 | 1 | | | | | | | | |
| 5 | E → Z | | | | 2 | 2 | | | | | | | |
| 6 | Total Weight drops (1 thru 5=6) | | 5 | 3 | 5 | 3 | | | | | | | |
| 7 | Weight gains Z → E | | | | | | | | | | | | |
| 8 | E → D | | | | | | | | | | | | |
| 9 | D → C | | | | 1 | | | | | | | | |
| 10 | C → B | | | 3 | 2 | 1 | | | | | | | |
| 11 | B → A | | 2 | | 4 | | | | | | | | |
| 12 | Total Weight gains (7 thru 11=12) | | 2 | 3 | 7 | 1 | | | | | | | |
| 13 | Off curve no change | | 1 | 2 | | 2 | | | | | | | |
| 14 | On curve no change | | 10 | 11 | 8 | 14 | | | | | | | |
| 15 | Not Weighed - Omitted | | | | | | | | | | | | |
| 16 | - Death | | | 1 | | | | | | | | | |
| 17 | - Departed | | 1 | | | | | | | | | | |
| 18 | Total registered last Month | | 19 | 20 | 20 | 20 | | | | | | | |
| | → CHANGE DATA | | | | | | | | | | | | |
| 19 | Births Weighed | | 2 | | | | | | | | | | |
| 20 | Arrivals Weighed | | | 1 | | | | | | | | | |
| 21 | Terminations not weighed | | 1 | | | | | | | | | | |
| 22 | Departures not weighed | | | | | | | | | | | | |
| 23 | Deaths not weighed tbl | | | 1 | | | | | | | | | |
| 24 | Diarrheal - | | | | | | | | | | | | |
| 25 | Communicable - | | | | | | | | | | | | |
| 26 | Respiratory - | | | | | | | | | | | | |
| 27 | Accidental | | | | | | | | | | | | |
| 28 | Total registered this month | | 19 | 20 | 20 | 20 | 20 | | | | | | |

CHART 25