J.2 Auto CPAP vs fixed pressure CPAP for OSAHS

Research question: What is the clinical and cost effectiveness of auto CPAP and fixed-level CPAP for managing obstructive sleep apnoea/hypopnoea syndrome (OSAHS)?

Why this is important:

Positive airway pressure is an established treatment for OSAHS that can be delivered via a number of devices and through the use of fixed or variable pressure ("auto titration"). All evidence in the review was for people with moderate to severe sleep apnoea; however, the majority of the studies were in people with severe sleep apnoea. The quality of the evidence was predominantly of low or very low quality and was downgraded due to due to risk of bias, inconsistency and imprecision. They showed little difference in outcomes between auto and fixed-level CPAP. Auto CPAP is more adaptable than fixed-level CPAP because it can vary the pressure according to the individual needs. Because patients are only getting the pressure they need, those who have tried both often report that auto-CPAP is more comfortable to use. This in turn may lead to better adherence and fewer visits to the sleep specialist. However, auto-CPAP is generally more expensive than fixed-level, but the difference in cost between the two has decreased over time. Although the advent of telemonitoring is thought to have helped improve adherence with use of fixed-level CPAP, it is still not known which is more cost-effective between auto and fixed-level CPAP. A randomised controlled trial of the clinical and cost-effectiveness using the latest devices would help answer this question. `

Criteria for selecting high-priority research recommendations:

PICO question	Population: Inclusion: People (16 and older) with OSAHS due to start CPAP treatment for the first time. Population will be stratified by: severity: Mild, moderate, severe (based on AHI/ODI) Exclusion: Children and young adults (under 16 years old) Intervention: Auto CPAP with telemonitoring Fixed-level CPAP with telemonitoring

	Comparison: To each other Outcomes: Quality of life including EQ-5D and Sleep Apnea Quality of Life Index (SAQLI) Sleepiness scores (e.g. Epworth) Maintenance of wakefulness test Apnoea-Hypopnoea index Mask leak data Hours of use (adherence measure) Minor adverse effects of treatment Tolerability of the treatment Treatment pressure Number of healthcare appointments NHS costs and cost per Quality-Adjusted Life-Year (QALY) Follow up: 1 month and 6 months
Importance to patients or the population	The research will allow a consistent evidence-based approach to the first choice of treatment of either auto CPAP with telemonitoring or fixed pressure CPAP with telemonitoring for people with OSAHS. The cost of these devices vary across the country. NHS supply chain prices suggests auto-CPAP is more expensive than fixed level CPAP but NHS Trusts arrange local deals with suppliers so auto CPAP can be obtained at a similar cost in some areas of the country.
Relevance to NICE guidance	This research will enable future guidelines to clearly recommend either auto CPAP with telemonitoring or fixed CPAP with telemonitoring as first choice of treatment.
Relevance to the NHS	A clear recommendation will offer clinicians clearer guidance on use of auto CPAP and fixed pressure CPAP
National priorities	No
Current evidence base	The current evidence is reviewed in Evidence report F of the full guideline. There was evidence from 36 studies comparing auto-CPAP with fixed level CPAP. The evidence showed fixed-level CPAP and auto-CPAP to be equally effective, and auto-CPAP to be more costly. Therefore, the committee agreed to recommend fixed-level CPAP as the first-choice treatment. However, some people, particularly those in whom high pressures are only needed part of the time, find auto-CPAP more comfortable and effective than fixed-level CPAP. For others, telemonitoring may not be possible because of technological constraints such as the lack of availability of internet or poor internet connection. The committee agreed that auto-CPAP should be an option in these cases. There was limited evidence for fixed pressure CPAP with telemonitoring. The committee agreed that there was insufficient evidence to make a clear recommendation for a first-choice treatment just based on clinical effectiveness.
Equality	The recommendation is unlikely to impact on equality issues.
Study design	Randomised controlled trial of auto CPAP with telemonitoring vs fixed pressure CPAP with telemonitoring.
Feasibility	The trial is feasible and should be straightforward to carry out.
Other comments	-
Importance	High: the research is essential to inform future updates of key recommendations in the guideline and maximise resource allocation.