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# European Guidelines for the Accreditation of Sleep Medicine Centers (2nd draft)

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Adapted by the Steering Committee of the European Sleep Research Society (ESRS): Neil Stanley, Jurgen Fischer, Soren Berg, Dirk Pevernagie, Jean Krieger.

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## Introduction

The accreditation of clinical sleep laboratories is essential to ensure and improve patient care. The voluntary accreditation of sleep laboratories in Germany has been carried out by the DGSM, by means of a questionnaire and site inspection, since 1989 (*Somnologie* 2000, 4: 181––187, also see advisory articles and standards [3–5, 8]). At a meeting of the heads of the European National Sleep Societies in Mallorca, 2004 it was decided that an accreditation process based on the DGSM model should be developed to form the basis of a Europe-wide voluntary accreditation procedure.

The accreditation process examines and certifies the staff and facilities of the laboratory that constitute the Sleep Medicine Centre (SMC). The process quality and outcome quality of the results are checked and ensured by other measures (*available from DGSM but need to be translated and modified for European use*).

Accreditation of a sleep laboratory is achieved by a 2-step process, firstly a questionnaire is completed, and then a site inspection visit is conducted by a panel of independent, experienced sleep physicians[1]. These guidelines set out the requirements of the accreditation procedure and the assessment criteria used. There will be an administrative fee, set by the local National Society (NS), charged for the application process and additionally the SMC will be required to meet the travel costs associated with the site inspection visit.

An accredited SMC must have the diagnostic measures available to diagnose common sleep disorders in accordance with the latest edition of ICSD-R. However it should also be noted that accredited SMCs are not required to be able to treat the entire spectrum of sleep disorders.

The status of accredited SMC does not preclude the existence of other clinical facilities with more limited capabilities in the diagnosis of specific sleep disorders (e.g. a clinic diagnosing obstructive sleep apnea-hypopnea syndromes on the basis of pulse oximetry and video). However such facilities would not be eligible for accreditation by the NS.

It is envisaged that this document will be reviewed, and where necessary revised, every four years.

## Staff, facilities, equipment, and structural requirements for a Sleep Medicine Centre

### Management and medical staff

A SMC must have a responsible physician who can demonstrate comprehensive knowledgeable about the diagnostic spectrum of sleep disorders. The head physician of the SMC should have a permanent position at the institution in order to ensure continuity of the sleep medical care. To be eligible for accreditation, the applicant must be a member of the NS and have, or will obta-

[1]It is recommended that this panel consists of three members.

in, the National 'Somnologist' Certification, if available[2]. The head of the SMC is responsible for the continual quality assurance in an accredited sleep laboratory. It is not felt appropriate that one person acts as the head of more than one SMC at any one time.

Medical emergency care must be guaranteed. In case of emergency a physician must be available to attend the SMC, at clinically appropriate, short notice. Medical care must be ensured: an attending physician in the clinic is considered sufficient.

Overall, the staff policy of the hospital should ensure that the sleep laboratory is an independent entity e.g. those performing night duty in the sleep laboratory must not have any further responsibilities, such as night duty in another ward.

Sleep laboratories that are part of a ward need to be able to demonstrate that they have a dedicated staff.

## Technical staff

The operation of a SMC with both day and night examinations and a sleep outpatient clinic with ambulatory diagnostics requires an adequate staff.

Medical technicians must be familiar with the diagnostic and therapeutic procedures, the polysomnographic measuring methods, the procedures performed during the day, as well as ambulatory measuring procedures.

Polysomnographic technologists for nocturnal recordings are required to ensure the proper, artefact-free functioning of the recording devices, to detect problems and resolve them. This makes their presence during the entire recording process an absolute necessity. They are also required to continuously monitor the patient's vital signs and take appropriate measures in case of emergency. It is recommended that one member of the night staff is responsible for no more than four patients undergoing diagnostic measurements or two patients undergoing airway pressure treatment.

The technical and nursing staff of the SMC must also be knowledgeable about the diagnosis of sleep disorders in accordance with ICSD and to this end they should obtain professional certification in the field of Somnology, if available [2].

## Administrative staff

The SMC should have a permanent secretarial staff, who can adequately answer and refer the patients' calls as well as organise appointments and keep patient's records.

## Facilities

The following criteria must be met for the approval of a polysomnographic bed:

Only those beds that are located in single bedrooms and in which the polysomnograph allows recording of all relevant biosignals will be approved as polysomnographic beds.

The bedrooms must allow professional diagnosis and therapy in the field of sleep medicine to be carried out and must be capable of both nocturnal examinations and assessments of daytime sleepiness.

The recording and examination rooms should be of an adequate size that complies with local specifications[3], The rooms must be sound and light attenuated and equipped with temperature and ventilation controls. The rooms must be capable of being made dark for the performance of daytime assessments such as the MSLT. Adequate sanitary facilities must be available.

Each bedroom should be equipped with a suitable video monitoring system.

A two-way communication system must be installed which allows the patient and night duty technician to communicate with each other and for biosignal calibration.

A separate room, which is also sufficiently large and which ensures undisturbed working conditions, must be available for the monitoring equipment and the technical/nursing staff (i.e. no polysomnograph next to the patient's bed).

## Recording techniques and criteria

### Polysomnography

Polysomnography (PSG) a diagnostic technique comprising the simultaneous recording of neurophysiological, cardio-respiratory and other biosignals during an entire nocturnal sleep period. The suggested minimum PSG recording montage to be used in a SMC is listed in table 1.

Depending on the therapeutic orientation of the laboratory, the recording of additional signals will be required.

**Table 1. Minimum Montage for Standard Sleep Medicine Polysomnography**

| |
|---|
| 2 EEG (C3-A2, C4-A1) |
| 2 EOG |
| 1 mentalis/submentalis EMG |
| Snoring signal |
| Body position sensor |
| Oro-nasal air flow (thermistors are no longer acceptable) |
| Validated method of respiratory effort |
| 2 EMG, tibialis anterior |
| ECG, one channel |
| Video monitoring with possibility of recording |

[2]The description of the postgraduate curriculum and certification in Clinical Somnology is subject of a separate publication.

[3]A minimum bedroom surface of 12 $m^2$ is recommended.

**Table 2. Supplementary signals to be recorded depending of the clinical specialisation of the SMC**

| |
|---|
| Oesophageal pressure probe (manometry) |
| 24 hour pH-metry |
| Body core temperature |
| Tumescence NPT |
| Non-invasive continuous blood pressure measurement |
| Long-term blood pressure measurement, discontinuous |
| Long-term ECG, multi-channel |
| Transcutaneous $O_2$, $CO_2$ measurement |
| Plethysmographic signal on oximetry |
| Extended EEG |
| Extended EOG (vertical eye movements) |
| Extended EMG, multi-channel, other extremities |
| Videometry (synchronous image and signal recording) |
| Tonometry or PTT |

Where appropriate the above signals my be augmented with discontinuous long-term blood pressure measurement or multi-channel long-term ECG?

Polysomnographs can either be recorded on paper or digitally, however if digital recordings are performed then a printout on paper must be possible. The digital recording device used must allow the viewing of previous epochs during the recording. In digital recording the monitor screens must have a sufficiently high resolution to allow accurate assessment and evaluation of all recorded biosignals[4].

**Concise description of other techniques and tests**

— Polygraphy (PG): a diagnostic technique comprising the simultaneous recording of certain cardio-respiratory and other biosignals but not EEG during an entire nocturnal sleep period.
— Multiple Sleep Latency Test (MSLT): a neurophysiological test comprising EEG, EMG and EOG, for a duration of 20 min, in 5 sessions with 2 hours interval. The primary outcome is the evaluation of the tendency to fall asleep.
— Maintenance of Wakefulness Test (MWT): a neurophysiological test comprising EEG, EMG and EOG, for a duration of 40 min, in 5 sessions with 2 hours interval. The primary outcome is the evaluation of the tendency to stay awake.
— A description of techniques and measurements not listed here can be found in the literature.

## ■ Patient reports, documentation and archive facilities

Sleep disorders must be classified in accordance with ICSD [1]. The protocol of the PSG (descriptive-statistical sleep characteristics, hypnogram and other all-night trends) and findings of the accompanying examinations must be documented in the patient's medical record. This also applies to the documentation of the titration of nocturnal ventilation therapy.

A comprehensive report should be prepared within a reasonable time delay[5]. A brief discharge report is also required. The comprehensive report has to comprise the patient's sleep history as well as a description and interpretation of relevant sleep parameters (sleep stages, sleep latency, etc.). The inclusion of all night graphical trends of relevant signals e.g. $SpO_2$, hypnogram etc. is desirable. The report should be based on human scoring of the signals that constitute the PSG by professionals trained in Somnology.

A filing system needs to be maintained so that polysomnographic records and patient related findings can be easily accessed. The entire patient record, including the raw data, is to be archived in accordance with the relevant statutory period of the SMCs' host country[6].

# ■ Guidelines for the completion and evaluation of the accreditation questionnaire

## The accreditation questionnaire (AQ) is attached to this document

## A) Staff

**1. Name of laboratory**

The name of the SMC and the clinic in which the SMC is located. If available, the address is to be supplemented with the e-mail address and internet homepage.

**2. Head physician of the laboratory**

a) The physician in charge of the SMC is given here. This person should be a member of the NS and, if applicable, should possess the Somnologist Certification (optional criterion). The head of the laboratory should have a permanent position at the institution.
b) If a non-medical house officer (e.g. PhD) is involved in the management of the SMC, his or her name is to be given here. Membership of the National Society and possession of the Somnologist Certificate are optional.

[4]A resolution of 1600x1200 pixels is considered sufficient to display EEG in 30 sec epochs.

[5]A maximum of 4 weeks is recommended.
[6]A maximum period of 10 years is recommended.

**3. Consulting services**

Proof should be provided that a comprehensive sleep medical diagnosis can be established.

In accordance with the nature of sleep disorders, consulting services from other medical and non-medical specialties are required.

Details of outpatient sleep clinic activities should also be given under this heading. Although optional, it is strongly recommend that the SMC offers an outpatient clinic for pre-screening, follow-up and therapy. This approach may be useful to reduce inpatient admissions.

**4. Staff**

A full list of the staff members working in the SMC should be given along with a description of their knowledge of and experience in sleep medicine, An indication of the percentage of total job time spent working in the sleep laboratory is to be given. From the composition of the staff it should be clear that the continuity of medical services is guaranteed by the SMC.

**5. Advanced training**

Sleep medicine is undergoing rapid changes due to the continuous increase in scientific knowledge. For this reason, regular sleep-related training activities should be conducted for the laboratory's own staff and/or the possibility of attending external training should be ensured. The provision of sleep-medical educational activities for other hospitals or physicians is welcomed (optional criterion).

## B) Patient and sleep-medical services

The sleep-medical services offered provide information on the interdisciplinarity of the SMC.

In particular, the diagnostic measures should enable the laboratory to diagnose common sleep disorders in accordance with ICSD-R. However it should be noted that accredited laboratories are not required to be able to treat the entire spectrum of sleep disorders.

The diagnostic and therapeutic process should be economical and correspond to national and international standards, respectively. The patient's length of stay in the laboratory should be oriented to the diagnostic and therapeutic standards.

**1. Diagnostic profile of the SMC**

The numerical data, including ICSD number and outpatient/inpatient status, provide information on the focus of the laboratory, differential diagnosis, and its size, as shown by the number of patients. The data given here should provide as exact statistics as possible. The current waiting periods for outpatient and inpatient diagnosis are to be given.

**2. Therapeutic profile of the SMC**

The numerical data, including ICSD number and outpatient/inpatient status, provide information on the therapeutic main points of the laboratory.

## C) Equipment and rooms

**1. PSG recorders**

A description of the PSG recording equipment and montages used in the laboratory is to be given here.

**2. Additional devices**

Under this heading the polygraphs used for inpatients should be mentioned. Polysomnographs, which are operated in rooms without continuous monitoring, should also be cited here.

**3. Routine measurements**

A description of the routine nocturnal measurements performed in the laboratory of the SMC is to be included here.

**4. Other equipment**

Existing independent systems for follow-up diagnoses and controls should be listed here. This heading is to provide space for devices that are not only used in a sleep medical context e.g.

— Actigraphy
— Long-term EEG
— Long-term ECG
— Ambulatory blood pressure monitoring (ABPM) or continuous monitoring
— Ambulatory pH measurement
— Pulse oximeters, which can be used independently of the SMC

**5. Facilities**

A description of the bedrooms, recording rooms, sanitary facilities etc. should be given here

## D) Diagnostic tests

Additional diagnostic tests that are routinely performed at the SMC should be listed here e.g.

— Physical examination
— Clinical investigation
— MSLT
— MWT
— Sleep diary
— Sleep questionnaires (e.g. Pittsburg Sleep Quality Index [PSQI], Epworth Sleepiness Scale [ESS], Stanford Sleepiness Scale [SSS], etc.)
— Psychological and personality questionnaires, (e.g. MMPI, etc.)
— Neuropsychological examinations (vigilance, psychometric and cognitive tests)
— other

### E) Medical documentation and archive

A description of the reporting procedure and relevant documentation should be given here along with a description of the archive system used.

### F) Invoicing

The invoicing procedure for sleep medical services can be briefly listed here. During the site visit, an exchange of experiences on this topic can take place.

### G) Miscellaneous

Additional comments and information thought relevant should be given here.

## Scenario for the Site Visit

Once the site has submitted a completed questionnaire a site inspection visit is arranged. The Accreditation Committee of the NS will assign independent experts to constitute an Inspection Panel[7]. These indivuals should have expertise in quality management and sleep medicine. They will each be given a copy of the site questionnaire which will form the basis of the initial discussion. The site visit is a three-part procedure. The Inspection Panel should represent different but appropriate specialties in order to assess the work of the site to be visited. First there is an initial discussion with the staff of the laboratory; this is then followed by a demonstration of skilfulness in the required techniques as well as a tour and assessment of the facilities. The final stage is a discussion of the findings of the Inspection Panel with the management of the laboratory. The Accreditation Committee of the NS is entitled to charge a fee to the SMC in order to reimburse the travel expenses of the members of the Inspection Panel.

### Initial discussion

The head of the SMC and the technical staff will participate in this discussion. If the laboratory is interdisciplinary, the respective technical staff members should also be present. Whether predominantly children or adults are diagnosed and treated must have been clarified before the site visit, because a paediatrician must be part of the Certification Commission if the former is the case.

The discussion will be comprehensive and will usually last at least an hour, frequently longer. It should take place in a calm atmosphere and be uninterrupted. The diagnostic and therapeutic procedures of the sleep laboratory will be discussed.

### Demonstration of technical skills

At the beginning of the initial discussion, the laboratory staff will be informed that a complete 'hook-up' of electrodes and sensors is to be carried out on a test subject, followed by a test polysomnographic recording. At the beginning of the demonstration the technical staff will be allowed to proceed without interference so that they perform the procedure in their usual manner. Following the initial discussion, the quality of hook-up and recording will be evaluated by the Inspection Panel.

Subsequently, past polysomnographic recordings performed in the sleep laboratory will be assessed for good quality. When showing these records, the SMC staff will be asked to demonstrate their practical knowledge in analysis and evaluation of such data.

Finally, an examination of randomly selected patient records will be carried out. This should demonstrate that clinical investigations have been performed in an appropriate medical context, ultimately leading to the diagnosis of the sleep disorder for which the patients consulted the SMC.

An inspection of all the rooms listed in the questionnaire will be conducted to see whether they fulfil the relevant criteria (see Section 2).

## Final discussion

The Inspection Panel will retreat on site to identify critical points and prepare these items for the final discussion. Subsequently, the final discussion will take place with the head physician of the sleep laboratory. The Inspection Panel will inform the head of the sleep laboratory on the result of the site visit. The Inspection Panel can only make recommendations; the decision on the accreditation is made by the Accreditation Committee of the NS.

Four major outcomes can be differentiated in the Accreditation Recommendation.

— Recommendation to accredit the SMC in its present form with no restrictions.
— Recommendation to accredit the SMC after correction of slight deficiencies and being informed in writing of the correction of the deficiencies by the SMC without another site visit.
— Recommendation that deficiencies qualified to be 'substantial' first be corrected and that the decision on a possible accreditation is made dependent on a new site visit.
— No Accreditation.

The oral statement of the Inspection Panel must absolutely agree with the contents of the written report. In cases of considerable uncertainty, the Inspection Panel should not make any definitive decision on site, but first consult the Accreditation Committee of the NS. In this case the result of the final discussion remains open.

[7]A panel of three experts is recommended (see Introcuction). These experts are selected by the NS, but not necessarily from the NS.

## Outline of the accreditation report

The report must be written on neutral stationary. The items in the report correspond to the structure of the Accreditation Questionnaire.

### Initial essential information

Address, date, composition of the Inspection Panel, Address, telephone, fax, and if applicable the sleep laboratory's e-mail and website addresses

Name of the head physician of the SMC.

### General information

Description of the clinic/department in which the SMC is based and how the SMC is integrated into the structure, as well as its origin and development

Consulting services provided with names of the relevant physicians and allotment of time to the sleep laboratory, transfer information for the sleep outpatient clinic.

Staff and fraction of its working time spent in SMC.

### Sleep laboratory routine

Description of diagnostic and therapeutic procedures.
Diagnostic profile
(Foci in diagnosis — patient numbers)
Therapeutic profile
(Foci in therapy — patient numbers)

### Equipment and facilities

Diagnostic tests
Documentation
Demonstration of placement of all measuring devices
Demonstration of recording
Review of past nocturnal recordings
Review of files and physicians' reports
Remuneration of expenses

### Assessment and recommendations

General summary of the site visit

Recommendations listed point by point

Final summary of the recommendation with statement:

— accreditation immediately;
— accreditation after fulfilment of improvements without revisit;
— accreditation after fulfilment of improvements with revisit;
— no accreditation;

### Signatures of the three experts

After being signed the report is to be sent to the Accreditation Committee of the NS and a letter will be sent from there to the respective SMC. A copy of the report remains in the SMC documentation in the Accreditation Office.

## Responding to an accreditation report

The Accreditation Office will send a copy of the site visit report to the SMC within a reasonable time span. It is recommended that the Accreditation Committee of the NS and the SMC agree upon the span for the delivery of the report before the site visit is undertaken. The letter that accompanies the report will again state in which of the four categories the SMC was placed during the site visit. If improvements are required the SMC must document the alterations that have been carried out. If this is to be checked without a renewed site visit, documentary evidence or photographs of the structural alterations is to be submitted. If the improvements refer to signals (e.g. oesophageal pressure, tibialis EMG) copies of epochs of the measuring curves of 3 to 5 patient are to be submitted.

If it is recommended that further training in another SMC of excellence is required for members of SMC staff, then details of such training should be given.

In summary, the SMC is to write a statement on all points of the recommendations. This statement will be forwarded to the Inspection Panel experts with the included documents and receipts. They can then directly declare their agreement with accreditation or require the submission of further documents. If necessary, they can directly contact the laboratory to clarify details of the improvements. If the SMC has fulfilled all the recommendations, accreditation will be granted after agreement of the experts. If the subsequently submitted documents do not satisfy the experts, another site visit can be taken into consideration. Depending on the subsequently submitted documents, the number of experts can be reduced by a renewed site visit. All experts must agree to this procedure.

## Re-evaluation of laboratories

Re-evaluation of SMC is required every two years. This is achieved by means of a further questionnaire. In the process the general information of the SMC and its equipment will be confirmed. Inquiries will be made about the Somnologist Certification of people in leading positions.

## Notification of changes of the physician in charge of the SMC and changes in capacity or changes in location

The SMC's accreditation is linked to the laboratory facilities and their head. The Accreditation Committee of the NS must be informed of any change in this context within two weeks.

In cases involving a change in the physician in charge of te SMC, a renewed site visit does not occur as a rule, unless the new head does not have the Somnologist Certification, if available from the NS.

In cases involving changes in capacity (i.e. expansion) of the SMC, the head of the respective SMC must submit a detailed report on the extent and type of expansion with regard to technical capabilities, facilities and/or staff. If this report contains indications that the criteria are no longer fulfilled, the Accreditation Committee of the NS may arrange for a renewed site visit.

If the SMC moves into new facilities in another building (address change), even if part of the staff and equipment are retained, a new site visit is required. This new site visit can be performed by one appointed expert, who will make an assessment of the facilities and prepare a brief report on them. If the capacity has not changed, it is not necessary to fill out a new questionnaire.

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# ACCREDITATION QUESTIONNAIRE FOR SLEEP MEDICINE CENTRES IN EUROPE

date: .....

## A) STAFF:

**1. Name of laboratory** .....
street, nr.: .....
postal code, city: .....
phone: .....
fax: .....
e-mail: .....
web-site: .....

**2. Laboratory direction**
a) head physician of sleep laboratory: .....

member of the NS ☐ yes ☐ no
certified somnologist ☐ yes ☐ no
permanent position at the SMC ☐ yes ☐ no

in charge since: .....

b) non-medical house officer with responsibilities in the SMC: .....

member of the NS ☐ yes ☐ no
certified somnologist ☐ yes ☐ no

involved in management of SMC since: .....

**3. Consulting services**

Which consulting services are available (e.g. internal medicine, pneumology, cardiology, neurology, psychiatry, ENT surgery, (neuro-)psychology, dentistry, paediatrics, etc.)?
.....
.....

In which phase of the stepwise diagnostic procedure are these services consulted?
.....
.....

Which physicians/departments refer patients to the sleep laboratory?

| | Name/department | Affinity with sleep-medicine |
|---|---|---|
| ENT | | |
| Neurology | | |
| Psychiatry | | |
| Internal medicine | | |
| Pneumology | | |
| Cardiology | | |
| Pediatrics | | |
| Dental surgery | | |
| Other | | |

Is there an outpatient clinic for sleep disorders? yes ☐ no ☐

What are the office hours of the outpatient clinic (days per week, hours per day)?

.....

.....

Ambulatory sleep recordings: how many nights per week and how many per night are conducted?

.....

.....

In-hospital polygraphies: how many nights per week and how many per night are conducted?

.....

.....

Laboratory polysomnographies: how many nights per week and how many per night are conducted?

.....

.....

**4. Staff**

Please list all the staff members working in the sleep laboratory:

| Personnel | Number and qualification (specialist, specialist in training etc.) | Percent of total job time spent in sleep laboratory | Tasks/functions (e.g. controlling, editing etc.) |
|---|---|---|---|
| Physicians | | | |
| Psychologists | | | |
| Technicians | | | |
| Nurses | | | |
| Night staff | | | |
| Secretaries | | | |
| Other | | | |

How are the night-duties in the sleep laboratory scheduled (e.g. number of attending staff per patient, continuous attended monitoring etc.)?

.....

.....

How is medical supervision organized in the sleep laboratory at night (with regard to physicians knowledgeable of sleep medicine)?

.....

.....

How is the quality of the sleep analysis (PSG, MSLT) ensured?
Describe the nature of your quality assurance:

.....

.....

.....

**5. Advanced training**

Is there in-house advanced training for physicians, medical-technicians, assistants and staff of the sleep laboratory? Is it scheduled at regular intervals?

.....

.....

.....

Do you offer training for other hospitals or external physicians?
Is it scheduled at regular intervals?

.....

.....

## B) PATIENTS AND SLEEP MEDICAL SERVICES:

**1. Diagnostic profile of the SMC (main foci in diagnosis)**

| Number of patients per annum | | |
|---|---|---|
| | **Out-patient diagnosis** | **In-patient diagnosis** |
| a) Insomnia<br>• Psycho-physiological insomnia (307.42–0)<br>• Sleep state misperception (307.49–1)<br>• Idiopathic insomnia (780.52–7) | | |
| b) EDS and hypersomnia<br>• Narcolepsy (347)<br>• Recurrent hypersomnia (780.54–2)<br>• Idiopathic hypersomnia (780.54–7)<br>• Post-traumatic hypersomnia (780.54–8) | | |
| c) Sleep related breathing disorders<br>• OSAS & snoring (780.53)<br>• Central sleep apnoea syndrome (780.51–0)<br>• Central alveolar hypoventilation, primary (780.51–1) and secondary (e.g. COPD) | | |
| d) RLS & PLM<br>• Periodic leg movements (780.52–4)<br>• Restless legs syndrome (780.52–5) | | |
| e) Hypnotics, alcohol & drug dependence (780.52) | | |
| f) Parasomnias | | |
| g) Other 1 | | |
| h) Other 2 | | |

Which diagnostic methods are used for which diagnostic group in the table above?

a) .....
b) .....
c) .....
d) .....
e) .....
f) .....
g) .....
h) .....

Waiting period for ambulatory diagnostics: .....
Waiting period for laboratory diagnostics: .....

**2. Therapeutic profile of the SMC (main foci in treatment)**

Which therapies are applied by for each diagnosis in the table above? Specify percentage of therapeutic procedures within each diagnosis group.

a) .....
b) .....
c) .....
d) .....
e) .....
f) .....
g) .....
h) .....

## C) EQUIPMENT AND ROOMS:

**1. Polysomnographs:**

| Number | Manufacturer | Channels | Kind of recording (paper/digital) | Kind of archiving |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**2. Additional equipment for sleep monitoring (e.g. polygraphs etc.):**

| Number | Type | Firm/Producer | Number of signals |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**3. The routine sleep recording comprises:**

| | EEG | EOG | EMG |
|---|---|---|---|
| **Number of channels (specify derivations)** | | | |

| | | | |
|---|---|---|---|
| ***Air flow*** | ☐ thermal signal | ☐ pressure signal | |
| ***Respiratory movement*** | ☐ thoracic | ☐ abdominal | |
| ***Esophageal pressure probe*** | ☐ yes | ☐ no | type: |
| ***Pulse oximetry*** | ☐ oxygen saturation | ☐ heart rate | |
| ***Capnography*** | ☐ yes | ☐ no | |
| ***EMG (tibial)*** | ☐ right | ☐ left | ☐ sum (total) |
| ***PTT*** | ☐ yes | ☐ no | |
| ***Snoring microphone*** | ☐ yes | ☐ no | |
| ***Video*** | ☐ monitoring | ☐ recording | ☐ videometry |
| ***Intercom*** | ☐ yes | ☐ no | |
| ***Options*** | ☐ actigraphy | ☐ body temperature | ☐ NPT |
| ***Other signals*** | ☐ | ☐ | |

**4. Other equipment:**

For long-term monitoring (e.g. ECG, long-term EEG, ambulatory blood pressure monitoring, actigraphy):
.....
.....

**5. Facilities:**

Number and size of control rooms: .....
.....
Number and size of patient bedrooms: .....
.....
Acoustic insulation: .....
Lighting control: .....
Air conditioning: .....
Room facilities of outpatient clinic: .....

## D) Diagnostic tests: (please attach a sample of your paper questionnaires)

Physical examination: .....
Sleep questionnaires: .....
MSLT: .....
MWT: .....
Sleep diary: .....
Sleep questionnaires: .....
.....
Psychological and personality questionnaires: .....
.....
Psychological tests: .....
Neuropsychological examinations: .....
Other: .....

## E) Medical documentation and archive: (please attach standard sleep report format)

Which results will be reported in patient's medical report (sleep, respiration, cardiovascular results):
.....
.....

Which classification systems are used (DSM-III-R, ICSD, ICD-9, ICD-10)?
.....
Organisation of archive: .....
.....
Which results of PSG will be archived?
.....
How long will these results be archived?
.....

## F) Invoicing:

Briefly describe the invoicing procedure for sleep medical services:
.....
.....

G) Additional information or comments:
.....
.....