

Second Edition

MONITORING CHILD DEVELOPMENT (0-6 YEARS) IN THE IMCI CONTEXT

**Amira Consuelo Figueiras
Isabel Cristina Neves de Souza
Viviana Graciela Ríos
Yehuda Benguigui**

 **Pan American
Health
Organization**



Regional Office of the
World Health Organization

110 
1902 • 2012

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Texas Children's Hospital®

**Healthy Lifecourse Project
Family and Community Health Area**

March 2012

Also published in Spanish (2011) with the title:
Manual para la vigilancia del desarrollo infantil (0–6) años en el contexto de AIEPI
ISBN 978-927533237-5

PAHO HQ Library Cataloguing-in-Publication Data

Pan American Health Organization
Monitoring Child Development (0-6 years) In the IMCI context (2nd edition)
Washington, D.C.: PAHO © 2012
(PAHO/FCH/HL/11.4.I)

ISBN: 978-92-75-11660-9

I. Title II. Series

1. CHILD DEVELOPMENT
2. CHILD DEVELOPMENT DISORDERS, PERVASIVE – prevention & control
3. HEALTH SURVEILLANCE
4. CHILD WELFARE
5. CHILD GUIDANCE CLINICS
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NLM WS 105

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**The authors wish to honor the memory of
Dr. Márcia Regina Marcondes Pedromônico, who
died during the preparation of this manual.**

Dr. Pedromônico held a doctorate in psychology and was professor at both the undergraduate and graduate levels in the Department of Pediatrics, São Paulo School of Medicine, University of São Paulo. It was she who first espoused the idea of using the IMCI strategy as a tool for monitoring child development. Her technical knowledge was enlisted in preparing the table of development milestones. She was always available to discuss ideas for improving this material.

Our thanks to Dr. Rolando Cerezo M., Pediatrician, Neonatologist, and PAHO/INCAP Consultant in Guatemala, who was responsible for the complete revision of this manual, as well as for modifications and final corrections.





FOREWORD

“Not all children born in Latin America and the Caribbean have equal opportunity for growth and development ...”

–Dr. Mirta Roses Periago, Director of the Pan American Health Organization (PAHO)

In child health in the Americas, the process of epidemiological transition portrays a complex panorama resulting from the interaction between positive outcomes in terms of effective health interventions and an increase in the number of problems arising, among other causes, from a deterioration in living conditions.

The current state of child health in the Americas lies within this dynamic scenario, where infant mortality continues its downward trend—while at the same time, there is an ever-increasing upward trend in the relative weight in the neonatal component.

On the other hand, vulnerable population groups comprised of people living in poverty, minorities, and indigenous and immigrant populations—among others—lack the necessary conditions and opportunities for their biological, psychological, and social development. Nearly 15% of the child population presents significant developmental delays; and a very high proportion presents disorders that, if not diagnosed in a timely manner, jeopardize both the health and quality of life of these children—in addition to having consequences on their potential development. In addition to these problems, several others arise: behavioral disorders, lack of adaptation to the environment, failure at school, violent situations and profiles, disabilities, acute and chronic morbidity, and emerging pathologies in mood, personality, and behavioral disorders.

The context of child development advocates promoting healthy behaviors for all: this means prevention for the majority, and cure and rehabilitation for the minority that does not manage to advance satisfactorily despite specific strategies and interventions to promote health and prevent health problems.

Early detection of developmental problems is a continuous process of monitoring a child's development. In children under 6, it consists of high-impact strategies beginning the moment the child receives primary health care. The health system meets nearly 80% of its demand—mainly for mother and child health—through primary care services.

Utilizing the methodology for Integrated Management of Childhood Illness (IMCI) simplifies care in terms of both diagnosis and treatment. It includes promotion and prevention components, thus enabling the implementation of child development monitoring into routine health care.

The extraordinary success of the first edition of *Monitoring Child Development in the IMCI Context*, which PAHO published in three languages in 2005 and reprinted in 2007, has led to its utilization and adaptation in at least ten countries of the Americas.

Accordingly, it is with great satisfaction that the PAHO Regional Program is publishing this revised version, which expands the age group that formerly ended at age 2, to cover children up to age 6. This

new edition is also available in interactive format for distance learning. On a timely basis, we will be adding versions in other languages, a DVD with simulations and exercises, and a reference book on topics related to various child development scenarios.

Finally, we would like to congratulate Professor Amira Consuelo de Melo Figueiras of the Federal University of Pará, Belém, Pará, Brazil, for her leadership in the subject; Professor Isabel Cristina Neves de Sousa, also of the Federal University of Pará; and Dr. Viviana Graciela Rios, pediatric neurologist from Dr. Orlando Alassis Children's Hospital in Santa Fe, Argentina, for their enormous contribution to this process.

We are confident that this revised and expanded edition—together with all the other components of the IMCI strategy—will serve as instruments to provide support to the countries in their efforts to advance quality child health care and reach Millennium Development Goal Number 4, which refers to reducing mortality in children under 5 in the Region of the Americas.

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PAHO

PREFACE

Providing children with opportunities to develop fully may well be the most important contribution that can be made to the human species. Satisfactory child development, especially in the first years of life, helps to maximize children's likelihood of getting an education and becoming fully active citizens who are able to cope with the vicissitudes of life and thus reduce social and economic disparities in society.

This manual was developed as part of the instructional materials for the Course in Monitoring Child Development in the IMCI Context. It is intended for professionals in the basic health network rather than specialists in child development. It contains basic information on development during the first 6 years of life that every primary care health professional should know in order to counsel parents adequately on monitoring their child's normal development and, in the event of delays or difficulties, on what decisions to make. It is not meant as a diagnostic test but rather as a general, easy-to-apply assessment tool. Its purpose is to encourage primary care professionals to assess development in children under 6 years old with an understanding of why this is so important. Early diagnosis will most certainly give developmentally delayed children a better chance, since it opens up the possibility to seek specialized care as early as possible and thus improve their quality of life.

Monitoring a child's development in the first years of life is of the utmost importance, since this is the stage of extrauterine life when nerve tissue grows the fastest and matures—and is therefore the most vulnerable. Because of children's great plasticity, it is also the period during which they respond best to therapy and to the stimulation they receive from their environment. For all these reasons, it is fundamental that health professionals, families, and communities take advantage of this time to monitor the development of all children.

“Development monitoring includes all activities related to the promotion of normal development and the detection of developmental problems in the course of primary child health care. It is a flexible, ongoing process based on information received from health professionals, parents, teachers, and others” (Huthsson & Nicholl, 1988).

“Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination” (Declaration of Alma-Ata, 1978).

As a result, if child development monitoring is to be incorporated effectively into primary health care, health professionals must have a basic knowledge of child development. They need to know how a normal child behaves, understand the risk factors that can contribute to developmental impairments, and recognize behavior that may be indicative of a problem. To do this, they need to use methods that are simple, accessible, scientifically proven, and socially acceptable.

In an effort to simplify child development monitoring and incorporate it into primary health care operations, this manual follows the methodology adopted for Integrated Management of Childhood Illness. It is designed to systematize care and make it easier for the health professionals to advise parents on how to encourage normal development in their children and detect problems early. Children showing any warning signs should be referred to and assessed by professionals who have in-depth knowledge of child development and are therefore the most capable of determining not only whether or not there is a real problem requiring further study, but also what treatment is the most appropriate.

In this second edition, the assessment has been extended to the age of 6 years, taking into account the need to monitor children up to that age, as well as in response to requests we received from health services that had already been trained in the use of the previous manual. As a result of the lessons learned from training professionals in several countries of the Americas, we have also improved the sensitivity of the methodology, to enable earlier capture of children who present any deviation from the norm with regard to their development.

Chapter I

CHILD DEVELOPMENT MONITORING— THEORETICAL CONTEXT

1. Introduction

The integral development of young children is fundamental to human progress and building human and social capital. These elements are deemed necessary to break the vicious intergenerational circle of poverty and reduce inequities—thus equalizing opportunities for all human beings, not only socioeconomically but also in terms of gender.

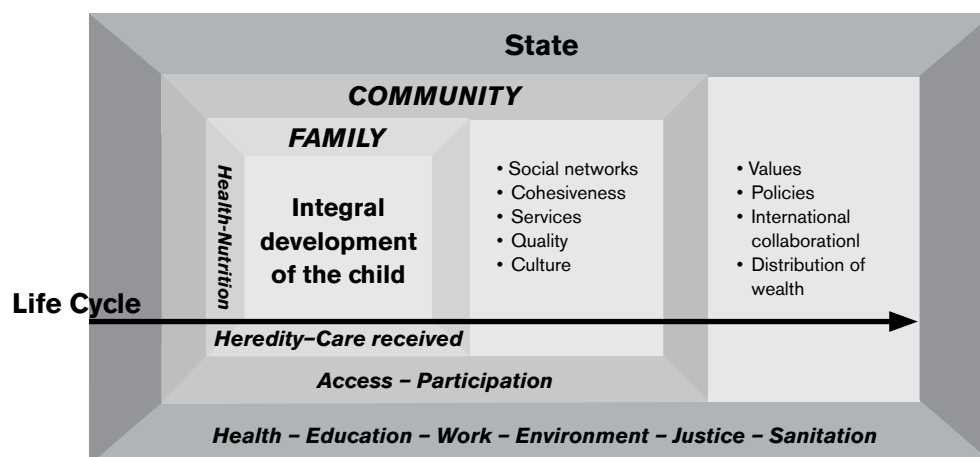
Establishing the concept of child development is no simple task. It varies according to the theoretical framework to be adopted and the aspects to be addressed. For the pediatrician, there is the classical definition of Marcondes et al. (1991) (1), who say that “development is the growing capacity of the individual to perform increasingly complex functions.” The pediatric neurologist, on the other hand, will focus on maturation of the central nervous system; the psychologist, on cognitive aspects, intelligence, adaptation, and the ability to relate to the environment; and the psychoanalyst, on relationships with others and development of the psyche (2).

For Mussen et al. (3), development is defined as “systematic, long-lasting changes in physical and neurological, cognitive, and behavioral struc-

tures.” The fundamental basis of development is about discovering how and why the human organism grows and changes throughout life. One of these objectives is to understand those changes that appear to be universal—i.e., changes that occur in all children, regardless of the culture in which they are being raised or the experiences they have. A second objective is to account for individual differences. A third objective is to understand how children's behavior is influenced by the surrounding context. These three perspectives—**universal norms, individual differences, and environmental influences**—are essential to a clear understanding of child development. Depending on the theoretical orientation of the professional and the types of issues to be assessed, emphasis may be placed on any of these three perspectives.

Another model of human development stems from the ecological concept, through which the different environments (micro- and macro-social) and settings are considered to interact (Figure 1). Within this scenario, the environments and/or settings are the state, the community, and the family. Each has its own set of standards and values. At the level of the state, these are expressed through

FIGURE 1: ECOLOGICAL MODEL—DETERMINANTS OF INTEGRAL DEVELOPMENT IN CHILDREN



Source: Molina H., Bedregal P. & Margozzini P., 2001. Revisión sistemática sobre eficacia de intervenciones para el desarrollo biopsicosocial de la niñez. Santiago de Chile, Ediciones Terra Mía; 2002.

its policies and institutional frameworks; in the community, they are seen in its models of organization and participation; and in the family, they are created by its all-encompassing role to protect the children, care for them, and meet their immediate needs.

In summary, child development is a process that starts with conception and embraces a number of different aspects, ranging from a child's physical growth to his or her neurological, behavioral, cognitive, social, and emotional maturation. The end-product of development is a child who is able to respond to his or her needs and react to the environment while taking into account the context of her or his life.

2. Prevalence of Child Development Disorders

In the Americas, there are no statistical data showing the true prevalence of development problems in children, given the complexity of the definition and the different perspectives on normal development.

The World Health Organization (WHO) estimates that 10% of the people in any country have some type of impairment (4-5). In Latin America, with an estimated population of 930,690,000 inhabitants in 2009, there are approximately 93 million people—including children—with some type of developmental disorder.

For example, Halpern et al. (2000) (6)—when they assessed 1,363 infants under 12 months of age selected randomly from a cohort of 5,304 born in the hospitals of Pelotas, Brazil, in 1993—found that 463 (34%) were at risk for delayed development. Figueiras et al. (2001) (7) —assessing 82 children under the age of 2 on Combu Island, Pará, Brazil—found 37% to be at risk for developmental problems.

3. Risk Factors for Developmental Problems in Children

A number of different factors can be responsible for child development problems. Most of the time, no

single cause can be identified, since any number of etiologies might be associated with the problem.

Since child development—as we have seen—is the result of interactions between biological characteristics and experiences gained in the environment, adverse factors in either of these areas can alter it and cause damage. The probability of such an event occurring is called developmental risk. For example, the primary condition for children to develop well is the affection of their mother or caregiver (8). Lack of affection or love in the first years of life will have a permanent effect on a child's development and is one of the most serious developmental risks.

Most studies classify the risks for developmental problems in children as being either biological or environmental. Biological risks are the pre-, peri-, and post-natal events that result in the probability of developmental damage. Biological risks can be separate from those already established: in other words, medically defined disorders—particularly those of genetic origin. Examples of established risks would include inborn metabolic defects, congenital malformations, Down syndrome, and other genetic conditions. Biological risks would include prematurity, severe cerebral hypoxia, kernicterus, meningitides, encephalitides, etc.

Adverse life experiences associated with the family, the environment, and society are considered social/environmental risks. Examples of these would include poor sanitary conditions, lack of social and educational resources, family disintegration, and inadequate care practices, among others (9).

4. Warning or Danger Signs during the Physical Examination

There are two danger or warning signs during a child's routine physical examination that are associated with a greater risk of presenting development disorders or delay: phenotypical alterations and alterations in head circumference, both of which are easy to see and measure.

“Phenotype” refers to any of the child’s characteristics that are either physical or behavior related, and that are determined by the interaction between the child’s genotype (genetic makeup) and his or her environment. Among the physical characteristics, there can be major and minor anomalies. Major anomalies are brought about when the patient’s organ functions or health are being compromised (for example, congenital heart disease or myelomeningocele). Minor anomalies are defined as non-frequent morphological features that may pose a serious medical problem, with or without serious cosmetic consequences for the patient (10) (for example, abnormally close-set eyes or low-set ears). It is important to recognize these anomalies, since they serve as indicators of a globally altered morphogenesis. The presence of three or more of these minor anomalies is very likely to mean that the individual has major phenotypical alterations. These could be associated with a genetic disorder that coincides with a developmental disorder (11).

During the physical examination, we know that the head circumference is the measurement of the size of the skull, which indicates the cephalic index, i.e., brain volume (brain and cerebrospinal fluid) (12). Periodic measurement is of the utmost importance because it allows us, through monitoring and comparison, to assess any deviations and thus predict alterations in the development of the central nervous system. Any deviation in head circumference greater than 2 standard deviations (SDs) above the norm or lower than 2 SDs below the norm (< -2 SDs or $> +2$ SDs) is associated with a greater risk of a developmental disorder (13). The WHO head circumference growth curves (included in the Annexes) can be utilized for this.

5. Clinical Presentation of Developmental Disorders in Children

Problems in child development can manifest themselves in a number of different ways: motor development, language, personal-social interaction, cognition, etc. In most cases, a condition will affect more than one

function, in which case the child will have a mix of functional disturbances. For example, a child with cerebral palsy will first and foremost have disturbances in motor development, and he or she may also have difficulties with language and cognition.

A child with untreated congenital hypothyroidism may additionally be challenged in motor, language, and cognitive development. Deaf children will mainly have language difficulties. Autistic children will tend to have problems with personal-social interaction and also with language development. In other words, the clinical presentation of children with developmental problems will vary greatly in terms of both type and intensity.

There are also children who have no clinical manifestations of delayed development but who will be unable to achieve their potential because they did not receive adequate stimulation, even though they are well nourished and healthy. Thus, it is very important not only to diagnose problems, but also to promote the basis of healthy child development.

Special care should be given to the evolution of language in the child. In a young child with normal hearing, language development is the best indicator of her or his future cognitive skills (14). Learning and using language is essential for child development in several areas, of which the most obvious among young and preschool children is cognitive and social development. It is also related to the development of reading skills (15).

Autism or autism spectrum disorders are a complex developmental disorder when defined from the behavioral standpoint, with multiple etiologies and varying degrees of severity. The behavioral manifestations that define this disorder include the following:

- A social interaction deficit (for example, social isolation, poor eye contact, emotional indifference, or inappropriate demonstrations of affection);
- A communication deficit (according to the degree of severity, this can affect both the oral and non-oral

ability to share information with others; for example, difficulty in making conversation, as well as interpreting body language and facial expressions); and

- Repetitive and stereotypical behavior patterns (for example, resistance to change, persistence in carrying out routines, excessive attachment to objects, and fascination with moving parts such as wheels or propellers). Examples of stereotypical movement and speaking patterns include the child's rocking back and forth, continually clapping his or her hands, walking around in circles, and repeating words or sounds (16). Autistic children can use toys, but they will only line them up instead of using them symbolically.

For all the above, therapeutic intervention in cases of autism is very complex and requires interdisciplinary teams.

6. Diagnosis of Developmental Disorders in Children

The ease of detecting developmental problems in children, whether by a health professional or by the child's family, can depend on any number of factors. Identifying disorders associated with previously defined risks is relatively uncomplicated. The more severe a child's developmental disorder, the more easily and quickly it will be detected by a health professional—for example, Down syndrome. Another factor is the area in which the disorder is manifested—for example, delayed motor development is more easily identifiable than are linguistic and cognitive problems. However, the latter correlate more closely with future development than do alterations in motor behavior. Although serious disorders can be recognized even in infancy, language impairments, hyperactivity, and emotional disorders are usually not diagnosed before the child is 3 or 4 years old. Similarly, learning difficulties are rarely identified before a child starts going to school (17).

In order to ensure that a child attains his or her full development potential, it is essential to understand nor-

mal child development and the factors that can affect its process. For this reason, training is needed, not only for family members but also for professionals who know how to detect any alterations, so that the child can be referred for treatment as early as possible.

Even though professionals agree on the importance of following up on diagnoses as well as monitoring child development, there is still some debate about how it should be approached. A number of proposals and models have been suggested (18-19):

- **Development screening:** This systematic process checks the development of apparently normal children—using tests, scales, examinations, or other procedures—to identify those who might be at high risk of developmental problems.
- **Development monitoring:** This series of activities includes the promotion of normal development and the detection of developmental problems as part of a flexible ongoing process within the primary child health care context; it involves sharing reports and feedback from health professionals, parents, teachers, and others.
- **Development assessment:** Children suspected of having developmental problems undergo a series of detailed (usually multidisciplinary) examinations, including diagnostic testing.
- **Development follow-up:** This procedure involves close observation of the child's development on a periodic or ongoing basis, either systematically or informally, with or without screening. It does not imply the use of any specific technique or process.

Depending on the purpose, all these procedures have their place in the study of child development. Thus, for example, when conducting population surveys in which the objective might be to identify children at greater or lesser risk for developmental problems, screening would probably be the best choice. On the

other hand, when following individual children, development monitoring would undoubtedly be preferable. In this instance, it may be necessary to refer to some sort of scale as a basis for the examination. For cases that require diagnosis, development assessment is indispensable; or a given approach may be used while, at the same time, drawing on elements from another in order to produce a more appropriate result.

Input from parents on their children's development is a critical element in development monitoring. There is general consensus in the literature that parents are good observers and excellent detectors of deficiencies in their children. Their observations are highly sensitive and very specific, and they are valuable in predicting the detection of problems in their children's development (20).

7. Treatment of Developmental Disorders in Children

Treatment of children with delayed development will largely depend on the cause of the problem. If the delay is due to environmental problems such as lack of stimulation from the caregiver, the treatment will consist of counseling the parents about the important relationship between the child's development and the way in which they interact with him or her. Often, for example, it is necessary to treat a depressed mother who is having difficulty interacting with her child.

If the developmental delay is being caused by a pathology such as toxoplasmosis or congenital hypothyroidism, the child needs to start receiving medication as soon as possible, as well as functional therapy with a multidisciplinary team—pediatrician, neurologist, psychologist, physical therapist, occupational therapist, speech pathologist, etc.

If the condition is the result of an event that has already occurred—such as neonatal asphyxia, kernicterus, or a central nervous system infection—the child should receive functional therapy for any alterations that are present. Functional therapy should never be postponed while awaiting clarification of the etiology. Depending on the resources available, isolating a single etiology usually takes a long time or may not be successful at all.

Experience has repeatedly shown that stimulation during the first 3 years of life results in improved performance both by children with established developmental disorders and those at risk. For this reason, stimulation should be encouraged as soon as possible.

8. Exercises

Read the descriptions below and list the risk factors present in each case.

Case 1: Rosa is 3 months old. Her mother had several episodes of blood loss when she was pregnant and had been confined to bed. Rosa was delivered normally at gestation week 34 and weighed 2,100 grams (g). She did not cry immediately after she was born and was taken to the nursery, where she remained for 7 days. She is currently being monitored in a program for at-risk newborns. Identify and classify her developmental risk factors.

Answer: _____

Case 2: Pedro is 10 months old. He was delivered normally at term and weighed 3,300 g. He cried at birth and did not present any abnormality. His mother drank while she was pregnant. She is depressed, did not want to get pregnant, and does not get along with Pedro's father. They are always arguing and sometimes exchange blows. Pedro is an irritable child and cries easily. He is being monitored at a basic health unit. Identify and classify his developmental risk factors.

Answer: _____

Case 3: Mario is 2 months old. He was born at term by normal delivery and weighed 3,800 g. There were no intercurrent events during childbirth. His mother had had no prenatal care when she was pregnant. He was discharged from the maternity ward after 24 hours. On his second day at home, his mother noticed that he was turning "yellow." She was told to place him in the sun ear-

ly in the morning, but Mario did not improve. His symptoms got worse on day 5, when he went into convulsions and was taken to the hospital. He was kept in the nursery for 20 days, where he was given light therapy and two blood transfusions. This information was reported by the mother, because the hospital did not furnish a medical report. Mario is the third child. His mother states that her second child died 1 week after birth and had also been very "yellow." Identify and classify Mario's developmental risk factors.

Answer: _____

Case 4: Ann is 2 years old and does not speak. She is one of six children. Her mother goes to a job, and Ann is left at home in the care of her 9- and 10-year-old siblings. Her father is an alcoholic, and there is a lot of fighting. When she was 8 months old, Ann became seriously ill with a high fever and convulsions. She was kept in the hospital for two weeks. When her mother was pregnant, she took pills (Citotek) in an attempt to induce an abortion because she did not want to have another child. Identify and classify Ann's developmental risk factors.

Answer: _____

Chapter II

CHILD DEVELOPMENT MONITORING IN THE IMCI CONTEXT

1. Assessing a Child's Development

The tool presented here for monitoring child development in the IMCI context assesses a child, taking into account information on risk factors, the mother's opinion of her child's development, head circumference, any phenotypical alterations observed during physical examination, and finally, the body positions, reflexes, skills, and behaviors corresponding to what is expected and/or deemed satisfactory for the child's particular age group. The expected positions and reflexes have been selected from observations by Lefèvre and Diamant (1990), and the behaviors are based on four development scales used both nationally and internationally that have been validated by other authors (Bayley, 1993; Frankenburg and Dodds, 1967; Gesell and Amatruda, 1945; Pinto, Vilanova, and Vieira, 1997) (21-24).

For infants under 2 months old, the criteria have been based on primitive reflexes, positions, and skills (Table 1 and Assessment Sheet 1). Since the number of reflexes/position/skills is small, the absence of even 1 of them is considered sufficient basis for deciding that a problem exists.

For children 2 months to 6 years old, a total of 60 easily observable development milestones or behaviors have been grouped into 15 age groups. The 4 milestones for each cohort are considered to be present in 90% of all children of that age, and there is 1 from each of the following categories: gross motor skills, fine motor skills, language skills, and personal-social interaction (Table 2 and Assessment Sheet 2). Since the number of behaviors to be observed is small (only four for each age group), failure to meet a single milestone is considered sufficient basis for making a decision (21-24).

In the first consultation to assess the development of a child up to 6 years old, it is always important to ask the mother or primary caregiver about development-related facts and observe the child as he or she en-



gages in the expected behaviors for the corresponding age group.

Take this opportunity to observe the mother and her interaction with the child (the mother-child bond), since this relationship an important factor in fostering human development. Notice how the mother holds her baby, and whether there is affectionate visual and verbal contact between mother and child. Also look for the child's spontaneous movements, and whether he or she shows interest in nearby objects and the surrounding environment.

It is also important to see how much care the baby is getting based on his or her state of hygiene. Notice what the child is paying attention to, doing, looking at, or wants. These preliminary observations may be helpful in the assessment.

2. Monitoring Development in the Infant under 2 Months Old

FIRST ASK: How old is your child?

If she or he is under 2 months old, ASK:

► **Did you receive prenatal care?**

Prenatal check-ups provide an opportunity to detect hereditary conditions or complications during previous pregnancies, as well as providing access to safe conditions during childbirth and preventing asphyxia

during the birth process. Among mothers who have had at least five prenatal check-ups, reports indicate fewer complications during pregnancy and childbirth: fewer cases of preeclampsia, urinary tract infections, and postpartum anemia, as well as lower maternal mortality rates and fewer instances of low birth weight (LBW) (25-27).

► **Were there any problems during pregnancy or the baby's delivery or birth?**

Problems during pregnancy—such as hypertension, diabetes, eclampsia, or intrauterine infections (e.g. rubella, toxoplasmosis, HIV/AIDS)—or during delivery and birth—such as intrauterine hypoxia (IH), hemorrhaging, maternal fever, etc.—can have an impact on the child's future development. When asking the mother about her pregnancy, use simple words that she can understand. Ask her whether she was examined and/or tested to confirm whether any of these diseases were present.

Find out if the delivery took place at home or in the hospital; if the mother was in labor for a long time; and if the delivery was normal, cesarean, or with forceps.

► **Was the baby hospitalized after birth?**

Find out if the mother has any information from the hospital in writing about her newborn's delivery. Note the baby's birth weight and initial head circumference. Ask if the infant cried at birth; whether there was any problem that required oxygen, medications, light therapy, blood transfusion, or any other intervention. Ask whether the baby was allowed rooming-in or had to remain hospitalized in the nursery or intensive care unit (ICU)—and if so, for how many days and for what type of problem. Also ask whether the mother stayed with her infant during the hospitalization or if she visited from time to time. It is even important to know whether she took part in caring for the newborn (feeding, hygiene, etc.); whether there was physical, verbal, and/or visual contact between mother and the infant; and whether the father participated in some way at this time.

► **Was the baby born premature?**

Prematurity is related to greater morbidity and neonatal mortality, as well as sequelae involving future neu-

rological and psycho-motor development.

► **How much did the baby weigh at birth?**

The lower the birth weight, the more neonatal complications there will be. Children with a birth weight of less than 2,500 grams (g) show higher rates of morbidity and neonatal mortality.

► **Did the baby's skin turn 'yellow' during the first few days after birth?**

Jaundice or a yellow skin color can be a benign physiological condition appearing in 80% of all newborns. However, when the yellow color appears during the first 48 hours after birth, it is a serious condition that calls for emergency evaluation and intervention. Hyperbilirubinemia—a condition known as kernicterus—can cause brain damage, disability, and mental retardation.

► **Has your baby had any severe health problem so far?**

Some of the diseases common in infancy can interfere with a child's development, for example: convulsions, meningitides, encephalitides, cranial injuries, respiratory infections, repeated ear infections, etc.

► **Are you and your baby's father related by blood?**

Consanguineous parents—i.e., those who are close relatives—are more likely to have children with genetic alterations due to autosomal recessive inheritance.

► **Does anyone in your family have a physical or mental health problem?**

Some conditions that affect a child's full development can be related to the same conditions in a close family member.

► **What do you think of your baby's development?**

It is the mother who spends the most time with her infant and is therefore in the best position to observe his or her development. When comparing her baby with another, more often than not, she will be the first to notice if she or he is not doing well. Value her opinion; and

when she thinks her baby is not doing well, be twice as careful to monitor this child's development.

THEN, ask additional questions that can help supplement the infant's history and background:

- **Is there any other risk factor such as domestic violence, maternal depression, alcoholism, etc.?**

Be very careful when asking this type of questions; often you will need to ask them indirectly so as not to appear to be making any accusations against the parents.

Once you have asked the necessary questions to investigate risk factors and obtained the mother's opinion on her baby's development:

■ MEASURE

■ Head circumference

Head circumference (measurement of a child's head around its widest area, or the distance from above the eyebrows and ears and around the back of the head, on the lower part of the forehead; also referred to as the occipital-frontal circumference [OFC]).



Technique: Use a non-extendable tape measure. Place it on the most prominent point at the back of the skull (the occiput) and just above the eyebrows (on the superciliary ridge).

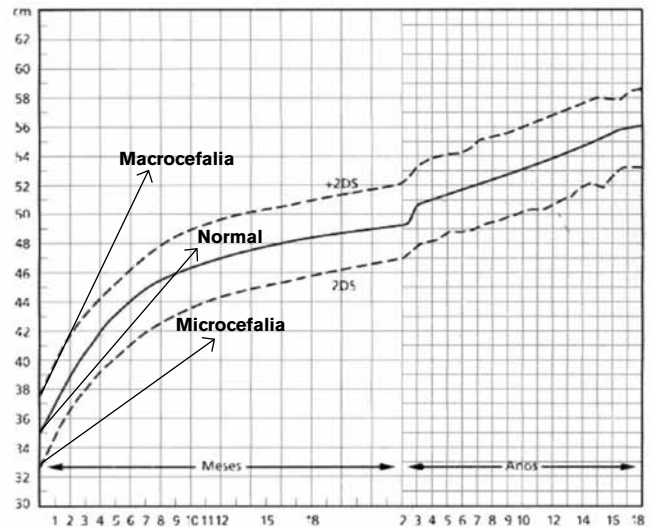
If the child has any protuberance on his or her forehead that makes it asymmetrical, put the tape over the most prominent part. After taking the measurement, confirm the percentile according to the WHO head circumference growth charts for girls or boys (included in the Annexes).

Importance: This measurement is mainly to show brain growth. The size of the skull serves as an approximate index of the volume of its contents (normally brain and cerebrospinal fluid [CSF]). Brain growth

slows down once the child is 12 months old and, for all practical purposes, stabilizes by age 5. Any increase in head circumference (larger than +2 SDs) is called macrocephalia; and any reduction in head circumference (smaller than -2 SDs), microcephaly. Both conditions force us to rule out any diseases that need treatment or can be associated with developmental disorders (Figure 2).

Curved monitoring: Periodic head circumference measurement establishes a trend that, should it run parallel to the norm, has no pathological meaning. However, should the measurement increase, it becomes appropriate to suspect the possible causes of macrocephalia; and should it decrease, to suspect pathologies that might induce acquired microcephaly.

FIGURE 2: WHO HEAD CIRCUMFERENCE GROWTH CHART



Note: Head circumference should be measured regardless of the child's age.

■ LOOK FOR

■ Presence of phenotypical alterations, such as:

- Low-set ears
- An upward slant to the eyes (oblique palpebral fissures)

- Exceptionally wide-set eyes (hypertelorism)
- Harelip
- Cleft palate
- An exceptionally short or long neck
- A single crease across the center of the palm (single transverse palmar crease)
- A crooked little pinky (i.e. a very short fifth finger where the bone is curved: clinodactyly)

Make sure that the assessment environment is as quiet and relaxing as possible and that the baby is in an appropriate health and emotional state to proceed with the examination.

If for some reason it is not possible to assess the infant's development during that visit, or if you have any doubts about any aspect of the consultation, schedule a new appointment at the earliest possible date to continue the assessment more safely.

■ OBSERVE

The child's developmental status: Follow the recommended steps for monitoring the baby's developmental status. Observe and ascertain whether or not the infant displays the set of behaviors or milestones being used to classify his or her development.

Use the table "Monitoring the Development of Infants under 2 Months Old" (Annexes, Table 1). For premature infants, use the corrected age up to the chronological age of 12 months.

In infants under 2 months old, we are going to observe the following behaviors:

► NEWBORNS (INFANTS UNDER 1 MONTH OLD)

- **Lying face up with arms and legs flexed and head sideways**
- **Moro reflex**
- **Looks at your face**
- **Blinking reflex**
- **Raises his or her head**

■ Lying face up with arms and legs flexed and head sideways



Position of the infant: Lying face up

See what position the baby naturally assumes.

Satisfactory response: Because of the predominance of flexor tonus at this age, the baby's arms and legs should be flexed; and her or his head, leaning sideways.

■ Moro reflex

Position of the infant: Lying face up

There are several ways to test for this reflex. One of them is to place the infant lying face up on top of a diaper or blanket on a smooth surface, and then suddenly yank the diaper or blanket away. Another way is to clap or make some other loud noise directly above the baby's head.

Satisfactory response: The infant cries, extends and spreads both arms (abduction), followed by returning to the normal flexed position by moving the limbs toward the midline or axis of the body (in adduction). This response should be both symmetrical and complete.

■ Looks at your face

Position of the infant: Held by the examiner directly in front of her or him, or lying face up

Put your face approximately 30 cm in front of or above the baby's face.

Satisfactory response: The infant clearly looks at you.

■ Blinking reflex

Position of the infant: Lying face up

Clap your hands about 30 cm away from the baby's RIGHT ear and watch for the response. Then repeat with the LEFT ear and observe again. The response should be obtained within no more than 2 or 3 attempts, since the baby might become accustomed to the stimulus.

Satisfactory response: The infant blinks.

■ Raises his or her head

Position of the infant: Lying face down

Observe what the child proceeds to do.

Satisfactory response: The child lifts her or his head, at least momentarily, off the surface, without turning to one side or the other. Also take into consideration what the caregiver tells you.

► 1 MONTH TO UNDER 2 MONTHS OLD

Social smiling

Tracks an object at mid-range

Uses voice to make sounds (vocalizing)

Alternate kicking

■ Social smiling

Position of the infant: Lying on his or her back

Smile at the baby and talk to him or her. Do not tickle and/or touch her or his face.

Satisfactory response: The baby smiles in response. The objective here is to obtain more of a social response than a physical one.

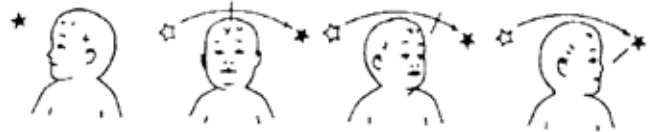
■ Tracks an object at mid-range

Position of the infant: Lying face up

From behind, hold a red pompom above the child's face at a distance of 20 to 30 cm, so that he or she can see it. Gently bounce the pompom to attract his or her attention.

Once you are sure that the child has seen the pompom, move it slowly to the RIGHT. If the child loses sight of the pompom, try the same movement again, for up to 3 attempts. Notice whether the child tracks the pompom. Now move the pompom slowly to the LEFT. Remember that if the child loses sight of the pompom, you can try the same movement again, for up to 3 attempts.

Satisfactory response: The child tracks the pompom, either just with the eyes or with both the eyes and the head, ON BOTH SIDES.



From front to side, back to mid-range, both sides

■ Uses voice to make sounds (vocalizing)

Position of the infant: Any position

Notice whether the baby produces vocalizations, i.e., uses his or her voice to make guttural or short vowel sounds. They should not be crying sounds. If no such sounds are observed, ask the caregiver if the baby makes any of them at home.

Satisfactory response: The infant uses his or her voice (vocalizes), or the caregiver says that she or he makes such sounds at home.

■ Alternate kicking

Position of the infant: Lying on his or her back

Watch how the baby moves her or his legs.

Satisfactory response: The infant flexes or extends his or her legs, usually in a pedaling movement or crossing them over, sometimes kicking with force as they extend.

■ CLASSIFY

Developmental status of the infant under 2 months old: To make a decision regarding the development of a child under 2 months old, first IDENTIFY whether there are any risk factors, MEASURE the head circumference, and LOOK FOR the presence of any phenotypical alterations (Table A). THEN OBSERVE the infant's response in relation to the developmental milestones or behaviors corresponding to his or her age group (Table B).

TABLE A: IDENTIFY/MEASURE/LOOK FOR**IDENTIFY whether there are any RISK FACTORS such as:**

- No or incomplete prenatal care
- Problems during pregnancy, labor, or delivery
- Prematurity
- Weight below 2,500 g
- Severe jaundice
- Hospitalization during the neonatal period
- Serious diseases such as meningitis, or head trauma or convulsions
- Parents related by blood (consanguinity)
- Cases of mental deficiency or other mental disorders in the family
- Social/environmental risk factors such as domestic violence, maternal depression, drugs or alcoholism, suspected sexual abuse, etc.

MEASURE**Head circumference < -2 SDs or > +2 SDs****LOOK FOR****Presence of phenotypical alterations**

- An upward slant to the eyes (oblique palpebral fissures)
- Exceptionally wide-set eyes (hypertelorism)
- Low-set ears
- Harelip
- Cleft palate
- An exceptionally short or long neck
- A single crease across the center of the palm (single transverse palmar crease)
- A crooked little pinky (i.e. a very short fifth finger where the bone is curved or bent: clinodactyly)

TABLE B: OBSERVE**OBSERVE****Under 1 month**

- Flexed arms and legs, head sideways, lying face up
- Moro reflex
- Looking at your face
- Blinking reflex
- Raises his or her head

> 1 to 2 months

- Social smiling
- Tracks an object at mid-range
- Uses voice to make sounds (vocalizing)
- Alternate kicking

Then immediately assess the infant's responses in relation to the developmental milestones or behaviors corresponding to his or her age group. Assign a classification according to the procedures outlined in **Table 1: Classification According to Clinical Signs for the Infant under 2 Months Old**.

► **Newborns (infants under 1 month old)**

If the infant is lacking one or more of the reflexes or positions, if her or his head circumference is smaller than -2 SDs or larger than +2 SDs, or if he or she has 3 or more phenotypical alterations, assign the classification **Suspected Developmental Delay (red)**.

If the infant shows normal reflexes and her or his positions are normal, if his or her head circumference falls within -2 SDs and +2 SDs, and if she or he does not

have 3 or more phenotypical alterations, but if there are one or more risk factors, assign the classification **Normal Development with Risk Factors (yellow)**.

If the infant shows normal reflexes and his or her positions are normal, if her or his head circumference falls within -2 SDs and +2 SDs, if he or she does not have 3 or more phenotypical alterations, and there are no risk factors, assign the classification **Normal Development (green)**.

► **Infants from 1 to 2 months old**

If the infant does not show one or more of the behaviors corresponding to the previous age group or presents alterations during the physical examination (3 or more phenotypical alterations, as well as less a head circumference smaller than -2 SDs or larger than +2 SDs),

assign the classification **Suspected Developmental Delay (red)**.

If the infant presents no alterations during the physical examination, if he or she displays all the behaviors corresponding to her or his age group, but there are one or more risk factors, assign the classification **Normal Development with Risk Factors (yellow)**.

If the infant does not present any alterations during the physical examination but does not display one or more behaviors corresponding to his or her age group, be alert and check for the behaviors from the previous age group (under 1 month). If the infant displays the behaviors from the previous age group but not those from her or his own age group, assign the classification **Developmental Alert (yellow)**.

Remember that the yellow classification has two alternative designations: **Normal Development with Risk Factors or Developmental Alert**.

If the infant presents no alterations during the physical examination, displays all the behaviors corresponding to her or his age group, and there are no risk fac-

tors, assign the classification **Normal Development (green)**.

Once you have classified the developmental status of the infant under 2 months old, take action to **TREAT** the baby, as indicated in the procedures outlined in **Table 2: Treatment According to Classification for the Infant under 2 Months Old**.

If the infant was classified as having a **Suspected Developmental Delay**, refer the baby for neurological and psychomotor assessment by a pediatrician or other professional who has in-depth knowledge of child development and can counsel the mother or caregiver. For infants with phenotypical alterations, in addition to such a referral, refer the case whenever possible to a medical genetics service for assistance in diagnosing the problem and counseling the family.

If the infant was classified as having **Normal Development with Risk Factors or Developmental Alert**, counsel the mother on stimulating her baby, schedule a return visit in 2 weeks, and inform the mother about the warning signs indicating that she should come back

TABLE 1: CLASSIFICATION ACCORDING TO CLINICAL SIGNS FOR THE INFANT UNDER 2 MONTHS OLD

SIGNS	CLASSIFY AS
<ul style="list-style-type: none"> • Head circumference is < -2 SDs or $> +2$ SDs • 3 or more phenotypical alterations are present • The infant does not display one or more of the reflexes/positions/skills corresponding to the previous age group (for classifying an infant in the earliest age group, i.e. newborn to 1 month old, who does not display one or more of the reflexes/skills/positions corresponding to his or her own age group, use the criteria corresponding to the infant's own age group) 	SUSPECTED DEVELOPMENTAL DELAY
<ul style="list-style-type: none"> • The infant displays all the reflexes/positions/skills corresponding to her or his age group, but there are one or more risk factors 	NORMAL DEVELOPMENT WITH RISK FACTORS
<ul style="list-style-type: none"> • The infant does not display one or more of the reflexes/positions/skills corresponding to the his or her age group (for infants from 1 to 2 months old) 	DEVELOPMENTAL ALERT
<ul style="list-style-type: none"> • The infant displays all the reflexes/positions/skills corresponding to her or his age group and there are no risk factors. 	NORMAL DEVELOPMENT

with her baby sooner than 2 weeks. The main signs to watch for are convulsions or any indication that the infant is extremely irritated, sleeps too much, or refuses to eat. If there is any suspicion of a congenital infection such as rubella, toxoplasmosis, syphilis, HIV, or cytomegalovirus, request serological tests.

If the infant was classified as having **Normal Development**, praise the mother, counsel her on stimulating her baby, and schedule a return visit for routine monitoring based on the timetable followed by the health service. It is recommended that the child be seen every two months up to the age of 6 months, every three months between the ages of 6 and 18 months, and every six months between the ages of 18 and 24 months. Tell her what warning signs to look for indicating that she should come back sooner. The main signs to watch for are convulsions or any indication that the infant is extremely irritated, sleeps too much, or refuses to eat.

Explain to the mother that referring her baby for an assessment does not necessarily mean that there is a developmental delay. This will be up to a team of specialists who, following a thorough examination, will be making a determination and will be able to provide the necessary care and guidance—as early as possible—should there prove to be a problem.

Note: Do not forget neonatal screening for hypothyroidism, phenylketonuria, acoustic otoemisiones and/or other conditions. If these have not been done, refer the infant for these tests.

Follow-up consultation

In the follow-up consultation to monitor the infant classified as **Normal Development with Risk Factors or Developmental Alert**, observe and confirm the presence of the reflexes and/or skills corresponding to his or her age group. If all these are present and normal, praise the mother and counsel her on stimulating

TABLE 2: TREATMENT ACCORDING TO CLASSIFICATION FOR THE INFANT UNDER 2 MONTHS OLD

SUSPECTED DEVELOPMENTAL DELAY	<ul style="list-style-type: none"> • Refer the infant for neurological and psychomotor assessment
NORMAL DEVELOPMENT WITH RISK FACTORS OR DEVELOPMENTAL ALERT	<ul style="list-style-type: none"> • Counsel the mother on stimulating her baby • Schedule a return visit in 2 weeks • Tell the mother what warning signs to look for indicating that she should bring her baby back sooner than 2 weeks
NORMAL DEVELOPMENT	<ul style="list-style-type: none"> • Praise the mother • Counsel the mother to continue stimulating her baby • Schedule a return visit for routine monitoring based on the timetable followed by the health service • Tell the mother what warning signs to look for indicating that she should bring her baby back sooner

her baby. Schedule a return visit for routine monitoring based on the timetable followed by the health service. Tell the mother what warning signs to watch for indicating that she should come back sooner. The main signs to watch for are convulsions or any indication that the infant is extremely irritated, sleeps too much, or refuses to eat.

Should the infant not show one or more of the reflexes and/or skills corresponding to her or his age group, re-

classify the case as **Suspected Developmental Delay** and refer the infant for neurological and psychomotor assessment. If by the time the infant returns she or he is already 2 months old, use the assessment criteria in **Table 2: Treatment According to Classification for the Infant under 2 Months Old**.



Exercises

Case 1

Fernanda is 28 days old. Her mother is 15 years old and used drugs while she was pregnant. The infant was born at term, but she weighed only 2,300 g. The delivery was normal. However, the baby did not cry when she was born. She remained in the hospital for 10 days and is now being cared for by her grandparents. At home, her grandmother has noticed that she is very quiet and has difficulty feeding. She was brought to the health service by her grandmother. After asking questions about the pregnancy, delivery, and birth, the attending health professional observed that Fernanda did not have the Moro reflex, she did not react to sound stimuli, her arms and legs were extended and hypotonic, and she did not have the sucking reflex. Her head circumference was 36 cm and there were no phenotypical alterations. Assess, classify, and counsel Fernanda's grandmother about her development, filling out the assessment sheet. What action would you take, based on the classification assigned?

Case 2

John is 1 and a half months old. His gestation was uneventful, his mother having had prenatal care since her second month of pregnancy. His parents are not related, nor is there any history of family members with physical or mental problems in either parent's family. John was born at term, weighed 3,600 g, cried at birth, and did not present any alterations during the neonatal period. He is being moni-

tored in the Family Health Program. He was brought into the unit today for routine growth and development monitoring. He weighs 4,900 g and is being exclusively breast-fed. His head circumference is 38 cm and he has no evident phenotypical alterations. The health professional assessed his development. John is already responding to a smile, making sounds, kicking his legs alternately, and opening his hands from time to time. Assess and classify John's development, filling out the assessment sheet below. What action would you take, based on the classification assigned? What advice would you give to John's mother?

Case 3

Julia is 20 days old. She was brought to the Health Service to take the foot prick test. The health professional asked Julia's mother about the pregnancy, delivery, and birth. Julia's mother said she had had a febrile condition during the third month of her pregnancy, followed by a red-dish rash on her body. Julia was born at term, cried at birth, and weighed 3,050 g. The health professional's examination showed a head circumference of 34 cm and the absence of phenotypical alterations. The health professional also observed that the Moro reflex was present and symmetrical, and that she had the blinking reflex in response to a sound stimulus. Her arms and legs were flexed, and her hands remained closed. Assess and classify Julia's development, filling out the assessment sheet below. What action would you take, based on the classification assigned?

Assessment Sheet 1: Development of the Infant under 2 Months Old

Name: _____ Age: ____ Weight: _____ Kg. Temp.: _____ °C

ASK: What problems does the child have? _____

First visit? _____ Return visit? _____

ASSESS		CLASSIFY
Assess development of the infant up to 2 months old		
ASK	OBSERVE	
<ul style="list-style-type: none"> • Were there any problems during your pregnancy or the baby's delivery or birth? _____ • Was your baby premature? _____ • How much did your baby weigh at birth? _____ • Did your baby get jaundice after birth? _____ • Has your baby had any serious disease such as meningitis, or a head injury, convulsions, etc.? _____ • Are you and the baby's father related by blood? _____ • Are there any physical or mental illnesses in the family? _____ • What do you think of your baby's development? _____ <p>IDENTIFY any social or environmental risk factors (maternal depression, alcoholism, drugs, violence, etc.) _____</p> <p>MEASURE head circumference _____</p> <p>ASSESS whether there are any phenotypical alterations _____</p> <p>REMEMBER: If the infant's mother has said that her baby has a development problem, or if there are one or more risk factors, be especially attentive in your assessment of his or her development. _____</p>	<ul style="list-style-type: none"> • Alterations in head circumference Yes <input type="checkbox"/> No <input type="checkbox"/> • Presence of 3 or more phenotypical alterations: Yes <input type="checkbox"/> No <input type="checkbox"/> • Alterations in reflexes/positions/skills: Yes <input type="checkbox"/> No <input type="checkbox"/> 	

3. Monitoring Development in the Child 2 Months to 2 Years Old

Observe the child's behavior according to his or her age group.

► 2 TO 4 MONTHS

Responds to the examiner

Holds objects

Makes sounds

Holds head up

■ Responds to the examiner



Position of the infant: Lying face up on a cot or pad

Place yourself in front of the infant so that he or she can see your face. Say something

like “Hi, (name)” or “What a pretty baby!” Watch for a reaction (smile, speech sound, crying). If the child does not respond, ask the mother or caregiver to do the same thing. Watch for a response.

Satisfactory response: The infant looks at the examiner or the mother, smiles, or tries to make a speech sound as if he or she were trying to talk.

Holds objects

Position of the infant: Lying face up in a bed or on a pad

Touch the back or tips of the baby's fingers with a toy you are holding. Observe how the baby responds.

Satisfactory response: The infant grasps the object and holds it for a few seconds.

Makes sounds



Position of the infant: Lying face up in a crib or on a pad

Place yourself in front of the infant so that he or she can see your face. Say something

like “Hi, (name)” or “What a pretty baby!” Notice whether the baby responds to your speech with vocal sounds.

Satisfactory response: The child makes sounds (goo-goo, aaaah, eeee, etc.), or the mother says that the child does so at home

Holds head up

Position of the infant: Seated, with support

Place the infant in a sitting position with your hands supporting his or her trunk, or ask the mother to do so.

Satisfactory response: The infant holds her or his head up for a few seconds without bobbing.

► 4 TO 6 MONTHS OLD

■ Reaches for a toy

■ Brings objects to his or her mouth

■ Locates the source of a sound

■ Actively changes position (rolls over)

■ Reaches for a toy



Position of the infant: Seated on the mother's lap, facing the examiner

Take a red block and place it within the baby's reach (for example, on the table or in the palm of your hand). Get the baby's attention by tapping on the block, so that she or he looks at it. Do not place the block in the child's hand.

Satisfactory response: The infant tries to get to the toy by extending an arm or moving his or her body toward it. The infant does not necessarily have to grasp the toy.

■ Brings objects to his or her mouth

Position of the infant: Seated on the mother's lap, facing the examiner

Take a red block and place it within the baby's reach (on the table or in the palm of your hand, for example). Get the child's attention by tapping on the block, so that she or he looks at it. If the baby does not reach, or try to reach, for the block, place it in his or her hand.

Satisfactory response: The infant brings the block to her or his mouth.

■ Locates the source of a sound

Position of the infant: Seated on the mother's lap, facing the examiner

Offer the child a toy (a cup or a block) to play with. Go behind the child, outside her or his line of vision, and gently ring a bell near his or her RIGHT ear. Notice the response. Repeat the stimulus near her or his LEFT ear.

Satisfactory response: The infant responds by turning his or her head toward the sound, ON BOTH SIDES.

■ Actively changes position (rolls over)

Position of the infant: Lying face up in the crib or on a pad

Lay the bell down next to the baby and attract his or her attention to it. See if the child can roll over unaided to get to the bell.

Satisfactory response: The child changes position and rolls all the way over.

► 6 TO 9 MONTHS

■ Plays peek-a-boo

■ Transfers objects from hand to hand

■ Duplicates syllables

■ Sits without support



■ Plays peek-a-boo

Position of the child: Seated on a pad or on the mother's lap

Place yourself in the front of the baby and pretend to disappear and reappear behind a cloth or behind the mother's back. Notice whether she or he tries to find you when you disappear, such as pulling at the cloth or looking behind his or her mother.

Satisfactory response: The child pulls the cloth away from you or looks behind her or his mother.

■ Transfers objects from hand to hand



Position of the child: Seated on a pad or on the mother's lap

Place yourself in front of the child and give her or him a block to hold. Notice whether the child tries to transfer the block from one hand to the other. If not, offer another block, moving your hand into his or her line of vision, and observe what the child does.

Satisfactory response: The child transfers the first block to the other hand.

■ Duplicates syllables

Position of the child: Seated on a pad or on the mother's lap

During the course of the consultation, notice whether the child has been making two-syllable utterances such as "papa," "dada," or "mama." If not, speak to the child or ask the mother to do so, to try to elicit duplicated syllables. Ask the mother whether the child does this at home. The words do not necessarily have to mean anything. Make a note of any verbal production.

Satisfactory response: The child produces duplicated syllables, or the mother says that he or she has done so at home.

■ Sits without support

Position of the child: Seated in a crib or on a pad

Give a bell or a cup to the child to hold and see if he or she remains sitting without support.

Satisfactory response: The child is able to remain seated.

ed without support while holding the object in her or his hands.

► 9 TO 12 MONTHS

- **Imitates gestures**
- **Uses thumb and index finger to pick up small objects (pincer grasp)**
- **Babbles**
- **Takes steps with support (cruising)**

■ **Imitates gestures**

Position of the child: Seated on a pad or on the mother's lap

Ask the mother what types of gestures she has already taught her baby (for example: "Clap!" "Kiss!" "Bye-bye!" etc.). Facing the child, make one of these gestures and see whether the child imitates it. If not, ask the mother to try. If the child still refuses to do it, ask the mother whether she or he does makes the gesture at home.

Satisfactory response: The child imitates the gesture. If the mother says that he or she does it at home, make a note to this effect, but only calculate what you actually saw.

■ **Uses thumb and index finger to pick up small objects (pincer grasp)**

Position of the child: Seated on a pad or on the mother's lap

Place a bean or a kernel of corn on the pad or in the palm of your hand. Notice if the child tries to pick it up. Observe how he or she picks up the bean or kernel.

Satisfactory response: The child picks up the bean or kernel with any part of the thumb and forefinger.

■ **Babbles**

Position of the child: Seated on a pad or on the mother's lap, lying down for a diaper change, or undergoing a physical examination

Notice whether the child carries on an incomprehensible conversation with him- or herself, or with the examiner or the mother, using pauses and inflection (with varying intonation, but where only a few words, if any, are distinguishable). If this is not observed, ask the mother if the child speaks gibberish at home and make a note of her answer.

Satisfactory response: The child babbles, or the mother reports that he or she does so at home.

■ **Takes steps with support (cruising)**

Position of the child: Standing, leaning on a piece of furniture or the mother's leg for support

With the child standing, ask the mother to support her baby (by holding his or her hand, or by showing her or him a piece of furniture to lean on, etc.) and encourage the baby to take a few steps.

Satisfactory response: The child manages to take a few steps, with support.

► 12 TO 15 MONTHS

- **Makes gestures on request**
- **Places block in a cup**
- **Says 1 word**
- **Takes steps without support**

■ **Makes gestures on request**



Position of the child: Seated on a pad or on the mother's lap

Ask the mother what types of gestures she has already taught her baby (for example: "Clap!" "Kiss!" "Bye-bye!" etc.).

Facing the child, VERBALLY ask him or her to make one of these gestures and then observe what happens. If the baby does not make the gesture, have the mother

make the same request. If the baby still does not make the gesture, ask the mother whether she or he does so at home.

Note: Be careful not to demonstrate the gesture; just try to elicit it verbally.

Satisfactory response: The child makes the gesture. If the mother says that he or she does so at home, make a note to this effect, but only calculate what you actually saw.

■ Places block in a cup

Position of the child: Seated on a pad or on the mother's lap



Pick up a cup and 3 blocks and place them within the child's reach on the table or pad. Make sure that she or he is watching while you do

this. Hold one of the blocks and show the baby that you are putting it in the cup. Remove the block and tell the baby, "Put the blocks in the cup. Put the blocks here" (pointing inside the cup with your index finger). Demonstrate up to 3 times.

Satisfactory response: The child puts at least 1 block in the cup and lets go of it.

■ Says 1 word

Position of the child: Seated on a pad or on the mother's lap

During the course of the consultation, notice whether the child says words spontaneously. Take notes. If he or she does not say any words, ask the mother how many words the child says at home and what the words are.

Satisfactory response: The child says at least 1 word other than "papa" or "mama," or the names of family members or pets.

■ Takes steps without support

Position of the child: Standing

Ask the mother to call her baby. Watch the child as he or she takes a few steps. Stay close by to offer support in case it is needed.

Satisfactory response: The child takes a few steps unsupported and with good balance.

► 15 TO 18 MONTHS

■ Identifies 2 objects

■ Scribbles spontaneously

■ Says 3 words

■ Takes steps backwards

Identifies 2 objects



Position of the child: Seated on a pad or on the mother's lap

Place 3 objects—a pencil, a ball, and a cup—side by side on the pad or table, close to the child. Say, "Give me the ball!" Make a note of his or her response. If the child points to or picks up another object, take it from him or her without showing any sign of disapproval, and set the object aside. Now say: "Give me the pencil!" Again, make a note of the response. Take the object without comment. Finally, ask the child to give you the cup.

Satisfactory response: The child correctly points to or picks up 2 of the 3 objects. If the mother says that she or he does it home, make a note to that effect, but calculate only what you have actually observed.

■ Scribbles spontaneously

Position of the child: Seated on a pad or on the mother's lap

Put a blank sheet of unlined paper and a pencil on the table, opposite the child. You can place the pencil in the child's hand and encourage him or her to scribble, but do not demonstrate how to do it.

Satisfactory response: The child scribbles on the paper spontaneously. Disregard accidental marks caused by the pencil hitting the paper.

■ Says 3 words

Position of the child: Seated on a pad or on the mother's lap

During the course of the consultation, notice whether the child produces words spontaneously. Make a note to that effect. If he or she does not, ask the mother how many words the child says and which ones.

Satisfactory response: The child says 3 words besides "Daddy," "Mommy," or the names of family members or pets. Take into account what the mother says.

■ Steps backwards

Position of the child: Standing

During the course of the consultation, notice whether the child steps backwards. If this does not happen, ask the child to open the door of the examination room and see if he or she steps backwards.

Satisfactory response: The child takes 2 steps backwards without falling, or the mother states that she or he is capable of doing so.

► 18 TO 24 MONTHS

■ Takes off his or her clothes

■ Builds a 3-block tower

■ Points to 2 pictures

■ Kicks a ball

■ Takes off his or her clothes

Position of the child: Any position

When examining the child, ask him or her to take off any article of clothing that is easy to remove, except socks, diapers, or shoes. The purpose is to find out whether the child is able to remove an item of clothing, demonstrating independence. If the child does not want to do so, ask the mother whether she or he does it at home.

Satisfactory response: The child is capable of removing any article of clothing, or the mother reports that he or she does so at home.

■ Builds a 3-block tower



Position of the child: Seated on a pad or on the mother's lap

Put 3 blocks on a table or on the floor in front of the child.

Take another 3 blocks and make a tower with them. Say to the child, "Make a tower like mine. Build a tower." Allow up to 3 attempts.

Satisfactory response: The child places the 3 blocks one on top of the other, and they do not fall down when the child takes his or her hand away.

■ Points to 2 pictures

Position of the child: Seated on a pad or on the mother's lap

Show the child the sheet of paper with 5 pictures on it: a bird, a dog, a girl, a car, and a flower (see the Picture Chart in the Annexes). Tell the child, "Show me the girl!" or "Where is the girl?" Make a note of her or his response. Repeat for all the pictures.

Satisfactory response: The child correctly points to at least 2 of the 5 pictures.

■ Kicks a ball

Position of the child: Standing

Place a ball about 15 cm in front of the child or roll it in his or her direction. Notice whether she or he kicks the ball. You can demonstrate up to 3 times.

Satisfactory response: The child kicks the ball without having to lean on anything for support.



- **CLASSIFY:** Developmental status of the child 2 months to 2 years old: To make a decision regarding the development of a child 2 months to 2 years old, first IDENTIFY whether there are any risk factors, MEASURE the head circumference, and LOOK FOR the presence of any phenotypical alterations (Table A). THEN OBSERVE how the child responds in relation to the developmental milestones or behaviors corresponding to his or her age group (Table B).

Then immediately assess the child's responses in relation to the developmental milestones or behaviors corresponding to his or her age group. Assign a classification according to the procedures outlined in **Table 3: Classification According to Clinical Signs for the Child 2 Months to 2 Years Old**.

If the child does not display one or more of the behaviors corresponding to the previous age group or presents alterations during the physical examination (3 or more phenotypical alterations, as well as a head circumference smaller than -2 SDs or larger than +2 SDs), assign the classification **Suspected Developmental Delay (red)**.

If the child presents no alterations during the physical examination and displays all the behaviors corresponding to his or her age group, but there are one or more risk factors, assign the classification **Normal Development with Risk Factors (yellow)**.

If the child does not present any alterations during the physical examination but does not display one or more behaviors corresponding to his or her age group, be alert and check for the behaviors from the previous age group. If the child does display the behaviors from the previous age group but not those from her or his own age group, assign the classification **Developmental Alert (yellow)**.

Remember that the yellow classification has two alternative designations: **Normal Development with Risk Factors or Developmental Alert**.

If the child presents no alterations during the physical examination and displays all the behaviors corresponding to her or his age group, and if there are no risk factors, assign the classification **Normal Development (green)**.

Once you have classified the developmental status of

TABLE A: IDENTIFY/MEASURE/LOOK FOR

IDENTIFY

whether there are any RISK FACTORS such as:

- No or incomplete prenatal care
- Problems during pregnancy, labor, or delivery
- Prematurity
- Birth weight below 2,500 g
- Severe jaundice
- Hospitalization during the neonatal period
- Serious diseases such as meningitis, head trauma, or convulsions
- Parents related by blood (consanguinity)
- Cases of mental deficiency or other mental disorders in the family
- Environmental risk factors such as domestic violence, maternal depression, drugs or alcoholism, suspected sexual abuse, etc.

MEASURE

Head circumference < -2 SDs or > +2 SDs

LOOK FOR

Presence of phenotypical alterations

- An upward slant to the eyes (oblique palpebral fissures)
- Exceptionally wide-set eyes (hypertelorism)
- Low-set ears
- Harelip
- Cleft palate
- An exceptionally short or long neck
- A single crease across the center of the palm (single transverse palmar crease)
- A crooked little pinky (i.e. a very short fifth finger where the bone is curved or bent: clinodactyly)

TABLE B: OBSERVE

2 to 4 months old

- Responds to the examiner
- Holds objects
- Makes sounds
- Holds head up

4 to 6 months old

- Reaches for a toy
- Brings objects to his or her mouth
- Locates the source of a sound
- Actively changes position (rolls over)

6 to 9 months old

- Plays peek-a-boo
- Transfers objects from hand to hand
- Duplicates syllables
- Sits without support

9 to 12 months old

- Imitates gestures
- Uses thumb and index finger to pick up small objects (pincer grasp)
- Babbles
- Takes steps with support (cruising)

12 to 15 months old

- Makes gestures on request
- Places block in a cup
- Says 1 word
- Takes steps without support

15 to 18 months old

- Identifies 2 objects
- Scribbles spontaneously
- Says 3 words
- Takes steps backwards

18 to 24 months old

- Takes off his or her clothes
- Builds a 3-block tower
- Points to 2 pictures
- Kicks a ball

the child from 2 months to 2 years old, take action to **TREAT** the child, as indicated in the procedures outlined in **Table 4: Treatment According to Classification for the Child 2 Months to 2 Years Old**.

In the event of **Suspected Developmental Delay**, refer the child for neurological and psychomotor assessment by a professional who has in-depth knowledge of child development, and who can also counsel the mother or caregiver. If the child presents phenotypical alterations, he or she can also be referred to a medical genetics service for assistance in diagnosing the problem and counseling the family.

If the child was classified as having **Normal Development with Risk Factors or Developmental Alert**, counsel the mother on stimulating her child, schedule a return visit in 30 days, and tell the mother what warning signs to look for indicating that she bring her child back sooner.

If the child has been assigned the classification **Normal Development**, praise the mother and counsel her to continue stimulating her child. Tell her to come back for routine development monitoring according to the timetable followed by the health service. (It is recommended that the child be seen every two months up to the age of 6 months, every three months between the ages of 6 and 18 months, and every six months between the ages of 18 and 24 months.) Tell the mother what warning signs to look for indicating that she should bring her child back sooner. Among these are

convulsions or if the child is extremely irritated, sleeps too much, or refuses to eat.

Explain to the mother that referring her child for further assessment does not necessarily mean that there is a developmental delay. This will be up to a team of specialists who, following a thorough examination, will determine what the situation is and will provide the necessary care and guidance—as early as possible—should the child present a developmental delay.

Monitoring consultation

On the return visit of a child with Normal Development with Risk Factors or Developmental Alert, confirm whether the child has now met the milestones for reflexes, skills, and behaviors corresponding to his or her age group. If so, praise the mother and counsel her on stimulating her child. Then schedule the next appointment for routine development monitoring according to the timetable followed by the health service. Tell the mother what warning signs to look for indicating that she should bring her child back sooner.

If the child still does not meet one of the milestones corresponding to her or his age group, reclassify the child as Suspected Developmental Delay and refer him or her to developmental services for assessment. If at the time the child returns she or he is 2 years old or older, use **Table 3: Classification According to Clinical Signs for the Child 2 Months to 2 Years Old**.

**TABLE 3: CLASSIFICATION ACCORDING TO CLINICAL SIGNS
FOR THE CHILD 2 MONTHS TO 2 YEARS OLD**

SIGNS	CLASSIFY AS
<ul style="list-style-type: none"> • Head circumference is < -2 SDs or $> +2$ SDs • 3 or more phenotypical alterations are present • The child does not display one or more of the reflexes/positions/skills corresponding to the previous age group 	SUSPECTED DEVELOPMENTAL DELAY
<ul style="list-style-type: none"> • The child displays all the reflexes/positions/skills/behaviors corresponding to his or her age group, but there are one or more risk factors 	NORMAL DEVELOPMENT WITH RISK FACTORS
<ul style="list-style-type: none"> • The child does not display one or more of the reflexes/positions/skills/behaviors corresponding to her or his age group 	DEVELOPMENTAL ALERT
<ul style="list-style-type: none"> • The child displays all the reflexes/positions/skills/behaviors corresponding to his or her age group, and there are no risk factors 	NORMAL DEVELOPMENT

**TABLE 4: TREATMENT ACCORDING TO CLASSIFICATION
FOR THE CHILD 2 MONTHS TO 2 YEARS OLD**

SUSPECTED DEVELOPMENTAL DELAY	<ul style="list-style-type: none"> • Refer the child to developmental services for assessment
NORMAL DEVELOPMENT WITH RISK FACTORS OR DEVELOPMENTAL ALERT	<ul style="list-style-type: none"> • Counsel the mother on stimulating her child • Schedule a return visit in 30 days • Tell the mother what warning signs to look for indicating that she should bring her child back sooner
NORMAL DEVELOPMENT	<ul style="list-style-type: none"> • Praise the mother • Counsel the mother to continue stimulating her child • Schedule a return visit for routine monitoring based on the timetable followed by the health service • Tell the mother what warning signs to look for indicating that she should bring her child back sooner



Exercise

Case 1 Ivan is 9 months old. He was brought to the Health Service because he had been coughing.

During the consultation, the health professional assessed him following the IMCI methodology. She then asked the mother what she thought about his development. The mother acknowledged that Ivan is a little “slow.” He is not yet sitting up unaided. He picks up objects and passes them from one hand to the other, already says “papa” and “dada,” and plays peek-a-boo. When lying down, he is not able to roll over. When asked about his gestation, delivery, and birth, the mother stated that he was not premature, weighed 3,100 g at birth, but was slow to start crying after he was born and needed oxygen. His head circumference was 36 cm. His ears are low-set, his eyes have an upward-slanting crease, and his fingers show signs of clinodactyly (i.e. a curved bone on the pinky). Based on this information, classify Ivan’s development following the IMCI methodology and fill out the assessment sheet on the next page. What action would you take in Ivan’s case?

Case 2 Mariana is 4 months old. She was brought to the Health Unit because she had “sores” on her body. Upon examining her, the health professional noticed that Mariana was not interacting. Asked if she did not smile, the mother said that Mariana is very serious, did not like to be on her lap and preferred to lie in her cradle looking at a mobile overhead. The mother also said that,

since she worked a lot, she did not have much time to play with Mariana. With regard to her gestation, delivery, and birth, the mother said that everything had gone well. She had had prenatal monitoring and the delivery was normal. Mariana weighed 3,200 g and there were no intercurrent events. Asked if the mother bore any family relationship to Mariana’s father, she said that they were first cousins. The health professional found that Mariana did not have any phenotypical alterations and her head circumference was 40 cm. Based on this information, classify Mariana’s development following the IMCI methodology and fill out the assessment sheet on the next page. What action would you take in Mariana’s case?

Case 3 Fabrício is 2 years old and was brought to the Health Unit because his mother was concerned that he had not yet started to talk. He also appeared not to understand when he given instructions. Asked about his gestation, delivery, and birth, the mother said everything had been normal. With regard to Fabrício’s health, she said that he had been hospitalized for 20 days when he was 8 months old with bacterial meningitis. The health professional found that Fabrício did not have any phenotypical alterations. His head circumference was 50 cm. Based on this information, classify Fabrício’s development following the IMCI methodology and fill out the assessment sheet on the next page. What action would you take in Fabrício’s case?

ASSESSMENT SHEET 2: DEVELOPMENT OF THE CHILD 2 MONTHS TO 2 YEARS OLD

Name: _____ Age: ____ Weight: _____ Kg. Temp.: _____ °C

ASK: What problems does the child have? _____

First visit? _____ Return visit _____

EVALUAR		CLASSIFY
ASK	OBSERVE	
<ul style="list-style-type: none"> • Were there any problems during your pregnancy or the baby's delivery or birth? _____ • Was your baby premature? _____ • How much did your baby weigh at birth? _____ • Did your baby get jaundice after birth? _____ • Has your baby had any serious disease such as meningitis, or a head injury, convulsions, etc.? _____ • Are you and the baby's father related by blood? _____ • Are there any physical or mental illnesses in the family? _____ • What do you think of your baby's development? _____ <p>IDENTIFY any social or environmental risk factors (mother's level of schooling, alcoholism, drugs, violence, etc.).</p> <p>MEASURE head circumference.</p> <p>ASSESS whether there are any phenotypical alterations.</p>	<p>2 to 4 months old</p> <ul style="list-style-type: none"> • Responds to the examiner • Holds objects • Makes sounds • Holds head up <p>4 to 6 months old</p> <ul style="list-style-type: none"> • Reaches for a toy • Brings objects to his or her mouth • Locates the source of a sound • Actively changes position (rolls over) <p>6 to 9 months old</p> <ul style="list-style-type: none"> • Plays peek-a-boo • Transfers objects from hand to hand • Duplicates syllables • Sits without support <p>9 to 12 months old</p> <ul style="list-style-type: none"> • Imitates gestures • Uses thumb and index finger to pick up small objects (pincer grasp) • Babbles • Takes steps with support (cruising) <p>12 to 15 months old</p> <ul style="list-style-type: none"> • Makes gestures on request • Places block in a cup • Says 1 word • Takes steps without support <p>15 to 18 months old</p> <ul style="list-style-type: none"> • Identifies 2 objects • Scribbles spontaneously • Says 3 words • Takes steps backwards <p>18 to 24 months old</p> <ul style="list-style-type: none"> • Takes off his or her clothes • Builds a 3-block tower • Points to 2 pictures • Kicks a ball 	

4. Monitoring Development in the Child aged 2 to 6 years



► 2 YEARS TO 2 YEARS AND 6 MONTHS (2–2½)

- Gets undressed
- Builds a 3-block tower
- Points to 2 pictures
- Kicks a ball

■ Gets undressed

Position of the child: Any position

While you are examining the child, ask him to take off any item of clothing except for socks or shoes that are easy to take off. The objective is to verify the child's independence. If the child does not want to take any

of his clothes off, ask the mother whether he does it at home.

Satisfactory response: The child takes off any item of clothing, such as pants, shirt, undershirt, dress, etc., or the mother says that he or she does so at home.

■ Builds a 3-block tower

Position of the child: Sitting on the mother's lap or on the floor.

Put three blocks on the table or floor in front of the child. Take three other blocks yourself and make a tower with them. Tell the child, "Make a tower like mine," Reinforce, "Make a tower like mine." Allow the child up to three attempts to stack the blocks.

Satisfactory response: The child stacks at least three blocks, one on top of the other, making a tower that does not topple he takes his hand away.

■ Point to 2 pictures

Position of the child: Sitting on the mother's lap or on a mat.

Show the child a sheet of paper with five pictures of familiar items, such as a doll, dog, cat, or flower. (Annex, Picture Chart). Ask the child: "Show me the girl" or "Where is the girl?" Repeat the same procedure for all the pictures. Record the child's response.

Satisfactory response: The child correctly points to at least two of the five pictures.

■ Kicks a ball

Position of the child: Standing

Place a ball about 15 cm away from the child or push the ball toward him. Confirm that the child kicks the ball. You may demonstrate how this is done.

Satisfactory response: The child kicks the ball without holding onto anything.



► 2 YEARS AND 6 MONTHS TO 3 YEARS (2½–3)

- Gets dressed with supervision
- Builds a 6-cube tower
- Makes 2-word sentences
- Jumps on BOTH feet

■ Gets dressed with supervision

Position of the child: Any position

While you are examining the child, ask him to put on any item of clothing except for a hat or sandals that are easy to put on. The objective is to verify that the child is capable of dressing himself, putting on such clothing as underwear, socks, shoes, coat, etc., and thus showing independence. Shoes do not need to be tied and it is all right if they are on the wrong feet. The child's

haphazardly putting on a cap should not be considered. If the child does not put any of his clothes on, ask the mother whether he does so at home.

Satisfactory response: The child puts on an item of clothing or the mother says that he does so at home.

Buils a 6-block tower

Position of the child: Sitting in the presence of the evaluator, with elbows and hands on the table

Put the blocks in front of the child and encourage him to stack them. Show how this is done. Allow the child up to three attempts to stack the blocks.

Satisfactory response: The child stacks six blocks, one on top of the other, into a tower that does not topple when he takes his hand away.

Makes 2-word sentences

Position of the child: Any position

Pay attention to the child's language during the consultation. If this is not possible, ask the parents what the child does to communicate. If the parents' description is insufficient, ask them whether the child can put two words together to form a meaningful sentence that indicates some sort of action.

Satisfactory response: The child puts together two-word sentences made up of a noun and a verb: for example, "Baby eats."

Jumps on both feet

Position of the child: Standing

Ask the child to jump on both feet. Demonstrate how this is done.

Satisfactory response: The child jumps on both feet, lifting them at the same time but not necessarily in the same place. He may run before jumping or hold onto anything.



► 3 YEARS TO 3 YEARS AND 6 MONTHS (3–3½)

- Says a friend's name
- Reproduces a vertical line
- Recognizes two actions
- Throws a ball

■ Says a friend's name

Position of the child: Any position

Ask the child the name of a few friends or playmates who do not live with him.

Satisfactory response: The child says a friend's name. The names of brothers and sisters or cousins are accepted as long as they do not live with the child. The names of pets or imaginary friends are not accepted.

■ Reproduces a vertical line

Position of the child: Seated at a table at a level comfortable for writing

Put a pencil and a blank sheet of paper in front of the child and draw a few vertical lines, straight up and down. Tell the child to draw some lines like the ones that you drew. Do not guide his hand. Allow the child up to three attempts.

Satisfactory response: On the paper, the child draws 1 or more lines at least 5 cm long. The lines should NOT lean at an angle greater than 30 degrees. The lines can be wavy.



Satisfactory

Unsatisfactory

■ Recognizes two actions

Position of the child: Any position

Show the child the Picture Chart (found in the Annexes). Ask him to point at who or what is performing each action: "Who says 'meow'?" "Who says 'woof-woof' or 'arf-arf'?" or "Who is running or galloping?" "Who is talking?"

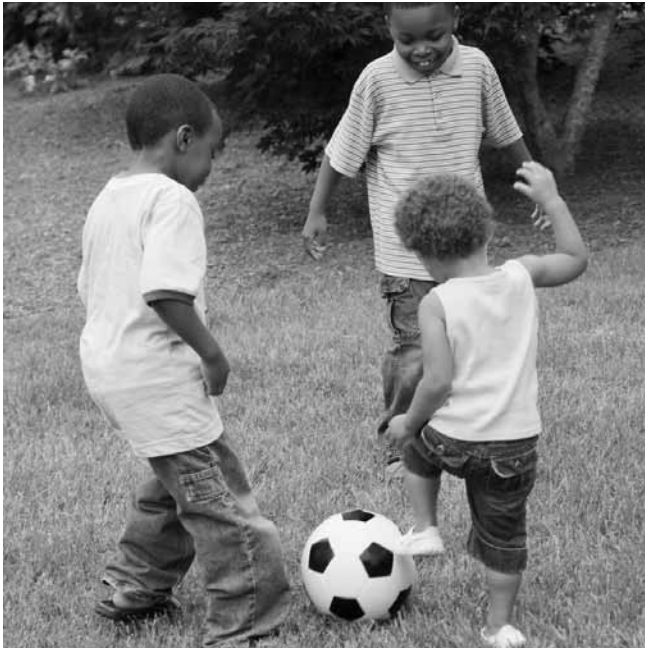
Satisfactory response: The child correctly points to two or three pictures.

■ Throws a ball

Position of the child: Standing

Give a ball to the child and stand about 90 cm away from him. Ask him to throw the ball to you so that you can catch it in your hands. Demonstrate how this should be done. Allow the child up to three attempts.

Satisfactory response: The child throws the ball above the level of her or his arms to within reach of the examiner (at a level between the examiner's knees and head). The pitch should be fairly straight, with no arc. The ball cannot be thrown off to the side or underneath.



► 3 YEARS AND 6 MONTHS TO 4 YEARS (3½-4)

- Puts on an undershirt
- Moves his thumb while making a fist
- Understands two adjectives
- Stands on each foot for 1 second

■ Puts on an undershirt

Position of the child: Any position

Ask the caregivers if the child can put on an undershirt or pullover by himself without assistance.

Satisfactory response: The child is capable of putting on an undershirt or pullover by pulling it on over his head and putting his arms in the sleeves. The undershirt or pullover can be put on frontwards or backwards.

■ Moves his or her thumb while making a fist

Position of the child: Any position

With one or both hands, show the child the thumbs-up sign used as a gesture to mean "OK!". Encourage him

to imitate this. Do not help him put his hand into the same position.

Satisfactory response: The child points his thumb upwards on one or both hands without moving any of his other fingers.

■ Understands two adjectives

Position of the child: Any position

Ask the child the following questions, one at a time:

- "What do you do when you are cold?"
- "What do you do when you are tired?"
- "What do you do when you are hungry?"

Satisfactory response: The child answers correctly using 2 or 3 words. Below are a few examples of correct responses:

Cold

- "I put on an undershirt."
- "I go inside."
- "I get under the blanket."

Note: Responses related to having a cold, such as "I take my medicine" or "I cough" are not considered correct responses.

Tired

- "I go to sleep."
- "I go to bed."
- "I lie down."

Hungry

- "I eat."
- "I have breakfast/lunch/dinner/supper."
- "I get something to eat."

■ Stands on each foot for 1 second

Position of the child: Standing

Show the child how you stand on one foot without holding on to anything. Demonstrate up to three times. Ask him or her to do the same, first with one foot and then with the other. Allow the child up to three attempts.

Satisfactory response: The child can stand on each foot for at least 1 second.



► 4 YEARS TO 4 YEARS AND 6 MONTHS (4–4½)

- Matches colors
- Copies circles
- Speaks intelligibly
- Jumps on one foot

■ Matches colors

Position of the child: Sitting at or standing in front of a table where there are blocks

Give the child all the blocks and ask him to find all the ones that are alike, without stating any particular criteria such as “find all the red ones.” You may say something like, “Put all the ones that look alike alongside each other” or “Put all the matching blocks together.”

Satisfactory response: The child divides the blocks up by color into one or more pairs or groups.

■ Copies circles

Position of the child: Seated at a table at a level comfortable for writing

Give the child a sheet of blank paper and a pencil. Show him or her a drawing of a circle (the Shapes and Lines Chart in the Annexes can be used for this purpose). Do

not name the shape or draw it to show the child how. Ask the child to copy or draw the shape.



Satisfactory response: The child draws any shape that looks like a circle that is closed or nearly closed. Spirals are not considered satisfactory.

■ Speaks intelligibly

Position of the child: Any position

While you are examining the child, observe whether her or his speech is intelligible or listen to see whether you can understand him or her (look for articulation and ideas being expressed in sequence).

Satisfactory response: The child speaks intelligibly; you can understand what she or he is saying.

■ Jumps on one foot

Position of the child: Standing

In an area where there is enough space, show the child how you jump on one foot. Demonstrate this up to three times. Then ask the child to do the same thing. Allow the child up to three attempts.

Satisfactory response: The child jumps on one foot once or several times in a row, either in place or moving in any direction, without holding on to anything.



► 4 YEARS AND 6 MONTHS TO 5 YEARS (4½–5)

- Gets dressed by him/herself
- Copies an X
- Understands 4 prepositions
- Stands on each foot for 3 seconds

■ Gets dressed by him/herself

Position of the child: Any position

Ask the accompanying adult if the child gets dressed and undressed by himself. The child should be capable of getting completely and properly dressed, without any help. He should be able to pick out his own clothes to wear every day (at least his play clothes).

Satisfactory response: The child is capable of getting dressed and undressed by himself.

Copies an X

Position of the child: Seated at a table at a comfortable level for writing

Give the child a pencil and a blank sheet of paper. Show him or her a picture with a drawing of an X or cross, without naming it or moving your finger or the pencil to demonstrate how it is made (the Shapes and Lines Chart in the Annexes can be used for this purpose). Tell the child, "Make a drawing like this one." Allow the child up to three attempts.

Satisfactory response: The child draws two lines that cross over at the middle. The lines can be undulating but they must be crossed using 2 continuous lines.



Satisfactory

Unsatisfactory

■ Understands 4 prepositions

Position of the child: Standing

Give the child a block and tell him or her to do the following:

- "Put the block on the table."
- "Put the block under the table."
- "Put the block in front of me."
- "Put the block behind me."

Satisfactory response: The child correctly performs all four actions.

■ Stands on each foot for 3 seconds

Position of the child: Standing

Show the child how you stand on one foot without holding on to anything. Demonstrate this up to three times. Afterwards, ask him to do the same thing, first with one foot and then with the other. Allow him up to three attempts.

Satisfactory response: The child remains on each foot at least 3 seconds.

► 5 YEARS TO 5 YEARS AND 6 MONTHS (5–5½)

- **Brushes teeth by himself**
- **Points at the longer of two lines**
- **Defines five words**
- **Stands on each foot for 5 seconds**

■ **Brushes teeth by himself**

Position of the child: Any position

Ask the caregivers if the child is able to brush his teeth without help or supervision (and if he has been able to do so for some time). This includes putting the toothpaste on and brushing the back teeth.

Satisfactory response: The caregivers report that the child can brush his teeth without help or supervision (and has been able to do so for some time). The caregivers can sometimes help the child, reinforcing his training to ensure proper brushing.

■ **Points at the longer of two lines**

Position of the child: Seated at a table at a comfortable level for writing

Show the child a drawing of two parallel vertical lines (the Shapes and Lines Chart in the Annexes can be used for this purpose; but if you draw these yourself, make sure they are vertical). Ask the child, "Which line is longer?" (Do not say "bigger.") After the child answers, turn the picture upside down and repeat the question. Turn the picture right side up and repeat the procedure a third time. If the child does not respond correctly to the three questions, repeat the procedure once more, remembering to rotate the picture.

Satisfactory response: The child points out the longer line either the first three times or in five out of six attempts.

■ **Defines five words**

Position of the child: Any position

See if the child is paying attention to you. Then tell the child, "I am going to say some words and I want you to

tell me what that word is." Say one word at a time. Each word can be repeated up to three times, if necessary, saying "Tell me something about ..." or "What do you know about ...?" Do not ask the child what he or she does with the object in question or what it is used for.

Ask the following questions, one at a time:

- "What is a ball?"
- "What is a river?"
- "What is a table?"
- "What is a house?"
- "What is a banana?"
- "What is a curtain?"
- "What is a wall?"
- "What is a fence?"
- "What is a roof?"

Satisfactory response: The child correctly defines five words. The definition is correct when it includes the following information on the object:

1. Use
2. Shape
3. What it is made of
4. General category

Examples

- Ball: Play, circle, made of rubber or plastic, toy
- River: Fishing, swimming, water, has fish, has boats
- Table: Eating, putting books on it, writing on it, made of wood or plastic
- House: Living in it, made of bricks or wood, etc.
- Banana: Something that you eat or peel, fruit
- Curtain: Covers the window, so you can not see outside or inside
- Wall: Goes around the room, has door and windows, has pictures on it
- Fence: Goes around the yard (or other, in rural settings), something to climb over
- Roof: Is over the room, keeps out the rain

■ **Stands on each foot for 5 seconds**

Position of the child: Standing

Show the child how to stand on one foot without holding on to anything. Demonstrate how this is done up to three times. Then ask the child to do the same thing, first with one foot and then with the other. Allow the child up to three attempts.

Satisfactory response: The child stands on each foot for at least 5 seconds.



► 5 YEARS AND 6 MONTHS TO 6 YEARS (5½–6)

- Plays 'pretend' with other children
- Draws a person with six parts
- Makes comparisons
- Walks heel to toe

■ Plays 'pretend' with other children

Position of the child: Any position

Ask the caregivers if the child plays 'pretend' (for example, 'playing house,' 'playing school'), either with family members or at school.

Satisfactory response: The caregivers say that the child plays this type of game with other children.

■ Draws a person with six parts

Position of the child: Seated at a table at a comfortable level for writing

Give the child a blank sheet of paper. Ask him or her to draw you a person (boy, girl, mother, father, etc.). Make sure that she or he finishes the drawing before making your assessment. The body parts that are present in pairs should be regarded as 1 part (ears, eyes, arms, hands, legs, and feet). Assign a point only if the child has drawn both parts of the pair.

Satisfactory response: The child draws a person with six or more body parts.

■ Makes comparisons

Position of the child: Any position

Ask the child to complete the following sentences, slowly and clearly, one after the other:

- "A horse is big, a mouse is"
- "A fire is hot, ice is"
- "If the sun shines during the day, the moon shines at"

Satisfactory response: The child correctly completes two sentences, using, for example:

- Big → little, small
- Hot → cold, frozen, freezing, chilly
("melting" or "water" are considered errors)
- Day → night, dark, black

■ Walks heel to toe

Position of the child: Standing

Show the child how you walk in a straight line, touching the end of one foot with the heel of the other foot. Take about eight steps to demonstrate this. If necessary, demonstrate up to three times. Then ask the child to do the same thing (it may help him understand if you compare this to 'walking the tightrope' while 'playing circus'). Allow the child up to three attempts.

Satisfactory response: The child manages to take four or more steps in a straight line, heel to toe, with the heel of one foot no more than 2.5 cm from the toe of the other foot, without holding on to anything.

► 6 YEARS

■ Accepts and follows board game rules

■ Copies a square

■ Defines seven words

■ Balances on each foot for 7 seconds

■ Accepts and follows board game rules

Position of the child: Any position

Ask the caregivers if the child is able to accept and follow the rules when playing board games.

Satisfactory response: The caregivers report that the child is able to accept and follow the rules when playing board games.

■ Copies a square

Position of the child: Seated at a table at a comfortable level for writing

Give the child a blank sheet of paper and a pencil. Show him or her a picture with a drawing of a square (□: The Shapes and Lines Chart in the Annexes can be used for this purpose.) You should not name the shape or move your finger or the pencil in order to show how to draw it. Ask the child, "Draw a shape like this one." Allow the child up to three attempts.

If the child could not copy the picture of the square, show her or him how to do it, drawing the first two opposite (parallel) sides and then the other 2 (rather than drawing all four sides of the square continuously). Demonstrate up to three times. Allow the child up to three attempts.



Satisfactory

Unsatisfactory

■ Defines seven words

Position of the child: Any position

Make sure that the child is paying attention to you. Then tell him, "I am going to say some words and I want you to tell me what that word is." Say one word at a time. Each word can be repeated up to three times, if necessary, saying, "Tell me something about", "or "What do you know about?" Do not ask the child to tell you what he or she does with the object or what the object is used for.

Ask the following questions, one at a time:

- "What is a ball?"
- "What is a river?"
- "What is a table?"
- "What is a house?"
- "What is a banana?"
- "What is a curtain?"
- "What is a wall?"
- "What is a fence?"
- "What is a roof?"

Satisfactory response: The child correctly defines seven words. The definition is correct when it includes the following information on the object:

1. Use
2. Shape
3. What it is made of
4. General category

Examples

- Ball: Play, circle, made of rubber or plastic, toy
- River: Fishing, swimming, water, has fish, has boats
- Table: Eating, putting books on it, writing on it, made of wood or plastic
- House: Living in it, made of bricks or wood, etc.
- Banana: Something that you eat or peel, fruit
- Curtain: Covers the window, so you can not see outside or inside
- Wall: Goes around the room, has door and windows, has pictures on it
- Fence: Goes around the yard (or other, in rural settings), something to climb over
- Roof: Is over the room, keeps out the rain

■ Balances on each foot for 7 seconds

Position of the child: Standing

Show the child how you stand on one foot without holding on to anything. Demonstrate up to three times. Then ask him to do the same thing, first with one foot and then the other. Allow the child up to three attempts.

Satisfactory response: The child remains balanced on each foot at least 7 seconds.

■ CLASSIFY: Developmental status of the child aged 2 to 6 years:

To make a decision about the development of a child aged 2 to 6 years, first IDENTIFY whether there are any risk

factors (Table A), MEASURE the head circumference, and LOOK FOR the presence of any phenotypical alterations (Table A). THEN OBSERVE the child's response in relation to the developmental milestones or behaviors corresponding to his or her age group (Table B).

TABLE A: IDENTIFY/MEASURE/LOOK FOR

IDENTIFY

whether there are any RISK FACTORS such as:

- No or incomplete prenatal care
- Problems during pregnancy, labor, or delivery
- Prematurity
- Birth weight below 2,500 g
- Severe jaundice
- Hospitalization during the neonatal period
- Serious diseases such as meningitis, head trauma, or convulsions
- Parents related by blood (consanguinity)
- Cases of mental deficiency or other mental disorders in the family
- Environmental risk factors such as domestic violence, maternal depression, drugs or alcoholism, suspected sexual abuse, etc.

MEASURE

Head circumference < -2 SDs or > +2 SDs

LOOK FOR

Presence of phenotypical alterations

- An upward slant to the eyes (oblique palpebral fissures)
- Exceptionally wide-set eyes (hypertelorism)
- Low-set ears
- Harelip
- Cleft palate
- An exceptionally short or long neck
- A single crease across the center of the palm (single transverse palmar crease)
- A crooked little pinky (i.e. a very short fifth finger where the bone is curved or bent: clinodactyly)

TABLE B: OBSERVE

2 years to 2 years 6 months old (2-2½)

- Gets dressed with supervision
- Builds a 6-block tower
- Makes 2-word sentences
- Jumps on both feet

2 years 6 months to 3 years old (2½-3)

- Says a friend's name
- Imitates a vertical line
- Recognizes 2 actions
- Throws a ball

3 years to 3 years 6 months old (3-3½)

- Puts on an undershirt
- Moves his or her thumb while making a fist (makes the 'thumbs-up' sign)
- Understands 2 adjectives
- Stands on each foot for 1 second

3 years 6 months to 4 years (3½-4)

- Matches colors
- Copies circles
- Speaks intelligibly
- Jumps on 1 foot

4 years to 4 years 6 month old (4-4½)

- Gets dressed by him/herself
- Copies an X
- Understands 4 prepositions
- Stands on each foot for 3 seconds

4 years 6 months to 5 years old (4½-5)

- Brushes teeth by him/herself
- Points at the longer of 2 lines
- Defines 5 words
- Stands on each foot for 5 seconds

5 years to 5 years 6 months old (5-5½)

- Plays 'pretend' with other children
- Draws a person with 6 parts
- Makes comparisons/analogies
- Walks heel to toe

5 years 6 months to 6 years old (5½-6)

Accepts and follows game rules

Copies a square

Defines 7 words

Balances on each foot for 7 seconds

Then immediately assess the child's responses in relation to the developmental milestones or behaviors corresponding to his or her age group. Assign a classification according to the procedures outlined in **Table 5: Classification According to Clinical Signs for the Child 2 to 6 Years Old**.

If the child does not display one or more of the behaviors corresponding to the previous age group or presents alterations during the physical examination (3 or more phenotypical alterations, as well as a head circumference smaller than -2 SDs or larger than +2 SDs), assign the classification **Probable Developmental Delay (red) (Table 5)**.

If the child displays all the behaviors corresponding to her or his age group but there are one or more risk factors, assign the classification **Normal Development with Risk Factors (yellow)**.

If the child does not display one of the behaviors corresponding to his or her age group, there may possibly be a development delay. At this point, be alert and confirm whether the child has displayed the behaviors corresponding to the previous age group. If these have been displayed and only those from the child's own age group have not, assign the classification **Developmental Alert (yellow)**.

Remember that the yellow classification has two alternative designations: **Normal Development with Risk Factors or Developmental Alert**.

If the child presents no alterations during the physical examination and displays all the behaviors corresponding to her or his age group, and if there are no risk factors, assign the classification **Normal Development (green)**.

In the event of **Probable Developmental Delay**, refer the child for neurological and psychomotor assessment by a professional who has in-depth knowledge of child development and can counsel the mother or caregiver. In the case of children with phenotypical alterations, whenever possible refer them to a medical genetics service for assistance in diagnosing the problem and counseling the family.

If the child was classified as having **Normal Development with Risk Factors** or **Developmental Alert**, counsel the mother on stimulating her child, schedule a return visit in 30 days, and tell the mother what warning signs to look for indicating that she should bring her child back sooner. Among these warning signs are convulsions or if the child stops displaying behaviors that have already been noted (denoting a loss of skills or developmental regression).

If the child has been assigned the classification **Normal Development**, praise the mother and counsel her to continue stimulating her child. Tell her to come back for routine development monitoring according to the timetable followed by the health service.

Explain to the mother that referring her child for an assessment does not necessarily mean that there is a developmental delay. This will be up to a team of specialists who, following a thorough examination, will be making a determination and will be able to provide the necessary care and guidance—as early as possible—should there prove to be a problem.

During routine visits for the child classified as **Normal Development with Risk Factors**, observe the child and confirm whether he or she is displaying any of the behaviors that she or he was not displaying before. If so, praise the mother and counsel her to continue stimulating her child. Advise her to schedule the next check-up according to the routine timetable of the health service.

If the child is still not displaying the behaviors in question, reclassify him or her as Suspected Developmental Delay and refer the child for neurological and psychomotor evaluation.

In the event the child was classified as Normal Development with Risk Factors, proceed as follows:

If the child continues to display the behaviors corresponding to his or her age group, praise the mother and counsel her on continuing to stimulate her child. Tell her when to schedule the next appointment according to the routine timetable of the health service. Tell the mother what warning signs to look for indicating that she should bring her child back sooner. Among these

warning signs are convulsions or if the child stops displaying behaviors that have already been noted (denoting a loss of skills or developmental regression).

If the child stops displaying any of the behaviors corresponding to her or his age group, refer the child for neurological and psychomotor evaluation.

Once you have classified the developmental status of the child from 2 to 6 years old, take action to **TREAT** the child, as indicated in the procedures outlined in **Table 6: Treatment According to Classification for the Child 2 to 6 Years Old**.

TABLE 5: CLASSIFICATION ACCORDING TO CLINICAL SIGNS FOR THE CHILD 2 TO 6 YEARS OLD

<ul style="list-style-type: none"> • Head circumference is < -2 SDs or $> +2$ SDs • 3 or more phenotypical alterations are present • The child does not display one or more of the behaviors corresponding to the previous age group 	PROBABLE DEVELOPMENT DELAY
<ul style="list-style-type: none"> • The child displays all the behaviors corresponding to his or her age group, but there are one or more risk factors 	NORMAL DEVELOPMENT WITH RISK FACTORS
<ul style="list-style-type: none"> • The child does not display one of the behaviors corresponding to her or his age group 	DEVELOPMENTAL ALERT
<ul style="list-style-type: none"> • The child displays all the behaviors corresponding to his or her age group and there are no risk factors. 	NORMAL DEVELOPMENT

TABLE 6: TREATMENT ACCORDING TO CLASSIFICATION FOR THE CHILD 2 TO 6 YEARS OLD

NORMAL DEVELOPMENT WITH RISK FACTORS	<ul style="list-style-type: none"> • Refer the child for neurological assessment
PROBABLE DEVELOPMENT DELAY	<ul style="list-style-type: none"> • Counsel the mother on stimulating her child according to the guidelines for his or her age group • Schedule a return visit in 30 days
DEVELOPMENTAL ALERT	<ul style="list-style-type: none"> • Tell the mother what warning signs to look for indicating that she should bring her child back sooner
NORMAL DEVELOPMENT	<ul style="list-style-type: none"> • Praise the mother • Schedule a return visit in 30 days • Tell the mother what warning signs to look for indicating that she should bring her child back sooner

INDIVIDUAL CHARACTERISTICS	
What to do	What to avoid
<ul style="list-style-type: none"> • Always love and support the child (unconditionally) • Praise the child whenever he or she does something correctly or makes an effort 	<ul style="list-style-type: none"> • Failing to give the child love, attention, or care • Acting in an overly authoritarian manner
<ul style="list-style-type: none"> • Allow the child to express his or her wishes and desires and show respect for them • Give the child a chance to do things unaided 	<ul style="list-style-type: none"> • Overprotecting the child • Keeping the child from experimenting with new things
<ul style="list-style-type: none"> • Undertake activities with pleasure and enjoyment • Create a cheerful and festive environment 	<ul style="list-style-type: none"> • Having no time for fun • Acting out of obligation • Giving importance to negative and tragic situations
<ul style="list-style-type: none"> • Allow the child to create and play freely • Offer (safe) things for the child to play with 	<ul style="list-style-type: none"> • Failing to stimulate the child • Imposing rigid or strict rules • Leaving unsafe things around for the child to play with

FAMILY CHARACTERISTICS	
What to do	What to avoid
<ul style="list-style-type: none"> • Foster a harmonious and confident family environment • Know how to listen to the child and look out for his or her well-being 	<ul style="list-style-type: none"> • Constant family conflict • Violence and/or mistreatment of the child • Ignoring the child's needs when a loved one dies or goes away • Family disintegration

COMMUNITY CHARACTERISTICS	
What to do	What to avoid
<ul style="list-style-type: none"> • Give importance to reviving and valuing the local culture • Show interest in children (this applies both to leaders and to the community as a whole) 	<ul style="list-style-type: none"> • Insufficient recreation areas for children • Insufficient cohesiveness and solidarity in the community

5. Guidelines for Promoting Healthy Child Development

In order for a child to develop fully, above all else it is essential to be loved and wanted by his or her family, and insofar as possible, for the family to try to understand the child's feelings and know how to meet his or her needs.

An important concept that every health professional should understand is resiliency—in other words, the capacity to confront and overcome adversity and risks in a

positive and constructive way. Resiliency is not inborn; it is cultivated through education and ongoing interactions with people and the surrounding environment, which gradually build a person's character.

This means that children need to have conditions around them that encourage the development of their full potential. These conditions can be both human—i.e., people who foster interaction—and physical, such as housing, parks, daycare centers, and schools—that make it possible for them to have a variety of experiences that, when

taken together, provide them protection, stimulation, and a sense of achievement, and confidence.

In addition to the external influences mentioned, there are also internal characteristics of the personality, such as self-esteem, autonomy, creativity, and humor. All of these are closely linked.

The following is a list of ways to promote development and prevent aspects that should be avoided in children and families, with the object of improving their living conditions and quality of life.

Guidelines for Children under 2 Years of Age

► UNDER 2 MONTHS

- As a parent—along with family members and other people living in the home—you should talk to your baby, while at the same time making eye contact. Chat with the baby in a quiet, peaceful voice while nursing or giving him or her a bottle. A baby spends a great deal of time feeding, which provides a good opportunity for mothers and fathers to show their little one that their voice conveys a happy tone accompanied by a smile: “How are you doing?” “Are you hungry?” “Mommy/Daddy loves you very much!”
- Stimulate your infant visually by waving brightly colored objects within his or her line of vision at a distance of at least 30 cm.
- To stimulate the baby’s neck, place the infant face down and attract his or her attention in front, using visual and auditory stimulation.

► 2 TO 4 MONTHS

- Talk to your baby while looking at him or her, interacting with the infant by establishing visual and auditory contact.
- While giving your baby a bath, nursing, bottle feeding, dressing the baby, or changing his or her diaper, talk to the baby—especially about what you are doing, repeating the same words over and over again. “Isn’t this a nice bath! ... Now let’s dry your little ears ... Let’s wrap you up in your towel ... Let’s put on your

little shirt ... Put your little head (arm, leg, hand, foot), pretty little head, put your little head right in ...”

- Any spontaneous vocalization on the baby’s part should be celebrated with smiles and imitation. If the baby says “ba ba ba,” the parent should repeat “ba ba ba.” Imitating all the sounds that she or he makes (coughing, crying, sneezing) will encourage the baby to use his or her voice more frequently.
- When helping your baby to remain sitting up, take advantage of this for the baby to practice controlling her or his head movements.
- Touch your baby’s hands with small objects and encourage him or her to grasp them.

► 4 TO 6 MONTHS

- Offer the baby toys at short distances away, encouraging her or him to reach for them.
- Place an object in the baby’s hand and encourage him or her to bring it to his or her mouth.
- Provide auditory stimulation outside the baby’s line of vision to encourage her or him to look for the source of the sound.
- Begin to introduce your baby to household sounds. When someone knocks at the door or somebody enters the room or the telephone rings, say “Who’s that?” Do this even if at the beginning the baby is not listening to you at all; later on, he or she will begin to pay attention to the noises that the parents have mentioned.
- Stimulate your baby by moving objects or making gestures off to the child’s side, to get her or him to roll over.
- Babies like to be rocked. Hold your baby and dance with him or her to the beat of a favorite song.

► 6 TO 9 MONTHS

- Play peek-a-boo with your baby, using a cloth in front of your face.
- Give your baby toys that are easy to handle, so that he or she can pass them from one hand to the other.

- Keep up a constant dialogue with your baby, introducing words with sounds that are easy to make (da-da, pa-pa).
- When you start feeding your baby solids, hold a conversation with him or her at feeding time: “Are you hungry, Juanito? Here is your little plate. Isn’t that good!” Encourage your baby to take hold of the spoon.
- At this age, your baby likes to look at him- or herself in the mirror. The baby will smile and make faces and gestures. Try to interact with your baby when she or he does this: “Where is the baby? There he is! Where is Mommy? There’s Mommy!”
- At this age, babies are fascinated with noses. Play with your baby by showing her or him where your nose is and then showing the baby his or her own nose. Always talk to the baby while you are doing this: “Where is Mommy’s nose? There’s Mommy’s nose! Where is the baby’s nose? There it is!” Do the same with your and the baby’s eyes, mouth, hair, etc.
- Let your baby play on the floor (on a pad or mat) or lying face down, to encourage her or him to wiggle around and ultimately crawl.

► 9 TO 12 MONTHS

- Play with your baby by singing songs and using gestures (clapping, waving bye-bye) and encouraging him or her to respond.
- Let the baby handle very small objects (bean, kernels of corn, beads) so that she or he can learn to grasp them and pick them up, being careful that the baby does not put them in her or his mouth.
- Talk and encourage your baby to learn the names of people and objects in his or her environment.
- Put the baby in a place where she or he can move from a sitting to a standing position by holding on to something (for example, a sofa, bed, or chair) and move around holding onto the furniture.
- Speak naturally to your baby, using short sentences like “Here’s your cup,” “Let’s clean up,” “Good cookie!”

- At this age, babies are fascinated by throwing things to the floor. Ask your child to help clean up. Say “Bring the ball to Mommy. We put it here. I’ll help you.”

► 12 TO 15 MONTHS

- Encourage the baby to wave and say, “Bye-bye,” throw kisses, clap hands, and pretend to answer the phone.
- Give the baby containers and objects of various sizes so that he or she can learn how to put one thing inside another.
- Teach the baby simple words through rhymes, songs, and the use of sounds from regular speech. For example, the entire family might clap their hands and play the drums to a dance tempo and sing with the baby while listening to music.
- This age is the perfect time to stimulate your baby by looking at magazines or story books. Another way to stimulate your child is to cut out pictures of favorite foods, toys, or furniture and make a scrapbook. Your baby will learn from this how to turn pages, though at the beginning she or he may turn several pages at a time or hold the book upside down.
- Babies at this age like to move from one person to another. Make this into a game: “Where is Daddy? Go find him! Where is Suzanne? Come with Mommy, come on! Let’s go find her!” The baby can then go find each person and should get a hug or reward for doing so.
- Give the baby opportunities to toddle over small distances safely, leaning on objects for support, as preparation for walking unaided.

► 15 TO 18 MONTHS

- Ask your baby for different objects by name to help expand his or her knowledge and help him or her learn how to pick up, give, and let go of things; show the baby how to do these things whenever possible.
- Take advantage of naps or bedtime to bring a book

and show it to your baby. Talk about the pictures on the pages and tell stories about them: “This is a car. It looks just like Daddy’s car! Here is the baby ...” If the baby points out some of the pictures, she or he is trying to say something about them. Even if you do not understand what your baby is saying, you should listen all the same, for the sake of the effort being made.

- Listen with your baby to fast-paced music, followed by slow music. Encourage your baby to pick up the rhythm and move with the beat.
- If Daddy asks the baby, “Who is she?” the probable answer will be “Mommy!” Celebrate this accomplishment so that the child can know by your facial expression that you have listened to him or her.
- If your baby asks for something through sounds or signs, it is important for you to repeat correctly what she or he is trying to tell you: “Do you want some water? Here is your water!”
- Give your baby some paper and a fat crayon or marker to empower him or her to begin expressing her- or himself through spontaneous scribbling.
- Play with your baby by asking her or him to walk forwards and backwards; it is all right to help out at first.

► 18 TO 24 MONTHS

- Encourage your baby to put on and take off his or her clothes when told; it is all right to help out at first.
- Play with the other members of the family to learn the parts of the body. Your baby will simply observe the first time and then participate. “Touch your nose!” “Where are your eyes?”
- Your baby will continue to use gestures when encountering new words that she or he does not know how to say. Pay attention to what he or she is trying to express and teach your baby the word for it. At this age, a word may mean a whole sentence:
- Baby: “More!”
- Mother: “More milk, please! Would you like some more milk?”
- Encourage your baby to talk on the phone.
- Play with objects that can be stacked, showing your baby how to stack them.
- Ask your baby to identify pictures of characters or things that he or she already knows from magazines and games.
- Play kickball with your baby; try to get him or her to make a goal.

Video Exercises

Now we are going to show some children in video segments, and you are being asked to observe their development. Decide on the appropriate classification and the proper action to take in each case.

Case 1 Odair is 1 year and 9 months old. He was brought to the Health Unit with coughing and fever. His mother also thinks that he may have a development problem. The health professional assessed, classified, and treated him according to the IMCI strategy. During the consultation, it was also possible to observe his development. You are asked to observe him as well.

How would you classify Odair's development? Explain your answer.

What action would you take in Odair's case?

Case 2 Emmanuelle is 4 months old. She was brought to the Health Unit for a routine consultation and vaccinations. The health professional examined her, counseled the mother on breastfeeding, vaccinated her, and also observed her development. You are asked to observe her as well.

How would you classify the Emmanuelle's development? Explain your answer.

What action would you take in Emmanuelle's case?

Case 3 Alana is 1 year and 4 months old. She was brought to the Health Unit because she has been having diarrhea for three days. Her mother is also concerned because Alana has not yet started to talk. The health professional examined Alana and made some recommendations.

What is your opinion of Alana's development? Explain your answer.

What action would you take in Alana's case?

Case 4 Gilson is 11 months old. His mother brought him to the Health Unit because he has a fever. She also thinks he is rather slow. She had already mentioned this concern on previous visits, but the health professional did not offer her any guidance on this problem.

What is your opinion of Gilson's development? Explain your answer.

What action would you take in Gilson's case?

Case 5

Sue Ann was born prematurely at 7 months. She is now 12 months old and was brought to the Health Unit because she had cried a lot the night before. Her mother thinks that she has an earache. The Health professional examined Sue Anne and counseled her mother.

What is your opinion of Sue Ann's development? Explain your answer.

What action would you take in Sue Anne's case?

Guidelines for Children 2 to 6 Years of Age

► 2 YEARS TO 2 YEARS AND 6 MONTHS (2–2½)

- Encourage your toddler's autonomy and sense of independence in everyday activities, by encouraging him or her to perform simple tasks in caring for her- or himself: for example, feeding her- or himself, taking a bath (ask her or him to identify the parts of the body), and getting dressed (encourage him or her to put on an item of clothing without help), with mother's supervision.
- Encourage your toddler to play with children of the same age (his or her peers). This will expand her or his social and cognitive context and help him or her interact with others. Help your toddler control her or his basic bodily functions (bladder, bowels, gag reflex). Potty training should take place in a relaxed and comfortable atmosphere of play—and not in one loaded with emotional pressure. When this is done properly, your toddler will gradually incorporate 'going potty' into his or her normal routine.

► 2 YEARS AND 6 MONTHS TO 3 YEARS (2½–3)

- Maintain an ongoing dialogue with your toddler, asking her or him to talk about play and name his or her friends; this will help stimulate language and intelligence.

- Give your toddler plenty of opportunities to read (by reading story books to him or her) or draw (by providing paper and pencils or fat crayons or markers).
- Show your toddler pictures: for example, animals, types of clothing, and household objects. Encourage her or him to tell you what they are (by naming them) and what they are used for.
- Play games with a ball, asking your toddler to throw the ball to you—thus initiating intentional, interactive play.

► 3 YEARS AND 6 MONTHS TO 4 YEARS (3½–4)

- Encourage your toddler to perform daily tasks by him- or herself (for example, taking a bath, brushing her or his teeth).
- Encourage your toddler to talk about his or her daily routine, playtime activities, and what she or he likes to play.
- Ask your toddler how he or she feels: "Are you tired?" "Are you sleepy?"
- Play games with your toddler, singing songs that teach gestures or imitate animals or characters from children's stories. Games also involve movement, coordination, and balance: for example, riding a tricycle, jumping in and out instead of all around.

► **4 YEARS TO 4 YEARS AND 6 MONTHS (4–4½)**

- Play games with your child using blocks or colorful toys. Ask her or him to match colors or group similar objects. Show him or her objects or things in the environment that are of a certain color, and provide a context for the colors: for example, “The refrigerator is white.” “Your teddy bear is brown.” “The sky is blue.”
- Encourage your child to play games involving the following activities: drawing (either spontaneously or copying), coloring, and cutting out pictures from magazines. Always tell him or her what the picture represents and ask your child to tell you about what she or he has drawn.
- Tell your child stories and try to get him or her to remember what they were about (for example, “What is the name of the story we just read?” “What was the story about?”)
- Play ‘jump-on-one-foot’ with your child.

► **4 YEARS AND 6 MONTHS TO 5 YEARS (4½–5)**

- Encourage your child to perform daily tasks (for example, getting dressed by him- or herself). Allow your child to take the initiative in doing so, and do not do them for her or him. Stimulate your child by having him or her perform simple chores: “Put your shoes away in the closet,” “Put the bread on the table,” “Put your toys away in your toy box.”
- Organize games that include movement and coordination: for example, playing ‘statue’ or tag.

► **5 YEARS TO 5 YEARS AND 6 MONTHS (5–5½)**

- Do not interfere with your child when she or he takes the initiative to perform daily tasks (for example, brushing his or her teeth) without your supervision.
- Tell your child the different structural characteristics of objects, through making comparisons, counting on your fingers, and describing traits (for example, “Is the table big or little?” or “How many more balloons do we have?”).
- Play ‘pretend’ games with your child: for example, ‘playing house’ or ‘playing school’. Ask to child to play ‘walk the tightrope’, walking heel to toe: “Let’s play circus! Let’s pretend we’re walking the tightrope and we have to keep our balance or we’ll fall down!”
- Play board games with your child (for example, “Memory,” “Old Maid,” “Candy Land”). This will teach your child how rules work and how to follow them, as well as how to show self-control and good sportsmanship when winning or losing.
- Read your child stories and ask her or him to draw a picture of what the story was about.

► **6 YEARS**

- Make your child take responsibility for his or her own activities or chores—for example, picking up and taking care of her or his toys, doing homework and keeping school supplies in order—based on what his or her age group is capable of doing.
- Encourage your child to draw (for example, “Let’s draw a person!”) and paint.
- Encourage play that promotes good balance (for example, jumping rope).

TABLE 1: DEVELOPMENT OF THE INFANT UNDER 2 MONTHS OLD
(AS LONG AS THERE IS NO SERIOUS CLASSIFICATION REQUIRING REFERRAL TO A HOSPITAL)

IDENTIFY whether there are any RISK FACTORS such as:		OBSERVE		Classify the development	ASSESS	CLASSIFY	TREATMENT
<ul style="list-style-type: none">No or incomplete prenatal careProblems during pregnancy, labor, or deliveryPrematurityBirth weight below 2,500 gSevere jaundiceHospitalization during the neonatal periodSerious diseases such as meningitis, or head trauma or convulsionsParents related by blood (consanguinity)Cases of mental deficiency or other mental disorders in the familyEnvironmental risk factors such as domestic violence, maternal depression, drugs or alcoholism, suspected sexual abuse, etc. MEASURE Head circumference < -2 SDs or > +2 SDs		<ul style="list-style-type: none">► Newborns (under 1 month old)<ul style="list-style-type: none">Lying face up with arms and legs flexed and head sidewaysMoro reflexLooks at your faceBlinking reflexRaises his or her head► > 1 to 2 months old<ul style="list-style-type: none">Social smilingTracks an object at mid-rangeUses voice to make sounds (vocalizing)Alternate kicking					
						NORMAL DEVELOPMENT WITH RISK FACTORS	DEVELOPMENTAL ALERT
						NORMAL DEVELOPMENT	<ul style="list-style-type: none">► Praise the mother► Counsel the mother to continue stimulating her baby► Schedule a return visit for routine monitoring based on the timetable followed by the health service► Tell the mother what warning signs to look for indicating that she should come back sooner

If the infant's mother has said that her baby has a development problem, or if there are one or more risk factors, be especially attentive in your assessment of his or her development

Assessment Sheet 1:

DEVELOPMENT OF THE INFANT UNDER 2 MONTHS OLD

Name: _____ Age: _____ Weight: _____ Kg Temperature: _____ °C

ASK:

What problems does the child have? _____

First visit? _____ Return visit? _____

ASSESS		CLASSIFY
ASK	OBSERVE	
<ul style="list-style-type: none"> • Were there any problems during your pregnancy or the baby's delivery or birth? _____ • Was your baby premature? _____ • How much did your baby weigh at birth? _____ • Has your baby had any serious disease such as meningitis, or a head injury, convulsions, etc.? _____ • Are you and the baby's father related by blood? _____ • Are there any physical or mental illnesses in the family? _____ • What do you think of your baby's development? _____ <p>IDENTIFY any social or environmental risk factors (level of maternal schooling, alcoholism, drugs, violence, etc.) _____</p> <p>REMEMBER: If the infant's mother has said that her baby has a development problem, or if there are one or more risk factors, be especially attentive in your assessment of his or her development</p>	<ul style="list-style-type: none"> • Alterations in head circumference: Yes <input type="checkbox"/> No <input type="checkbox"/> • Presence of 3 or more phenotypical alterations: Yes <input type="checkbox"/> No <input type="checkbox"/> • Alterations in reflexes/positions/skills: Yes <input type="checkbox"/> No <input type="checkbox"/> 	

R: _____

ANNEX

TABLE 2: DEVELOPMENT OF THE CHILD 2 MONTHS TO 2 YEARS OLD
(AS LONG AS THERE IS NO SERIOUS CLASSIFICATION REQUIRING REFERRAL TO A HOSPITAL)

<p>IDENTIFY whether there are any RISK FACTORS such as:</p> <ul style="list-style-type: none"> • No or incomplete prenatal care • Problems during pregnancy, labor, or delivery • Prematurity • Birth weight below 2,500 g • Severe jaundice • Hospitalization during the neonatal period • Serious diseases such as meningitis, or head trauma or convulsions • Parents related by blood (consanguinity) • Cases of mental deficiency or other mental disorders in the family • Environmental risk factors such as domestic violence, maternal depression, drugs or alcoholism, suspected sexual abuse, etc. <p>MEASURE Head circumference < -2 SDs or > +2 SDs</p> <p>LOOK FOR Presence of phenotypical alterations</p> <ul style="list-style-type: none"> • An upward slant to the eyes (oblique palpebral fissures) • Exceptionally wide-set eyes (hypertelorism) • Low-set ears • Harelip • Cleft palate • An exceptionally short or long neck • A single crease across the center of the palm (single transverse palmar crease) • A crooked little pinky (i.e. a very short fifth finger where the bone is curved or bent: clinodactyly) 	<p>OBSERVE:</p> <p>► 2 to 4 months</p> <ul style="list-style-type: none"> • Responds to the examiner • Holds objects • Makes sounds • Holds head up <p>► 4 to 6 months</p> <ul style="list-style-type: none"> • Reaches for a toy • Brings objects to his or her mouth • Locates the source of a sound • Actively changes position (rolls over) <p>► 6 to 9 months</p> <ul style="list-style-type: none"> • Plays peek-a-boo • Transfers objects from hand to hand • Duplicates syllables • Sits without support <p>► 9 to 12 months</p> <ul style="list-style-type: none"> • Imitates gestures • Uses thumb and index finger to pick up small objects (pincer grasp) • Babbles • Takes steps with support (cruising) <p>► 12 to 15 months</p> <ul style="list-style-type: none"> • Makes gestures on request • Places block in a cup • Says 1 word • Takes steps without support <p>► 15 to 18 months</p> <ul style="list-style-type: none"> • Identifies 2 objects • Scribbles spontaneously • Says 3 words • Takes steps backwards <p>► 18 to 24 months</p> <ul style="list-style-type: none"> • Takes off his or her clothes • Builds a 3-block tower • Points to 2 pictures • Kicks a ball
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Classify the development

ASSESS	CLASSIFY	TREATMENT
<ul style="list-style-type: none"> • Head circumference is < -2 SDs and > +2 SDs • 3 or more phenotypical alterations are present • The child does not display one or more of the reflexes/positions/skills corresponding to his or her age group 	SUSPECTED DEVELOPMENTAL DELAY	<ul style="list-style-type: none"> ► Refer the child for neurological and psychomotor assessment
<ul style="list-style-type: none"> • The child displays all the reflexes/positions/skills corresponding to his or her age group, but there are one or more risk factors 	NORMAL DEVELOPMENT WITH RISK FACTORS	<ul style="list-style-type: none"> ► Counsel the mother on stimulating her child ► Schedule a return visit in 30 days ► Tell the mother what warning signs to look for indicating that she should come back sooner
<ul style="list-style-type: none"> • The child does not display one or more of the reflexes/positions/skills corresponding to her or his age group 	DEVELOPMENTAL ALERT	
<ul style="list-style-type: none"> • The child displays all the reflexes/positions/skills corresponding to her or his age group, and there are no risk factors 	NORMAL DEVELOPMENT	<ul style="list-style-type: none"> ► Praise the mother ► Counsel the mother to continue stimulating her child ► Schedule a return visit for routine monitoring based on the timetable followed by the health service ► Tell the mother what warning signs to look for indicating that she should come back sooner

If the infant's mother has said that her baby has a development problem, or if there are one or more risk factors, be especially attentive in your assessment of his or her development

Assessment Sheet 2:

DEVELOPMENT OF THE CHILD 2 MONTHS TO 2 YEARS OLD

Name: _____ Age: _____ Weight: _____ Kg Temperature: _____ °C

ASK:

What problems does the child have? _____

First visit? _____ Return visit? _____

ASSESS		CLASSIFY
ASK <ul style="list-style-type: none"> • Were there any problems during your pregnancy or the baby's delivery or birth? _____ • Was your baby premature? _____ • How much did your baby weigh at birth? _____ • Has your baby had any serious disease such as meningitis, or a head injury, convulsions, etc.? _____ • Are you and the baby's father related by blood? • Are there any physical or mental illnesses in the family? _____ • What do you think of your baby's development? _____ IDENTIFY any social or environmental risk factors (level of maternal schooling, alcoholism, drugs, violence, etc.) _____	OBSERVE <ul style="list-style-type: none"> • Alterations in head circumference: Yes <input type="checkbox"/> No <input type="checkbox"/> • Presence of 3 or more phenotypical alterations: Yes <input type="checkbox"/> No <input type="checkbox"/> • Alterations in reflexes/positions/skills: Yes <input type="checkbox"/> No <input type="checkbox"/> Observe whether the child is displaying all the developmental behaviors corresponding to his or her age group: All displayed _____ One or more not displayed _____ In the event that the child does not display one or more of the developmental behaviors corresponding to his or her age group, observe whether he or she displays all the behaviors from the previous age group: All displayed _____ One or more not displayed _____	
REMEMBER: If the infant's mother has said that her baby has a development problem, or if there are one or more risk factors, be especially attentive in your assessment of his or her development		

R: _____

ANNEX

TABLE 3: DEVELOPMENT OF THE CHILD 2 TO 6 YEARS OLD
(AS LONG AS THERE IS NO SERIOUS CLASSIFICATION REQUIRING REFERRAL TO A HOSPITAL)

IDENTIFY		EVALUATE	CLASSIFY	TREATMENT
whether there are any RISK FACTORS such as:				
<ul style="list-style-type: none">No or incomplete prenatal careProblems during pregnancy, labor, or deliveryPrematurityBirth weight below 2,500 gSevere jaundiceHospitalization during the neonatal periodSerious diseases such as meningitis, or head trauma or convulsionsParents related by blood (consanguinity)Cases of mental deficiency or other mental disorders in the familyEnvironmental risk factors such as domestic violence, maternal depression, drugs or alcoholism, suspected sexual abuse, etc.		<ul style="list-style-type: none">Head circumference is < -2 SDs or $> +2$ SDs3 or more phenotypical alterations are presentThe child does not display one or more of the behaviors corresponding to the previous age group	SUSPECTED DEVELOPMENT DELAY	<ul style="list-style-type: none">Referir para evaluación neuropsicomotora
OBSERVE		<ul style="list-style-type: none">The child displays all the behaviors corresponding to his or her age group, but there are one or more risk factors	NORMAL DEVELOPMENT WITH RISK FACTORS	<ul style="list-style-type: none">Counsel the mother on stimulating her child according to the guidelines for his or her age groupSchedule a return visit in 30 days
<ul style="list-style-type: none">2 years to 2 years and 6 months (2-2½)Gets dressed with supervisionBuilds a 6-block towerMakes 2-word sentencesJumps on both feet2 years and 6 months to 3 years (2½-3)Says a friend's nameImitates a vertical lineRecognizes 2 actionsThrows a ball3 years to 3 years and 6 months (3-3½)Puts on an undershirtMoves his or her thumb while making a fist (makes the 'thumbs-up' sign)Understands 2 adjectivesStands on each foot for 1 second3 years and 6 months to 4 years (3½-4)Matches colorsCopies circlesSpeaks intelligiblyJumps on 1 foot4 years to 4 years and 6 months (4-4½)Gets dressed by him/herselfCopies an XUnderstands 4 prepositionsStands on each foot for 3 seconds4 years and 6 months to 5 years (4½-5)Brushes teeth by him/herselfPoints at the longer of 2 linesDefines 5 words				
		<ul style="list-style-type: none">The child does not display one or more of the behaviors corresponding to her or his age group	DEVELOPMENTAL ALERT	<ul style="list-style-type: none">Tell the mother what warning signs to look for indicating that she should come back sooner
MEASURE		<ul style="list-style-type: none">The child displays all the behaviors corresponding to his or her age group, and there are no risk factors	NORMAL DEVELOPMENT	<ul style="list-style-type: none">Praise the motherSchedule a return visit for routine monitoring based on the timetable followed by the health serviceTell the mother what warning signs to look for indicating that she should come back sooner
Head circumference < -2 SDs or > +2 SDs				
LOOK FOR				
Presence of phenotypical alterations				
<ul style="list-style-type: none">An upward slant to the eyes (oblique palpebral fissures)				

If the infant's mother has said that her baby has a development problem, or if there are one or more risk factors, be especially attentive in your assessment of his or her development

Assessment Sheet 3:

DEVELOPMENT OF THE CHILD 2 TO 6 YEARS OF AGE

Name: _____ Age: _____ Weight: _____ Kg Temperature: _____ °C

ASK:

What problems does the child have? _____

First visit? _____ Return visit? _____

ASSESS		CLASSIFY
ASK	OBSERVE	
<ul style="list-style-type: none"> • Were there any problems during your pregnancy or the baby's delivery or birth? _____ • Was your baby premature? _____ • How much did your baby weigh at birth? _____ • Has your baby had any serious disease such as meningitis, or a head injury, convulsions, etc.? _____ • Are you and the baby's father related by blood? _____ • Are there any physical or mental illnesses in the family? _____ • What do you think of your baby's development? _____ <p>IDENTIFY any social or environmental risk factors (level of maternal schooling, alcoholism, drugs, violence, etc.) _____</p> <p>REMEMBER: If the infant's mother has said that her baby has a development problem, or if there are one or more risk factors, be especially attentive in your assessment of his or her development</p>	<ul style="list-style-type: none"> • Alterations in head circumference: Yes <input type="checkbox"/> No <input type="checkbox"/> • Presence of 3 or more phenotypical alterations: Yes <input type="checkbox"/> No <input type="checkbox"/> • Alterations in reflexes/positions/skills: Yes <input type="checkbox"/> No <input type="checkbox"/> <p>Observe whether the child is displaying all the developmental behaviors corresponding to his or her age group:</p> <p>All displayed _____</p> <p>One or more not displayed _____</p> <p>In the event that the child does not display one or more of the developmental behaviors corresponding to his or her age group, observe whether he or she displays all the behaviors from the previous age group:</p> <p>All displayed _____</p> <p>One or more not displayed _____</p>	

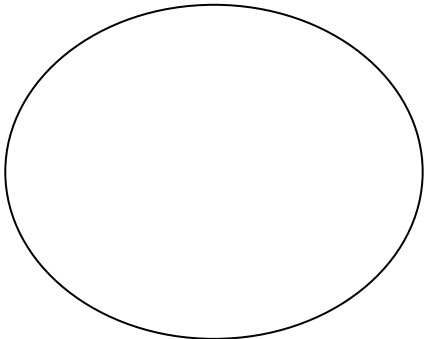
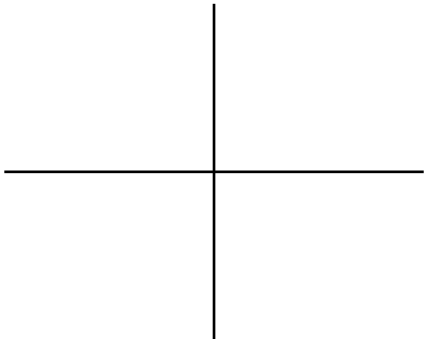
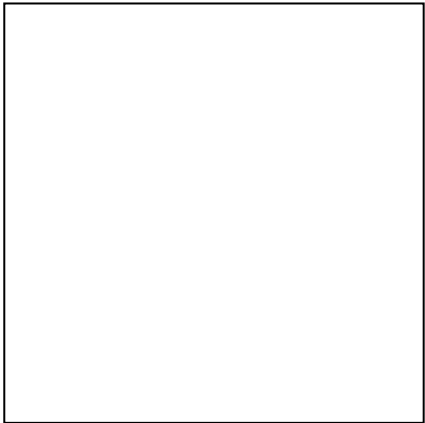

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ANNEX

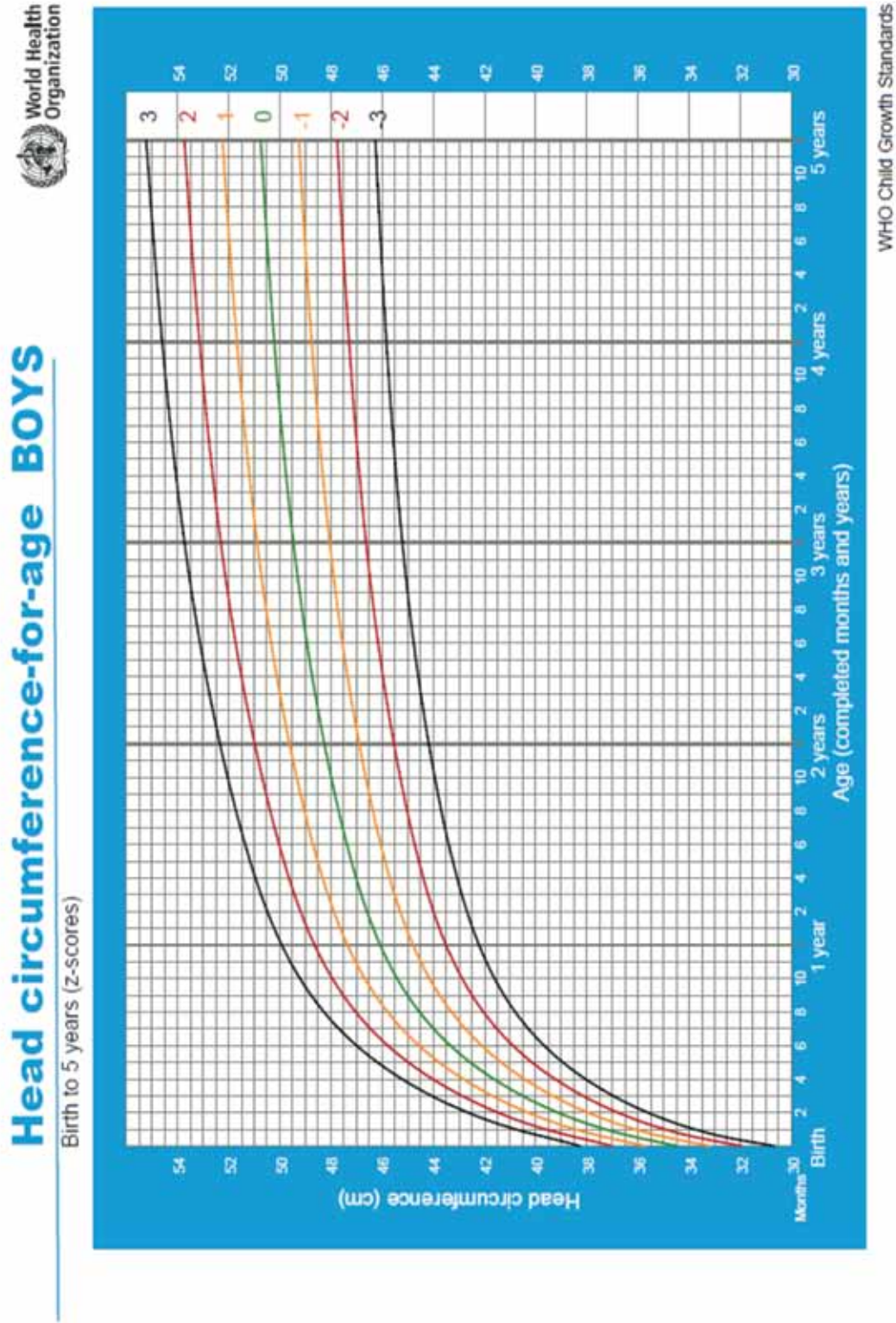
Picture Chart



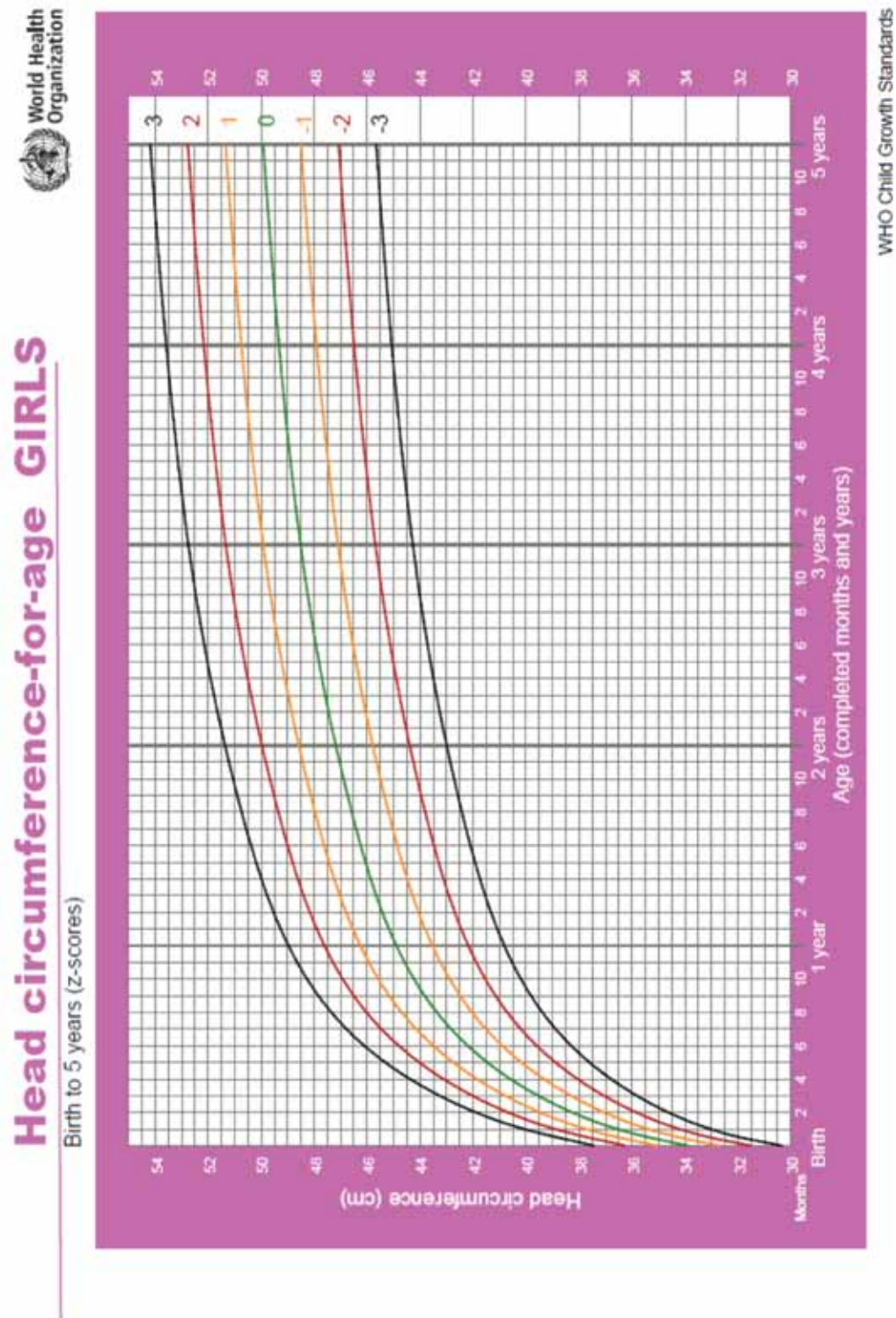
Shapes and Lines Chart

<p>Circle</p> 	<p>Cross</p> 
<p>Square</p> 	<p>Show which line is longer</p> 

ANNEX: WHO Head Circumference Chart for Girls up to 5 Years Old



ANNEX: WHO Head Circumference Chart for Girls up to 5 Years Old



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ISBN: 978-92-75-11660 9

