



**Paediatric Section of the
Union of European Medical Specialists**

EUROPEAN TRAINING REQUIREMENTS

SCIENTIFIC SOCIETY:

European Society for Paediatric Infectious Diseases

SUBSPECIALITY:

Paediatric infectious diseases

1. General introduction:

Preface

Paediatrics is an independent medical specialty based on the knowledge and skills required for the prevention, diagnosis and management of all aspects of illness and injury affecting children of all age groups from birth, through adolescence and up to the age of 18 years. Paediatrics also encompasses child health and covers growth, development, health promotion and prevention of disease. The influence of the family and other environmental factors also play a large role in development and for those children with chronic conditions, many require life-long management with smooth transition of care from paediatric to adult services.

We believe therefore that all doctors practising Paediatric Infectious Diseases and Immunology (PID) require a solid basic training in General Paediatrics, as set out by many National Training Authorities (NTAs), and in the recommended European Common Trunk Syllabus, approved by the European Academy of Paediatrics - Union Européenne des Médecins Spécialistes (EAP-UEMS). This basic paediatric training, which should be a minimum of 3 years duration, should be the prelude to specialist training, and will underpin many of the principles set out in this specialist syllabus.

This document sets out the minimum requirements for training in Tertiary Care Paediatric Infectious Diseases. PID is a subsection of the Tertiary Care Group of the EAP-UEMS through the European Board of Paediatrics (EBP).

Introduction

Infectious diseases remain a major cause of morbidity and mortality in children. Infections in children differ from those in adults in aetiology, epidemiology, pathogenesis, management and prevention. The emergence of new problems such as new pandemic Influenza strains, new virus such as SARS and MERS Coronaviruses, the re-emergence of known diseases, such as tuberculosis, and the increasing incidence of drug resistance among many different pathogens implies that there is a need for paediatric specialists in this field. Moreover, the increasing antimicrobial resistance of bacterial pathogens leads to necessity of antimicrobial stewardship supported by paediatric infectious diseases specialists.

Because complex immunosuppressive treatments are used more frequently in paediatrics, PID specialists should also be involved in the management of infections in immunocompromised hosts.

In order to achieve high standards of patient care and scientific research in the field of paediatric infectious diseases, high quality training programmes are indispensable. This syllabus intends to outline the requirements for trainees and training-centres with the goal to improve the level of care for children with infectious diseases and immune disorders to high standards. Furthermore it tries to harmonise training-programs between different European countries.

Paediatric infectious diseases has a considerable overlap with other subspecialities, especially immunology, since infectious diseases frequently are the presenting

symptoms of an underlying (immunological) disease. Furthermore infections have a immunopathological background. This syllabus also includes a basic training in immunology related to the understanding of the host response in children with infectious diseases and immunodeficiencies. It serves also as a basis for more in depth studies on primary immunodeficiencies for those trainees aiming to work in a tertiary care centre specialised in the care of these patients. When combined with add-on modules in immunology, this syllabus provides a program for specialists in a paediatric immunology as well.

Composition of the syllabus subcommittee

Nico Hartwig – The Netherlands, writer
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Methodology to develop the syllabus

This syllabus is a revision of the 2004 edition. A primary draft, based on the 2004 edition, was made by Marieke Emonts, fellow at that time, and Andrew Cant. From 2014 writing of the syllabus was taken over by Nico Hartwig who guided the process of writing, commenting and approval by the ESPID board. All members of the Educational Committee of ESPID between the years 2013-2017 actively participated in several discussion-rounds and have made several comments during the process. After the first draft was written, a discussion round was held among “Young ESPID”-members and fellows at the meeting in Dublin. A second draft was presented to the members on the ESPID website for comments. The final version which was approved during the 2017 meeting in Madrid was approved by the ESPID board.

2. Aims of training

2.1. Content of training knowledge

- General:** On the basis of this training, European PID specialists should have an understanding of the scientific principles of infectious diseases, microbiology, virology, mycology, parasitology and the immune response.
- Epidemiology:** To have knowledge of mortality and morbidity rates of infectious diseases and factors influencing these rates.
To have knowledge of methods of data collection at national and local level, including notifiable diseases.
- Physiology:** To have knowledge of structure, function and development of the immune system.
To have knowledge of microbes and the host-pathogen interaction.
- Pathophysiology:** To have knowledge of microbes and the host pathogen interaction with sufficient attention to normal and disturbed defence mechanisms of the host.
- Pathophysiology of underlying conditions:** To have knowledge about the relationship between infections and anatomical abnormalities, surgical procedures, neonates, malignancies, presence of prosthetic material.
- Diagnostics:** To become acquainted with microbiological and immunological laboratory diagnostics in relation to infectious and immunological diseases.
To gain an understanding of the principles of bacterial and viral culture, ELISA, PCR techniques, flow cytometry.
To know how to manage clinical laboratory samples, to maintain quality standards and to ensure the safety of its staff.
To become acquainted with imaging diagnostics in relation to infectious and immunological diseases.
To become acquainted with laboratory diagnostics in relation to immunological diseases, genetics and transplant biology.
- Diseases:** To have solid knowledge of clinical signs and diagnostic criteria of infectious and immunologic diseases.
To have solid knowledge of the prevention of infections in immunocompromised patients, either primary, acquired (secondary) or iatrogenic.

To have knowledge of clinical aspects and diagnostic criteria of auto-immunity and systemic auto-immune diseases.

Treatment:

To have solid knowledge of treatment of infectious and immunologic diseases.
To have knowledge of antimicrobial treatment of infections, including antimicrobial stewardship.
To obtain knowledge of immunomodulating therapy including immunoglobulins, monoclonal antibodies, cytokines and other immunotherapy.
To have knowledge of possibilities of haematopoietic stem cell transplant and gene-therapy as curative treatments for primary immunodeficiencies.
To have knowledge of preventative strategies such as immunisations and prevention of outbreaks of hospital infection and communicable diseases in the society.

Pharmacology:

To have knowledge of antimicrobial agents, indications for use, microbial susceptibility, interactions and toxicity.
To have knowledge of pharmacodynamic and –kinetic parameters in different populations (neonates, children, adolescents, disturbed kidney function or liver function).

Follow-up/complications:

To have knowledge of outcome of different infectious diseases.
To have knowledge how to organise outpatient clinics related to complications due to infectious diseases.
To be able to conduct quality assurance (e.g. audits) and research to seek cures for diseases or their complications

Prevention:

To have solid knowledge of methods to prevent spread of infections, antibiotic prophylaxis, and infection prevention in travellers to (sub)tropic countries.

Vaccination:

To have solid knowledge of the vaccination-program for healthy children, vaccination for children with specific conditions (e.g. asplenia and transplantation) and additional vaccinations for children traveling abroad.

Ethical issues:

To have knowledge of ethical issues pertaining research and clinical management.

2.2 Content of training skills

Taking history:

History taking with an emphasis on specific underlying conditions, microbial exposure, animal contacts, travel and vaccinations.

<i>Physical examination:</i>	Clinical examination to recognise specific infectious conditions. Skills to observe complications and underlying conditions including anatomical abnormalities.
<i>Practical procedures:</i>	Procedures to perform microbiological diagnostics like venepuncture for blood culture, lumbar puncture, urethral catheterisation, fine needle aspiration and skin biopsies.
<i>Diagnostic procedures:</i>	An understanding of the routine and specialised application of diagnostic procedures An understanding of the speciality-related laboratory tests, including safety aspects. Interpretation of test results in specific situations.
<i>Clinical reasoning:</i>	Interpretation of clinical signs and symptoms in relation to infectious diseases and immunological disorders Interpretation of test results in relation to disease management.
<i>Therapy:</i>	Advise and applying antimicrobial therapy for infectious diseases Prudent use of antimicrobial therapy in relation to pathogen susceptibility and resistance issues (antibiotic stewardship). Advise and applying immunological treatments including immunoglobulins, monoclonal antibodies and/or cytokines
<i>Communication:</i>	Development of effective counselling and communication skills with children, young people and parents, including appropriate approach to distressed and bereaved parents To disclose “bad news”. To support staff, understand team dynamics and to respond to it.
<i>Technology:</i>	Not applicable
<i>Teaching:</i>	Be familiar with teaching and presentation methods. Experience in teaching should be provided during the specialist training.
<i>Science:</i>	Interpret scientific literature and determine value for patient care Be familiar with research methodologies.
<i>Personal skills:</i>	Develop leadership within the clinical team. Acquire an attitude of continuing professional development Gain insight into management roles within the unit/hospital Understand financial management skills

2.3. *Purpose of training*

The purpose of the training in Paediatric Infectious diseases is to educate paediatricians who are involved in secondary or tertiary care and who are treating children with infectious diseases, immune disorders or immunodeficiencies.

After finishing this training program the trainee has acquired all the necessary knowledge and skills to provide high standard clinical care within the framework of a specialised tertiary care unit in both the in-patient and out-patient setting.

3. Training program

3.1. Structure of the program

A medical doctor who has successfully completed his/her training of at least 3 years in general paediatrics will be eligible for access to further specialist training in PID. Clinical training in PID of a minimum of 24 months (full time equivalent) is considered adequate; in some countries a longer training may be required.

The precise training programme will vary from centre to centre. We recommend that the programme be designed locally to ensure that the trainee acquires competencies in several key areas.

Each trainee should be allocated to a mentor/educational supervisor at the commencement of training. The mentor/educational supervisor is responsible that assessments will take place and he/she monitors that the trainee is recording his/her competencies. In some countries a final certification in Paediatric Infectious Diseases is undertaken, but this is not mandatory and should not replace the process of mentoring and professional assessment.

Each area of competency set out below comprises a specific area of practice specific to paediatric infectious diseases. In addition, more general areas of competency should be developed, for example clinical governance and audit.

The areas of competency can be identified from the curriculum. In addition to the training necessary to support the development of the competencies, it is recommended that the trainee develops expertise in specific areas relevant to the practice of paediatric infectious diseases, for example:

- Laboratory diagnostics
- Neonatal infections
- Infections in the immunocompromised host
- Transplantation medicine
- HIV/AIDS care

3.2 Key competencies

Laboratory management: the trainee will be able to describe the logistic procedures that patient samples undergo in the microbiological and immunological laboratory.

Clinical consultancy: The trainee will demonstrate increasing skills to advice other physicians in diagnostic procedures and treatment pertaining infectious diseases in their patients.

Outpatient care: The trainee will demonstrate skills to run an outpatient-clinic and is able to carry out administrative duties, to participate in organisation and to optimise the clinical care pathways.

Transplantation care: The trainee will demonstrate skills to participate in care for patient undergoing organ or stem cell transplantation. The trainee is able to advise prophylactic treatment, to treat infections in these patients and to optimise protocols pertaining infectious diseases.

Adult care: The trainee is educated in infectious diseases in adults so that he has experience in how adults are treated and thereby understands differences between infectious diseases in adults and children.

Communication skills and counselling: The trainee will demonstrate increasing skills in communication with parents and staff, both individually and as part of a team, during their training. This includes experience at breaking “bad news”, handling mortality and discussing prognosis.

Science: The trainee is able to perform clinical or basic research under supervision.

Teaching: The trainee is able to educate staff and paediatricians on subjects in the area of infectious diseases and immunology.

3.3 Experience in other areas

The trainee will develop knowledge and expertise in more detail within other areas, such as paediatric surgery, paediatric neurology, paediatric cardiology, neonatology and intensive care medicine. With increasing knowledge and expertise the trainee will gain a fuller appreciation of infection risk and treatment options.

3.4 Recording of progress

Each trainee develops a portfolio which will include an assessment framework to record the evolution of competencies. This will be completed by the trainee and mentor/supervisor who will both sign the trainee off at the requisite level at regular intervals.

The portfolio should comprise:

- Evidence of completion of the key competencies of the curriculum.
- Reflective notes covering the key competencies of the curriculum
- Evidence of attendance of scientific meetings
- Records of educational activities undertaken
- Copies of publications produced during traineeship
- Copies of presentations held by the trainee
- Audits performed by the trainee
- Curriculum vitae of the trainee
- The syllabus of the training programme

3.5 Duration of the training:

Duration of the training is at least 24 months, and longer as it is required by local authorities.

Duration may be shortened by 6 months if the trainee has a PhD degree pertaining the field of infectious diseases or immunology.

PID trainees should spend the majority of their attachment in an accredited tertiary paediatric ID centre with close working relationships with diagnostic laboratories

- 2 months should be spent in regional / supra-regional paediatric HIV centres
- 2 months should be spent in clinical laboratory attachments
- 2 months should be spent in paediatric immunology
- The trainee is encouraged to spend time in:
 - adult infectious diseases
 - allergy

All trainees must complete 8 weeks in total of laboratory attachments in clinical microbiology, virology, mycology, or immunology. It is recognised that service commitments can make it difficult to achieve blocks of time for laboratory experience. These can therefore be completed in any combination of days or weeks over the training programme. All trainees should receive a minimum of at least one week's experience in microbiology, virology and immunology.

3.6 Assessment and monitoring of training

The assessment of training competence is an issue for NTAs. However, ESPID and EAP have agreed the principles of such assessments which should include four separate components of competence – assessment of knowledge, assessment of experience (e.g. logbooks), assessment of work competence (workplace assessment) and a face to face oral assessment. There should be some form of certification of completion of training (or 'Diploma') issued by the NTA, that recognizes all aspects of assessment that have been satisfactorily completed.

A mentor/educational supervisor is designated to each trainee at the beginning of the training programme.

The mentor/ educational supervisor advises the trainee on important training issues and reviews the trainee's progress at least at yearly intervals. In the first year an additional interview is held at 6 months.

The trainee maintains a personal portfolio as described above, where the trainee documents relevant training experiences. This portfolio and the trainee's progress through various levels of competency are regularly reviewed by the mentor/ educational supervisor and trainee. Successful achievement of competency is certified by the mentor/educational supervisor.

Accompanying the assessment framework, the certification should be detailed and state:

- The duration of the training
- The centres in which the trainee received education
- Describe acquired knowledge and skills

We recommend that each national body maintains a register of trainees and is provided with suitable certification of satisfactory training.
Furthermore, we recommend that national bodies or the scientific society (ESPID) develop systems for the regular review of training centres for Paediatric Infectious Diseases.

4. Trainee prerequisites

The trainee must have:

- University degree in Medicine
- Completed a core training in paediatrics
i.e. at least the common trunk of 3 years as established by the UEMS
or an accredited paediatric training (minimum 3 years) outside Europe

5. Training institutes and requirements

5.1 Training centres

Type of unit	Academic centre
Size of unit	not specified
Staff	min. of 2 fte (= fulltime equivalent)
Equipment	not applicable
Quality assurance	Accreditation by national bodies
Supporting departments	Laboratory for microbiology Laboratory for virology Laboratory for immunology Neonatology intensive care Paediatric intensive care Paediatric oncology and/or transplantation ward (stem cell or organ transplant)

The trainee is allowed to follow specific training in affiliated training centre with respect to one of the above departments when not present in the training centre itself.

5.2 Trainers

Each training-centre must identify an educational supervisor. This individual will be a senior specialist in Paediatric Infectious Diseases with at least 5 years of work experience.

The educational supervisor has teaching experience at an academic level.

The educational supervisor is responsible for developing a draft for a training programme.

The educational supervisor is responsible for identifying, supervising and allocating a mentor to the trainee or can act him-/herself as mentor.

The mentor/educational supervisor meets regularly with the trainee and when applicable with the mentor for feedback on the programme and adjustments necessary for acquiring the competencies.

Mentors are recruited from the staff. They undertake continuing professional development to equip them with the necessary skills to mentor the trainee.

Mentors have a duty to the trainee under their supervision to meet regularly, to make assessments of their competencies and to act as an advocate for the trainee to ensure that the individual obtains the optimal training opportunities from the programme.

5.3 Accreditation

For each country of the EU, a list of training programme, training centres and programme directors should be compiled and updated on an annual basis. This may be facilitated by ESPID and, where such body is not present, may provide a central registry for such a list.

Each centre is defined by the available modules and teachers.

Accreditation is given by the European Board of Paediatrics (EAP), based on recommendations of the national guidelines of the country or the scientific society (ESPID). EAP ensures that the national guidelines of a European country meet or exceed the minimal requirements of the training programs and training centres as defined in section 3 and 5.

6. Examinations

At present there are no plans for a centrally administered examination to licence practice as a Paediatric Infectious Disease specialist. Several European member countries currently have such certification and the training described in this document merely underpins this process and we anticipate these processes will be recognised.

Individuals holding their national Certificate of Completion of Specialist Training are eligible to work in other EU countries.

The process described in this document is intended to provide a framework whereby there may be confidence in the training of Paediatric Infectious Diseases specialists in each member country.

Appendix 1. Participating countries and current council

Participating countries EU-member:

Austria
Belgium
Bulgaria
Croatia
Cyprus
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
Italy
Ireland
Latvia
Lithuania
Luxembourg
Malta
Netherlands
Poland
Portugal
Romania
Slovakia
Slovenia
Spain
Sweden
United Kingdom

Participating countries non EU-member:

Iceland
Norway
Switzerland

Council:

Date:	:	July 2017
President	:	Adam Finn
Treasurer	:	Johannes Trück
Secretary	:	Fernanda Rodrigues
Officer responsible for education	:	Chrissie Jones

Appendix 2: competencies to be fulfilled

Specifications of the required level for different competencies on knowledge and skills

The competencies are classified according to CanMeds competencies

The competency level is according to Miller with the following explanation:

1 = orientation = heard of, not encountered in practice yet

2 = executed once = performed during the specified time-period under direct supervision

3 = independent = performed with supervisor available in hospital

4 = routine = performed with supervisor available at a distance e.g. by telephone

5 = transfer to others = able to teach to other persons/staff

I. Medical:

A. Knowledge:

1-18. Infectious diseases

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
1. <u>Organ-specific infections:</u>	3	4	5			
2. <u>Antimicrobial therapy:</u>	3	4	5			
3. <u>Prevention of infection:</u>	3	4	5			
4. <u>Epidemiology of infections:</u>	3	4	5			
5. <u>Immunity and Immunisation:</u>	3	4	5			
6. <u>Principles of post exposure prophylaxis in infectious diseases</u>	3	4	5			
7. <u>Bacterial infections:</u>	3	4	5			
8. <u>Important viral infections:</u>	3	4	5			
9. <u>Tropical infectious diseases and global child health:</u>	3	4	4			
10. <u>Mycobacterial infections:</u>	3	4	4			
11. <u>Congenital and Neonatal infections:</u>	3	4	5			
12. <u>HIV and Sexually transmitted infections:</u>	3	4	4			
13. <u>Parasitic infections:</u>	3	4	5			
14. <u>Infections in the immunocompromised patient:</u>	3	4	5			
15. <u>Fungal infections:</u>	3	4	4			
16. <u>Nosocomial infections</u>	3	4	5			
17. <u>Use of immunomodulating agents, immunoglobulins, cytokines, growth factors and immunosuppressive drugs including corticosteroids</u>	2	3	4			
18. <u>Advice for foreign travel</u>	2	3	4			

19-28. Immunology

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
19. <u>The immune system from the neonate to the adolescent:</u>	3	4	4			
20. <u>Humoral immunodeficiencies:</u>	3	4	5			
21. <u>Cellular immunodeficiencies:</u>	3	4	4			
22. <u>Complement disorders:</u>	3	4	4			
23. <u>Phagocyte disorders:</u>	3	4	4			
24. <u>Combined immunodeficiencies:</u>	3	4	4			
25. <u>Syndromal immunodeficiencies:</u>	3	4	4			

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
26. <u>IFNgamma/IL-12 pathway disorders:</u>	3	4	4			
27. <u>Other immunodeficiencies:</u>	3	4	4			
28. <u>Acquired immunodeficiencies</u>	3	4	4			
29. <u>Auto-inflammatory diseases</u>	3	4	5			

30. Psychosocial aspects

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Knowledge of psychosocial effect of the disease for the child	3	4	4			
Knowledge of the possibilities for psychosocial support	3	4	4			
Breaking bad news	3	4	4			
Assistance of parents during life threatening episodes or final stages of life	3	4	4			

31. Ethical aspects

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Knowledge of ethical dilemmas in the field of paediatric infectious diseases-immunology	3	4	4			
Involve ethical aspects in decision making	3	4	4			

32. Quality

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Knowledge of methods to judge quality of patient care	3	4	5			
Taking quality improving measures	3	4	5			
Development and implementation of protocols and guidelines	2	2	3			

B. Skills:

1. Technical skills

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Venepuncture	5	5	5			
Peripheral cannula insertion	5	5	5			
Lumbar puncture	5	5	5			
Urethral catheterisation	3	4	5			
Supra-pubic aspiration of urine	3	4	5			
Skin biopsy for fibroblast culture	1	2	2			
Bone marrow aspirate	1	2	3			

2. Cognitive skills

a. Self studies

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Formulate clear learning points about specific patient related problems	3	4	5			
Consult required specialists for the analysis of problems	3	4	5			
Evaluate shortcoming of own learning capabilities and taking measures to improve this	3	4	5			

b. Critical evaluation of knowledge sources

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Analyse clinical data, laboratory and other data	3	4	5			
Analyse published information on evidence	4	4	5			
Asses validity and applicability of the data analysed	4	4	5			

C. Attitude

1. Towards patients and parents

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Acknowledge the concerns of parents	3	4	5			
Information, communication and support for parents	3	4	5			

2. Towards colleagues

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Productive communication and collaboration with colleagues regarding all aspects of patient care, education and research	3	4	5			
Acknowledgement of the multidisciplinary character of the specialism	4	5	5			

3. Towards the society

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Adequate communication to the society regarding all aspects of infectious diseases and immunology	2	3	4			
Active contribution in the improvement of general healthcare	3	4	4			

4. Towards themselves

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others 5 = transfer	Required level			Own level		
	Months			Date		
	12	18	end			
Acknowledge personal capacities, emotional reactions and limitations in knowledge, skills, and attitude and the willingness to take appropriate measures to correct this	3	4	5			

II. Communication

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Good communication with families	3	4	5			
Gather information on the background of the patients' family	3	4	5			
Building a relationship with the patients' parents	3	4	5			
Give clear information to parents about their child's disease and involve them in the decision-making regarding their child's care and management	3	4	5			
Explain the role of different healthcare professionals to the parents	4	5	5			
Collaborate with others, even if the collaboration or communication is challenging	3	4	5			
Supply Information regarding the field or department to an extended public or media	1	2	3			

III. Collaboration

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Describe the role, expertise, added value and limitations of all members of the multidisciplinary team involved in patient care, education and research and administrative support of the sub specialism	3	4	5			
Make a multidisciplinary diagnostic and treatment plan together with members of a treatment team (including after care)	3	4	5			
In a multidisciplinary discussion not only bring in own specific expertise, but also accept and respect the opinions of other participants and involve these arguments in the decision making	3	4	5			
Possess communication skills to resolve misunderstandings and conflicts with and between members of the treatment team and where needed take the lead	3	4	4			
Is able to participate in "antimicrobial stewardship teams"	2	3	4			

IV. Organisation

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Function effectively in a hospital organisation, in particular in paediatrics	3	4	4			
Have access to and make adequate use of wide information regarding healthcare	3	4	4			
Being prepared as a member of the group to fulfil all tasks arising within the department	3	4	4			
Knowledge of the population-based approach of healthcare and the realise the consequences of this approach	3	4	4			
Participate in planning, budgeting, and evaluation of the jobs in a sub department	3	4	4			

V. Societal approach

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Knowledge of determinants of infectious diseases, based on results of scientific research	3	4	5			
Knowledge of the way government policies are developed and the potential positive and negative effects of these policies	2	3	4			
In the approach of an individual patient take individual determinants of disease into account and adjust diagnostics and treatment accordingly.	3	4	5			
Knowledge of notification programmes, disease surveillance, preventative measures, contact tracing, outbreak control	2	3	4			
Together with collaborators on regional and national level identify risk groups and use specific knowledge to prevent disease	2	3	4			
Dealing with the media	1	1	2			

VI. Knowledge and science

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Formulate a clinical question	4	5	5			
Signal own lacks in knowledge and expertise in clinical problems	3	4	5			
Formulate a plan improve own knowledge i. Perform literature search related to a clinical question ii. Use of relevant international databases iii. Assess literature content and quality iv. Develop a system to store and relocate relevant literature v. Appropriately request expert advice from others	3	4	5			
Formulate a research question	2	3	4			
Make a proposal to answer a research question: i. Perform a relevant literature search based on a research question ii. In relation to the conduction of research look for and collaborate with the right experts iii. Propose a methodological approach to answer a question	2	3	4			
Conduct research according to protocol	2	3	4			
Present research results	2	3	4			
Formulate new questions based on scientific results	2	3	4			
Knowledge of educational techniques best used for students, trainees and colleagues	2	3	4			

VII. Professionalism

Competence level 1 = orientation 2 = executed once 3 = independent 4 = routine 5 = transfer to others	Required level			Own level		
	Months			Date		
	12	18	end			
Professional behaviour	3	4	5			
Stress management and leading acute situations	4	5	5			
Ensure a good condition, both physical and mental	4	5	5			
Use the correct means to maintain and develop competencies	3	4	5			
Ongoing evaluation of knowledge and skills, and know ones own limitations	3	4	5			
Realise personal and professional aspects of the job and being able to analyse and solve personal problems in a professional environment	3	4	5			
Aim for a good balance between roles and responsibilities as a private and professional person and attempt to solve conflicting interests in a good manner	2	3	4			
Knowledge of healthcare related professional, legal and ethical guidelines and attempt to try finding solutions for ethical questions in daily practice e.g. being honest, agreement, unusual prescriptions, confidentiality, end of life care, conflicting interests, allocation of appliances, and ethical aspects of scientific research	2	3	4			
Knowledge of relevant legislation in relation to healthcare and take this into account in clinical practice	3	4	5			
Recognise and correct unprofessional behaviour in clinical practice	2	3	4			