Case Study:

How Oxford cleared its COVID sleep study backlog despite social distancing

As in so many hospitals, the COVID-19 pandemic led to closure of the Oxford University Hospitals Trust's inpatient bedrooms. Home sleep studies were also temporarily suspended, thus halting all overnight sleep studies. To cope with this potentially disastrous situation, the Oxford Sleep Unit converted itself into a fully 'drive-through' home sleep study service which met all public health requirements for social distancing, personnel safety, and equipment cleansing.

To do that required a safe, straightforward process using devices that are simple, reliable, and sturdy enough for patients to use at home and that provided sufficient data for a diagnosis without further studies. To implement this service required the purchase of 30 more Stowood Black Flashes, endorsed by the Trust as it was clear that it would be the only way to solve the problem.

The process

Patients drive to the hospital at pre-booked time, where pre-prepared kit is placed on the back seat of their car by a member of staff. The patient does not leave the car. The kit contains a sleep PG screener, sufficient consumables for one night's study, comprehensive instructions, and a hotline phone number to a member of staff in case they need help using the device. The patient wears the device overnight and brings it back to the hospital the next day. The recording is downloaded by a member of the sleep team to a network storage drive for analysis and diagnosis by a Consultant or specialist registrar. The device is sanitised and supplied with fresh consumables and instructions, ready for the next patient.

The device

Oxford use Stowood's Black Flash home sleep screener for their drive-in sleep studies. The Black Flash is easy for the patient to use with minimal instruction, is easy to clean, and its single-use consumables minimise staff cleaning time. Oxford has a low percentage of failed studies due to patient error, and has had no time out for repair during lockdown as the devices have proved highly reliable.

The device provides enough data for in-depth diagnosis: it records SpO_2, heart rate, plethysmographic signal, airflow, two channels of respiratory effort, high quality sound all night, body position, body movement, and thermistry if required. Although it doesn't have a video channel, the true sound (as opposed to just a volume envelope) is the next best thing for interpreting more complex recordings. It is easy to review raw data, change views, and perform an automatic or manual analysis, and events can be added, deleted, or modified with a simple click. The 'Visi-Download' analysis and reporting software is widely used, and user friendly.

Oxford's 'drive-through' service has been in place since June and has enabled them to clear their backlog and keep up with new referrals. It is a highly cost-effective solution given the current reimbursement for a sleep study, and the low cost of the home kit. We hope that this successful experience will encourage other units to move to this 'COVID-safe' and economical model of home sleep studies.

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