British Sleep Society
British Paediatric Sleep Society
UK Multidisciplinary Sleep Professionals

Report Service Evaluation

"Impact of COVID-19 on UK Sleep Services"

BSS Research Committee

Executive Summary

- **National Audit** with 46% responder rate, 81% of those confirmed UK location with England, Wales and Scotland represented.
- More than three quarters of respondents represent **larger sleep centres** with more than 40 patients per month, mostly adult services but 27% of respondents see children as well.
- The majority of responding services are seeing **respiratory and non-respiratory** referrals; 37% had 11+ personnel.
- The **negative impact of the COVID-19 Pandemic on services was -75%.**
- This is largely due to **32% of staff being redeployed** at the height of the pandemic, **38% were home based** (working) and **16% furloughed or off sick**.
- The highest negative impact was reported in terms of **personnel** (61.8%), **environment** (61.6%) and **patient care** (69.5%).
- **Future needs** identified mostly the need for PPE, increased CPAP capacity and IT support or provision.
- **Innovation** experienced during the pandemic included **telephone and virtual consultations, drive in services and remote monitoring**.
- The perceived impact was mostly on **In-Person services**, while IT and virtual consultations were starting up; in some cases this remained future planning.
- **Specific COVID-19 Sleep Clinics** could be considered due to specific impact of the disease and the mental health during the lockdown on Sleep.

Aims and Method

The British Sleep Society (BSS), Research Committee, undertook a national audit of sleep service provision in order to determine the impact of COVID-19. The audit was advertised through the BSS website and social media platforms and through a mass emailing to all members. The audit was available from May 2020 to September 2020. The aim was not only to examine the impact of COVID-19 on the provision of services but also to identify any areas of service innovation and anticipated future needs. The audit comprised four topic areas; two forced choice quantitative response areas (***about the service and impact on service***) and two open-ended qualitative response areas (***innovation and future needs***).

The first part of the audit asked respondents to provide information regarding their service in terms of location, typical number of patients seen per month, size of service in terms of personnel and specialities (both in terms of age and range of conditions seen).

The second part of the audit examined the impact of COVID-19 on service provision. This was examined as an estimated overall impact and then specifically focused on the areas of impact. The first part of the qualitative aspect of the audit asked about perceived needs; '*Moving forward, what, if any, new procedures do you feel you will need to put in place (e.g. post COVID-19 symptom clinics, PPE, IT)?*' Finally, respondents were asked about innovation to an existing service; '*Have you identified any new ways of working that have been beneficial to your service offering?*' A free-text response box, with no word limit, was provided and respondents could identify more than one area of need or innovation for the last two questions.

The quantitative parts of the audit were analysed using descriptives (e.g. percentages of individuals or represented services) and the open-ended qualitative response areas of the audit were analysed using quantitative thematic analysis.

Results

Of the 183 respondents who logged on to the survey 86 (47%) completed 100% of the first two quantitative topic areas and were included in the results section.

About the Services

70 of the 86 respondents (81.4%) reported their location in the UK (1 was outside the UK, 1 was a national organisation and 11 did not respond). The majority of respondents were from England (63 respondents and 48 services represented). All 9 geographical regions of England were represented by at least one service (note several people completed the evaluation for the same service):

- London (9 services represented)
- East of England (2 services represented)
- East Midlands (5 services represented)
- Yorkshire and Humber (5 services represented)
- North East (2 services represented)
- North West (4 services represented)
- West Midlands (8 services represented)
- South West (8 services represented)

Scotland had 2 respondents (2 services represented) and Wales had 8 respondents (3 services represented). There were no responses recorded from individuals, or services, in Northern Ireland.

Scale of Service Provision *(each service is only represented once)*

The majority of respondents worked in larger services with almost three quarters reporting seeing at least 40 patients per month and having a team of at least 11 personnel. The make up of the services audited was predominately aimed at Sleep-Disordered Breathing (SDB) and adult services, but 27.5% of the services audited saw children. Additionally, the majority of services also managed other sleep disorders including Insomnia, Parasomnias and Sleep Related Movement Disorders.

- 0-10 patients per month = 1.8% of sample
- 11-20 patients per month = 9.1% of sample
- 21-30 patients per month = 10.1% of sample
- 31-40 patients per month = 4.6% of sample
- 40+ patients per month = 74.4% of sample

Number of Personnel *(each service is only represented once)*

- 1 person = 3.9% of sample
- 2-4 personnel = 19.2% of sample
- 5-7 personnel = 26.9% of sample
- 8-10 personnel = 12.8% of sample
- 11+ personnel = 37.2% of sample

Range of Services *(each service is only represented once)*

- Adult = 72.5% of sample
- Child = 17.5% of sample
- Both = 10.0% of sample

Range of Conditions Seen *(each service is represented once)*

- Sleep Related Breathing Disorders = 85.5%
- Sleep related Movement Disorders = 55.4%
- Circadian Rhythm Disorders = 41.0%
- Insomnia Disorder = 41.0%
- Hypersomnolence Disorders = 39.8%
- Parasomnias = 38.6%
- Other Sleep Disorders = 26.5%

Impact on Services

At the time of the audit, the current negative impact on overall service delivery was reported at 75.4% (n = 83) and the area most often rated as impacted was In-Person Assessments.

Services rated as being severely impacted upon *(in order of impact)*

1) In-Person Assessment
2) Diagnosis
3) In-Person Management
4) Referral
5) Follow-up In-Person
6) At Home Assessment
7) At Home Follow-up
8) Other

Areas of Impact currently and at height of crisis

At the time of completing the audit, respondents on average suggested 31.6% (range 0-86%) of personnel in their service had been redeployed, 38.2% (range 0-94%) were home based working and 16.23% (0-84%) of had been furloughed or off sick. At the height of the crisis it was reported that services were negatively impacted in terms of personnel (61.8%), environment (61.6%) and patient care (69.5%).

Future Needs

Of the 86 respondents, 53 (61.6%) responded to this part of the audit. From the results of the thematic analysis 14 areas of anticipated "*needs*" were identified (Table 1).

Table 1: Anticipated Future Needs

Future Needs	Number of Individuals Suggesting
Increased / Appropriate PPE	28
Increased capacity for remote CPAP delivery	17
Enhanced IT provision	19
Changes to existing space	7
Increased capacity for drive in Drop off clinics	5
Increased patient education	5
Creation of specific post COVID clinics	4
New SOPs	4
Capacity to pre-screen patients for COVID	3
Reduced face to face patient numbers	3
Additional capacity for quarantining equipment	2
Increased virtual clinical linkage between services	2
Staggered patient clinics	2
Increased workforce	1

PPE: personal protective equipment; CPAP: continuous positive airway pressure; IT:information technology; SOP: standard operating procedures.

Innovation and Extension Strategies

Of the 86 respondents, 51 (59.3%) completed this part of the audit. From the results of the thematic analysis, 8 areas of **innovation and extension** of existing services were identified (Table 2).

Table 2: Innovation Strategies

Innovation Strategy / Extension of Existing Service	Number of Services using Strategy
Virtual Appointments	
Telephone	18
Online	17
Dedicated email for existing patients	2
Dedicated phone line for existing patients	1
Drive In / through pick ups	9
Posting equipment	3
Face to face with PPE / Social distancing (not switching on equipment)	4
Structural Changes	
Changing shift patterns to manage 'out of hours'	1
Changing location outside a hospital setting	2
Remote monitoring for CPAP and / or sleep studies	15
Psychoeducation & Support	
YouTube videos of equipment use	1
Embed self-help organisational links to email etc.	2
Audit and re-evaluation of waiting lists	1

Discussion

The aim of the present audit was to determine the **impact of COVID-19 on sleep service provision** throughout the United Kingdom. Moreover, a secondary aim was to determine anticipated future needs and areas of innovation. A good representation of services in England, Wales and Scotland were observed and all regions of England were represented by at least one service.

The results suggest a **significant impact of COVID-19 upon service provision** both at the height of the crisis and at the time of completing the audit. The finding that the estimated **negative impact** on service provision at the time of the audit was over **75%** is interesting, especially considering the levels of perceived impact at the height of the crisis were slightly lower in each of the three domains assessed (personnel, environment and patient care). One interpretation is that the initial impact to services, during the height of the crisis, created a backlog in provision accompanied by new ways of working which could have a sustained impact.

As might be expected the most highly endorsed impacts related to what would traditionally be seen as **in-person provision** (assessment, diagnosis and management). That said, the finding that over 59% of those completing the audit did identify at least one area of **innovation and/or extension** to existing services section is **encouraging**. Moreover, these areas of innovation were predominately focused in this area (e.g. virtual appointments).

Comparing the responses to the anticipated needs and the areas of innovation introduces some interesting differences between services. Where some respondents suggested, as part of their **innovation or extension strategies**, the ability to conduct remote CPAP monitoring or have drive-in appointments, these were highlighted by others, as a **future needs**. Whilst tentative, this may underscore differences at the level of service or indeed trust.

The final observation is that a few services identified, going forward, **the need for COVID-19 specific clinics**. Considering it is becoming apparent that one of the long-term effects of contracting COVID-19 is poorer sleep and higher levels of daytime fatigue, these initiatives seem warranted.

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on behalf of the BSS Research and Executive Committees