ICS 11.020.99

SCM-C

世界中医药学会联合会睡眠医学专业委员会

World Federation of Chinese Medicine Societies
Specialty Committee of Sleep Medicine

SCM-C 0067-2025

睡眠质量客观评价远程服务规范

Specification of remote service for objective evaluation on sleep quality

（发布稿，Specialty Committee Standard）

世界中联分支机构标准

2025-10-24 发布实施

Committee Standard of WFCMS

Issued and implemented on October 24, 2025

目　次

前　言

请注意本文件的某些内容可能涉及专利。本文件的发布机构不承担识别专利的责任。

主要起草单位：中国中医科学院广安门医院（南区）。

参与起草的单位：中国中医科学院广安门医院、空军特色医学中心、黑龙江中医药大学附属第二医院、广东省中医院、广州中医药大学第一附属医院、甘肃中医药大学附属医院、湖北中医药大学附属医院、湖北中医药大学教育部老年脑健康中医药防护新技术新产品工程中心、上海市中医医院、安徽中医药大学第一附属医院、杭州市中医院、福建省中医药科学院、呼和浩特市蒙医中医医院、赣南医科大学第一附属医院，北京市中医药管理局孙书臣中医药传统技能传承工作室、双首行动呼和浩特市蒙医中医医院孙书臣名医工作室、北京市大兴区孙书臣名医工作室。

主要起草人：孙书臣、周立美、李红岩、谭赛、陈铁光、刘艳骄、高和、李应东、杨志敏、徐建、姜翼（新西兰）、杨文明、黄三德（中国台湾）、张永华、王东岩、黄俊山、刘玲、刘蓬、 张良、许良、方继良、段莹、高荣林、汪卫东、王平。

参与起草人：林唐唐、陈开兵、徐凌云、朱道民、徐碧云、杜辉、李涛、李静、海英、于逢春、张樟进（中国香港）、陈升东、刘春生、王熙、吴慧莉、闫雪、杨丽、叶永铭、游秋云、章程鹏、郑芸、曾雪爱、钞建峰、陈成、高峰、合浩、李明懋、廖恒、卢玉俊、肖刚、赵甫刚、赵敏、胡霖霖、魏慧军、封继宏、谷献旦、洪秋阳、江红、蒋希成、乔锦、王春霞、张姝媛、王健、许晓伍、孙立军、杨国周、杨健、张压西、姚高峰、商善刚、梁添寿、滑宏巨、包立道。

睡眠质量客观评价远程服务规范

1 范围

本文件规定了睡眠质量客观评价（以多导睡眠监测为主）远程服务的主要手段、服务流程、平台和数据存储、服务人员要求及职责，以及接受远程服务医疗机构的准入要求。

本文件适用于开展睡眠质量客观评价远程服务的中医、中西医结合医疗机构。

2 规范性引用文件

下列文件对于本文件的应用必不可少。凡是标注日期的引用文件，仅标注日期的版本适用于本文件。凡是不标注日期的引用文件，其最新版本(包括所有的修改单)适用于本文件。

WS/T545-2017 远程医疗信息系统技术规范

WS/T546-2017 远程医疗信息系统与统一通信平台交互规范

3 术语和定义

下列术语和定义适用于本文件。

3.1

多导睡眠监测

通过记录睡眠期间不同部位的生物电或不同传感装置获得的生物电信号，经过放大转换输出为电信号，并对电信号图形进行分析以开展睡眠医学研究和睡眠疾病诊断的技术。多导睡眠监测要求记录指标包括脑电、眼电、肌电、呼吸气流、呼吸努力、血氧饱和度、体位、心电、鼾声、PSG 同步视频。

3.2

服务方

提供睡眠质量客观评价远程服务的医疗机构。

3.3

被服务方

接受睡眠质量客观评价远程服务的医疗机构。

3.4

远程服务

服务方利用通讯、计算机及网络技术，采用离线或在线交互方式，对被服务方开展远程睡眠质量客观评价指导、协助睡眠疾病诊断、治疗和远程会诊等服务的过程。

4 服务方

4.1 机构要求

4.1.1 基本条件

服务方应具有合法的执业资质。服务行为应符合服务所在国家或地区的法律与法规。

4.1.2 技术条件

服务方成立时间不低于10年，近5年完成多导睡眠监测病例每年不少于500例。通过多导睡眠监测独立诊断的病种不应少于5种。

4.2 人员要求

4.2.1 医师

4.2.1.1 服务方的睡眠医师可独立开展睡眠障碍临床工作，且至少从事睡眠医学专业5年以上，至少应拥有1名专职于睡眠临床医疗的高级职称医师负责睡眠监测工作。

4.2.1.2 医师的主要职责包括但不限于：

——对被服务方的医师开展培训并定期进行指导；

——全面评估患者睡眠疾病相关问题及远程监测处方；

——负责协助被服务方患者睡眠报告的解读及诊断；

——制定睡眠障碍患者治疗方案；

——确保远程沟通的及时性；

——审查远程医疗数据，及时了解被服务方睡眠障碍患者病情变化；

——通过远程方式及时解决被服务方共性问题，并进行详尽记录；

——开展疑难病例多学科会诊。

4.2.2 技师

4.2.2.1 服务方的睡眠技师专职、独立开展睡眠质量客观评价，至少有一名技师从事睡眠质量评价10年以上，或获得国际注册多导睡眠技师(Registered Polysomnographic Technologist)资质5年以上。该睡眠技师协助开展睡眠质量客观评价远程服务。

4.2.2.2 技师的主要职责包括：

——培训被服务方技师睡眠监测技术及关联治疗，对技师定期进行指导；

——熟悉远程医疗服务功能及流程；

——分析被服务方睡眠监测数据；

——协助医生进行睡眠障碍患者治疗前的评估；

——及时观察并协助医生了解及反馈患者的病情变化及治疗效果；

——审查远程医疗数据，随时了解被服务方技术需求，并及时解决被服务方睡眠技术的共性问题。

4.2.3 护理人员

服务方护理人员协助开展睡眠质量客观评价远程服务。护理人员应熟悉睡眠中心的主要工作流程，具有良好的沟通能力。

护理人员的主要职责包括：

——对被服务方护士职责定期进行指导；

——熟悉远程医疗功能及流程，协助医生、技师等完成远程工作；

——审查远程医疗尤其是远程随访数据，协助技师处理数据，将需要处理的问题及时反馈给临床医生；

——对远程服务的病历及数据进行归档及数据保管。

4.2.4 信息人员

服务方应有专职人员负责仪器、远程设备、信息系统等设施的定期检测、升级、维护改造等，符合远程服务相关信息标准和信息安全的规定，保障睡眠质量客观评价远程服务的正常进行。

4.3 设置要求

服务方应具有完善的睡眠中心规制，包括独立的睡眠监测室两间以上、中心控制室、睡眠诊室、治疗室等。

4.4 设备要求

服务方应拥有 1 级标准多导睡眠图检查设备（附录 A），能够收集包括脑电、眼电、肌电、呼吸气流、呼吸努力、血氧饱和度、体位、心电、鼾声、PSG 同步视频等参数。

睡眠监测室内设置高倍红外摄像机，双向对讲系统，可对病床进行实时监控，同步显示患者的电生理、视频及音频信号。

5 被服务方

5.1 机构要求

5.1.1 基本条件

被服务方应具有合法的执业资质。

5.1.2 技术条件

被服务方应具有独立、规范采集客观睡眠数据的能力，能够规范采集患者病历和睡眠数据。

5.2 人员要求

被服务方应有专职从事睡眠医学工作的医师、技师和护理人员。以上人员应在拥有服务能力的睡眠中心进修学习 3-6 个月以上。

5.3 设置要求

被服务方应有独立的睡眠疾病诊疗场所，至少包括睡眠监测室、中心控制室和睡眠诊室。

5.4 设备要求

被服务方应至少拥有 2 级及以上睡眠监测设备（附录 A），独立采集客观睡眠数据。

6 基础要求

6.1 硬件及网络

远程平台技术设备的性能水平应该与服务需求相匹配。远程医疗设施设备应当满足服务方和被服务方对图像、声音、文字的要求和其他需求，确保信息安全、图像清晰、数据准确，符合相关国家或地区远程会诊信息系统建设要求，满足远程会诊要求。服务网络需保持稳定、畅通，保障远程服务信息顺利传输。

6.2 平台功能

远程评价服务平台应满足服务方和被服务方业务需求，实现数据互传、在线视频等功能。

6.3 数据存储及信息安全

信息安全主要针对生物样本数据、电子病历等数据隐私、数据保护、数据权限、数据备份、数据交换等问题。应从网络结构安全、网络安全设备防护、网络访问控制安全与保密方面建立网络安全标准。设立独立的服务器，避免数据泄露和失密。

6.4 数据采集标准

服务方和被服务方应建立统一的数据采集标准，选择合适的数据传输方式、传输参数，设置中继站或信号放大器，以减少数据衰减。

7 流程要求

7.1 建立合作协议

服务方和被服务方应在达到本文件要求的技术条件后签署远程合作协议，进一步约定合作目的、合作条件、合作内容、详细流程、双方责权利和风险处置等事项。

7.2 数据收集和上传

被服务方技师和护理人员，按照患者病情及本文件要求对患者开展睡眠质量客观评价，收集规范化的病历数据（附录 C），并对收集到的资料进行汇总，汇总后的资料提交至平台，由睡眠医师对此过程进行审核和监督，由信息技术人员保证资料传输的稳定和数据完整。

7.3 数据整理和反馈

服务方睡眠技师下载并查看收到的睡眠数据，对数据进行分析，出具标准化的睡眠质量评价报告（附录 D），睡眠医师对报告进行审核后由相关人员签字，上传至被服务方。

7.4 病例讨论和会诊

遇有需要会诊或病例讨论的内容，由被服务方医师提交会诊申请，提前传输病历资料，确定会诊或病例讨论时间，服务方睡眠医师收到会诊或病例讨论申请后，应及时查看病历资料，并做好相关准备工作。双方睡眠医师在约定时间登录会诊平台开展会诊或病例讨论，睡眠技师、护理人员视需要参加。

7.5 数据资料保存

双方按照国家或地区病历书写及保管的有关规定共同完成病历资料的填写工作，一式两份，双方分别归档保存，由护理人员进行病历资料的管理。

8 服务评价与质量控制

8.1 服务方和被服务方均应建立服务评价管理机制，定期进行服务质量检查，并定期接受服务评价。成立质量控制小组，制定标准化病历采集流程和睡眠数据采集流程，保证病历和数据资料的完整性、准确性。

8.2 服务评价和质量控制应具有规范的评价指标和评价方案，评价行为和质量控制依据评价方案开展。

8.3 服务评价和质量控制指标应与实际工作一致，有助于工作的完善和提高。

8.4 根据服务评价结果和质量控制结果，制定整改措施，持续提高服务质量水平。

附录 A
（资料性）
睡眠监测设备分级标准

A．1 标准多导睡眠图检查（1 级）

要求记录指标至少包括脑电、眼电、肌电、呼吸气流、呼吸努力、血氧饱和度、心电、鼾声、PSG 同步视频等参数，必须记录睡眠体位。检查过程必须始终有经过训练的人员监视，以及必要时进行相应处理。最好同时记录腿动情况，但非必须。

A．2 全指标便携式多导睡眠图检查（2 级）

记录指标要求和标准多导睡眠图检查一样，只是可以心率记录代替心电图记录。可记录睡眠体位，不要求有经过训练人员始终监视。

A．3 改良便携式睡眠呼吸暂停检查（3 级）

至少 4 个导联，最低记录指标要求包括通气指标（至少包括两导呼吸运动或呼吸运动加上呼吸气流）、心电图或心率以及血氧饱和度。检查准备需医务人员进行（如电极安置和仪器调试、定标）；不要求有人员始终监视。

A．4 单或双生物指标持续记录（4 级）

至少记录氧饱和度、气流或胸部运动中的一项。可以没有人员监视。

便携式睡眠呼吸诊断装置指 2 至 4 级装置。

附录 B
（资料性）
被服务方机构分类（草案）

被服务机构在获得所在国家和地区要求的服务资质批准后，除符合正文所述技术、人员、设置、设备及服务、质控等要求外，按如下标准进行分级：

B.1 一级被服务方机构

具备收集客观睡眠数据的基础能力，能够收集包括脑电、眼电、肌电、呼吸气流、呼吸努力、血氧饱和度、体位、心电、鼾声等参数。有独立的睡眠疾病诊疗场所，至少拥有 1 台及以上 2 级睡眠监测设备，但不具备独立执行睡眠质量客观评价的能力。开展睡眠质量客观评价工作不足 1 年。技术人员在拥有服务能力的机构进修学习不低于 3 个月。

B.2 二级被服务方机构

具备收集客观睡眠数据的能力，较一级机构有更高的完整性与准确性，能够收集包括脑电、眼电、肌电、呼吸气流、呼吸努力、血氧饱和度、体位、心电、鼾声等参数。有独立的睡眠疾病诊疗场所，至少拥有两台及以上 2 级以上睡眠监测设备，具备一定的独立执行睡眠质量客观评价的能力。可在指导下完成与睡眠监测相关联的治疗。开展睡眠质量客观评价工作 1-3 年。技术人员在拥有服务能力的机构进修学习不低于 6 个月。

B.3 三级被服务方机构

具备较高水准的收集客观睡眠数据的能力，较二级机构有更高的完整性与准确性，能够收集包括脑电、眼电、肌电、呼吸气流、呼吸努力、血氧饱和度、体位、心电、鼾声、PSG 同步视频等参数。有独立的睡眠疾病诊疗场所，至少拥有两台 1 级睡眠监测设备，已独立掌握了睡眠质量评价的方法，可独立进行简单病例的睡眠质量客观评价及与睡眠监测相关联的治疗，仍需借助服务方机构的经验及技术审核睡眠质量客观评价报告。

开展睡眠质量客观评价工作 3-5 年。技术人员在拥有服务能力的机构进修学习不低于 6 个月。

被服务方机构达到新的等级标准，并通过相关考核及专家评审后，可晋级为高一级被服务方机构。三级被服务方机构达到服务方机构标准，并通过相关考核及专家评审后，可成为服务方机构。

附录 C

（资料性）

睡眠监测病历（建议版）

睡眠中心病历

患者基本信息（请患者详细认真填写！）							
*姓名		*性别		*出生日期			
*联系电话				工作单位			
*家庭住址							
前来就诊原因（请患者在相应位置划“√”，*为着重考虑症状）							
*睡眠打鼾		*白天嗜睡		*夜间腿动			
*夜间磨牙		*夜间异常动作		*夜间发声现象			
鼾声响亮但不均匀		夜间憋醒		夜尿多（大于 1 次）			
梦多、恶梦		说梦话		频繁翻身			
夜间失眠易醒		拍打同床人		夜间心绞痛			
晨起口干		晨起头晕头疼		腿酸腿疼			
目胀、眼睛干涩		反酸烧心		大便干燥			
腹胀、腹泻		乏力		工作开会时犯困			
精神不集中		记忆力减退		学习成绩下降			
抑郁、易怒、个性改变		情绪相关猝倒或腿软		高血压			
糖尿病		血脂异常		冠心病			
甲状腺功能异常		肝功能异常		脑血管疾病			
病情资料（以下内容医生填写）							
门诊号		住院号		申请科室		床号	
主诉、病程： 既往史： 家族史：							
颌面结构	Mallampati 分级	级	颈围	cm	腹围	cm	
短颈		小下颌		扁桃体肿大			
小儿腺样体肥大		舌体肥大、舌根后坠		悬雍垂肥大			
查体			身高	cm	体重	kg	
心、肺、腹、神经系统异常情况：							
其它							
PSG 监测中的特殊要求（技术员相应位置划“√”）							
便携		多导		PSG 监测同时压力滴定			
上肢肌电		颞叶脑电		其他（手写）：			

医生：

时间：

睡眠监测知情同意书

姓名_____ 性别_____ 年龄_____ 科别_____ 病案号_____

单位_____

住址_____

身份证号_____

联系电话_____ 联系人_____

您今晚将于本睡眠实验室进行多导睡眠监测，多导睡眠监测属于微创检查，对您的健康危害甚小，监测过程中因检查的需求，对您局部皮肤进行清理，因此可能导致**皮肤擦伤、水疱、过敏等**相关情况，对此我们将严格按照医疗工作制度及操作常规进行检查，尽量避免此类情况的发生，但如有发生，敬请谅解！

另外由于您个人的基础病情、个体其他情况及反应差异，监测过程中可能发生的情况有：

1、撞伤，坠床

2、呼吸困难，窒息

3、心律失常，心力衰竭，心脏骤停

4、癫痫发作

5、诱发其他疾病

6、意外死亡

由于目前医学对疾病复杂性认识程度有限，上述意外情况不可预知，如有发生，我们将按医院有关制度、规则及本实验室有关制度、流程进行妥善处理，敬请理解！

为全面了解您在睡眠中的有关情况，根据国际国内相关标准，进行多导睡眠检测过程中将全程进行视频观察。所采集视频资料仅作研究应用，我们将根据国家及医院有关规定对视频资料妥善保管，敬请理解！

我_____（填同意）接受该监测方式并愿意承担上述风险。

我_____（填拒绝）接受该监测方式，并且愿意承担因拒绝施行该监测而发生的一切后果。

患者签字：_____ **技师签字：**_____

签字时间： 年 月 日

多导睡眠监测睡前问卷

监测日期_____　　监测编号：_____

姓名_____　性别_____　年龄_____岁

联系电话_____今夜可联系到的家属电话_____

请回答下列问题，在相应备选答案“ □ ”内划“ √ ”，在横线_____上填写具体内容。

1. 您通常晚上上床睡觉时间是：_____ 时_____分
2. 通常情况下您上床后多长时间才能入睡？_____分钟
3. 昨夜您睡了多长时间？_____ 小时_____分
4. 您认为这样长的睡眠时间够吗？　□够　□不够
5. 您今天白天有过打盹、小睡或午睡吗？　□有　□无
   如果有，请问是什么时间？_____点___分
   估计有多长时间？_____小时____分
6. 您最后一次进食时间是：_____点_____分，是：
   □正餐　□零食　□茶点　□咖啡　□酒（□白酒　□红酒　□啤酒）
7. 请列出您今天或常规服用的药物（包括维生素、阿司匹林和非处方药）：

	药　名	剂　量	用　法
(1)			
(2)			
(3)			
(4)			
(5)			
(6)			

8. 您现在有何身体不适吗？（如疼痛、烦躁、焦虑、胸闷、激惹、恶心等）
   □是　□否
   如果有请描述：_____
   _____
9. 您现在感觉如何？
   □非常疲劳　□有些疲劳　□不疲劳也不精神　□有些精神　□非常精神
10. 您每天在家清早醒来后的感觉如何？
    □非常疲劳　□有些疲劳　□不疲劳也不精神　□有些精神　□非常精神
11. 有什么情况可能会影响今晚您的睡眠吗？　□是　□否
    如果有，请描述：_____

睡眠监测醒后问卷

姓名_____ 监测编号_____
日期_____年____月____日 时间_____点_____分

请回答下列问题，在相应备选答案“ □ ”内划“ √ ”，在横线_____上填写具体内容。

1. 昨晚关灯后多长时间您睡着了？_____分钟
2. 与平时在家睡眠比较，您感觉昨晚入睡所花费的时间（从关灯到睡着的时间）：
   □明显缩短 □缩短 □相同 □延长 □明显延长
3. 昨夜您感觉大概睡了多长时间？_____小时 _____分
4. 与平时在家睡眠比较，您感觉昨夜的睡眠时间（从入睡到睡醒的时间）：
   □明显缩短 □缩短 □相同 □延长 □明显延长
5. 您感觉昨夜睡眠如何？
   （1）. □很浅 □稍浅 □适中 □稍深 □很深
   （2）. □干扰很大 □稍有干扰 □很少干扰 □无干扰
   （3）. □无梦 □梦较少 □梦较多 □梦很多
   （4）. □非常不安 □稍感不安 □适中 □较安宁 □非常安宁
6. 与平时在家睡眠比较，您感觉昨晚的睡眠质量如何？
   □明显变差 □稍差 □差不多 □稍好 □明显变好
7. 您现在感觉如何？
   □非常疲劳困倦 □稍感疲劳 □既不精神也不疲倦 □较有精神 □非常精神
8. 您记得昨夜醒了几次吗？_____ 次，夜尿_____次。
9. 今早您醒来的时间是？_____ 时 _____分
10. 今早您是怎么醒的？
    □被唤醒 □不舒适 □噪音 □噩梦 □自己醒来 □其他
11. 您感觉昨晚影响您睡眠质量的问题是：
    □监测设备连接 □仪器设备噪音 □床/环境不适 □室内温度 □外界噪音
    遇到这些问题时您是否告知了您的技师并获得及时解决？ □是 □否
12. 您有什么身体不适吗？□口干 □头晕头疼 □目胀、眼睛干涩
    其他不适症状请描述：

_____

13. 您睡眠时是否使用了治疗设备（即呼吸机或吸氧）？ □是 □否
    如果是，您愿意在家中使用这种设备治疗吗？ □是 □否
14. 您还有其它意见和建议吗？

_____

_____

研究类型：□整夜标准 PSG 诊断 □整夜便携 PSG 诊断 □分夜 PSG 诊断治疗
□整夜 PSG 人工压力滴定 □整夜 PSG 自动压力滴定 □整夜自动压力滴定

监测信息表

姓名_____ 性别____ 年龄_____ 出生日期_____

身高_____cm 体重_____Kg

睡前血压_____mmHg 醒后血压_____mmHg

监测仪器_____ 监测编号_____ 监测日期_____

时间	帧数	分期	事件	处理	备注

监测技师_____

Epworth 白天嗜睡程度问卷

姓名_____ 性别_____ 出生日期_____

病历号_____ 填写日期_____

以下情况有无瞌睡的可能	从不	偶尔	有时	经常
1．坐着阅读时	0	1	2	3
2．坐着与人交谈时	0	1	2	3
3．在公共场所坐着时（如在剧院或开会）	0	1	2	3
4．午餐后安静坐下时（未饮酒）	0	1	2	3
5．下午静卧休息时	0	1	2	3
6．搭乘交通工具持续一小时以上时	0	1	2	3
7．驾车等信号灯时	0	1	2	3
8．看电视时	0	1	2	3

评分_____分

附录 D

（资料性）

远程多导睡眠监测报告（建议版）

多导睡眠监测报告（远程）

监测单位				报告单位		
个人资料						
姓名		性别		年龄		出生日期
身高		体重		BMI		监测日期
睡前血压		醒后血压		科别		编号
就诊原因				近期服药		

记录信息						
申请医生		监测技师		分析技师		报告医生

关灯时间		开灯时间		总睡眠时间		睡眠效率（%）
卧床时间		总记录时间		入睡后清醒时间（分）		清醒次数
睡眠潜伏期（分）				REM期潜伏期（分）		

睡眠分期					
睡眠分期	清醒期	N1期	N2期	N3期	REM期
持续时间（分）					
睡眠时间百分比					

呼吸事件：鼾声指数	鼾声总次数				
参数	阻塞型	混合型	中枢型	总呼吸暂停	低通气
次数					
指数					
平均时间（秒）					
最长时间（秒）					
持续时间（分）					

睡眠呼吸暂停低通气指数（/hr）-睡眠时相因素						
	阻塞型	混合型	中枢型	总呼吸暂停	低通气	指数
REM期						
NREM期						
AHI				陈施呼吸		

SaO2：氧减指数（≥3%）：			
平均SpO2（wake）		平均SpO2（TST）	
最低SpO2（NREM）		最低SpO2（REM）	
最低SpO2（report）		平均SpO2降低水平	

心率			
平均心率		宽复合波心动过速	
最低心率		窄复合波心动过速	
最快心率		心房纤颤	

微觉醒指数：						
参数	NREM		REM		SLEEP	
	次数	指数	次数	指数	次数	指数
呼吸相关微觉醒						
脑动相关微觉醒						
自发性微觉醒						
周期性腿动相关微觉醒						
总计						

睡眠呼吸暂停低通气指数（/hr）--体位因素

肢体运动								
参数	NREM		REM		SLEEP		清醒期	
	次数	指数	次数	指数	次数	指数	次数	指数
PLM								
LM								

趋势图

概述

睡眠结构

呼吸事件

血氧情况

心脏事件

结论：

分析技师

诊断医生

诊断日期

附录 E

（资料性）

睡眠质量客观评价机构服务评价和质量控制指标

服务评价

序号	一级指标	二级指标
1	医疗机构基本条件	服务方和被服务方应具有相应执业资质
2		服务方和被服务方必须在本国的法律范围内开展服务，服务行为符合所在国家或地区的法律法规
3		服务方具有医疗质量与医疗安全、信息化技术保障措施
4		服务方和被服务方均有在本机构注册、符合服务要求的专业技术人员
5	医师基本条件	参与服务和被服务的人员均具有相关执业资质
6		服务方和被服务方安排符合要求的医师、技师、护理人员开展服务。
7	支持人员基本条件	服务方和被服务方有专人负责远程系统的调试与维护
8	设备设施基本条件	远程服务平台应满足服务所需要求
9		远程服务网络应确保系统稳定、畅通
10		服务方和被服务方应确保网络安全、操作安全、数据安全，保护患者隐私，防止数据丢失
11	争议处理	服务方和被服务方有争议或纠纷处理约定，并符合法律规定
12	服务评价与改进	服务方和被服务福有针对服务的评价管理机制，评价方案科学、可操作
13		采集数据真实，评价结果客观、准确
14		服务方和被服务方能根据评价结果，就存在的问题进行整改，并记录

质量控制

序号	一级指标	二级指标
1	资料和数据	服务方和被服务方应采用标准化的病历资料
2		服务方和被服务方应采用标准化的数据采集流程，确保数据完整准确
3		服务方应提供标准化报告
4	人员	参与服务的人员均符合相关执业资质、年限要求并通过培训要求
5	质量评估与改进	服务方和被服务方有针对质量控制的评价管理机制，评价方案科学、可操作
6		质量控制数据真实，结果客观、准确
7		服务方和被服务方能根据评价结果，就存在的问题进行整改，并记录

参考文献

[1] “互联网+”时代的远程医疗服务运营关键问题研究[M].北京：科学出版社.2015.

[2] 中国医师协会呼吸医师分会睡眠呼吸障碍工作委员会.《成人阻塞性睡眠呼吸暂停低通气综合征远程医疗临床实践专家共识》.

[3] 便携式睡眠监测设备的研究进展.中国医疗设备[J].2021,36(9):166-169.

[4] 标准多导睡眠监测的技术规范和应用范围. 世界睡眠医学杂志[J].2014,1(1):30-33.

[5] 大数据存储安全的关键技术研究. 集成电路应用[J]. 2021, 38(11): 46-47.

[6] 社区医联体建设与物联网远程慢病分级诊疗管理探索.重庆医学[J]. 2023, 7(14): 2222-2223.

[7] 我国睡眠障碍防控研究现状及建议.四川大学学报（医学版）[J].2023，54（2）: 226- 230.

[8] 医疗机构睡眠门诊建设和管理专家共识（2025 版）.中华医学杂志[J].2025，105（32）: 2709-2717.

[9] 睡眠医学基础[M].北京：人民军医出版社,2014.

[10] 中国睡眠医学中心标准化建设[M].北京：人民卫生出版社.2021.

[11]睡眠障碍国际分类（第三版）[M].北京：人民卫生出版社,2017.

[12]睡眠医学[M].北京：人民卫生出版社,2022.

[13]睡眠及其相关事件判读手册 规则、术语和技术规范[M].北京：人民卫生出版社,2017.

[14]多导睡眠图书技术与理论[M].北京：人民军医出版社,2004.

[15]睡眠医学——理论与实践[M].北京：北大医学出版社,2025.

[16]睡眠呼吸病学[M].北京：人民卫生出版社,2022.

[17]中西医结合睡眠医学概要[M].北京：人民卫生出版社,2020.

[18]中西医结合睡眠障碍研究新进展[M].北京：人民卫生出版社.2018.

[19]多导睡眠仪实用技术[M].北京：人民军医出版社,2009.

[20]老年睡眠医学[M].北京：科学出版社,2022.

Preface

Attention is drawn to the possibility that certain elements of this document may be the subject of patent rights. The issuing body shall not be held responsible for identifying any or all such patent rights.

Main Drafting Organization: Guang'anmen Hospital South Campus, China Academy of Chinese Medical Sciences.

Participating Drafting Organizations: Guang'anmen Hospital, China Academy of Chinese Medical Sciences, Air force medical center, Second Affiliated Hospital of Heilongjiang University Of Chinese Medicine, Guangdong Provincial Hospital of Traditional Chinese Medicine, The First Affiliated Hospital, Guangzhou University of Traditional Chinese Medicine, Affiliated Hospital of Gansu University of Chinese Medicine, Hubei Provincial Hospital of Traditional Chinese Medicine, Hubei University of Chinese Medicine's Ministry of Education Engineering Research Center for New Technologies and Products in Traditional Chinese Medicine for Elderly Brain Health, Shanghai Hospital of Traditional Chinese Medicine, the First Affiliated Hospital of Anhui University of Chinese Medicine, Hangzhou hospital of traditional Chinese medicine, Fujian academy of Chinese Medicine sciences, Hohhot Mongolian Medicine of Traditional Chinese Medicine Hospital, First Affiliated Hospital of Gannan Medical University, Beijing Municipal Administration of Traditional Chinese Medicine - Sun Shuchen's TCM Traditional Skills Inheritance Studio, Sun Shuchen's Famous Doctor Studio at Hohhot Mongolian Medicine of Traditional Chinese Medicine Hospital, Dr. Sun Shuchen's Expert Clinic in Daxing District, Beijing.

Principal drafter: Sun Shuchen, Zhou Limei, Li Hongyan, Tan Sai, Chen Tieguang, Liu Yanjiao, Gao He, Li Yingdong, Yang Zhimin, Xu Jian, Jiang Yi (New Zealand), Yang Wenming, Huang Sande (Taiwan, China), Zhang Yonghua, Wang Dongyan, Huang Junshan, Liu Ling, Liu Peng, Zhang Liang, Xu Liang, Duan Ying, Fang Jiliang, Gao Ronglin, Wang Weidong, Wang Ping.

Contributors to the drafting： Lin Tangtang, Chen Kaibing, Xu Lingyun, Zhu Daomin, Xu Biyun, Du Hui, Li Tao, Li Jing, Hai Ying, Yu Fengchun, Zhang Zhangjin(Hong Kong, China,) Richard P. Allen (France), Chen Shengdong, Liu Chunsheng, Wang Xi, Wu Huili, Yan Xue, Yang Li, Ye Yongming, You Qiuyun, Zhang Chengpeng, Zheng Yun, Zeng Xueai, Chao Jianfeng, Chen Cheng, Chen Tieguang, Gao Feng, He Hao, Li Mingmao, Liao Heng, Lu Yujun, Xiao Gang, Zhao Fugang, Zhao Min, Hu Linlin, Wei Huijun, Feng Jihong, Gu Xiandan, Hong Qiuyang, Jiang Hong, Jiang Xicheng, Qiao Jin, Wang Chunxia, Zhang Shuyuan, Wang Jian, Xu Xiaowu, Sun Lijun, Yang Guozhou, Yang Jian, Zhang Yaxi, Yao Gaofeng, Shang Shangang, Liang Tianshou, Hua Hongju, Bao Lidao.

Author: Sun Shuchen, Zhou Limei, Li Hongyan.

corresponding author: Sun Shuchen

Specification of remote service for objective evaluation on sleep quality

1 Scope

This document specifies the primary modalities, service procedures, platform and data storage requirements, as well as personnel qualifications and responsibilities for remote services in objective sleep quality assessment (primarily based on polysomnography, PSG).

This document applies to TCM (Traditional Chinese Medicine) institutions and integrated TCM-Western medicine institutions that provide remote services for the objective evaluation of sleep quality..

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition (including any amendments) applies.

WS/T545-2017 Technical specifications for telemedicine information systems.
WS/T546-2017 Interactive Specification of Telemedicine Information Systems and Unified Communications Platform.

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

polysomnography (PSG)

a diagnostic technique that records bioelectrical signals acquired from different anatomical sites or sensors during sleep. These signals are amplified and converted into electrical waveforms for graphical analysis, enabling sleep medicine research and diagnosis of sleep disorders. Standard PSG monitoring must include the following parameters: electroencephalogram (EEG), electrooculogram (EOG), electromyography(EMG), respiratory airflow, respiratory effort, oxygen saturation (SaO_2), sleep position, electrocardiogram (ECG), snore, Full-night video recording.

3.2

service provider institutions

medical institutions providing remote services for objective evaluation of sleep quality.

3.3

service recipient institutions

medical institutions that accept remote services for objective evaluation of sleep quality.

3.4

remote services

the process by which service providers use communication, computer, and network technologies to conduct remote objective evaluation guidance on sleep quality, assist in diagnosing, treating, and remote consultations for sleep disorders for the clients through offline or online interaction methods.

4 Service provider institutions

4.1 Institutional requirements

4.1.1 basic conditions

The Service Provider Institutions should have legitimate professional qualifications. The service activities should comply with the laws and regulations of the country or region where the service is provided.

4.1.2 technical conditions

The Service Provider Institutions must have been established for at least 10 years and have completed no fewer than 500 polysomnography cases each year over the past 5 years. The number of diseases independently diagnosed through polysomnographic monitoring should not be less than5.

4.2 personnel requirements

4.2.1 physician

4.2.1.1 The sleep physicians provided by the Service Provider Institutions can independently conduct clinical work on sleep disorders, and they must have at least 5 years of experience in the field of sleep medicine. There should be at least

one full-time senior physician dedicated to sleep medicine clinical practice responsible for sleep monitoring work.

4.2.1.2 The primary responsibilities of a physician include, but are not limited to:

—— Train the physicians of the Service Recipient Institutions and provide regular guidance;

—— Comprehensive assessment of patient sleep-related issues and remote monitoring prescription;

—— Responsible for assisting in the interpretation and diagnosis of patient sleep reports;

——Develop a treatment plan for sleep disorder patients;

——Ensure the timeliness of remote communication;

—— Review telemedicine data to promptly monitor the condition changes of sleep disorder patients in the served medical units;

—— Timely resolve common issues of serviced medical units through remote means and make detailed records;

——Conduct multidisciplinary consultations for complex cases.

4.2.2 Technologist

4.2.2.1 The Service Provider Institutions' sleep technicians independently and engaged in full-time conduct objective evaluations of sleep quality. There must be at least one have at least 10 years of experience in evaluating sleep quality, or certified as an International Registered Polysomnographic Technologist (RPSGT) for over 5 years. This Sleep technicians assist in providing remote services for objective evaluation of sleep quality.

4.2.2.2 The main responsibilities of a technician include:

—— Training medical technicians from Service Recipient Institutions in and related treatments, providing regular guidance to technicians;

——Be familiar with the functions and procedures of telemedicine services;

——Analyze the monitoring data of the serviced sleep units;

——Assist doctors in evaluating patients before sleep treatment;

—— Promptly observe and assist physicians in monitoring and reporting patients' condition changes and treatment efficacy;

——Review telemedicine data to stay updated on the technical needs of Service Recipient Institutions, and promptly address common issues related to sleep technology in Service Recipient Institutions.

4.2.3 Nursing Personnel

The Service Provider Institutions nursing personnel assist in delivering remote services for objective sleep assessment.Nursing staff shall be proficient in the

core workflows of the sleep center and demonstrate effective communication skills.

The primary responsibilities of nursing personnel include：

—— Providing regular guidance to site nurses at the Service Recipient Institutions;

—— Maintaining proficiency in telemedicine capabilities and protocols to support physicians and technologists in virtual care delivery;

——Reviewing remote medical data (particularly virtual follow-up records), assisting technologists in data processing, and promptly escalating critical issues to clinicians.

——Archive and maintain the medical records and data from remote services.

4.2.4Information staff

The Service Provider Institutions shall designate dedicated personnel to perform periodic testing, upgrading, and maintaining/renovating of instruments, remote equipment, and information systems. These operations must comply with telemedicine-related standards and information security provisions, ensuring uninterrupted delivery of objective sleep assessment services.

4.3 Set requirements

The Service Provider Institutions shall establish a comprehensively configured sleep center, including: At least 2 independently isolated sleep monitoring room; A central control room for operational oversight; Sleep consultation room; Specialized treatment room.

4.4 Device Requirements

The Service Provider Institutions shall be equipped with Type 1 standard polysomnography (PSG) systems (Annex A), capable of capturing the following parameters:

Electroencephalography (EEG)
Electrooculography (EOG)
Electromyography (EMG)
Respiratory airflow
Respiratory effort
Oxygen saturation
Body position
Electrocardiography (ECG) monitoring
Snore

Full-night video recording

Sleep monitoring suites must be configured with High-magnification infrared cameras, Two-way audio communication systems, Real-time surveillance capabilities targeting patient beds, Synchronized display of electrophysiological signals, video feeds, and audio streams.

5 Service Recipient Institutions

5.1 Institutional Requirements

5.1.1 Basic Requirements

The Service Recipient Institutions shall possess valid practice licensure and current professional certification.

5.1.2 Technical Specifications

The Service Recipient Institutions shall have the capability to independently and systematically collect objective sleep data and ensure standardized acquisition of patient medical records and sleep-related data.

5.2 Personnel Requirements

The Service Recipient Institutions shall employ dedicated physicians, technicians, and nursing staff specialized in sleep medicine. These personnel must undergo a 3-6 month training program at a qualified sleep center with service capabilities.

5.3 Facility Requirements

The Service Recipient Institutions shall have an independent facility for sleep disorder diagnosis and treatment, which must include at least a sleep monitoring room, a central control room, and a sleep consultation room.

5.4 Equipment Requirements

The Service Recipient Institutions shall be equipped with at least Level 2 or higher sleep monitoring devices (Appendix A) to independently collect objective sleep data.

6 Basic Requirements

6.1 Hardware and Network Infrastructure Requirements

The performance level of remote platform technology equipment should align with service requirements. Remote medical facilities must meet the demands of

both service providers and recipients regarding image, audio, text, and other technical specifications, ensuring information security, image clarity, data accuracy, and compliance with national/regional remote consultation information system construction standards. The service network must maintain stability and smooth transmission to guarantee uninterrupted remote service delivery .

6.2 Platform Functional Requirements

The remote evaluation service platform shall meet the operational needs of both service providers and recipients, enabling functions such as bidirectional data transmission and online video consultation.

6.3 Data Storage and Information Security Requirements

Information security primarily addresses issues related to data privacy, protection, permissions, backup, and exchange of biological sample data and electronic medical records. It is essential to establish network security standards from aspects such as network structure security, protection of network security devices, and secure access control. An independent server should be set up to prevent data leakage and confidentiality breaches.

6.4 Data Acquisition Standards

Service providers and recipients shall establish unified data collection standards, select appropriate transmission methods and parameters, and deploy relay stations or signal amplifiers to minimize data attenuation.

7 Process requirements

7.1 Remote Service Partnership Agreement Framework

After meeting the technical requirements specified in this document., the Service Provider Institutions and Service Recipient Institutions shall sign a remote cooperation agreement to formally define: Purpose of cooperation, Terms & Conditions, Scope of collaboration , Detailed workflow ,Rights, Obligations & Liabilities of both parties, Risk mitigation & Dispute resolution.

7.2 Data Collection and Secure Upload

Service Recipient Institutions nursing staff and technicians shall conduct objective sleep quality evaluations for patients based on their medical conditions and the requirements specified in this document. Standardized medical record data (Appendix C) shall be collected, aggregated, and submitted to the platform.

The process will be audited and supervised by sleep specialists, while IT personnel shall ensure stable data transmission and integrity.

7.3 Data Processing and Feedback

Service Provider Institutions sleep technicians shall download and review received sleep data, analyze the collected information, and generate standardized sleep quality assessment reports (Appendix D). After review by sleep physicians, the reports shall be signed by authorized personnel and uploaded to the service recipient.

7.4 Case Discussion and Teleconsultation

When consultation or case discussion is required, Service Recipient Institutions physicians shall submit formal consultation requests with pre-transmitted medical records, confirming designated discussion timing. Service Provider Institutions sleep physicians must promptly review records and prepare relevant materials upon receipt. Both parties' sleep physicians access the teleconsultation platform at scheduled times for case discussions, with sleep technicians and nursing staff participating as needed.

7.5 Data preservation

Both parties shall jointly complete medical documentation in compliance with national/regional medical record regulations, maintaining duplicate originals for separate archival preservation by each institution. Nursing staff assume custodial responsibility for physical record management.

8 Service Evaluation and Quality Control

8.1 Both the service provider and the service recipient Institutions shall establish a service evaluation management system, conduct regular service quality inspections, and undergo periodic service evaluations. Both the service provider and the service recipient shall establish a service evaluation management system, conduct regular service quality inspections, and undergo periodic service evaluations. A quality control team shall be formed to develop standardized procedures for medical record collection, sleep data acquisition. These measures shall ensure the completeness and accuracy of medical records and sleep data.

8.2 Both service evaluation and quality control shall be conducted in accordance with standardized evaluation indicators and implementation protocols, ensuring that assessment activities and quality control measures are systematically

executed based on predefined evaluation frameworks.

8.3 Service evaluation indicators and quality control metrics must reflect actual workflows to ensure relevance and effectiveness.

8.4 Based on service evaluation results and quality control outcomes, formulate corrective measures to continuously improve service quality levels.

Annex A
(Informative)
Classification Standards for Four-Tier Polysomnography Monitoring Equipment

A．1 Standard In-Lab PSG（Type 1）

The requirements for recording indicators must at least include Electroencephalography (EEG),Electrooculography (EOG), Electromyography (EMG), Respiratory airflow Respiratory effort, Oxygen saturation, Electrocardiography (ECG),snore, Full-night video recording .Body position must also be recorded. The examination process must always be monitored by trained personnel, and appropriate actions should be taken when necessary. It is preferable but not mandatory to record leg movements as well.

A．2 Comprehensive Portable PSG（Type 2）

The requirements and standards for recording indicators are similar to those of a polysomnography test, except that heart rate recording can replace electrocardiogram recording. There is no requirement for trained personnel to continuously monitor.

A．3 Modified Portable Sleep Apnea Testing（Type 3）

The minimum recording criteria requirements include ventilation indicators (at least two channels of respiratory movements or respiratory movements plus respiratory airflow), electrocardiogram or heart rate, and arterial blood oxygen saturation. Preparation for the examination needs to be carried out by medical personnel(such as electrode placement and instrument calibration, standardization); it does not require continuous monitoring by a person.

A．4 Continuous Single/Dual Bioparameter Recording（Type 4）

Only records one or two physiological indicators. No personnel monitoring may be required.
Portable sleep apnea diagnostic devices refer to Class2 to 4 devices.

Annex B
(Informative)
Categorize Service Recipient Institutions

After obtaining the required service accreditation from the relevant national or regional authorities, in addition to meeting the technical, personnel, facilities, equipment, services, quality control, and other requirements specified in the main text, Recipient Institutions shall be graded according to the following standards:

B.1 Tier-one service recipient institution

Possesses the basic ability to collect objective sleep data, collecting and monitoring various physiological parameters including Electroencephalography (EEG), Electrooculography (EOG), Electromyography (EMG), Respiratory airflow, Respiratory effort, Oxygen saturation, Body position, Electrocardiography (ECG) monitoring, snore. It operates an independent sleep disorder diagnosis and treatment center equipped with at least one Comprehensive Portable PSG but lacks the independent capability to conduct objective sleep quality assessments. The facility has been performing objective sleep quality evaluations for less than one year, and its technical personnel have completed at least three months of specialized training at qualified service provider institutions to ensure competency in sleep disorder services.

B.2 Tier-two service recipient institution

Possesses the capability to collect objective sleep data, demonstrating higher data integrity and accuracy than Tier-one institutions. Capable of monitoring parameters including Electroencephalography (EEG), Electrooculography (EOG), Electromyography (EMG), Respiratory airflow, Respiratory effort, Oxygen saturation, Body position, Electrocardiography (ECG) monitoring, snore. There are independent facilities for diagnosing and treating sleep disorders, equipped with at least two or more Comprehensive Portable PSG or higher sleep monitoring devices, capable of independently conducting objective evaluations of sleep quality. Therapy related to sleep monitoring can be completed under guidance. The work of objectively evaluating sleep quality has been carried out for 1-3 years. Technical personnel have undergone at least 6 months of training and learning at institutions with service capabilities.

B.3 Tier-three service recipient institution

Possesses advanced capabilities for collecting objective sleep data with superior integrity and accuracy compared to Tier 2 institutions. Monitoring parameters include Capable of monitoring parameters including Electroencephalography (EEG), Electrooculography (EOG), Chin electromyography (chin-EMG), Leg electromyography (leg EMG), Respiratory airflow, Respiratory effort, Oxygen saturation, Body position, Electrocardiography (ECG) monitoring, and Full-night video recording. There is an independent sleep disorder treatment facility, equipped with at least two Standard In-Lab PSG. It has independently mastered methods for evaluating sleep quality and can independently conduct objective evaluations of simple cases of sleep quality and associated treatments related to sleep monitoring. However, it still needs to rely on the Service Provider's Institution for experience and technical review of the objective evaluation reports.

Conduct objective evaluation of sleep quality for 3-5 years. Technical personnel must undergo training and study at institutions with service capabilities for no less than 6 months.

The service recipient institution can be promoted to a higher-level institution after reaching new grade standards and passing relevant assessments/expert evaluations. A tier-three service recipient institution that reaches the service provider institution standards and passes the assessments/expert evaluations can be recognized as a service institution.

Annex C
(Informative)
Sleep Monitoring Medical Record (Recommended Version)

Sleep Center Medical Record

Patient Basic Information (Please fill in carefully)

*Name		*Gender		*Date of Birth	
*Phone Number		Work Unit			
*Home Address					
Reasons for Seeking Medical Care (Please mark " √ " in the corresponding position. * indicates symptoms to be prioritized)					
*Sleep Apnea		*Excessive Daytime Sleepiness		*Nocturnal Leg Movements	
*Bruxism at Night		*Abnormal Movements at Night		*Nocturnal Vocalization	
Snoring Loud but Uneven		Nocturnal Awakening		Frequent Urination at Night (More than 1 time)	
Frequent Nighttime Awakening		Talking in Sleep		Frequent Turning Over at Night	
Dry Mouth on Waking		Dizziness/Headache on Waking		Leg Ache	
Swollen Eyes, Dry Eyes		Acid Reflux		Constipation	
Abdominal Distension, Diarrhea		Fatigue		Drowsiness During Work Meetings	
Inattention		Memory Decline		Decline in Academic Performance	
Depression, Irritability, Personality Change		Emotional-Related Fainting or Leg Weakness		Hypertension	
Diabetes		Abnormal Lipid Levels		Coronary Heart Disease	
Abnormal		Abnormal Liver Function		Cerebrovascular Disease	

Thyroid Function						
Medical Condition Information (To be filled by the doctor)						
Outpatient ID		Inpatient ID		Applying Department		Bed Number	
Chief Complaint, Course of Illness:						
Past Medical History:						
Family Medical History:						
Physical Examination						
Craniofacial Structure	Mallampati Classification		Level	Neck Circumference		Abdominal Circumference
Short Neck		Small Mandible		Enlarged Tonsils		
Enlarged Adenoids in Children		Enlarged Tongue, Posterior Displacement of Tongue Root			Enlarged Uvula	
physical examination			Height	cm	Weight	Kg
Abnormalities in Heart, Lungs, Abdomen, and Nervous System:						
Other						
Special Requirements for PSG Monitoring (Technician to mark “√” in the corresponding position)						
Portable		Polysomnography		Simultaneous Pressure Titration During PSG		
Upper Limb Electromyography		Temporal Lobe Electroencephalography		Other (Handwritten):		

Doctor:

Time:

Informed Consent Form for Sleep Monitoring

Personal Information Section

Name: _____Gender: _____Age: ____Department: _ __Case Number: _____

Unit: _____

Address: _____

ID Number: _____

Contact Phone: _____Contact Person: _____

You will undergo polysomnography (PSG) in our sleep laboratory tonight. PSG is a minimally invasive examination. During the monitoring, we need to clean your local skin, which may cause skin abrasions, blisters, allergies, etc. We will strictly follow medical work systems and operational routines to minimize such occurrences. If they happen, please understand!

Additionally, due to your personal underlying conditions, individual differences, and varying reactions, the following situations may occur during monitoring:

1.Bruises, falls from bed

2.Difficulty breathing, suffocation

3.Arrhythmia, heart failure, cardiac arrest

4.Epileptic seizures

5.Triggering other diseases

6.Unexpected death

Currently, medical understanding of disease complexity is limited, and these unexpected situations cannot be predicted. If they occur, we will handle them properly according to hospital regulations, rules, and laboratory procedures. Please understand!

To comprehensively understand your sleep-related conditions, we will conduct video observations throughout the PSG process based on international and domestic standards. The collected video materials will only be used for research. We will properly store the video materials according to national and hospital regulations. Please understand!

I _____ (fill in "agree") accept this monitoring method and am willing to bear the above risks.

I _____ (fill in "refuse") accept this monitoring method and am willing to bear all consequences of refusing to undergo the monitoring.

Patient's Signature: _____Technician's Signature: _____

Date of Signature: _____ Year _____ Month _____ Day

Bedtime Questionnaire

Monitoring Date: _____ Monitoring No.: _____

Name: _____ Gender: _____ Age: _____

Contact Phone: _____ Family contact phone available tonight: _____

Please mark " √ " in the box for multiple-choice questions, fill in the blanks for open-ended questions.

1.Your usual bedtime: _____ o'clock _____ minutes

2.How long does it usually take for you to fall asleep after going to bed? _____ minutes

3.How long did you sleep last night? _____ hours _____ minutes

4.Do you think this sleep duration is sufficient? ☐ Yes ☐ No

5.Did you take a nap or nap during the day today? ☐ Yes ☐ No

If yes, what time? _____ o'clock _____ minutes

Estimated duration: _____ hours _____ minutes

6.Your last meal time: _____ o'clock _____ minutes, which was:

☐ Main meal ☐ Snack ☐ Tea/coffee break ☐ Coffee ☐ Alcohol (☐ Baijiu ☐ Red wine ☐ Beer)

7.List any medications (including vitamins, aspirin, and over-the-counter drugs) you took today or routinely:

	Medication Name	Dosage	Usage
(1)			
(2)			
(3)			
(4)			
(5)			
(6)			

8.Do you have any physical discomfort now? (e.g., pain, irritability, anxiety, chest tightness, nausea, etc.)

☐ Yes ☐ No

If yes, please describe: _____

9.How do you feel now?

☐ Very tired ☐ Somewhat tired ☐ Neither tired nor energetic ☐ Somewhat energetic ☐ Very energetic

10.How do you feel when you wake up in the morning at home?

☐ Very tired ☐ Somewhat tired ☐ Neither tired nor energetic ☐ Somewhat energetic ☐ Very energetic

11.Is there anything that might affect your sleep tonight? ☐ Yes ☐ No

If yes, please describe: _____

Sleep Monitoring Post - Wakeup Questionnaire

Name: _____ Monitoring Number: _____

Date: _____ Month _____ Day_____ Year Time: _____ Hours _____ Minutes

Please answer the following questions. Mark "√" in the checkbox for the corresponding options, and fill in the blanks with specific content.

1.How many minutes did you sleep after turning off the light last night? _____

2.Compared with your usual sleep at home, how do you feel about the time it took to fall asleep last night (from turning off the light to falling asleep)?

☐ Significantly shortened☐ Shortened☐ Same☐ Extended☐ Significantly extended

3.How long do you feel you slept last night? _____ Hours _____ Minutes

4.Compared with your usual sleep at home, how do you feel about the sleep duration last night (from falling asleep to waking up)?

☐ Significantly shortened☐ Shortened☐ Same☐ Extended☐ Significantly extended

5.How do you feel about your sleep last night?

(1). ☐ Very light ☐ Slightly light ☐ Moderate ☐ Slightly deep ☐ Very deep

(2). ☐ Greatly disturbed ☐ Slightly disturbed ☐ Slightly disturbed ☐ No disturbance

(3). ☐ Dreamless ☐ Few dreams ☐ More dreams ☐ Many dreams

(4). ☐ Very restless ☐ Slightly restless ☐ Moderate ☐ Relatively peaceful ☐ Very peaceful

6.Compared with your usual sleep at home, how do you feel about the sleep quality last night?

☐ Significantly worsened☐ Slightly worsened☐ About the same☐ Slightly improved☐ Significantly improved

7.How do you feel now?

☐ Very tired and sleepy☐ Slightly tired☐ Neither spirited nor sleepy☐ Relatively spirited☐ Very spirited

8.Do you remember how many times you woke up last night? _____ times, nocturia _____ times.

9What time did you wake up this morning? _____ Hours _____ Minutes

10How did you wake up this morning?

☐ Woken up☐ Uncomfortable☐ Noise☐ Nightmare☐ Woke up by yourself ☐ other

11What problems do you feel affected your sleep quality last night?

☐ Monitoring device connection☐ Instrument device noise☐ Bed/environment discomfort☐ Indoor temperature☐ External noise

Did you inform your technician and get timely solutions when encountering these problems? ☐ Yes ☐ No

12Do you have any physical discomfort? ☐ Dry ☐ Headache ☐ Eye swelling, dry eyes

Other discomfort symptoms: _____

13Did you use any treatment devices (such as a ventilator or oxygen) during sleep? ☐ Yes ☐ No

If yes, are you willing to use this device for treatment at home? ☐ Yes ☐ No

14Do you have any other opinions and suggestions? _____

Research Type:☐ Full - night standard PSG diagnosis☐ Full - night portable PSG diagnosis☐ Split - night PSG diagnostic treatment☐ Full - night PSG manual pressure titration☐ Full - night PSG automatic pressure titration☐ Full - night automatic pressure titration

Monitoring Information Form

Name: _____Gender: _____Age: _____Date of Birth: _____

Height: _____ cm Weight: _____ kg

Pre - sleep Blood Pressure: _____ mmHg

Post - wake Blood Pressure: _____mmHg

Monitoring Instrument: _____Monitoring Number: _____Monitoring Date: _____

Time	Frame Number	Stage	Event	Handling	Remarks

Monitoring Technician: _____

Epworth Sleepiness Scale (ESS)

Name_____Gender_____Date of Birth_____

Medical Record Number_____ Date of Completion_____

Below are situations where there is a possibility of dozing off.

Situation	Never (0)	Occasionally (1)	Sometimes (2)	Frequently (3)
1. While reading while sitting	0	1	2	3
2. While sitting and talking to someone	0	1	2	3
3. While sitting in public places (such as in a theater or at a meeting)	0	1	2	3
4. While sitting quietly after lunch (without drinking alcohol)	0	1	2	3
5. While resting quietly in the afternoon	0	1	2	3
6. While traveling by public transport for more than one hour	0	1	2	3
7. While driving and waiting at a traffic light	0	1	2	3
8. While watching TV	0	1	2	3

- Score _____ points

Annex D
(Informative)
Example of a remote polysomnography sleep monitoring report(Recommended Version)

Polysomnography Report (Remote)

observation unit				reporting		
Personal Information						
Name		Gender		Age		Date of Birth
Height		Weight		BMI		Monitoring Date
Blood Pressure Before Sleep		Blood Pressure After Waki		Department		ID Number
Reason for Visit				Medications		

Apply doctor		Inspection technician	Analysis technician	Report doctor

Lights Off Time		Lighting time	Total sleep time	Sleep efficiency (%)
Bedtime		Total Record Time	Time Awake After Falling Asl	Number of Awakenings
Sleep Latency (min)			REM Latency (min)	

Sleep Stages					
Sleep Stages	Awake	N1	N2	N3	REM
Duration (min)					
Percentage of sleep time					

Respiratory Events: Snore Index		Total number of snoring episodes			
Parameters	Obstructive	Mixed	Central	Total Apnea	Hypoventilation
Counts					
Indices					
Average Duration (seconds)					
Longest Duration (seconds)					
Duration (minutes)					

Sleep Apnea Hypopnea Index (/hr) - Sleep Phase Factors						
	Obstructive	Mixed	Central	Total Apnea	Hypopnea	Index
REM						
NREM						
AHI				Cheyne-Stokes Respiration		

SaO2: Oxygen Desaturation Index (≥3%) :			
Average SpO2 (wake)		Average SpO2 (TST)	
Minimum SpO2 (NREM)		Narrow Complex Tachycardi	
Minimum SpO2 (report)		Average SpO2 drop level	

Heart Rate			
Average Heart Rate		Wide Complex Tachycardia	
Lowest Heart Rate		Narrow Complex Tachycardi	
Fastest Heart Rate		Atrial Fibrillation	

Microarousal Index:						
Parameters	NREM		REM		SLEEP	
	Number of events	Index	Number of events	Index	Number of events	Index
Respiratory-related Microarousals						
Leg Movement-related Microarousals						
Spontaneous Microarousals						
Periodic Leg Movement-related Microarousals						
Total						

Sleep Apnea Hypopnea Index (AHI) - Body Position Factors

Motor Movement						
Parameters	NREM		REM		SLEEP	awake
	Number	Index	Number	Index	Number Index	Number Index
PLM						
LM						

Trend Chart

Overview
Sleep structure
Respiratory events
Oxygen levels
Cardiac events
Conclusion

Analyst
Diagnostic Physician
Date

Annex E
(Informative)
Objective Evaluation of Sleep Quality: Institutional Service Assessment and Quality Control Indicators

number	primary indicator	Secondary indicators
1	Essential Requirements for Healthcare Institutions	Service providers and recipients shall possess valid licensure credentials.
2		Both parties must operate within their legal jurisdiction and comply with applicable national/regional regulations.
3		Service providers must implement medical quality/safety management and IT safeguards.
4		Both service providers and recipients must have specialized technical personnel registered with this institution and service-eligible.
5	Basic conditions for physicians	All participating personnel hold requisite professional credentials.
6		Service Provider and Recipient shall arrange qualified physicians, technicians, and nursing personnel to deliver the services in accordance with requirements
7	Basic qualifications for support staff	Both parties maintain designated specialists for remote system configuration and maintenance.
8	Basic conditions of equipment and facilities	The remote service platform should meet the basic conditions required for service provision.
9		The remote service network should ensure system stability and smooth operation.
10		Service providers and service recipients should ensure network security, operational security, and data security, protect patient privacy, and prevent data loss.
11	dispute resolution	The service provider and the recipient have agreed on dispute resolution procedures, which comply with legal regulations.
12	Service evaluation and improvement	Service providers shall establish an evidence-based Quality Management System for service evaluation, featuring scientifically validated metrics and operationally feasible implementation protocols.
13		Data collection shall ensure authenticity, with evaluation results demonstrating objectivity and clinically validated accuracy.
14		Service providers shall implement corrective actions based on evaluation findings to address identified issues, with full documentation of the remediation process.

Quality Control

number	primary indicator	Secondary indicators
1	data and materials	The service provider and the recipient should use standardized medical records.
2		The service provider and the service recipient should adopt standardized data collection procedures to ensure the completeness and accuracy of the data
3		The service provider should provide standardized reports.
4	personnel	All personnel involved in the service meet the relevant professional qualifications, years of experience, and have completed the required training.
5	Quality assessment and improvement	The service provider and the service recipient have an evaluation management mechanism for quality control. The evaluation plan is scientific and operable.
6		Quality control data is genuine, and the results are objective and accurate.
7		The service provider and the service recipient can address existing issues based on the evaluation results and document the changes.

Bibliography

[1] Research on Key Operational Issues of Telemedicine Services in the 'Internet+' Era [M].Beijing：Science Press,2015.
[2] Working Committee on Sleep Respiratory Disorders, Respiratory Physician Branch, Chinese Medical Doctor Association. Expert Consensus on Telemedicine Clinical Practice for Adult Obstructive Sleep Apnea-Hypopnea Syndrome.
[3] Research Progress on Portable Sleep Monitoring Devices . China Medical Devices [J].2021,36(9):166-169.
[4] Technical specifications and application scope of standard polysomnography. world journal of sleep medicine [J].2014,1(1):30-33.
[5] Research on Key Technologies for Big Data Storage Security. Application of IC [J]. 2021, 38(11): 46-47.
[6] Exploring the Construction of Community Medical Consortiums and IoT-based Remote Chronic Disease Stratified Diagnosis and Treatment Management. Chongqing Medical Journal [J]. 2023, 7(14): 2222-2223.
[7] Current status and recommendations for research on sleep disorders prevention and control in China. Journal of Sichuan University (Medical Science Edition)[J]2023，54（2）: 226- 230.
[8] Consensus on the Construction and Management of Sleep Clinics in Medical Institutions (2025 Edition). Chinese Journal of Medical Journal, 2025, 105(32): 2709-2717.
[9] Fundamentals of Sleep Medicine [M]. Beijing：Science Press,2014.
[10] Standardization of Construction of Chinese Sleep Medicine Centers [M]. Beijing：People's Health Publishing House,2021.
[11] International Classification of Sleep Disorders (Third Edition) [M]. Beijing：People's Health Publishing House,2017.
[12] sleep medicine [M]. Beijing：People's Health Publishing House,2022.
[13] Sleep and Related Event Scoring Manual: Rules, Terminology, and Technical Standards [M]. Beijing：People's Health Publishing House,2017.
[14] Polysomnography technology and theory [M]. Beijing：People's Liberation Army Medical Publishing House,2004.
[15] Sleep medicine — theory and practice [M]. Beijing：Peking University Medical Publishing House,2025.
[16] Sleep respiratory medicine [M]. Beijing：People's Health Publishing House,2022.
[17] An overview of integrated Chinese and Western medicine sleep medicine [M]. Beijing：People's Health Publishing House,2022.
[18] New Progress in the Study of Sleep Disorders Combining Traditional Chinese

Medicine and Western Medicine [M]. Beijing：People's Health Publishing House,2018.
[19] Practical Techniques of Polysomnography [M]. Beijing：People's Liberation Army Medical Publishing House,2009.
[20] Geriatric Sleep Medicine [M]. Beijing：Science Press,2022