

One-week practical rotation at Health Centers

The work at the health center work is one of the cornerstones of developmental screening and prophylactic health care of children in Norway. It is important that medical students are exposed to this area of pediatric medicine in preparation for general practice.

In order to systematize and improve the one-week health center rotation, we have set the following guidelines:

Aim of instruction:

The student will gain practical experience in the work activities of a physician at a health center.

Practical information:

1. The student should read chapter 9 on health center examination guidelines, provided in this information hand-out.
2. The physician at the health center should demonstrate the examination techniques used in the screening of children of different age-groups. When possible, all age-groups should be represented. The student should follow the physician at the health station from the first consultation of the morning until 11:30 a.m. Some students wish to remain for the entire day, which must be arranged directly with the physician at the health center, and which is completely voluntary for both parties.
3. The student should individually examine at least two children, under the supervision of the physician at the health center.

Each health center receives an attendance record sheet, on which the student's name and rotation date is written. The health center will also receive a copy of the time-table with the assigned rotation. This includes the time and place for the student to meet. The health center will send the attendance record sheet back to my secretary (Turid Jacobsen) after the last planned day.

Håvard Ove Skjerven
Overlege/Universitetslektor

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Turid Jacobsen
Secretary

Tel. 23 01 55 97

In preparation of your health center rotation:

- Check the opening hours of “your” health center, to avoid arriving at the wrong time.
- Call beforehand to ensure that the health center’s daily schedule hasn’t been cancelled.
- **Please read through the provided chapter on health center examination guidelines prior to the rotation!**
- Bring your stethoscope and indoor shoes.
- If you need directions to the health center call directly or call traffic information at telephone number 177.
- It is allowed to switch health center location between students if this is more convenient.
- Should you be kept from attending, inform the health center. There are reserve days provided in the rotation schedule. Remember to call ahead of time to ask if it is possible to attend on that day. This also applies to make-up days following a cancellation from the health center.

I can be reached at *Universitetsseksjonen, Barnesenteret, Ullevål Universitetssykehus, tlf. 23 01 55 97. E-mail: turid.jacobsen@medisin.uio.no*

Turid Jacobsen
Secretary

Health center examination guidelines

9. Summary, conclusions and recommendations.

9.1 Check list for different age groups

Introduction

This is a summary of conclusions from the chapters on examination of organ systems regarding routine examination and questions to parents, according to the actual age groups. The reasons for the choice of areas examined is given in the individual sections, where this was possible.

Where it is adequate with information provided from the parents, the point is marked (A) *Anamnese*. Some points are marked (A+inspection) indicating that the area should also be examined.

It is beneficial to work with the parents in the observations of their child's development. This can be done by providing the parents with an overview for the next visit and recommending that they make note of their child's hearing, vision and other skills. This type of information could be developed by the State.

Checklists like these give the impression that age-related routine examinations are central in the prophylactic health care of children. As mentioned previously in this report, the "individual health care supervision" (*individuelle helseovervåkingen*), a knowledge of the individual child and its environment, is just as important. Examinations must always be seen in relation to this background information (refer to the points on past history at the beginning of each checklist for the different age-groups).

The checklists can also be regarded as the framework for the medical knowledge of health personal. This depends on the fact that the health card is organized such that information is easily available, and that the examination findings, environmental surroundings and developments are systematically recorded. This is not the case with the health card of today, where important data is scattered to different locations. In correlation with the overview of time-related check-ups, there should also be included a key word, chronological summary of elements that can be of importance for the health of the child.

Regarding development

It is essential to have an extensive knowledge of the developmental stages of a child, in order to be able to discover abnormal development, to perform area specific examinations and to make decisions about possible referral and follow-up. None the least, it is important to be able to have a meaningful dialogue with the parents and to be able to provide information in answer to their questions about their child's development.

Knowledge of the normal development and behaviour of a child at different ages also provides a basis for evaluating the clinical findings one must usually obtain. It is recommended that the health center nurse and physician have a general knowledge of child development, and that they are able to obtain an impression of the child's behaviour and development based on the observations and information provided by the parents.

Evaluation of development is a detailed examination which requires thorough knowledge and a theoretical understanding of a child's psychomotoric development, more extensive than that which a nurse and doctor usually have. There is no established basis for screening, neither regarding the evaluation of development, nor regarding milestones of development, and there are currently no guidelines provided by the State.

The key words for development, provided in the checklist, are therefore intended as an examination aid for a busy schedule. They provide an overview of the various skills associated with the different age-groups. It is essential to look at these skills in an overall developmental perspective.

In the column for *Follow-up/Referral* there are specific skills that should create alarm if they cannot be confirmed by the parents or observed during examination of the child. It does not necessarily imply that the child is developing abnormally, but rather that 90% of the children in that age-group have mastered that skill.

Development must be viewed on the basis of observations provided by the parents (A) + individual observations of contact and spontaneous movement + previous notations on the health card.

9.1.1 Neonates

(This refers to a general examination of all children)

General

Encouragement to the child and parents!

- Information obtained regarding the family history, the pregnancy and delivery
- Questions and concerns of the parents, used as the basis of examination

Skin

Birthmarks

Cyanosis (A + inspection)

Jaundice

Eyes/sight

Eyeball and the surrounding areas

Red reflex

Ears/hearing

Evaluation of risk, OAE or ERA when indicated

Inspection: Malformation of the outer ear or surrounding areas

Mouth/throat

Cleft lip and palate

Sucking reflex (A)

Neck/chest

Enlarged m. sternocleidomastoideus

Asymmetry

Heart

Auscultation

Cardiac symptoms (A)

Lungs

Auscultation – respiratory sounds on both sides?

Tachypnea (A + inspection)

Stomach/intestines

Palpation of the abdomen (enlarged liver/spleen/kidneys)

Anus

Genitalia

Descended testes

Urethral opening (boys)

Genital area (girls)

Head/back

Inspection

Palpation of the fontanelle

Measurement of head circumference

Scoliosis and other asymmetry

Sacral fistula

Hips/legs

Evaluation of risk factors
Ortolani-Barlow (2 times)
Deformities of the foot

Development

Skills relevant for this age:

- Spontaneous movements – activity in all extremities lying supine or prone
- Moro reflex, grasp reflexes of the hands and feet
- Symmetry
- Establishment of contact (A + inspection)

Length/weight

Weight and length

Lab tests

Guthrie screening test (*incl. testing for phenylketonuria (Føllings test), TSH*)

Follow-up/referral when indicated

Contact with the local health center prior to hospital discharge in the case of special needs children, requiring an early home visit or other considerations.

To be included in the patient record

- Findings which indicate the need for follow-up/referral
- Examinations which have not been completed

9.1.2 Home visit (1-2 weeks)

General

Encouragement to the child and parents!

- Information obtained regarding the family history, the pregnancy and delivery
- Information regarding the child's health record.
- Questions and concerns of the parents

Skin

Jaundice

Inspection of the navel

Atopy/skin disorders in the family (A)

Neck

Torticollis

Behaviour/contact

Temperament.

Does the child initiate contact?

Do the parents talk baby-talk with the child?

Routine questions regarding feeding

Breast-feeding

Premature infants: Vitamin and iron intake

Other routine questions

Does the child sleep on its back?

Follow-up/referral in the case of:

- Lacking contact ability
- Asymmetrical patterns of movement
- Torticollis
- Hypertonia/hypotonia

To be included in the patient record

- Findings which indicate the need for follow-up/referral
- Feeding

9.1.3 6 weeks

General

Encouragement to the child and parents!

- Information obtained regarding the family history, the pregnancy and delivery
- Information regarding the child's health record.
- Questions and concerns of the parents

Skin

Atopy

Jaundice

Eyes/sight

Red reflex

Strabismus

Ears/hearing

Reaction to sound (A)

Neck/chest

Torticollis

Heart

Auscultation

Cyanosis

Fatigue (A)

Lungs/respiration

Tachypnea (A + inspection)

Genitalia

Descended testes

Head

Inspection of head shape

Palpation of the anterior and posterior fontanelle

Head circumference

Hips/extremities

Ortolani-Barlow abduction test

Deformities of the feet (pes adductus)

Symmetrical movement of the arms and legs

Development and contact ability

Is the child's development as expected for social functioning and contact ability, as well as fine motor development and gross motor development?

Skills relevant for this age:

- Attention, eye-contact and awareness (eyes follow moving objects)
- Smiling (A)
- Cooing (*koselyder*)
- Lively movements with the arms and legs
- Ability to turn the head from side to side while lying supine
- Pattern of flexion in the arms and legs
- Point of gravity is chest/face lying prone

Length/weight

Weight

Length when indicated (or upon parents' request)

Routine questions regarding feeding

Breast-feeding or formula-feeding

Cod liver oil supplements (*Tran*) or other vitamin supplements

Follow-up/referral in the case of:

- Lack of eye-contact, smiling or awareness
- Suspicious murmur or other symptoms/signs of cardiac disease
- Uncertainty about abduction ability in the hips
- Suspicion of a foot deformity
- Asymmetrical movements, torticollis or obvious hypertonia/hypotonia
- Jaundice and pale faeces and/or elevated level of conjugated bilirubin
- Concern for the child or for the family
- Parents' own concerns

To be included in the patient record

- "√" in the square for each organ (organ system) found to be normal or where specific information has been given
- "T" for findings that require follow-up/treatment, along with a more detailed comment on the control sheet
- Feeding

9.1.4 3 months

General

Encouragement to the child and parents!

- Questions and concerns of the parents

Eyes/sight

Follows objects with the eyes

Ears/hearing

Reaction to sound (A)

Hips/extremities

Ortolani-Barlow abduction test

Position of the feet

Length/weight

When indicated (or upon parents' request)

Head

Head circumference

Development and contact ability

Is the child's development as expected for social functioning and contact ability, as well as fine motor development and gross motor development?

Skills relevant for this age:

- Glance/head turns toward sound
- Established eye-contact, smiling, active vocalization
- Response to contact "with the entire body"
- Opens hands periodically, grasps not only to the midline but also to the sides
- Point of gravity in the abdomen lying prone
- Rests on the elbows and underarms, holding the head in the midline position, lifted to 90°.

Routine questions regarding feeding

Breast-feeding or formula-feeding

Cod liver oil supplements (*Tran*)

Other vitamin supplements

Porridge and the type of grain (from 4-6 months of age)

Follow-up/referral in the case of:

- Concerns from the parents
- Own concerns for the child or the family in general
- Suspicion of a hearing deficit
- Abnormal abduction in the hips
- The child's gaze does not follow moving objects
- The child does not lift its head in the prone position

To be included in the patient record

- "√" in the square for each organ (organ system) found to be normal or where specific information has been given
- "T" for findings that require follow-up/treatment, along with a more detailed comment on the control sheet
- Feeding

9.1.5 6 months

General

Encouragement to the child and parents!

- Questions and concerns of the parents
- Anything new since the last control?

Eyes/sight

Impression of the child's sight capabilities (A)

Any curiosity/interest in the objects in the room?

Strabismus

Ears/hearing

Impression of the child's hearing (A)

Does the child turn its head towards sounds?

Inform the parents about what to pay attention to at home

Heart

Auscultation

History

Head

Head circumference

Hips

Ortolani-Barlow abduction test

Development and contact ability

Is the child's development as expected for social functioning and contact ability, as well as fine motor development and gross motor development?

Skills relevant for this age:

- Increasing interest in the near and distant surroundings, with a gaze that follows moving objects in a plane of 180°
- Verbalises actively, produces consonants and listens to its own voice. (A)
- Eye-hand-mouth co-ordination. Grips and releases objects with both hands, switches objects from one hand to the other and places objects in its mouth. Whole hand grip.
- Head control
- Obvious desire to change position and to lift itself from the floor while lying prone or supine
- Reaches for objects. Stretches arms up into the air to be lifted up. (A)
- Supports itself on outstretched arms with open palms lying prone. Legs spread from each other.

Length/weight

Weight

Length when indicated

Routine questions regarding feeding

Breast-feeding or formula-feeding

Cod liver oil supplements (*Tran*)

Other vitamin supplements

Porridge and the type of grain, or possible bits of bread

Follow-up/referral in the case of:

- Uncertainty regarding contact ability. Lack of smiling/laughter.
- Possible hearing deficit - *Referral!*
- The child does not grasp after objects, does not release objects easily from each of its hands
- The child does not demonstrate an interest in moving around, or making attempts at getting up from the floor (techniques for getting up include using outstretched arms for support or stretching out the arms when lying supine as if to be picked up off the floor)
- Doubts regarding hip abduction - *Referral!*
- Strabismus - *Referral!*
- Suspicious murmur or other symptoms/signs of cardiac disease
- Concerns for the child or the family
- Parent concerns

To be included in the patient record

- “√” in the square for each organ (organ system) found to be normal or where specific information has been given
- “T” for findings that require follow-up/treatment, along with a more detailed comment on the control sheet
- Feeding

9.1.6 8 months

General

Encouragement to the child and parents!

- Questions and concerns of the parents
- Anything new since the last control?

Eyes/sight

Impression of the child's sight capabilities (A)

Any curiosity/interest in the objects in the room?

Strabismus

Ears/hearing

Impression of the child's hearing (A)

Does the child turn its head towards sounds?

Distraction test

Back/head

Head circumference

Development and contact ability

Is the child's development as expected for social functioning and contact ability, as well as fine motor development and gross motor development?

Skills relevant for this age:

- Active socialization and play – waves, plays patty-cake, etc. (A)
- Distinguishes between strangers and friends and family
- Largely radial grip
- Changes position lying prone (A)
- Imitates sounds and uses consonants (A)

Routine questions regarding feeding

Types of meals

Follow-up/referral in the case of:

- Uncertainty regarding contact ability, lack of smiling and laughter
- Lack of discrimination between strangers and family and friends
- Suspicion of a hearing deficit - *Referral!*
- Difficulty in switching objects from hand to hand and asymmetrical use of hands
- The child does not demonstrate an interest in moving around, or making attempts at getting up from the floor
- and does not roll from stomach to back and back to stomach
- Abnormal muscle tone or an asymmetrical pattern of movement
- Concerns for the child or the family
- Parents' concerns

To be included in the patient record

- “√” in the square for each organ (organ system) found to be normal or where specific information has been given
- “T” for findings that require follow-up/treatment, along with a more detailed comment on the control sheet
- Feeding

9.1.7 1 year

General

Encouragement to the child and parents!

- Questions and concerns of the parents
- Anything new since the last control?

Eyes/sight

Impression of the child's sight capabilities (A)

Interest in distant objects? (A)

Strabismus

Ears/hearing

Impression that the child is able to hear soft-spoken speech/weak sounds? (A)

Does the child turn its head towards sounds? (A)

Heart

Auscultation + A

Lungs

Obstructive episodes? (A)

Do the parents smoke?

Head/Back

Head circumference

Hips

Ortolani-Barlow abduction test

Genitalia, boys

Descended testes

Development and contact ability

Is the child's development as expected for social functioning and contact ability, as well as fine motor development and gross motor development?

Skills relevant for this age:

- Playful socialisation, whereby the child playfully accepts objects and offers objects in return.
- The child looks for hidden toys. (A)
- Pincer grip of both hands. The child is able to carry a building block in each hand.
- Crawls on hands and knees. Is able to sit up and sits balanced. Gets up off of the floor with support of something to hold onto, walks without the need for support. (A)
- Responds to its name, imitates sounds and says, mummy and daddy specifically. (A)

Length/weight

Weight and length when indicated

Laboratory tests

Hb of immigrants coming from developing countries, otherwise taken liberally

Routine questions regarding feeding

Breast-feeding or formula-feeding

Cod liver oil supplements (*Tran*)

Other vitamin supplements

Follow-up/referral in the case of:

- Uncertainty about the child's contact ability, "babbling" and language development
- Suspicion of a hearing deficit -*Referral!*
- Absent pincer grip or developmental delay in standing
- Lack of crawling and general movement on the floor.
- Suspicion of an abnormal hip abduction -*Referral!*
- Strabismus -*Referral!*
- Suspicious murmur or other symptoms/signs of cardiac disease
- Concerns for the child or the family
- Parents' concerns

To be included in the patient record

- "√" in the square for each organ (organ system) found to be normal or where specific information has been given
- "T" for findings that require follow-up/treatment, along with a more detailed comment on the control sheet
- Feeding

9.1.8 18 months

General

Encouragement to the child and parents!

- Questions and concerns of the parents
- Anything new since the last control?

Eyes/sight

Impression of the child's sight capabilities (A)

Interest in distant objects? (A)

Strabismus

Ears/hearing

Impression that the child is able to hear soft-spoken speech/weak sounds? (A)

Does the child turn its head towards sounds? (A)

Development and contact ability

Is the child's development as expected for social functioning and contact ability, as well as fine motor development and gross motor development?

Skills relevant for this age:

- Uses individual words, understands several others (A)
- An increasing vocabulary. Understands basic phrases
- Supports its own head and feeds itself
- Walks, gets up and sits down

Length/weight

Height

Weight when indicated

Follow-up/referral in the case of:

- Uncertainty regarding language development, and a conscious choice of individual words
- Suspicion of a hearing deficit *-Referral!*
- Persistently lacking playful socialisation
- Not fully developed pincer grip
- The child is unable to lift itself and to move along furniture
- Strabismus *-Referral!*
- Concerns for the child or the family
- Parents' concerns

To be included in the patient record

- "√" in the square for each organ (organ system) found to be normal or where specific information has been given
- "T" for findings that require follow-up/treatment, along with a more detailed comment on the control sheet
- Feeding

9.1.9 2-3 years

General

Encouragement to the child and parents!

- Questions and concerns of the parents
- Anything new since the last control?

Skin

Eczema (A)

Eyes/sight

Impression of the child's sight capabilities (A)

Interest in distant objects? (A)

Able to see from a distance?

Strabismus

Ears/hearing

Impression that the child is able to hear soft-spoken speech/weak sounds? (A)

Does the child turn its head towards sounds? (A)

Oral hygiene

Inspection of the teeth + A

Lungs

Obstructive episodes? (A)

Parents' smoking habits as a routine question

Genitalia

Last check of the testes

Hips/extremities

Walking without a limp

Development and contact ability

Is the child's development as expected for social functioning and contact ability, as well as fine motor development and gross motor development?

Skills relevant for this age:

- Able to handle a spoon and a cup without any great difficulties (A)
- Pronated pencil grip, scribbles
- Likes basic puzzles
- Hops, runs, climbs stairs, can kick a ball (A)
- Puts together words, names the various parts of the body (A)

Length/weight

Length and weight when indicated

Routine questions regarding nutrition?

Cod liver oil supplements (*Tran*)?

Cholesterolemia or knowledge of early coronary heart disease (< 50 years old) in the family

Follow-up/referral in the case of:

- Slow progression of language development and understanding
- Suspicion of a hearing deficit -*Referral!*
- The child is unable to “keep up” with children of the same age
- Strabismus and questions regarding sight -*Referral!*
- Concerns for the child or the family
- Parents’ concerns

To be included in the patient record

- “√” in the square for each organ (organ system) found to be normal or where specific information has been given
- “T” for findings that require follow-up/treatment, along with a more detailed comment on the control sheet
- Feeding

9.1.11 5 years - examination at the start of school

A thorough medical examination should be performed when the child will begin its school years.

Screening

- Information should be given regarding the possibility of becoming near-sighted during the school years.
- Auscultation of the heart, along with possible patient information of increased fatigue.
- Measurement of height
- Specific patient history regarding episodes of obstructive respiration is recommended as obligatory screening information

Focused examination

This is moulded to the individual child, based on knowledge about the child, family and close contacts, the wishes of the child/parents and the situations that arise during the period of contact between the family and the health centre. The examination should not be geared entirely towards medicine, but should also focus on aspects of well-being, social functioning, communication, interests, ability to concentrate and behaviour.

Any amount of suspicion of abnormal vision, strabismus or other signs of decreased eye functioning, must be referred, evaluated and treated as soon as possible.

The aim is to identify children with a need for extra help and support and to evaluate the situation with regards to school performance. This applies to children with a chronic illness or functional handicap that are previously known to the health centre, in addition to “new” problems. Especially relevant to this age-group are difficulties in behaviour, concentration and motor movement. The consultation may sometimes provide a gateway into children and families struggling with psychological difficulties. Furthermore, this contact with the health service can provide a possibility for more individual information concerning the health of the child.

A well performed examination at the start of school is an essential aspect for the health centre's understanding of the child and is a required element in the follow-up of children with special needs.

The parents should be offered the opportunity to go through their child's health examination, especially considering a discussion of the child's well-being at school. This also provides the parent's with the opportunity to talk about how the health issues of the child can be discussed with the school. With the parents' permission, the school may be given background information, in order that the necessary provisions can be made. This can include difficulties in seeing the chalkboard, difficulties in hearing what is being said, asthma and allergy problems, concentration difficulties, motor movement restlessness, clumsiness, behavioural problems and possible situations that might require special consideration.

Parent orientation on the health centre activities

In correlation with the examination at the start of school, parents should be given an orientation on the work of the school health activities (*skolehelsetjenesten*) (preferably also a written letter of orientation). This should include information about how the parents are able to contact the school nurse and the physician in charge of the school health activities. The health personal oath of secrecy (*taushetsplikten*) should be mentioned and possibly also a short overview of routine treatment included under the informed permission.

In association with the start of school and the initial health care examination, the following points are recommended:

- Advance notice to parents with information about the aims of the particular health care activity and a request to report any special wishes for the health care activity
- Advance notice to the teacher
- A review of the child's past medical history and development
- Provide the parents with a report about the findings of the examination
- Provide the school with a report about the findings of the examination (after having asked the parents)
- Systematising and forwarding relevant information

9.1.12 Supplementary examinations during the school years

The main task of the school health service relates to issues for which the health service shares responsibility with the school system. The school plays an important role in nutrition, social skills, psychological preventive medicine, physical activity, sexuality and contraception, tobacco, alcohol and other stimulants. These areas are discussed by the healthcare committee 2.

Much like the examinations prior to starting school, the health examinations are not based upon screening, but rather focused examinations.

Following the guidelines of the healthcare committee, two screening examinations follow the examination prior to starting school. These include: Measurement of height around the 8 years of age and screening for scoliosis at around 12 years of age. It is discussed as to whether height measurement should also be routinely checked at age 12.

It is recommended, despite discussions for and against screening, that the students also be offered individual follow-ups two or three times throughout their schooling years. It would be most logical to have these focused examinations at age 8, 12 and 17. These consultations would best be used in order to assure successful school functioning, with focused examinations in combination with partly general, age-specific advice.

The consultation should primarily focus on the general health of the child, based on the needs of the child and its parents, following the principles of the examination at the start of school.

Thereafter, emphasis is on contact with students and an overview of the general health status of students and issues at school which can affect the students' health and well-being.

The school health service should aim to emphasise the positive aspects of health examinations in a combined effort between teachers, parents and others responsible for creating an atmosphere conducive with a healthy growth environment.

Routine examination guidelines in The School Health Service

5 years (at the start of school)

- Testing of vision
- Heart: Auscultation + patient history
- Lungs: Patient history regarding obstructive episodes
- Measurement of height

Additionally: Focused medical examination on the basis of previous knowledge regarding past history of health problems, information obtained from parents or others present and findings/information obtained by the health center.

8 years

Screening

Measurement of height

Focused medical examination

Examination focusing on the individual child, based on knowledge of the child, family and growth environment, wishes of the child/parent(s), information provided by the school and findings/information obtained by the health center.

12 years

Screening

Spine: Scoliosis

Measurement of height

Focused medical examination

Examination focusing on the individual child, based on knowledge of the child, family and growth environment, wishes of the child/parent(s), information provided by the school and findings/information obtained by the health center.

16-17 years

Focused medical examination

Examination focusing on the individual child, based on knowledge of the child, family and growth environment, wishes of the child/parent(s), information provided by the school and findings/information obtained by the health center.