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1 Sleep Apnoea search strategy 1_adherence

This literature search strategy was used for the following review;

- What support improves adherence to CPAP or other interventions?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual.{NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.1 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 1: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2019 Issue 11 of 12 CENTRAL to 2019 Issue 11 of 12	None
Epistemonikos (Epistemonikos Foundation)	Inception – 29 November 2018	None

Medline (Ovid) search terms

1.	exp Sleep Apnea Syndromes/
2.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
3.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
4.	(OSAHS or OSA or OSAS).ti,ab.
5.	(obes* adj3 hypoventil*).ti,ab.
6.	pickwick*.ti,ab.
7.	or/1-6
8.	limit 7 to English language
9.	letter/
10.	editorial/
11.	news/
12.	exp historical article/
13.	Anecdotes as Topic/

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Sleep Apnoea search strategy 1_adherence

14.	comment/
15.	case report/
16.	(letter or comment*).ti.
17.	or/9-16
18.	randomized controlled trial/ or random*.ti,ab.
19.	17 not 18
20.	animals/ not humans/
21.	exp Animals, Laboratory/
22.	exp Animal Experimentation/
23.	exp Models, Animal/
24.	exp Rodentia/
25.	(rat or rats or mouse or mice).ti.
26.	or/19-25
27.	8 not 26
28.	Patient compliance/ or patient dropouts/ or treatment refusal/
29.	(discontin* or abstention or abstain* or stop* or abandon* or uptak* or acclimat* or mainten* or keep*).ti,ab.
30.	(adhere* or adhering or nonadhere* or non-adhere* or non-adhering or complian* or complying or non-complian* or noncomplian* or concordance or capacitance).ti,ab.
31.	or/28-30
32.	((oral or intraoral or intra-oral) adj3 (device* or prosthesis* or appliance* or splint*)).ti,ab.
33.	(MAD or MADs or MAS or MRS).ti,ab.
34.	((dental or orthodontic* or orthosis or orthotic) adj3 (device* or prosthesis* or appliance* or splint*)).ti,ab.
35.	(tongue adj3 (device* or prosthesis* or appliance* or splint* or retain* or reposition* or stabiliz* or stabilis* or advancement or advancing or retention or protruding or protrude or protruded or protrusion or forward or mouthpiece*)).ti,ab.
36.	(mandib* adj3 (device* or prosthesis* or appliance* or splint* or advancement or advancing or protruding or protrude or protruded or protrusion or reposition* or position*)).ti,ab.
37.	(positive airway* pressure or PAP or CPAP or aPAP or nCPAP or autoCPAP or auto-CPAP or biPAP or BPAP or NBiPAP or NBPAP or NIV).ti,ab.
38.	(positive adj3 pressure adj (therapy or device* or ventilat*)).ti,ab.
39.	or/32-38
40.	27 and 31 and 39
41.	randomized controlled trial.pt.
42.	controlled clinical trial.pt.
43.	randomi#ed.ti,ab.
44.	placebo.ab.
45.	randomly.ti,ab.
46.	Clinical Trials as topic.sh.
47.	trial.ti.
48.	or/41-47
49.	Meta-Analysis/
50.	exp Meta-Analysis as Topic/
51.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
52.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
53.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.

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54.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
55.	(search* adj4 literature).ab.
56.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
57.	cochrane.jw.
58.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
59.	or/49-58
60.	40 and (48 or 59)

Embase (Ovid) search terms

1.	exp Sleep Disordered Breathing/
2.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
3.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
4.	(OSAHS or OSA or OSAS).ti,ab.
5.	(obes* adj3 hypoventil*).ti,ab.
6.	pickwick*.ti,ab.
7.	or/1-6
8.	limit 7 to English language
9.	letter.pt. or letter/
10.	note.pt.
11.	editorial.pt.
12.	case report/ or case study/
13.	(letter or comment*).ti.
14.	or/9-13
15.	randomized controlled trial/ or random*.ti,ab.
16.	14 not 15
17.	animal/ not human/
18.	nonhuman/
19.	exp Animal Experiment/
20.	exp Experimental Animal/
21.	animal model/
22.	exp Rodent/
23.	(rat or rats or mouse or mice).ti.
24.	or/16-23
25.	8 not 24
26.	patient compliance/ or patient dropout/ or treatment refusal/
27.	(discontin* or abstention or abstain* or stop* or abandon* or uptak* or acclimat* or mainten* or keep*).ti,ab.
28.	(adhere* or adhering or nonadhere* or non-adhere* or non-adhering or complian* or complying or non-complian* or noncomplian* or concordance or capacitance).ti,ab.
29.	or/26-28
30.	((oral or intraoral or intra-oral) adj3 (device* or prothes* or appliance* or splint*)).ti,ab.
31.	(MAD or MADs or MAS or MRS).ti,ab.
32.	((dental or orthodontic* or orthosis or orthotic) adj3 (device* or prothes* or appliance* or splint*)).ti,ab.
33.	(tongue adj3 (device* or prothes* or appliance* or splint* or retain* or reposition* or

	stabiliz* or stabilis* or advancement or advancing or retention or protruding or protrude or protruded or protrusion or forward or mouthpiece*)).ti,ab.
34.	(mandib* adj3 (device* or prothes* or appliance* or splint* or advancement or advancing or protruding or protrude or protruded or protrusion or reposition* or position*)).ti,ab.
35.	(positive airway* pressure or PAP or CPAP or aPAP or nCPAP or autoCPAP or auto-CPAP or biPAP or BPAP or NBiPAP or NBPAP or NIV).ti,ab.
36.	(positive adj3 pressure adj (therapy or device* or ventilat*)).ti,ab.
37.	or/30-36
38.	25 and 29 and 37
39.	random*.ti,ab.
40.	factorial*.ti,ab.
41.	(crossover* or cross over*).ti,ab.
42.	((doubl* or singl*) adj blind*).ti,ab.
43.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
44.	crossover procedure/
45.	single blind procedure/
46.	randomized controlled trial/
47.	double blind procedure/
48.	or/39-47
49.	systematic review/
50.	meta-analysis/
51.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
52.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
53.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
54.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
55.	(search* adj4 literature).ab.
56.	(medline or pubmed or cochrane or embase or psychlit or psychlit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
57.	cochrane.jw.
58.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
59.	or/49-58
60.	38 and (48 or 59)

Cochrane Library (Wiley) search terms

#1.	MeSH descriptor: [Sleep Apnea Syndromes] explode all trees
#2.	(sleep* near/4 (apnea* or apnoea* or hypopnea* or hypopnoea*)):ti,ab
#3.	(sleep* near/4 disorder* near/4 breath*):ti,ab
#4.	(OSAHS or OSA or OSAS):ti,ab
#5.	(obes* near/3 hypoventil*):ti,ab
#6.	pickwick*:ti,ab
#7.	(OR #1-#6)
#8.	MeSH descriptor: [Patient Compliance] this term only
#9.	MeSH descriptor: [Patient Dropouts] this term only
#10.	MeSH descriptor: [Treatment Refusal] this term only
#11.	(discontinu* or abstention or abstain* or stop* or abandon* or uptak* or acclimat* or mainten* or keep*):ti,ab

#12.	(adhere* or adhering or nonadhere* or non-adhere* or non-adhering or complian* or complying or non-complian* or noncomplian* or concordance or capacitance):ti,ab
#13.	(OR #8-#12)
#14.	((oral or intraoral or intra-oral) near/3 (device* or prosthes* or appliance* or splint*)):ti,ab
#15.	(MAD or MADs or MAS or MRS):ti,ab
#16.	((dental or orthodontic* or orthosis or orthotic) near/3 (device* or prosthes* or appliance* or splint*)):ti,ab
#17.	(tongue near/3 (device* or prosthes* or appliance* or splint* or retain* or reposition* or stabiliz* or stabilis* or advancement or advancing or retention or protruding or protrude or protruded or protrusion or forward or mouthpiece*)):ti,ab
#18.	(mandib* near/3 (device* or prosthes* or appliance* or splint* or advancement or advancing or protruding or protrude or protruded or protrusion or reposition* or position*)):ti,ab
#19.	(positive airway* pressure or PAP or CPAP or aPAP or nCPAP or autoCPAP or auto-CPAP or biPAP or BPAP or NBiPAP or NBPAP or NIV):ti,ab
#20.	(positive near/3 pressure near/1 (therapy or device* or ventilat*)):ti,ab
#21.	(OR #14-#20)
#22.	#7 AND #13 AND #21

Epistemonikos search terms

1.	((title:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*) OR abstract:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*)))
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A.2 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to sleep apnoea population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA – this ceased to be updated after March 2018) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics and quality of life studies.

A.2.1 Health economic studies strategy

Table 2: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 26 November 2019	Exclusions Health economics studies
Embase	2014 – 26 November 2019	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 31 March 2018 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

	exp Sleep Apnea Syndromes/
1.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
2.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
3.	(OSAHS or OSA or OSAS).ti,ab.
4.	(obes* adj3 hypoventil*).ti,ab.
5.	pickwick*.ti,ab.
6.	or/1-6
7.	limit 7 to English language
8.	letter/
9.	editorial/
10.	news/
11.	exp historical article/
12.	Anecdotes as Topic/
13.	comment/
14.	case report/
15.	(letter or comment*).ti.
16.	or/9-16
17.	randomized controlled trial/ or random*.ti,ab.
18.	17 not 18
19.	animals/ not humans/
20.	exp Animals, Laboratory/
21.	exp Animal Experimentation/
22.	exp Models, Animal/
23.	exp Rodentia/
24.	(rat or rats or mouse or mice).ti.
25.	or/19-25
26.	8 not 26
27.	Economics/
28.	Value of life/
29.	exp "Costs and Cost Analysis"/
30.	exp Economics, Hospital/
31.	exp Economics, Medical/
32.	Economics, Nursing/
33.	Economics, Pharmaceutical/
34.	exp "Fees and Charges"/
35.	exp Budgets/
36.	budget*.ti,ab.
37.	cost*.ti.
38.	(economic* or pharmaco?economic*).ti.
39.	(price* or pricing*).ti,ab.
40.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
41.	(financ* or fee or fees).ti,ab.
42.	(value adj2 (money or monetary)).ti,ab.
43.	or/28-43

44.	27 and 44
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Embase (Ovid) search terms

1.	exp Sleep Disordered Breathing/
2.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
3.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
4.	(OSAHS or OSA or OSAS).ti,ab.
5.	(obes* adj3 hypoventil*).ti,ab.
6.	pickwick*.ti,ab.
7.	or/1-6
8.	limit 7 to English language
9.	letter.pt. or letter/
10.	note.pt.
11.	editorial.pt.
12.	case report/ or case study/
13.	(letter or comment*).ti.
14.	or/9-13
15.	randomized controlled trial/ or random*.ti,ab.
16.	14 not 15
17.	animal/ not human/
18.	nonhuman/
19.	exp Animal Experiment/
20.	exp Experimental Animal/
21.	animal model/
22.	exp Rodent/
23.	(rat or rats or mouse or mice).ti.
24.	or/16-23
25.	8 not 24
26.	health economics/
27.	exp economic evaluation/
28.	exp health care cost/
29.	exp fee/
30.	budget/
31.	funding/
32.	budget*.ti,ab.
33.	cost*.ti.
34.	(economic* or pharmaco?economic*).ti.
35.	(price* or pricing*).ti,ab.
36.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
37.	(financ* or fee or fees).ti,ab.
38.	(value adj2 (money or monetary)).ti,ab.
39.	or/26-38
40.	25 and 39

NHS EED and HTA (CRD) search terms

#1.	MeSH DESCRIPTOR Sleep Apnea Syndromes EXPLODE ALL TREES
#2.	(sleep* adj4 (apn?ea* or hypopn?ea*))
#3.	(sleep* adj4 disorder* adj4 breath*)
#4.	(OSAHS or OSA or OSAS)
#5.	(obes* adj3 hypoventil*)
#6.	(pickwick*)
#7.	#1 OR #2 OR #3 OR #4 OR #5 OR #6

A.2.2 Quality of life studies strategy

Table 3: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	1946 – 26 November 2019	Exclusions Quality of life studies
Embase	1974 – 26 November 2019	Exclusions Quality of life studies

Medline (Ovid) search terms

1.	exp Sleep Apnea Syndromes/
2.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
3.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
4.	(OSAHS or OSA or OSAS).ti,ab.
5.	(obes* adj3 hypoventil*).ti,ab.
6.	pickwick*.ti,ab.
7.	or/1-6
8.	limit 7 to English language
9.	letter/
10.	editorial/
11.	news/
12.	exp historical article/
13.	Anecdotes as Topic/
14.	comment/
15.	case report/
16.	(letter or comment*).ti.
17.	or/9-16
18.	randomized controlled trial/ or random*.ti,ab.
19.	17 not 18
20.	animals/ not humans/
21.	exp Animals, Laboratory/
22.	exp Animal Experimentation/
23.	exp Models, Animal/

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Sleep Apnoea search strategy 1_adherence

24.	exp Rodentia/
25.	(rat or rats or mouse or mice).ti.
26.	or/19-25
27.	8 not 26
28.	quality-adjusted life years/
29.	sickness impact profile/
30.	(quality adj2 (wellbeing or well being)).ti,ab.
31.	sickness impact profile.ti,ab.
32.	disability adjusted life.ti,ab.
33.	(qal* or qtime* or qwb* or daly*).ti,ab.
34.	(euroqol* or eq5d* or eq 5*).ti,ab.
35.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
36.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
37.	(hui or hui1 or hui2 or hui3).ti,ab.
38.	(health* year* equivalent* or hye or hyes).ti,ab.
39.	discrete choice*.ti,ab.
40.	rosser.ti,ab.
41.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
42.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
43.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
44.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
45.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
46.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
47.	or/28-46
48.	27 and 47

Embase (Ovid) search terms

1.	exp Sleep Disordered Breathing/
2.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
3.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
4.	(OSAHS or OSA or OSAS).ti,ab.
5.	(obes* adj3 hypoventil*).ti,ab.
6.	pickwick*.ti,ab.
7.	or/1-6
8.	limit 7 to English language
9.	letter.pt. or letter/
10.	note.pt.
11.	editorial.pt.
12.	case report/ or case study/
13.	(letter or comment*).ti.
14.	or/9-13
15.	randomized controlled trial/ or random*.ti,ab.

16.	14 not 15
17.	animal/ not human/
18.	nonhuman/
19.	exp Animal Experiment/
20.	exp Experimental Animal/
21.	animal model/
22.	exp Rodent/
23.	(rat or rats or mouse or mice).ti.
24.	or/16-23
25.	8 not 24
26.	quality adjusted life year/
27.	"quality of life index"/
28.	short form 12/ or short form 20/ or short form 36/ or short form 8/
29.	sickness impact profile/
30.	(quality adj2 (wellbeing or well being)).ti,ab.
31.	sickness impact profile.ti,ab.
32.	disability adjusted life.ti,ab.
33.	(qal* or qtime* or qwb* or daly*).ti,ab.
34.	(euroqol* or eq5d* or eq 5*).ti,ab.
35.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
36.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
37.	(hui or hui1 or hui2 or hui3).ti,ab.
38.	(health* year* equivalent* or hye or hyes).ti,ab.
39.	discrete choice*.ti,ab.
40.	rosser.ti,ab.
41.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
42.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
43.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
44.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
45.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
46.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
47.	or/26-46
48.	25 and 47

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Sleep Apnoea search strategy 1_adherence

2 Sleep Apnoea search strategy 2_demonstration of efficacy

This literature search strategy was used for the following review;

- How should efficacy of treatment be demonstrated (for example, variable positive pressure titration device, oximetry, capnography or polysomnography titration)?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual.{NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.3 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 4: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2019 Issue 11 of 12 CENTRAL to 2019 Issue 11 of 12	None
Epistemonikos (Epistemonikos Foundation)	Inception – 29 November 2018	None

Medline (Ovid) search terms

61.	exp Sleep Apnea Syndromes/
62.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
63.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
64.	(OSAHS or OSA or OSAS).ti,ab.
65.	(obes* adj3 hypoventil*).ti,ab.
66.	pickwick*.ti,ab.
67.	or/1-6
68.	limit 7 to English language

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Sleep Apnoea search strategy 2_ demonstration of efficacy

69.	letter/
70.	editorial/
71.	news/
72.	exp historical article/
73.	Anecdotes as Topic/
74.	comment/
75.	case report/
76.	(letter or comment*).ti.
77.	or/9-16
78.	randomized controlled trial/ or random*.ti,ab.
79.	17 not 18
80.	animals/ not humans/
81.	exp Animals, Laboratory/
82.	exp Animal Experimentation/
83.	exp Models, Animal/
84.	exp Rodentia/
85.	(rat or rats or mouse or mice).ti.
86.	or/19-25
87.	8 not 26
88.	(sleep* adj3 (tool* or index* or indic* or score* or scoring or scale*)).ti,ab.
89.	((spouse* or wife or wives or husband* or significant other* or partner* or family or families or care giver* or caregiver* or carer* or symptom*) adj (report* or observ* or watch* or note* or noting or hear* or listen*)).ti,ab.
90.	(out of hours or off hours).ti,ab.
91.	exp oximetry/ or capnography/ or polysomnography/
92.	(oximetry or capnogra* or capnometer or polysomnograph* or colorimetr* or conductometr* or potentiometr*).ti,ab.
93.	((carbon dioxide or CO2 or oxygen or O2) adj2 (monitor* or continuous*)).ti,ab.
94.	(blood gas adj2 (monitor* or continuous or test*)).ti,ab.
95.	Epworth Sleepiness Scale.ti,ab.
96.	Apnoea Hypopnea Index.ti,ab.
97.	Oxygen desaturation index.ti,ab.
98.	Calgary Sleep Apnea Quality of Life Index.ti,ab.
99.	(ESS or AHI or ODI or SQALI or ABG).ti,ab.
100.	or/28-39
101.	27 and 40
102.	Meta-Analysis/
103.	exp Meta-Analysis as Topic/
104.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
105.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
106.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
107.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
108.	(search* adj4 literature).ab.
109.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.

110.	cochrane.jw.
111.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
112.	or/42-51
113.	randomized controlled trial.pt.
114.	controlled clinical trial.pt.
115.	randomi#ed.ti,ab.
116.	placebo.ab.
117.	randomly.ti,ab.
118.	Clinical Trials as topic.sh.
119.	trial.ti.
120.	or/53-59
121.	Epidemiologic studies/
122.	Observational study/
123.	exp Cohort studies/
124.	(cohort adj (study or studies or analys* or data)).ti,ab.
125.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
126.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
127.	Controlled Before-After Studies/
128.	Historically Controlled Study/
129.	Interrupted Time Series Analysis/
130.	(before adj2 after adj2 (study or studies or data)).ti,ab.
131.	exp case control study/
132.	case control*.ti,ab.
133.	Cross-sectional studies/
134.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
135.	or/61-74
136.	41 and (52 or 60 or 75)

Embase (Ovid) search terms

61.	exp Sleep Disordered Breathing/
62.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
63.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
64.	(OSAHS or OSA or OSAS).ti,ab.
65.	(obes* adj3 hypoventil*).ti,ab.
66.	pickwick*.ti,ab.
67.	or/1-6
68.	limit 7 to English language
69.	letter.pt. or letter/
70.	note.pt.
71.	editorial.pt.
72.	case report/ or case study/
73.	(letter or comment*).ti.
74.	or/9-13
75.	randomized controlled trial/ or random*.ti,ab.

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Sleep Apnoea search strategy 2_demonstration of efficacy

76.	14 not 15
77.	animal/ not human/
78.	nonhuman/
79.	exp Animal Experiment/
80.	exp Experimental Animal/
81.	animal model/
82.	exp Rodent/
83.	(rat or rats or mouse or mice).ti.
84.	or/16-23
85.	8 not 24
86.	(sleep* adj3 (tool* or index* or indic* or score* or scoring or scale*)).ti,ab.
87.	((spouse* or wife or wives or husband* or significant other* or partner* or family or families or care giver* or caregiver* or carer* or symptom*) adj (report* or observ* or watch* or note* or noting or hear* or listen*)).ti,ab.
88.	(out of hours or off hours).ti,ab.
89.	exp oximetry/ or exp capnometry/ or capnometer/ or polysomnography/
90.	(oximetry or capnogra* or capnometer or polysomnograph* or colorimetr* or conductometr* or potentiometr*).ti,ab.
91.	((carbon dioxide or CO2 or oxygen or O2) adj2 (monitor* or continuous*)).ti,ab.
92.	(blood gas adj2 (monitor* or continuous or test*)).ti,ab.
93.	Epworth Sleepiness Scale.ti,ab.
94.	Apnoea Hypopnea Index.ti,ab.
95.	Oxygen desaturation index.ti,ab.
96.	Calgary Sleep Apnea Quality of Life Index.ti,ab.
97.	(ESS or AHI or ODI or SQALI or ABG).ti,ab.
98.	or/26-37
99.	25 and 38
100.	systematic review/
101.	meta-analysis/
102.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
103.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
104.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
105.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
106.	(search* adj4 literature).ab.
107.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
108.	cochrane.jw.
109.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
110.	or/40-49
111.	random*.ti,ab.
112.	factorial*.ti,ab.
113.	(crossover* or cross over*).ti,ab.
114.	((doubl* or singl*) adj blind*).ti,ab.
115.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
116.	crossover procedure/

117.	single blind procedure/
118.	randomized controlled trial/
119.	double blind procedure/
120.	or/51-59
121.	Clinical study/
122.	Observational study/
123.	family study/
124.	longitudinal study/
125.	retrospective study/
126.	prospective study/
127.	cohort analysis/
128.	follow-up/
129.	cohort*.ti,ab.
130.	68 and 69
131.	(cohort adj (study or studies or analys* or data)).ti,ab.
132.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
133.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
134.	(before adj2 after adj2 (study or studies or data)).ti,ab.
135.	or/61-67,70-74
136.	exp case control study/
137.	case control*.ti,ab.
138.	cross-sectional study/
139.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
140.	or/75-79
141.	39 and (50 or 60 or 80)

Cochrane Library (Wiley) search terms

#23.	MeSH descriptor: [Sleep Apnea Syndromes] explode all trees
#24.	(sleep* near/4 (apnea* or apnoea* or hypopnea* or hypopnoea*)):ti,ab
#25.	(sleep* near/4 disorder* near/4 breath*):ti,ab
#26.	(OSAHS or OSA or OSAS):ti,ab
#27.	(obes* near/3 hypoventil*):ti,ab
#28.	pickwick*:ti,ab
#29.	(OR #1-#6)
#30.	(sleep* near/3 (tool* or index* or indic* or score* or scoring or scale*)):ti,ab
#31.	((spouse* or wife or wives or husband* or significant other* or partner* or family or families or care giver* or caregiver* or carer* or symptom*) near/1 (report* or observ* or watch* or note* or noting or hear* or listen*)):ti,ab
#32.	(out of hours or off hours):ti,ab
#33.	MeSH descriptor: [Oximetry] explode all trees
#34.	MeSH descriptor: [Capnography] this term only
#35.	MeSH descriptor: [Polysomnography] this term only
#36.	(oximetry or capnogra* or capnometer or polysomnograph* or colorimetr* or conductometr* or potentiometr*):ti,ab
#37.	((carbon dioxide or CO2 or oxygen or O2) near/2 (monitor* or continuous*)):ti,ab

#38.	(blood gas near/2 (monitor* or continuous or test*)):ti,ab
#39.	Epworth Sleepiness Scale:ti,ab
#40.	Apnoea Hypopnea Index:ti,ab
#41.	Oxygen desaturation index:ti,ab
#42.	Calgary Sleep Apnea Quality of Life Index:ti,ab
#43.	(ESS or AHI or ODI or SQALI or ABG):ti,ab
#44.	(OR #8-#21)
#45.	#7 and #22

Epistemonikos search terms

2.	((title:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*) OR abstract:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*)))
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A.4 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to sleep apnoea population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA – this ceased to be updated after March 2018) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics and quality of life studies.

A.4.1 Health economic studies strategy

Table 5: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 26 November 2019	Exclusions Health economics studies
Embase	2014 – 26 November 2019	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 31 March 2018 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

	exp Sleep Apnea Syndromes/
45.	(sleep* adj4 (apn?ea* or hypopn?ea*)):ti,ab.
46.	(sleep* adj4 disorder* adj4 breath*):ti,ab.
47.	(OSAHS or OSA or OSAS):ti,ab.
48.	(obes* adj3 hypoventil*):ti,ab.
49.	pickwick*:ti,ab.
50.	or/1-6

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Sleep Apnoea search strategy 2_ demonstration of efficacy

51.	limit 7 to English language
52.	letter/
53.	editorial/
54.	news/
55.	exp historical article/
56.	Anecdotes as Topic/
57.	comment/
58.	case report/
59.	(letter or comment*).ti.
60.	or/9-16
61.	randomized controlled trial/ or random*.ti,ab.
62.	17 not 18
63.	animals/ not humans/
64.	exp Animals, Laboratory/
65.	exp Animal Experimentation/
66.	exp Models, Animal/
67.	exp Rodentia/
68.	(rat or rats or mouse or mice).ti.
69.	or/19-25
70.	8 not 26
71.	Economics/
72.	Value of life/
73.	exp "Costs and Cost Analysis"/
74.	exp Economics, Hospital/
75.	exp Economics, Medical/
76.	Economics, Nursing/
77.	Economics, Pharmaceutical/
78.	exp "Fees and Charges"/
79.	exp Budgets/
80.	budget*.ti,ab.
81.	cost*.ti.
82.	(economic* or pharmaco?economic*).ti.
83.	(price* or pricing*).ti,ab.
84.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
85.	(financ* or fee or fees).ti,ab.
86.	(value adj2 (money or monetary)).ti,ab.
87.	or/28-43
88.	27 and 44

Embase (Ovid) search terms

41.	exp Sleep Disordered Breathing/
42.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
43.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
44.	(OSAHS or OSA or OSAS).ti,ab.
45.	(obes* adj3 hypoventil*).ti,ab.

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Sleep Apnoea search strategy 2_demonstration of efficacy

46.	pickwick*.ti,ab.
47.	or/1-6
48.	limit 7 to English language
49.	letter.pt. or letter/
50.	note.pt.
51.	editorial.pt.
52.	case report/ or case study/
53.	(letter or comment*).ti.
54.	or/9-13
55.	randomized controlled trial/ or random*.ti,ab.
56.	14 not 15
57.	animal/ not human/
58.	nonhuman/
59.	exp Animal Experiment/
60.	exp Experimental Animal/
61.	animal model/
62.	exp Rodent/
63.	(rat or rats or mouse or mice).ti.
64.	or/16-23
65.	8 not 24
66.	health economics/
67.	exp economic evaluation/
68.	exp health care cost/
69.	exp fee/
70.	budget/
71.	funding/
72.	budget*.ti,ab.
73.	cost*.ti.
74.	(economic* or pharmaco?economic*).ti.
75.	(price* or pricing*).ti,ab.
76.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
77.	(financ* or fee or fees).ti,ab.
78.	(value adj2 (money or monetary)).ti,ab.
79.	or/26-38
80.	25 and 39

NHS EED and HTA (CRD) search terms

#8.	MeSH DESCRIPTOR Sleep Apnea Syndromes EXPLODE ALL TREES
#9.	(sleep* adj4 (apn?ea* or hypopn?ea*))
#10.	(sleep* adj4 disorder* adj4 breath*)
#11.	(OSAHS or OSA or OSAS)
#12.	(obes* adj3 hypoventil*)
#13.	(pickwick*)
#14.	#1 OR #2 OR #3 OR #4 OR #5 OR #6

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A.4.2 Quality of life studies strategy

Table 6: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	1946 – 26 November 2019	Exclusions Quality of life studies
Embase	1974 – 26 November 2019	Exclusions Quality of life studies

Medline (Ovid) search terms

49.	exp Sleep Apnea Syndromes/
50.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
51.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
52.	(OSAHS or OSA or OSAS).ti,ab.
53.	(obes* adj3 hypoventil*).ti,ab.
54.	pickwick*.ti,ab.
55.	or/1-6
56.	limit 7 to English language
57.	letter/
58.	editorial/
59.	news/
60.	exp historical article/
61.	Anecdotes as Topic/
62.	comment/
63.	case report/
64.	(letter or comment*).ti.
65.	or/9-16
66.	randomized controlled trial/ or random*.ti,ab.
67.	17 not 18
68.	animals/ not humans/
69.	exp Animals, Laboratory/
70.	exp Animal Experimentation/
71.	exp Models, Animal/
72.	exp Rodentia/
73.	(rat or rats or mouse or mice).ti.
74.	or/19-25
75.	8 not 26
76.	quality-adjusted life years/
77.	sickness impact profile/
78.	(quality adj2 (wellbeing or well being)).ti,ab.
79.	sickness impact profile.ti,ab.

80.	disability adjusted life.ti,ab.
81.	(qal* or qtime* or qwb* or daly*).ti,ab.
82.	(euroqol* or eq5d* or eq 5*).ti,ab.
83.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
84.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
85.	(hui or hui1 or hui2 or hui3).ti,ab.
86.	(health* year* equivalent* or hye or hyes).ti,ab.
87.	discrete choice*.ti,ab.
88.	rosser.ti,ab.
89.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
90.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
91.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
92.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
93.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
94.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
95.	or/28-46
96.	27 and 47

Embase (Ovid) search terms

49.	exp Sleep Disordered Breathing/
50.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
51.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
52.	(OSAHS or OSA or OSAS).ti,ab.
53.	(obes* adj3 hypoventil*).ti,ab.
54.	pickwick*.ti,ab.
55.	or/1-6
56.	limit 7 to English language
57.	letter.pt. or letter/
58.	note.pt.
59.	editorial.pt.
60.	case report/ or case study/
61.	(letter or comment*).ti.
62.	or/9-13
63.	randomized controlled trial/ or random*.ti,ab.
64.	14 not 15
65.	animal/ not human/
66.	nonhuman/
67.	exp Animal Experiment/
68.	exp Experimental Animal/
69.	animal model/
70.	exp Rodent/
71.	(rat or rats or mouse or mice).ti.
72.	or/16-23

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Sleep Apnoea search strategy 2_ demonstration of efficacy

73.	8 not 24
74.	quality adjusted life year/
75.	"quality of life index"/
76.	short form 12/ or short form 20/ or short form 36/ or short form 8/
77.	sickness impact profile/
78.	(quality adj2 (wellbeing or well being)).ti,ab.
79.	sickness impact profile.ti,ab.
80.	disability adjusted life.ti,ab.
81.	(qal* or qtime* or qwb* or daly*).ti,ab.
82.	(euroqol* or eq5d* or eq 5*).ti,ab.
83.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
84.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
85.	(hui or hui1 or hui2 or hui3).ti,ab.
86.	(health* year* equivalent* or hye or hyes).ti,ab.
87.	discrete choice*.ti,ab.
88.	rosser.ti,ab.
89.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
90.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
91.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
92.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
93.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
94.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
95.	or/26-46
96.	25 and 47

A.5 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 7: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies Diagnostic tests studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies Diagnostic tests studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2019 Issue 11 of 12 CENTRAL to 2019 Issue 11 of 12	None
Epistemonikos (Epistemonikos Foundation)	Inception – 29 November 2018	None

Medline (Ovid) search terms

137.	exp Sleep Apnea Syndromes/
138.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
139.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
140.	(OSAHS or OSA or OSAS).ti,ab.
141.	(obes* adj3 hypoventil*).ti,ab.
142.	pickwick*.ti,ab.
143.	or/1-6
144.	letter/
145.	editorial/
146.	news/
147.	exp historical article/
148.	Anecdotes as Topic/
149.	comment/
150.	case report/
151.	(letter or comment*).ti.
152.	or/8-15
153.	randomized controlled trial/ or random*.ti,ab.
154.	16 not 17
155.	animals/ not humans/

156.	exp Animals, Laboratory/
157.	exp Animal Experimentation/
158.	exp Models, Animal/
159.	exp Rodentia/
160.	(rat or rats or mouse or mice).ti.
161.	or/18-24
162.	7 not 25
163.	limit 26 to English language
164.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
165.	27 not 28
166.	(Epworth or ESS or ESS-CHAD).ti,ab.
167.	(STOP-bang or stopbang or "snoring tired observed pressure").ti,ab.
168.	((sleep* or Berlin or STOP*) adj3 (questionair* or questionair*)).ti,ab.
169.	((score* or scoring or stratif* or assess*) adj3 (system* or schem*)).ti,ab.
170.	exp Oximetry/
171.	(oxymet* or oximet*).ti,ab.
172.	Capnography/
173.	capnogra*.ti,ab.
174.	(oxi-capnogra* or oxicapnogra* or oxy-capnogra* or oxycapnogra*).ti,ab.
175.	POLYSOMNOGRAPHY/
176.	(polysomnogra* or PSG).ti,ab.
177.	(polygraph* or HRP).ti,ab.
178.	ACTIGRAPHY/
179.	actigraph.ti,ab.
180.	(venous adj3 bicarbonat*).ti,ab.
181.	or/30-44
182.	29 and 45
183.	randomized controlled trial.pt.
184.	controlled clinical trial.pt.
185.	randomi#ed.ti,ab.
186.	placebo.ab.
187.	randomly.ti,ab.
188.	Clinical Trials as topic.sh.
189.	trial.ti.
190.	or/47-53
191.	Meta-Analysis/
192.	exp Meta-Analysis as Topic/
193.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
194.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
195.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
196.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
197.	(search* adj4 literature).ab.
198.	(medline or pubmed or cochrane or embase or psychlit or psychlit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.

199.	cochrane.jw.
200.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
201.	or/55-64
202.	exp "sensitivity and specificity"/
203.	(sensitivity or specificity).ti,ab.
204.	((pre test or pretest or post test) adj probability).ti,ab.
205.	(predictive value* or PPV or NPV).ti,ab.
206.	likelihood ratio*.ti,ab.
207.	likelihood function/
208.	((area under adj4 curve) or AUC).ti,ab.
209.	(receive* operat* characteristic* or receive* operat* curve* or ROC curve*).ti,ab.
210.	(diagnos* adj3 (performance* or accurac* or utilit* or value* or efficien* or effectiveness)).ti,ab.
211.	gold standard.ab.
212.	or/66-75
213.	Epidemiologic studies/
214.	Observational study/
215.	exp Cohort studies/
216.	(cohort adj (study or studies or analys* or data)).ti,ab.
217.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
218.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
219.	Controlled Before-After Studies/
220.	Historically Controlled Study/
221.	Interrupted Time Series Analysis/
222.	(before adj2 after adj2 (study or studies or data)).ti,ab.
223.	exp case control studies/
224.	case control*.ti,ab.
225.	Cross-sectional studies/
226.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
227.	or/77-90
228.	46 and (54 or 65 or 76 or 91)

Embase (Ovid) search terms

142.	exp Sleep Disordered Breathing/
143.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
144.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
145.	(OSAHS or OSA or OSAS).ti,ab.
146.	(obes* adj3 hypoventil*).ti,ab.
147.	pickwick*.ti,ab.
148.	or/1-6
149.	letter.pt. or letter/
150.	note.pt.
151.	editorial.pt.
152.	case report/ or case study/

153.	(letter or comment*).ti.
154.	or/8-12
155.	randomized controlled trial/ or random*.ti,ab.
156.	13 not 14
157.	animal/ not human/
158.	nonhuman/
159.	exp Animal Experiment/
160.	exp Experimental Animal/
161.	animal model/
162.	exp Rodent/
163.	(rat or rats or mouse or mice).ti.
164.	or/15-22
165.	7 not 23
166.	limit 24 to English language
167.	(exp child/ or exp pediatrics/) not (exp adult/ or exp adolescent/)
168.	25 not 26
169.	(Epworth or ESS or ESS-CHAD).ti,ab.
170.	(STOP-bang or stopbang or "snoring tired observed pressure").ti,ab.
171.	((sleep* or Berlin or STOP*) adj3 (questionair* or questionair*)).ti,ab.
172.	((score* or scoring or stratif* or assess*) adj3 (system* or schem*)).ti,ab.
173.	oximetry/ or transcutaneous oxygen monitoring/
174.	(oxymet* or oximet*).ti,ab.
175.	capnometry/
176.	capnogra*.ti,ab.
177.	(oxi-capnogra* or oxicapnogra* or oxy-capnogra* or oxycapnogra*).ti,ab.
178.	polysomnography/
179.	(polysomnogra* or PSG).ti,ab.
180.	(polygraph* or HRP).ti,ab.
181.	actimetry/
182.	actigraph.ti,ab.
183.	(venous adj3 bicarbonat*).ti,ab.
184.	or/28-42
185.	27 and 43
186.	random*.ti,ab.
187.	factorial*.ti,ab.
188.	(crossover* or cross over*).ti,ab.
189.	((doubl* or singl*) adj blind*).ti,ab.
190.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
191.	crossover procedure/
192.	single blind procedure/
193.	randomized controlled trial/
194.	double blind procedure/
195.	or/45-53
196.	systematic review/
197.	meta-analysis/

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Sleep Apnoea search strategy 2_ demonstration of efficacy

198.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
199.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
200.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
201.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
202.	(search* adj4 literature).ab.
203.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
204.	cochrane.jw.
205.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
206.	or/55-64
207.	exp "sensitivity and specificity"/
208.	(sensitivity or specificity).ti,ab.
209.	((pre test or pretest or post test) adj probability).ti,ab.
210.	(predictive value* or PPV or NPV).ti,ab.
211.	likelihood ratio*.ti,ab.
212.	((area under adj4 curve) or AUC).ti,ab.
213.	(receive* operat* characteristic* or receive* operat* curve* or ROC curve*).ti,ab.
214.	(diagnos* adj3 (performance* or accurac* or utilit* or value* or efficien* or effectiveness)).ti,ab.
215.	diagnostic accuracy/
216.	diagnostic test accuracy study/
217.	gold standard.ab.
218.	or/66-76
219.	Clinical study/
220.	Observational study/
221.	family study/
222.	longitudinal study/
223.	retrospective study/
224.	prospective study/
225.	cohort analysis/
226.	follow-up/
227.	cohort*.ti,ab.
228.	85 and 86
229.	(cohort adj (study or studies or analys* or data)).ti,ab.
230.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
231.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
232.	(before adj2 after adj2 (study or studies or data)).ti,ab.
233.	or/78-84,87-91
234.	exp case control study/
235.	case control*.ti,ab.
236.	cross-sectional study/
237.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
238.	or/92-96

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239.	44 and (54 or 65 or 77 or 97)
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Cochrane Library (Wiley) search terms

#46.	MeSH descriptor: [Sleep Apnea Syndromes] explode all trees
#47.	(sleep* near/4 (apn?ea* or hypopn?ea*)):ti,ab
#48.	(sleep* near/4 disorder* near/4 breath*):ti,ab
#49.	(OSAHS or OSA or OSAS):ti,ab
#50.	(obes* near/3 hypoventil*):ti,ab
#51.	pickwick*:ti,ab
#52.	(OR #1-#6)
#53.	(Epworth or ESS or ESS-CHAD):ti,ab
#54.	(STOP-bang or stopbang or "snoring tired observed pressure"):ti,ab
#55.	((sleep* or Berlin or STOP*) near/3 (questionnair* or questionair*)):ti,ab
#56.	((score* or scoring or stratif* or assess*) near/3 (system* or schem*)):ti,ab
#57.	MeSH descriptor: [Oximetry] explode all trees
#58.	(oxymet* or oximet*):ti,ab
#59.	MeSH descriptor: [Capnography] this term only
#60.	capnogra*:ti,ab
#61.	(oxi-capnogra* or oxicapnogra* or oxy-capnogra* or oxycapnogra*):ti,ab
#62.	MeSH descriptor: [Polysomnography] this term only
#63.	(polysomnogra* or PSG):ti,ab
#64.	(polygraph* or HRP):ti,ab
#65.	MeSH descriptor: [Actigraphy] this term only
#66.	actigraph:ti,ab
#67.	(venous near/3 bicarbonat*):ti,ab
#68.	(OR #8-#22)
#69.	#7 and #23

Epistemonikos search terms

3.	((title:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*) OR abstract:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*)))
----	---

A.6 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to sleep apnoea population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA – this ceased to be updated after March 2018) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics and quality of life studies.

A.6.1 Health economic studies strategy

Table 8: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 26 November 2019	Exclusions Health economics studies
Embase	2014 – 26 November 2019	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 31 March 2018 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

	exp Sleep Apnea Syndromes/
89.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
90.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
91.	(OSAHS or OSA or OSAS).ti,ab.
92.	(obes* adj3 hypoventil*).ti,ab.
93.	pickwick*.ti,ab.
94.	or/1-6
95.	limit 7 to English language
96.	letter/
97.	editorial/
98.	news/
99.	exp historical article/
100.	Anecdotes as Topic/
101.	comment/
102.	case report/
103.	(letter or comment*).ti.
104.	or/9-16
105.	randomized controlled trial/ or random*.ti,ab.
106.	17 not 18
107.	animals/ not humans/
108.	exp Animals, Laboratory/
109.	exp Animal Experimentation/
110.	exp Models, Animal/
111.	exp Rodentia/
112.	(rat or rats or mouse or mice).ti.
113.	or/19-25
114.	8 not 26
115.	Economics/
116.	Value of life/
117.	exp "Costs and Cost Analysis"/

118.	exp Economics, Hospital/
119.	exp Economics, Medical/
120.	Economics, Nursing/
121.	Economics, Pharmaceutical/
122.	exp "Fees and Charges"/
123.	exp Budgets/
124.	budget*.ti,ab.
125.	cost*.ti.
126.	(economic* or pharmaco?economic*).ti.
127.	(price* or pricing*).ti,ab.
128.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
129.	(financ* or fee or fees).ti,ab.
130.	(value adj2 (money or monetary)).ti,ab.
131.	or/28-43
132.	27 and 44

Embase (Ovid) search terms

81.	exp Sleep Disordered Breathing/
82.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
83.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
84.	(OSAHS or OSA or OSAS).ti,ab.
85.	(obes* adj3 hypoventil*).ti,ab.
86.	pickwick*.ti,ab.
87.	or/1-6
88.	limit 7 to English language
89.	letter.pt. or letter/
90.	note.pt.
91.	editorial.pt.
92.	case report/ or case study/
93.	(letter or comment*).ti.
94.	or/9-13
95.	randomized controlled trial/ or random*.ti,ab.
96.	14 not 15
97.	animal/ not human/
98.	nonhuman/
99.	exp Animal Experiment/
100.	exp Experimental Animal/
101.	animal model/
102.	exp Rodent/
103.	(rat or rats or mouse or mice).ti.
104.	or/16-23
105.	8 not 24
106.	health economics/

107.	exp economic evaluation/
108.	exp health care cost/
109.	exp fee/
110.	budget/
111.	funding/
112.	budget*.ti,ab.
113.	cost*.ti.
114.	(economic* or pharmaco?economic*).ti.
115.	(price* or pricing*).ti,ab.
116.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
117.	(financ* or fee or fees).ti,ab.
118.	(value adj2 (money or monetary)).ti,ab.
119.	or/26-38
120.	25 and 39

NHS EED and HTA (CRD) search terms

#15.	MeSH DESCRIPTOR Sleep Apnea Syndromes EXPLODE ALL TREES
#16.	(sleep* adj4 (apn?ea* or hypopn?ea*))
#17.	(sleep* adj4 disorder* adj4 breath*)
#18.	(OSAHS or OSA or OSAS)
#19.	(obes* adj3 hypoventil*)
#20.	(pickwick*)
#21.	#1 OR #2 OR #3 OR #4 OR #5 OR #6

A.6.2 Quality of life studies strategy

Table 9: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	1946 – 26 November 2019	Exclusions Quality of life studies
Embase	1974 – 26 November 2019	Exclusions Quality of life studies

Medline (Ovid) search terms

97.	exp Sleep Apnea Syndromes/
98.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
99.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
100.	(OSAHS or OSA or OSAS).ti,ab.
101.	(obes* adj3 hypoventil*).ti,ab.
102.	pickwick*.ti,ab.
103.	or/1-6
104.	limit 7 to English language
105.	letter/
106.	editorial/

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Sleep Apnoea search strategy 2_demonstration of efficacy

107.	news/
108.	exp historical article/
109.	Anecdotes as Topic/
110.	comment/
111.	case report/
112.	(letter or comment*).ti.
113.	or/9-16
114.	randomized controlled trial/ or random*.ti,ab.
115.	17 not 18
116.	animals/ not humans/
117.	exp Animals, Laboratory/
118.	exp Animal Experimentation/
119.	exp Models, Animal/
120.	exp Rodentia/
121.	(rat or rats or mouse or mice).ti.
122.	or/19-25
123.	8 not 26
124.	quality-adjusted life years/
125.	sickness impact profile/
126.	(quality adj2 (wellbeing or well being)).ti,ab.
127.	sickness impact profile.ti,ab.
128.	disability adjusted life.ti,ab.
129.	(qal* or qtime* or qwb* or daly*).ti,ab.
130.	(euroqol* or eq5d* or eq 5*).ti,ab.
131.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
132.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
133.	(hui or hui1 or hui2 or hui3).ti,ab.
134.	(health* year* equivalent* or hye or hyes).ti,ab.
135.	discrete choice*.ti,ab.
136.	rosser.ti,ab.
137.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
138.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
139.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
140.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
141.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
142.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
143.	or/28-46
144.	27 and 47

Embase (Ovid) search terms

97.	exp Sleep Disordered Breathing/
98.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.

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99.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
100.	(OSAHS or OSA or OSAS).ti,ab.
101.	(obes* adj3 hypoventil*).ti,ab.
102.	pickwick*.ti,ab.
103.	or/1-6
104.	limit 7 to English language
105.	letter.pt. or letter/
106.	note.pt.
107.	editorial.pt.
108.	case report/ or case study/
109.	(letter or comment*).ti.
110.	or/9-13
111.	randomized controlled trial/ or random*.ti,ab.
112.	14 not 15
113.	animal/ not human/
114.	nonhuman/
115.	exp Animal Experiment/
116.	exp Experimental Animal/
117.	animal model/
118.	exp Rodent/
119.	(rat or rats or mouse or mice).ti.
120.	or/16-23
121.	8 not 24
122.	quality adjusted life year/
123.	"quality of life index"/
124.	short form 12/ or short form 20/ or short form 36/ or short form 8/
125.	sickness impact profile/
126.	(quality adj2 (wellbeing or well being)).ti,ab.
127.	sickness impact profile.ti,ab.
128.	disability adjusted life.ti,ab.
129.	(qal* or qtime* or qwb* or daly*).ti,ab.
130.	(euroqol* or eq5d* or eq 5*).ti,ab.
131.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
132.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
133.	(hui or hui1 or hui2 or hui3).ti,ab.
134.	(health* year* equivalent* or hye or hyes).ti,ab.
135.	discrete choice*.ti,ab.
136.	rosser.ti,ab.
137.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
138.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
139.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
140.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
141.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.

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Sleep Apnoea search strategy 2_demonstration of efficacy

142.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
143.	or/26-46
144.	25 and 47

Sleep Apnoea search strategy 3 diagnostic tests/assessment

This literature search strategy was used for the following reviews;

- What are the most clinically and cost effective diagnostic strategies for obstructive sleep apnoea/hypopnea syndrome, obesity hypoventilation syndrome and overlap syndrome, including home- and hospital-based studies, and investigations such as oximetry, capnography, respiratory polygraphy and polysomnography?
- What assessment scales should be used if obstructive sleep apnoea/hypopnoea syndrome, obesity hypoventilation syndrome or overlap syndrome is suspected (for example, the Epworth sleepiness scale, STOP-Bang sleep apnoea questionnaire or Berlin questionnaire)?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual.{NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.7 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 10: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies Diagnostic tests studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies Diagnostic tests studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2019 Issue 11 of 12 CENTRAL to 2019 Issue 11 of 12	None
Epistemonikos (Epistemonikos Foundation)	Inception – 29 November 2018	None

Medline (Ovid) search terms

229.	exp Sleep Apnea Syndromes/
230.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
231.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
232.	(OSAHS or OSA or OSAS).ti,ab.
233.	(obes* adj3 hypoventil*).ti,ab.

234.	pickwick*.ti,ab.
235.	or/1-6
236.	letter/
237.	editorial/
238.	news/
239.	exp historical article/
240.	Anecdotes as Topic/
241.	comment/
242.	case report/
243.	(letter or comment*).ti.
244.	or/8-15
245.	randomized controlled trial/ or random*.ti,ab.
246.	16 not 17
247.	animals/ not humans/
248.	exp Animals, Laboratory/
249.	exp Animal Experimentation/
250.	exp Models, Animal/
251.	exp Rodentia/
252.	(rat or rats or mouse or mice).ti.
253.	or/18-24
254.	7 not 25
255.	limit 26 to English language
256.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
257.	27 not 28
258.	(Epworth or ESS or ESS-CHAD).ti,ab.
259.	(STOP-bang or stopbang or "snoring tired observed pressure").ti,ab.
260.	((sleep* or Berlin or STOP*) adj3 (questionair* or questionair*)).ti,ab.
261.	((score* or scoring or stratif* or assess*) adj3 (system* or schem*)).ti,ab.
262.	exp Oximetry/
263.	(oxymet* or oximet*).ti,ab.
264.	Capnography/
265.	capnogra*.ti,ab.
266.	(oxi-capnogra* or oxicapnogra* or oxy-capnogra* or oxycapnogra*).ti,ab.
267.	POLYSOMNOGRAPHY/
268.	(polysomnogra* or PSG).ti,ab.
269.	(polygraph* or HRP).ti,ab.
270.	ACTIGRAPHY/
271.	actigraph.ti,ab.
272.	(venous adj3 bicarbonat*).ti,ab.
273.	or/30-44
274.	29 and 45
275.	randomized controlled trial.pt.
276.	controlled clinical trial.pt.
277.	randomi#ed.ti,ab.

278.	placebo.ab.
279.	randomly.ti,ab.
280.	Clinical Trials as topic.sh.
281.	trial.ti.
282.	or/47-53
283.	Meta-Analysis/
284.	exp Meta-Analysis as Topic/
285.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
286.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
287.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
288.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
289.	(search* adj4 literature).ab.
290.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
291.	cochrane.jw.
292.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
293.	or/55-64
294.	exp "sensitivity and specificity"/
295.	(sensitivity or specificity).ti,ab.
296.	((pre test or pretest or post test) adj probability).ti,ab.
297.	(predictive value* or PPV or NPV).ti,ab.
298.	likelihood ratio*.ti,ab.
299.	likelihood function/
300.	((area under adj4 curve) or AUC).ti,ab.
301.	(receive* operat* characteristic* or receive* operat* curve* or ROC curve*).ti,ab.
302.	(diagnos* adj3 (performance* or accurac* or utilit* or value* or efficien* or effectiveness)).ti,ab.
303.	gold standard.ab.
304.	or/66-75
305.	Epidemiologic studies/
306.	Observational study/
307.	exp Cohort studies/
308.	(cohort adj (study or studies or analys* or data)).ti,ab.
309.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
310.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
311.	Controlled Before-After Studies/
312.	Historically Controlled Study/
313.	Interrupted Time Series Analysis/
314.	(before adj2 after adj2 (study or studies or data)).ti,ab.
315.	exp case control studies/
316.	case control*.ti,ab.
317.	Cross-sectional studies/
318.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.

319.	or/77-90
320.	46 and (54 or 65 or 76 or 91)

Embase (Ovid) search terms

240.	exp Sleep Disordered Breathing/
241.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
242.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
243.	(OSAHS or OSA or OSAS).ti,ab.
244.	(obes* adj3 hypoventil*).ti,ab.
245.	pickwick*.ti,ab.
246.	or/1-6
247.	letter.pt. or letter/
248.	note.pt.
249.	editorial.pt.
250.	case report/ or case study/
251.	(letter or comment*).ti.
252.	or/8-12
253.	randomized controlled trial/ or random*.ti,ab.
254.	13 not 14
255.	animal/ not human/
256.	nonhuman/
257.	exp Animal Experiment/
258.	exp Experimental Animal/
259.	animal model/
260.	exp Rodent/
261.	(rat or rats or mouse or mice).ti.
262.	or/15-22
263.	7 not 23
264.	limit 24 to English language
265.	(exp child/ or exp pediatrics/) not (exp adult/ or exp adolescent/)
266.	25 not 26
267.	(Epworth or ESS or ESS-CHAD).ti,ab.
268.	(STOP-bang or stopbang or "snoring tired observed pressure").ti,ab.
269.	((sleep* or Berlin or STOP*) adj3 (questionair* or questionair*)).ti,ab.
270.	((score* or scoring or stratif* or assess*) adj3 (system* or schem*)).ti,ab.
271.	oximetry/ or transcutaneous oxygen monitoring/
272.	(oxymet* or oximet*).ti,ab.
273.	capnometry/
274.	capnogra*.ti,ab.
275.	(oxi-capnogra* or oxicapnogra* or oxy-capnogra* or oxycapnogra*).ti,ab.
276.	polysomnography/
277.	(polysomnogra* or PSG).ti,ab.
278.	(polygraph* or HRP).ti,ab.
279.	actimetry/
280.	actigraph.ti,ab.

281.	(venous adj3 bicarbonat*).ti,ab.
282.	or/28-42
283.	27 and 43
284.	random*.ti,ab.
285.	factorial*.ti,ab.
286.	(crossover* or cross over*).ti,ab.
287.	((doubl* or singl*) adj blind*).ti,ab.
288.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
289.	crossover procedure/
290.	single blind procedure/
291.	randomized controlled trial/
292.	double blind procedure/
293.	or/45-53
294.	systematic review/
295.	meta-analysis/
296.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
297.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
298.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
299.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
300.	(search* adj4 literature).ab.
301.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
302.	cochrane.jw.
303.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
304.	or/55-64
305.	exp "sensitivity and specificity"/
306.	(sensitivity or specificity).ti,ab.
307.	((pre test or pretest or post test) adj probability).ti,ab.
308.	(predictive value* or PPV or NPV).ti,ab.
309.	likelihood ratio*.ti,ab.
310.	((area under adj4 curve) or AUC).ti,ab.
311.	(receive* operat* characteristic* or receive* operat* curve* or ROC curve*).ti,ab.
312.	(diagnos* adj3 (performance* or accurac* or utilit* or value* or efficien* or effectiveness)).ti,ab.
313.	diagnostic accuracy/
314.	diagnostic test accuracy study/
315.	gold standard.ab.
316.	or/66-76
317.	Clinical study/
318.	Observational study/
319.	family study/
320.	longitudinal study/
321.	retrospective study/
322.	prospective study/
323.	cohort analysis/

324.	follow-up/
325.	cohort*.ti,ab.
326.	85 and 86
327.	(cohort adj (study or studies or analys* or data)).ti,ab.
328.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
329.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
330.	(before adj2 after adj2 (study or studies or data)).ti,ab.
331.	or/78-84,87-91
332.	exp case control study/
333.	case control*.ti,ab.
334.	cross-sectional study/
335.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
336.	or/92-96
337.	44 and (54 or 65 or 77 or 97)

Cochrane Library (Wiley) search terms

#70.	MeSH descriptor: [Sleep Apnea Syndromes] explode all trees
#71.	(sleep* near/4 (apn?ea* or hypopn?ea*)):ti,ab
#72.	(sleep* near/4 disorder* near/4 breath*):ti,ab
#73.	(OSAHS or OSA or OSAS):ti,ab
#74.	(obes* near/3 hypoventil*):ti,ab
#75.	pickwick*:ti,ab
#76.	(OR #1-#6)
#77.	(Epworth or ESS or ESS-CHAD):ti,ab
#78.	(STOP-bang or stopbang or "snoring tired observed pressure"):ti,ab
#79.	((sleep* or Berlin or STOP*) near/3 (questionnair* or questionair*)):ti,ab
#80.	((score* or scoring or stratif* or assess*) near/3 (system* or schem*)):ti,ab
#81.	MeSH descriptor: [Oximetry] explode all trees
#82.	(oxymet* or oximet*):ti,ab
#83.	MeSH descriptor: [Capnography] this term only
#84.	capnogra*:ti,ab
#85.	(oxi-capnogra* or oxicapnogra* or oxy-capnogra* or oxycapnogra*):ti,ab
#86.	MeSH descriptor: [Polysomnography] this term only
#87.	(polysomnogra* or PSG):ti,ab
#88.	(polygraph* or HRP):ti,ab
#89.	MeSH descriptor: [Actigraphy] this term only
#90.	actigraph:ti,ab
#91.	(venous near/3 bicarbonat*):ti,ab
#92.	(OR #8-#22)
#93.	#7 and #23

Epistemonikos search terms

4.	((title:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*))) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*) OR abstract:((sleep apnea syndromes) OR
----	---

(sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*))

A.8 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to sleep apnoea population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA – this ceased to be updated after March 2018) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics and quality of life studies.

A.8.1 Health economic studies strategy

Table 11: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 26 November 2019	Exclusions Health economics studies
Embase	2014 – 26 November 2019	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 31 March 2018 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

	exp Sleep Apnea Syndromes/
133.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
134.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
135.	(OSAHS or OSA or OSAS).ti,ab.
136.	(obes* adj3 hypoventil*).ti,ab.
137.	pickwick*.ti,ab.
138.	or/1-6
139.	limit 7 to English language
140.	letter/
141.	editorial/
142.	news/
143.	exp historical article/
144.	Anecdotes as Topic/
145.	comment/
146.	case report/
147.	(letter or comment*).ti.
148.	or/9-16
149.	randomized controlled trial/ or random*.ti,ab.
150.	17 not 18

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Sleep Apnoea search strategy 2_demonstration of efficacy

151.	animals/ not humans/
152.	exp Animals, Laboratory/
153.	exp Animal Experimentation/
154.	exp Models, Animal/
155.	exp Rodentia/
156.	(rat or rats or mouse or mice).ti.
157.	or/19-25
158.	8 not 26
159.	Economics/
160.	Value of life/
161.	exp "Costs and Cost Analysis"/
162.	exp Economics, Hospital/
163.	exp Economics, Medical/
164.	Economics, Nursing/
165.	Economics, Pharmaceutical/
166.	exp "Fees and Charges"/
167.	exp Budgets/
168.	budget*.ti,ab.
169.	cost*.ti.
170.	(economic* or pharmaco?economic*).ti.
171.	(price* or pricing*).ti,ab.
172.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
173.	(financ* or fee or fees).ti,ab.
174.	(value adj2 (money or monetary)).ti,ab.
175.	or/28-43
176.	27 and 44

Embase (Ovid) search terms

121.	exp Sleep Disordered Breathing/
122.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
123.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
124.	(OSAHS or OSA or OSAS).ti,ab.
125.	(obes* adj3 hypoventil*).ti,ab.
126.	pickwick*.ti,ab.
127.	or/1-6
128.	limit 7 to English language
129.	letter.pt. or letter/
130.	note.pt.
131.	editorial.pt.
132.	case report/ or case study/
133.	(letter or comment*).ti.
134.	or/9-13
135.	randomized controlled trial/ or random*.ti,ab.
136.	14 not 15

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137.	animal/ not human/
138.	nonhuman/
139.	exp Animal Experiment/
140.	exp Experimental Animal/
141.	animal model/
142.	exp Rodent/
143.	(rat or rats or mouse or mice).ti.
144.	or/16-23
145.	8 not 24
146.	health economics/
147.	exp economic evaluation/
148.	exp health care cost/
149.	exp fee/
150.	budget/
151.	funding/
152.	budget*.ti,ab.
153.	cost*.ti.
154.	(economic* or pharmaco?economic*).ti.
155.	(price* or pricing*).ti,ab.
156.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
157.	(financ* or fee or fees).ti,ab.
158.	(value adj2 (money or monetary)).ti,ab.
159.	or/26-38
160.	25 and 39

NHS EED and HTA (CRD) search terms

#22.	MeSH DESCRIPTOR Sleep Apnea Syndromes EXPLODE ALL TREES
#23.	(sleep* adj4 (apn?ea* or hypopn?ea*))
#24.	(sleep* adj4 disorder* adj4 breath*)
#25.	(OSAHS or OSA or OSAS)
#26.	(obes* adj3 hypoventil*)
#27.	(pickwick*)
#28.	#1 OR #2 OR #3 OR #4 OR #5 OR #6

A.8.2 Quality of life studies strategy

Table 12: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	1946 – 26 November 2019	Exclusions Quality of life studies
Embase	1974 – 26 November 2019	Exclusions Quality of life studies

Medline (Ovid) search terms

145.	exp Sleep Apnea Syndromes/
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Sleep Apnoea search strategy 2_ demonstration of efficacy

146.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
147.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
148.	(OSAHS or OSA or OSAS).ti,ab.
149.	(obes* adj3 hypoventil*).ti,ab.
150.	pickwick*.ti,ab.
151.	or/1-6
152.	limit 7 to English language
153.	letter/
154.	editorial/
155.	news/
156.	exp historical article/
157.	Anecdotes as Topic/
158.	comment/
159.	case report/
160.	(letter or comment*).ti.
161.	or/9-16
162.	randomized controlled trial/ or random*.ti,ab.
163.	17 not 18
164.	animals/ not humans/
165.	exp Animals, Laboratory/
166.	exp Animal Experimentation/
167.	exp Models, Animal/
168.	exp Rodentia/
169.	(rat or rats or mouse or mice).ti.
170.	or/19-25
171.	8 not 26
172.	quality-adjusted life years/
173.	sickness impact profile/
174.	(quality adj2 (wellbeing or well being)).ti,ab.
175.	sickness impact profile.ti,ab.
176.	disability adjusted life.ti,ab.
177.	(qal* or qtime* or qwb* or daly*).ti,ab.
178.	(euroqol* or eq5d* or eq 5*).ti,ab.
179.	(qol* or hq1* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
180.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
181.	(hui or hui1 or hui2 or hui3).ti,ab.
182.	(health* year* equivalent* or hye or hyes).ti,ab.
183.	discrete choice*.ti,ab.
184.	rosser.ti,ab.
185.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
186.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.

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Sleep Apnoea search strategy 2_demonstration of efficacy

187.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
188.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
189.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
190.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
191.	or/28-46
192.	27 and 47

Embase (Ovid) search terms

145.	exp Sleep Disordered Breathing/
146.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
147.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
148.	(OSAHS or OSA or OSAS).ti,ab.
149.	(obes* adj3 hypoventil*).ti,ab.
150.	pickwick*.ti,ab.
151.	or/1-6
152.	limit 7 to English language
153.	letter.pt. or letter/
154.	note.pt.
155.	editorial.pt.
156.	case report/ or case study/
157.	(letter or comment*).ti.
158.	or/9-13
159.	randomized controlled trial/ or random*.ti,ab.
160.	14 not 15
161.	animal/ not human/
162.	nonhuman/
163.	exp Animal Experiment/
164.	exp Experimental Animal/
165.	animal model/
166.	exp Rodent/
167.	(rat or rats or mouse or mice).ti.
168.	or/16-23
169.	8 not 24
170.	quality adjusted life year/
171.	"quality of life index"/
172.	short form 12/ or short form 20/ or short form 36/ or short form 8/
173.	sickness impact profile/
174.	(quality adj2 (wellbeing or well being)).ti,ab.
175.	sickness impact profile.ti,ab.
176.	disability adjusted life.ti,ab.
177.	(qal* or qtime* or qwb* or daly*).ti,ab.
178.	(euroqol* or eq5d* or eq 5*).ti,ab.
179.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
180.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.

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Sleep Apnoea search strategy 2_demonstration of efficacy

181.	(hui or hui1 or hui2 or hui3).ti,ab.
182.	(health* year* equivalent* or hye or hyes).ti,ab.
183.	discrete choice*.ti,ab.
184.	rosser.ti,ab.
185.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
186.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
187.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
188.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
189.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
190.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
191.	or/26-46
192.	25 and 47

3 Sleep Apnoea search strategy 3_diagnostic tests/assessment

This literature search strategy was used for the following reviews;

- What are the most clinically and cost effective diagnostic strategies for obstructive sleep apnoea/hypopnea syndrome, obesity hypoventilation syndrome and overlap syndrome, including home- and hospital-based studies, and investigations such as oximetry, capnography, respiratory polygraphy and polysomnography?
- What assessment scales should be used if obstructive sleep apnoea/hypopnoea syndrome, obesity hypoventilation syndrome or overlap syndrome is suspected (for example, the Epworth sleepiness scale, STOP-Bang sleep apnoea questionnaire or Berlin questionnaire)?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual.{NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.9 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 13: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies Diagnostic tests studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies Diagnostic tests studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2019 Issue 11 of 12 CENTRAL to 2019 Issue 11 of 12	None
Epistemonikos (Epistemonikos Foundation)	Inception – 29 November 2018	None

Medline (Ovid) search terms

321.	exp Sleep Apnea Syndromes/
322.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.

323.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
324.	(OSAHS or OSA or OSAS).ti,ab.
325.	(obes* adj3 hypoventil*).ti,ab.
326.	pickwick*.ti,ab.
327.	or/1-6
328.	letter/
329.	editorial/
330.	news/
331.	exp historical article/
332.	Anecdotes as Topic/
333.	comment/
334.	case report/
335.	(letter or comment*).ti.
336.	or/8-15
337.	randomized controlled trial/ or random*.ti,ab.
338.	16 not 17
339.	animals/ not humans/
340.	exp Animals, Laboratory/
341.	exp Animal Experimentation/
342.	exp Models, Animal/
343.	exp Rodentia/
344.	(rat or rats or mouse or mice).ti.
345.	or/18-24
346.	7 not 25
347.	limit 26 to English language
348.	(exp child/ or exp pediatrics/ or exp infant/) not (exp adolescent/ or exp adult/ or exp middle age/ or exp aged/)
349.	27 not 28
350.	(Epworth or ESS or ESS-CHAD).ti,ab.
351.	(STOP-bang or stopbang or "snoring tired observed pressure").ti,ab.
352.	((sleep* or Berlin or STOP*) adj3 (questionair* or questionair*)).ti,ab.
353.	((score* or scoring or stratif* or assess*) adj3 (system* or schem*)).ti,ab.
354.	exp Oximetry/
355.	(oxymet* or oximet*).ti,ab.
356.	Capnography/
357.	capnogra*.ti,ab.
358.	(oxi-capnogra* or oxicapnogra* or oxy-capnogra* or oxycapnogra*).ti,ab.
359.	POLYSOMNOGRAPHY/
360.	(polysomnogra* or PSG).ti,ab.
361.	(polygraph* or HRP).ti,ab.
362.	ACTIGRAPHY/
363.	actigraph.ti,ab.
364.	(venous adj3 bicarbonat*).ti,ab.
365.	or/30-44
366.	29 and 45

367.	randomized controlled trial.pt.
368.	controlled clinical trial.pt.
369.	randomi#ed.ti,ab.
370.	placebo.ab.
371.	randomly.ti,ab.
372.	Clinical Trials as topic.sh.
373.	trial.ti.
374.	or/47-53
375.	Meta-Analysis/
376.	exp Meta-Analysis as Topic/
377.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
378.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
379.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
380.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
381.	(search* adj4 literature).ab.
382.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
383.	cochrane.jw.
384.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
385.	or/55-64
386.	exp "sensitivity and specificity"/
387.	(sensitivity or specificity).ti,ab.
388.	((pre test or pretest or post test) adj probability).ti,ab.
389.	(predictive value* or PPV or NPV).ti,ab.
390.	likelihood ratio*.ti,ab.
391.	likelihood function/
392.	((area under adj4 curve) or AUC).ti,ab.
393.	(receive* operat* characteristic* or receive* operat* curve* or ROC curve*).ti,ab.
394.	(diagnos* adj3 (performance* or accurac* or utilit* or value* or efficien* or effectiveness)).ti,ab.
395.	gold standard.ab.
396.	or/66-75
397.	Epidemiologic studies/
398.	Observational study/
399.	exp Cohort studies/
400.	(cohort adj (study or studies or analys* or data)).ti,ab.
401.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
402.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
403.	Controlled Before-After Studies/
404.	Historically Controlled Study/
405.	Interrupted Time Series Analysis/
406.	(before adj2 after adj2 (study or studies or data)).ti,ab.
407.	exp case control studies/

408.	case control*.ti,ab.
409.	Cross-sectional studies/
410.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
411.	or/77-90
412.	46 and (54 or 65 or 76 or 91)

Embase (Ovid) search terms

338.	exp Sleep Disordered Breathing/
339.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
340.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
341.	(OSAHS or OSA or OSAS).ti,ab.
342.	(obes* adj3 hypoventil*).ti,ab.
343.	pickwick*.ti,ab.
344.	or/1-6
345.	letter.pt. or letter/
346.	note.pt.
347.	editorial.pt.
348.	case report/ or case study/
349.	(letter or comment*).ti.
350.	or/8-12
351.	randomized controlled trial/ or random*.ti,ab.
352.	13 not 14
353.	animal/ not human/
354.	nonhuman/
355.	exp Animal Experiment/
356.	exp Experimental Animal/
357.	animal model/
358.	exp Rodent/
359.	(rat or rats or mouse or mice).ti.
360.	or/15-22
361.	7 not 23
362.	limit 24 to English language
363.	(exp child/ or exp pediatrics/) not (exp adult/ or exp adolescent/)
364.	25 not 26
365.	(Epworth or ESS or ESS-CHAD).ti,ab.
366.	(STOP-bang or stopbang or "snoring tired observed pressure").ti,ab.
367.	((sleep* or Berlin or STOP*) adj3 (questionnair* or questionair*)).ti,ab.
368.	((score* or scoring or stratif* or assess*) adj3 (system* or schem*)).ti,ab.
369.	oximetry/ or transcutaneous oxygen monitoring/
370.	(oxymet* or oximet*).ti,ab.
371.	capnometry/
372.	capnogra*.ti,ab.
373.	(oxi-capnogra* or oxicapnogra* or oxy-capnogra* or oxycapnogra*).ti,ab.
374.	polysomnography/
375.	(polysomnogra* or PSG).ti,ab.

376.	(polygraph* or HRP).ti,ab.
377.	actimetry/
378.	actigraph.ti,ab.
379.	(venous adj3 bicarbonat*).ti,ab.
380.	or/28-42
381.	27 and 43
382.	random*.ti,ab.
383.	factorial*.ti,ab.
384.	(crossover* or cross over*).ti,ab.
385.	((doubl* or singl*) adj blind*).ti,ab.
386.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
387.	crossover procedure/
388.	single blind procedure/
389.	randomized controlled trial/
390.	double blind procedure/
391.	or/45-53
392.	systematic review/
393.	meta-analysis/
394.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
395.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
396.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
397.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
398.	(search* adj4 literature).ab.
399.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
400.	cochrane.jw.
401.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
402.	or/55-64
403.	exp "sensitivity and specificity"/
404.	(sensitivity or specificity).ti,ab.
405.	((pre test or pretest or post test) adj probability).ti,ab.
406.	(predictive value* or PPV or NPV).ti,ab.
407.	likelihood ratio*.ti,ab.
408.	((area under adj4 curve) or AUC).ti,ab.
409.	(receive* operat* characteristic* or receive* operat* curve* or ROC curve*).ti,ab.
410.	(diagnos* adj3 (performance* or accurac* or utilit* or value* or efficien* or effectiveness)).ti,ab.
411.	diagnostic accuracy/
412.	diagnostic test accuracy study/
413.	gold standard.ab.
414.	or/66-76
415.	Clinical study/
416.	Observational study/
417.	family study/
418.	longitudinal study/

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Sleep Apnoea search strategy 3_diagnostic tests/assessment

419.	retrospective study/
420.	prospective study/
421.	cohort analysis/
422.	follow-up/
423.	cohort*.ti,ab.
424.	85 and 86
425.	(cohort adj (study or studies or analys* or data)).ti,ab.
426.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
427.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
428.	(before adj2 after adj2 (study or studies or data)).ti,ab.
429.	or/78-84,87-91
430.	exp case control study/
431.	case control*.ti,ab.
432.	cross-sectional study/
433.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
434.	or/92-96
435.	44 and (54 or 65 or 77 or 97)

Cochrane Library (Wiley) search terms

#94.	MeSH descriptor: [Sleep Apnea Syndromes] explode all trees
#95.	(sleep* near/4 (apn?ea* or hypopn?ea*)):ti,ab
#96.	(sleep* near/4 disorder* near/4 breath*):ti,ab
#97.	(OSAHS or OSA or OSAS):ti,ab
#98.	(obes* near/3 hypoventil*):ti,ab
#99.	pickwick*:ti,ab
#100.	(OR #1-#6)
#101.	(Epworth or ESS or ESS-CHAD):ti,ab
#102.	(STOP-bang or stopbang or "snoring tired observed pressure"):ti,ab
#103.	((sleep* or Berlin or STOP*) near/3 (questionnair* or questionair*)):ti,ab
#104.	((score* or scoring or stratif* or assess*) near/3 (system* or schem*)):ti,ab
#105.	MeSH descriptor: [Oximetry] explode all trees
#106.	(oxymet* or oximet*):ti,ab
#107.	MeSH descriptor: [Capnography] this term only
#108.	capnogra*:ti,ab
#109.	(oxi-capnogra* or oxicapnogra* or oxy-capnogra* or oxycapnogra*):ti,ab
#110.	MeSH descriptor: [Polysomnography] this term only
#111.	(polysomnogra* or PSG):ti,ab
#112.	(polygraph* or HRP):ti,ab
#113.	MeSH descriptor: [Actigraphy] this term only
#114.	actigraph:ti,ab
#115.	(venous near/3 bicarbonat*):ti,ab
#116.	(OR #8-#22)
#117.	#7 and #23

Epistemonikos search terms

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5.	((title:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*))) OR (sleep* AND (apn?ea* OR hypopn?ea*))) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*) OR abstract:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*))) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*))
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A.10 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to sleep apnoea population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA – this ceased to be updated after March 2018) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics and quality of life studies.

A.10.1 Health economic studies strategy

Table 14: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 26 November 2019	Exclusions Health economics studies
Embase	2014 – 26 November 2019	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 31 March 2018 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

	exp Sleep Apnea Syndromes/
177.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
178.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
179.	(OSAHS or OSA or OSAS).ti,ab.
180.	(obes* adj3 hypoventil*).ti,ab.
181.	pickwick*.ti,ab.
182.	or/1-6
183.	limit 7 to English language
184.	letter/
185.	editorial/
186.	news/
187.	exp historical article/
188.	Anecdotes as Topic/
189.	comment/
190.	case report/
191.	(letter or comment*).ti.

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Sleep Apnoea search strategy 3_diagnostic tests/assessment

192.	or/9-16
193.	randomized controlled trial/ or random*.ti,ab.
194.	17 not 18
195.	animals/ not humans/
196.	exp Animals, Laboratory/
197.	exp Animal Experimentation/
198.	exp Models, Animal/
199.	exp Rodentia/
200.	(rat or rats or mouse or mice).ti.
201.	or/19-25
202.	8 not 26
203.	Economics/
204.	Value of life/
205.	exp "Costs and Cost Analysis"/
206.	exp Economics, Hospital/
207.	exp Economics, Medical/
208.	Economics, Nursing/
209.	Economics, Pharmaceutical/
210.	exp "Fees and Charges"/
211.	exp Budgets/
212.	budget*.ti,ab.
213.	cost*.ti.
214.	(economic* or pharmaco?economic*).ti.
215.	(price* or pricing*).ti,ab.
216.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
217.	(financ* or fee or fees).ti,ab.
218.	(value adj2 (money or monetary)).ti,ab.
219.	or/28-43
220.	27 and 44

Embase (Ovid) search terms

161.	exp Sleep Disordered Breathing/
162.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
163.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
164.	(OSAHS or OSA or OSAS).ti,ab.
165.	(obes* adj3 hypoventil*).ti,ab.
166.	pickwick*.ti,ab.
167.	or/1-6
168.	limit 7 to English language
169.	letter.pt. or letter/
170.	note.pt.
171.	editorial.pt.
172.	case report/ or case study/
173.	(letter or comment*).ti.

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174.	or/9-13
175.	randomized controlled trial/ or random*.ti,ab.
176.	14 not 15
177.	animal/ not human/
178.	nonhuman/
179.	exp Animal Experiment/
180.	exp Experimental Animal/
181.	animal model/
182.	exp Rodent/
183.	(rat or rats or mouse or mice).ti.
184.	or/16-23
185.	8 not 24
186.	health economics/
187.	exp economic evaluation/
188.	exp health care cost/
189.	exp fee/
190.	budget/
191.	funding/
192.	budget*.ti,ab.
193.	cost*.ti.
194.	(economic* or pharmaco?economic*).ti.
195.	(price* or pricing*).ti,ab.
196.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
197.	(financ* or fee or fees).ti,ab.
198.	(value adj2 (money or monetary)).ti,ab.
199.	or/26-38
200.	25 and 39

NHS EED and HTA (CRD) search terms

#29.	MeSH DESCRIPTOR Sleep Apnea Syndromes EXPLODE ALL TREES
#30.	(sleep* adj4 (apn?ea* or hypopn?ea*))
#31.	(sleep* adj4 disorder* adj4 breath*)
#32.	(OSAHS or OSA or OSAS)
#33.	(obes* adj3 hypoventil*)
#34.	(pickwick*)
#35.	#1 OR #2 OR #3 OR #4 OR #5 OR #6

A.10.2 Quality of life studies strategy

Table 15: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	1946 – 26 November 2019	Exclusions Quality of life studies
Embase	1974 – 26 November 2019	Exclusions

Database	Dates searched	Search filter used
		Quality of life studies

Medline (Ovid) search terms

193.	exp Sleep Apnea Syndromes/
194.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
195.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
196.	(OSAHS or OSA or OSAS).ti,ab.
197.	(obes* adj3 hypoventil*).ti,ab.
198.	pickwick*.ti,ab.
199.	or/1-6
200.	limit 7 to English language
201.	letter/
202.	editorial/
203.	news/
204.	exp historical article/
205.	Anecdotes as Topic/
206.	comment/
207.	case report/
208.	(letter or comment*).ti.
209.	or/9-16
210.	randomized controlled trial/ or random*.ti,ab.
211.	17 not 18
212.	animals/ not humans/
213.	exp Animals, Laboratory/
214.	exp Animal Experimentation/
215.	exp Models, Animal/
216.	exp Rodentia/
217.	(rat or rats or mouse or mice).ti.
218.	or/19-25
219.	8 not 26
220.	quality-adjusted life years/
221.	sickness impact profile/
222.	(quality adj2 (wellbeing or well being)).ti,ab.
223.	sickness impact profile.ti,ab.
224.	disability adjusted life.ti,ab.
225.	(qal* or qtime* or qwb* or daly*).ti,ab.
226.	(euroqol* or eq5d* or eq 5*).ti,ab.
227.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
228.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
229.	(hui or hui1 or hui2 or hui3).ti,ab.

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230.	(health* year* equivalent* or hye or hyes).ti,ab.
231.	discrete choice*.ti,ab.
232.	rosser.ti,ab.
233.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
234.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
235.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
236.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
237.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
238.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
239.	or/28-46
240.	27 and 47

Embase (Ovid) search terms

193.	exp Sleep Disordered Breathing/
194.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
195.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
196.	(OSAHS or OSA or OSAS).ti,ab.
197.	(obes* adj3 hypoventil*).ti,ab.
198.	pickwick*.ti,ab.
199.	or/1-6
200.	limit 7 to English language
201.	letter.pt. or letter/
202.	note.pt.
203.	editorial.pt.
204.	case report/ or case study/
205.	(letter or comment*).ti.
206.	or/9-13
207.	randomized controlled trial/ or random*.ti,ab.
208.	14 not 15
209.	animal/ not human/
210.	nonhuman/
211.	exp Animal Experiment/
212.	exp Experimental Animal/
213.	animal model/
214.	exp Rodent/
215.	(rat or rats or mouse or mice).ti.
216.	or/16-23
217.	8 not 24
218.	quality adjusted life year/
219.	"quality of life index"/
220.	short form 12/ or short form 20/ or short form 36/ or short form 8/
221.	sickness impact profile/
222.	(quality adj2 (wellbeing or well being)).ti,ab.
223.	sickness impact profile.ti,ab.

224.	disability adjusted life.ti,ab.
225.	(qal* or qtime* or qwb* or daly*).ti,ab.
226.	(euroqol* or eq5d* or eq 5*).ti,ab.
227.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
228.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
229.	(hui or hui1 or hui2 or hui3).ti,ab.
230.	(health* year* equivalent* or hye or hyes).ti,ab.
231.	discrete choice*.ti,ab.
232.	rosser.ti,ab.
233.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
234.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
235.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
236.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
237.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
238.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
239.	or/26-46
240.	25 and 47

4 Sleep apnoea search strategy 4 – information and support

This literature search strategy was used for the following review;

- What information and support do people and their families or carers need (for example, advice on lifestyle, driving and occupation, and their treatment)?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual. {NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.11 Clinical search literature search strategy

Searches for patient views were run in Medline (OVID), Embase (OVID), CINAHL, Current Nursing and Allied Health Literature (EBSCO) and PsycINFO (ProQuest). Search filters were applied to the search where appropriate.

Table 16: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Qualitative studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Qualitative studies
CINAHL, Current Nursing and Allied Health Literature (EBSCO)	Inception – 20 November 2019	Exclusions Qualitative studies
PsycINFO (ProQuest)	Inception – 20 November 2019	Exclusions

Medline (Ovid) search terms

413.	exp Sleep Apnea Syndromes/
414.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
415.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
416.	(OSAHS or OSA or OSAS).ti,ab.
417.	(obes* adj3 hypoventil*).ti,ab.
418.	pickwick*.ti,ab.
419.	or/1-6
420.	limit 7 to English language
421.	letter/
422.	editorial/
423.	news/
424.	exp historical article/
425.	Anecdotes as Topic/
426.	comment/
427.	case report/
428.	(letter or comment*).ti.
429.	or/9-16

430.	randomized controlled trial/ or random*.ti,ab.
431.	17 not 18
432.	animals/ not humans/
433.	exp Animals, Laboratory/
434.	exp Animal Experimentation/
435.	exp Models, Animal/
436.	exp Rodentia/
437.	(rat or rats or mouse or mice).ti.
438.	or/19-25
439.	8 not 26
440.	Patients/ or Inpatients/ or Outpatients/
441.	Caregivers/ or exp Family/ or exp Parents/ or exp Legal-Guardians/
442.	(patient* or carer* or caregiver* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or next of kin or significant other* or partner* or guardian* or inpatient* or outpatient*).ti,ab.
443.	or/28-30
444.	Patient Education Handout/ or exp Information-Services/ or Publications/ or Books/ or Pamphlets/ or Counseling/ or Directive-Counseling/
445.	31 and 32
446.	(patient* adj3 (education or educate or educating or literature or leaflet* or booklet* or pamphlet* or information*)).ti,ab.
447.	Patient Education as Topic/
448.	Consumer Health Information/
449.	(information* adj3 (need* or requirement* or support* or seek* or access* or disseminat* or barrier*)).ti,ab.
450.	((educat* or learn* or support*) adj3 (service* or literature or leaflet* or booklet* or pamphlet* or information* or manual* or brochure* or publication* or handout* or material* or program*)).ti,ab.
451.	(discharge* adj3 (information* or advice or support*)).ti,ab.
452.	or/34-39
453.	exp Consumer Behavior/ or Personal-Satisfaction/ or exp Patient-Acceptance-Of-Health-Care/
454.	((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) adj3 (attitud* or priorit* or perception* or preferen* or expectation* or choice* or perspective* or view* or satisfact* or inform*)).ti,ab.
455.	((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) adj3 (knowledge or awareness or misconception* or understanding or misunderstanding)).ti,ab.
456.	((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) adj3 (experience or experiences or opinion* or concern* or belief* or feeling* or idea* or satisfaction or anxiet* or fear* or acceptance or denial or stigma* or label* or behaviour* or behavior*)).ti,ab.
457.	((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) adj3 (need* or requirement* or support* or communication* or involve*)).ti,ab.
458.	or/41-45
459.	33 or 40 or 46
460.	27 and 47
461.	Qualitative research/ or Narration/ or exp Interviews as Topic/ or exp "Surveys and

	Questionnaires"/ or Health care surveys/
462.	(qualitative or interview* or focus group* or theme* or questionnaire* or survey*).ti,ab.
463.	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-stud* or metathem* or meta-them* or ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic* adj3 analys*) or theoretical sampl* or purposive sampl* or hermeneutic* or heidegger* or husserl* or colaizzi* or van kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*).ti,ab.
464.	or/49-51
465.	48 and 52

Embase (Ovid) search terms

436.	exp Sleep Disordered Breathing/
437.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
438.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
439.	(OSAHS or OSA or OSAS).ti,ab.
440.	(obes* adj3 hypoventil*).ti,ab.
441.	pickwick*.ti,ab.
442.	or/1-6
443.	limit 7 to English language
444.	letter.pt. or letter/
445.	note.pt.
446.	editorial.pt.
447.	case report/ or case study/
448.	(letter or comment*).ti.
449.	or/9-13
450.	randomized controlled trial/ or random*.ti,ab.
451.	14 not 15
452.	animal/ not human/
453.	nonhuman/
454.	exp Animal Experiment/
455.	exp Experimental Animal/
456.	animal model/
457.	exp Rodent/
458.	(rat or rats or mouse or mice).ti.
459.	or/16-23
460.	8 not 24
461.	*patient/ or *hospital patient/ or *outpatient/
462.	*caregiver/ or *family/ or adult child/ or family relation/ or grandparent/ or military family/ or nuclear family/ or single-parent family/ or *parent/ or father/ or mother/ or single parent/ or legal guardian/
463.	(patient* or carer* or caregiver* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or next of kin or significant other* or partner* or guardian* or inpatient* or outpatient*).ti,ab.
464.	or/26-28
465.	information service/ or documentation/ or publication/ or book/ or counseling/ or directive counseling/
466.	29 and 30
467.	(patient* adj3 (education or educate or educating or literature or leaflet* or booklet* or

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Sleep apnoea search strategy 4 – information and support

	pamphlet* or information*)).ti,ab.
468.	patient education/
469.	consumer health information/
470.	(information* adj3 (need* or requirement* or support* or seek* or access* or disseminat* or barrier*)).ti,ab.
471.	((educat* or learn* or support*) adj3 (service* or literature or leaflet* or booklet* or pamphlet* or information* or manual* or brochure* or publication* or handout* or material* or program*)).ti,ab.
472.	(discharge* adj3 (information* or advice or support*)).ti,ab.
473.	or/32-37
474.	*consumer attitude/ or *satisfaction/ or patient attitude/ or patient compliance/ or patient dropout/ or patient participation/ or patient preference/ or patient satisfaction/
475.	((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) adj3 (attitud* or priorit* or perception* or preferen* or expectation* or choice* or perspective* or view* or satisfact* or inform*)).ti,ab.
476.	((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) adj3 (knowledge or awareness or misconception* or understanding or misunderstanding)).ti,ab.
477.	((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) adj3 (experience or experiences or opinion* or concern* or belief* or feeling* or idea* or satisfaction or anxiet* or fear* or acceptance or denial or stigma* or label* or behaviour* or behavior*)).ti,ab.
478.	((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) adj3 (need* or requirement* or support* or communication* or involve*)).ti,ab.
479.	or/39-43
480.	31 or 38 or 44
481.	25 and 45
482.	health survey/ or exp questionnaire/ or exp interview/ or qualitative research/ or narrative/
483.	(qualitative or interview* or focus group* or theme* or questionnaire* or survey*).ti,ab.
484.	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-stud* or metathem* or meta-them* or ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic* adj3 analys*) or theoretical sampl* or purposive sampl* or hermeneutic* or heidegger* or husserl* or colaizzi* or van kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*).ti,ab.
485.	or/47-49
486.	46 and 50

CINAHL (EBSCO) search terms

S1.	(MH "Sleep Apnea Syndromes+")
S2.	TI (sleep* n4 (apn?ea* or hypopn?ea*))
S3.	AB (sleep* n4 (apn?ea* or hypopn?ea*))
S4.	TI (sleep* n4 disorder* n4 breath*)
S5.	AB (sleep* n4 disorder* n4 breath*)
S6.	TI (OSAHS or OSA or OSAS)
S7.	AB (OSAHS or OSA or OSAS)
S8.	TI (obes* n3 hypoventil*)
S9.	AB (obes* n3 hypoventil*)
S10.	TI (pickwick*)

S11.	AB (pickwick*)
S12.	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11
S13.	PT anecdote or PT audiovisual or PT bibliography or PT biography or PT book or PT book review or PT brief item or PT cartoon or PT commentary or PT computer program or PT editorial or PT games or PT glossary or PT historical material or PT interview or PT letter or PT listservs or PT masters thesis or PT obituary or PT pamphlet or PT pamphlet chapter or PT pictorial or PT poetry or PT proceedings or PT "questions and answers" or PT response or PT software or PT teaching materials or PT website
S14.	S12 NOT S13
S15.	(MH "Patients") OR (MH "Inpatients") OR (MH "Outpatients")
S16.	(MH "Caregivers") OR (MH "Family+") OR (MH "Parents+") OR (MH "Guardianship, Legal+")
S17.	TI (patient* or carer* or caregiver* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or next of kin or significant other* or partner* or guardian* or inpatient* or outpatient*)
S18.	AB (patient* or carer* or caregiver* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or next of kin or significant other* or partner* or guardian* or inpatient* or outpatient*)
S19.	S15 OR S16 OR S17 OR S18
S20.	(MH "Information Services+") OR (MH "Books") OR (MH "Pamphlets") OR (MH "Counseling")
S21.	S19 AND S20
S22.	TI (patient* n3 (education or educate or educating or literature or leaflet* or booklet* or pamphlet* or information*))
S23.	AB (patient* n3 (education or educate or educating or literature or leaflet* or booklet* or pamphlet* or information*))
S24.	(MH "Patient Education")
S25.	(MH "Consumer Health Information")
S26.	TI (information* n3 (need* or requirement* or support* or seek* or access* or disseminat* or barrier*))
S27.	AB (information* n3 (need* or requirement* or support* or seek* or access* or disseminat* or barrier*))
S28.	TI ((educat* or learn* or support*) n3 (service* or literature or leaflet* or booklet* or pamphlet* or information* or manual* or brochure* or publication* or handout* or material* or program*))
S29.	AB ((educat* or learn* or support*) n3 (service* or literature or leaflet* or booklet* or pamphlet* or information* or manual* or brochure* or publication* or handout* or material* or program*))
S30.	TI (discharge* n3 (information* or advice or support*))
S31.	AB (discharge* n3 (information* or advice or support*))
S32.	S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31
S33.	(MH "Consumer Attitudes") OR (MH "Personal Satisfaction") OR (MH "Patient Attitudes") OR (MH "Patient Compliance") OR (MH "Patient Dropouts") OR (MH "Patient Preference") OR (MH "Patient Satisfaction")
S34.	TI ((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) n3 (attitud* or priorit* or perception* or preferen* or expectation* or choice* or perspective* or view* or satisfact* or inform*))
S35.	AB ((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) n3 (attitud* or priorit* or perception* or preferen* or expectation* or choice* or perspective* or view* or satisfact* or inform*))
S36.	TI ((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) n3 (knowledge or awareness or misconception* or understanding or misunderstanding))

S37.	AB ((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) n3 (knowledge or awareness or misconception* or understanding or misunderstanding))
S38.	TI ((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) n3 (experience or experiences or opinion* or concern* or belief* or feeling* or idea* or satisfaction or anxiet* or fear* or acceptance or denial or stigma* or label* or behaviour* or behavior*))
S39.	AB ((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) n3 (experience or experiences or opinion* or concern* or belief* or feeling* or idea* or satisfaction or anxiet* or fear* or acceptance or denial or stigma* or label* or behaviour* or behavior*))
S40.	TI ((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) n3 (need* or requirement* or support* or communication* or involve*))
S41.	AB ((patient* or user* or carer* or famil* or parent* or father* or mother* or spouse* or wife or wives or husband* or significant other* or partner*) n3 (need* or requirement* or support* or communication* or involve*))
S42.	S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41
S43.	S21 OR S32 OR S42
S44.	S14 AND S43
S45.	(MH "Qualitative Studies+")
S46.	(MH "Qualitative Validity+")
S47.	(MH "Interviews+") OR (MH "Focus Groups") OR (MH "Surveys") OR (MH "Questionnaires+")
S48.	(qualitative or interview* or focus group* or theme* or questionnaire* or survey*)
S49.	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-stud* or metathem* or meta-them* or ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic* adj3 analys*) or theoretical sampl* or purposive sampl* or hermeneutic* or heidegger* or husserl* or colaizzi* or van kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*)
S50.	S45 OR S46 OR S47 OR S48 OR S49
S51.	S44 AND S50

PsycINFO (ProQuest) search terms

1.	(((MAINSUBJECT.EXACT.EXPLODE("Sleep Apnea") OR ti,ab(sleep* NEAR/4 (apn?ea* OR hypopn?ea*)) OR ti,ab(sleep* NEAR/4 disorder* NEAR/4 breath*) OR ti,ab(OSAHS OR OSA OR OSAS) OR ti,ab(obes* NEAR/3 hypoventil*) OR ti,ab(pickwick*)) AND (MAINSUBJECT.EXACT("Patients") OR MAINSUBJECT.EXACT("Outpatients") OR MAINSUBJECT.EXACT.EXPLODE("Parents") OR MAINSUBJECT.EXACT("Caregivers") OR MAINSUBJECT.EXACT.EXPLODE("Family") OR MAINSUBJECT.EXACT("Guardianship")))) NOT (su.exact.explode("rodents") OR su.exact.explode("mice") OR (su.exact("animals") NOT (su.exact("human males") OR su.exact("human females")))) OR ti(rat OR rats OR mouse OR mice))) AND la.exact("English"))
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Sleep apnoea search strategy 4 – information and support

5 Sleep Apnoea search strategy 5 monitoring

This literature search strategy was used for the following reviews;

- What is the most clinically and cost effective strategy for monitoring OSAHS/OHS/OS (for example based on outpatient visits, download of data from devices or telemonitoring)?
- What is the optimum frequency of monitoring of OSAHS/OHS/OS?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual. {NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.12 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 17: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2019 Issue 11 of 12 CENTRAL to 2019 Issue 11 of 12	None
Epistemonikos (Epistemonikos Foundation)	Inception – 29 November 2018	None

Medline (Ovid) search terms

466.	exp Sleep Apnea Syndromes/
467.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
468.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
469.	(OSAHS or OSA or OSAS).ti,ab.
470.	(obes* adj3 hypoventil*).ti,ab.
471.	pickwick*.ti,ab.
472.	or/1-6
473.	limit 7 to English language
474.	letter/

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Sleep Apnoea search strategy 5 monitoring

475.	editorial/
476.	news/
477.	exp historical article/
478.	Anecdotes as Topic/
479.	comment/
480.	case report/
481.	(letter or comment*).ti.
482.	or/9-16
483.	randomized controlled trial/ or random*.ti,ab.
484.	17 not 18
485.	animals/ not humans/
486.	exp Animals, Laboratory/
487.	exp Animal Experimentation/
488.	exp Models, Animal/
489.	exp Rodentia/
490.	(rat or rats or mouse or mice).ti.
491.	or/19-25
492.	8 not 26
493.	Monitoring, Physiologic/
494.	Patient Outcome Assessment/
495.	monitoring.ti,ab.
496.	((followup or follow-up or check* or evaluat* or appointment* or observation or observations) adj3 (timing* or interval* or year* or annual* or biannual* or month* or periodic* or frequen* or routine*)).ti,ab.
497.	((followup or follow-up or check* or evaluat* or appointment* or monitor*) adj3 (outpatient or out-patient or clinic or telephone or remote or virtual)).ti,ab.
498.	((monitor* or time point* or interval*) adj3 (year* or annual* or biannual* or month* or periodic* or frequen* or routine*)).ti,ab.
499.	(telemonitor* or telemedicine or telehealth or tele monitor* or tele medicine or tele health or download* or smartphone* or smart phone or ipad* or iphone*).ti,ab.
500.	((manage* or monitor*) adj3 (virtual or remote or web* or cloud* or wireless or Internet or wi fi or wifi)).ti,ab.
501.	(monitor* adj3 device*).ti,ab.
502.	Telemedicine/
503.	or/28-37
504.	27 and 38
505.	randomized controlled trial.pt.
506.	controlled clinical trial.pt.
507.	randomi#ed.ti,ab.
508.	placebo.ab.
509.	randomly.ti,ab.
510.	Clinical Trials as topic.sh.
511.	trial.ti.
512.	or/40-46
513.	Meta-Analysis/
514.	exp Meta-Analysis as Topic/

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Sleep Apnoea search strategy 5 monitoring

515.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
516.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
517.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
518.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
519.	(search* adj4 literature).ab.
520.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
521.	cochrane.jw.
522.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
523.	or/48-57
524.	Epidemiologic studies/
525.	Observational study/
526.	exp Cohort studies/
527.	(cohort adj (study or studies or analys* or data)).ti,ab.
528.	((follow up or observational or uncontrolled or non random#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
529.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
530.	Controlled Before-After Studies/
531.	Historically Controlled Study/
532.	Interrupted Time Series Analysis/
533.	(before adj2 after adj2 (study or studies or data)).ti,ab.
534.	exp case control studies/
535.	case control*.ti,ab.
536.	Cross-sectional studies/
537.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
538.	or/59-72
539.	39 and (47 or 58 or 73)

Embase (Ovid) search terms

487.	exp Sleep Disordered Breathing/
488.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
489.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
490.	(OSAHS or OSA or OSAS).ti,ab.
491.	(obes* adj3 hypoventil*).ti,ab.
492.	pickwick*.ti,ab.
493.	or/1-6
494.	limit 7 to English language
495.	letter.pt. or letter/
496.	note.pt.
497.	editorial.pt.
498.	case report/ or case study/
499.	(letter or comment*).ti.
500.	or/9-13
501.	randomized controlled trial/ or random*.ti,ab.

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Sleep Apnoea search strategy 5 monitoring

502.	14 not 15
503.	animal/ not human/
504.	nonhuman/
505.	exp Animal Experiment/
506.	exp Experimental Animal/
507.	animal model/
508.	exp Rodent/
509.	(rat or rats or mouse or mice).ti.
510.	or/16-23
511.	8 not 24
512.	physiologic monitoring/
513.	outcome assessment/
514.	monitoring.ti,ab.
515.	((followup or follow-up or check* or evaluat* or appointment* or observation or observations) adj3 (timing* or interval* or year* or annual* or biannual* or month* or periodic* or frequen* or routine*)).ti,ab.
516.	((followup or follow-up or check* or evaluat* or appointment* or monitor*) adj3 (outpatient or out-patient or clinic or telephone or remote or virtual)).ti,ab.
517.	((monitor* or time point* or interval*) adj3 (year* or annual* or biannual* or month* or periodic* or frequen* or routine*)).ti,ab.
518.	(telemonitor* or telemedicine or telehealth or tele monitor* or tele medicine or tele health or download* or smartphone* or smart phone or ipad* or iphone*).ti,ab.
519.	((manage* or monitor*) adj3 (virtual or remote or web* or cloud* or wireless or Internet or wi fi or wifi)).ti,ab.
520.	(monitor* adj3 device*).ti,ab.
521.	exp telemedicine/
522.	or/26-35
523.	25 and 36
524.	random*.ti,ab.
525.	factorial*.ti,ab.
526.	(crossover* or cross over*).ti,ab.
527.	((doubl* or singl*) adj blind*).ti,ab.
528.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
529.	crossover procedure/
530.	single blind procedure/
531.	randomized controlled trial/
532.	double blind procedure/
533.	or/38-46
534.	systematic review/
535.	meta-analysis/
536.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
537.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
538.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
539.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
540.	(search* adj4 literature).ab.
541.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or

	cinahl or science citation index or bids or cancerlit).ab.
542.	cochrane.jw.
543.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
544.	or/48-57
545.	Clinical study/
546.	Observational study/
547.	family study/
548.	longitudinal study/
549.	retrospective study/
550.	prospective study/
551.	cohort analysis/
552.	follow-up/
553.	cohort*.ti,ab.
554.	66 and 67
555.	(cohort adj (study or studies or analys* or data)).ti,ab.
556.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
557.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
558.	(before adj2 after adj2 (study or studies or data)).ti,ab.
559.	or/59-65,68-72
560.	exp case control study/
561.	case control*.ti,ab.
562.	cross-sectional study/
563.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
564.	or/73-77
565.	37 and (47 or 58 or 78)

Cochrane Library (Wiley) search terms

#118.	MeSH descriptor: [Sleep Apnea Syndromes] explode all trees
#119.	(sleep* near/4 (apnea* or apnoea* or hypopnea* or hypopnoea*)):ti,ab
#120.	(sleep* near/4 disorder* near/4 breath*):ti,ab
#121.	(OSAHS or OSA or OSAS):ti,ab
#122.	(obes* near/3 hypoventil*):ti,ab
#123.	pickwick*:ti,ab
#124.	(OR #1-#6)
#125.	MeSH descriptor: [Monitoring, Physiologic] this term only
#126.	MeSH descriptor: [Patient Outcome Assessment] this term only
#127.	monitoring:ti,ab
#128.	((followup or follow-up or check* or evaluat* or appointment* or observation or observations) near/3 (timing* or interval* or year* or annual* or biannual* or month* or periodic* or frequen* or routine*)):ti,ab
#129.	((followup or follow-up or check* or evaluat* or appointment* or monitor*) near/3 (outpatient or out-patient or clinic or telephone or remote or virtual)):ti,ab
#130.	((monitor* or time point* or interval*) near/3 (year* or annual* or biannual* or month* or periodic* or frequen* or routine*)):ti,ab
#131.	(telemonitor* or telemedicine or telehealth or download* or smartphone*):ti,ab

#132.	((manage* or monitor*) near/3 (virtual or remote or web* or cloud* or wireless or Internet)):ti,ab
#133.	(monitor* near/3 device*).ti,ab
#134.	MeSH descriptor: [Telemedicine] this term only
#135.	(or #8-#17)
#136.	#7 AND #18

Epistemonikos search terms

6.	((title:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*) OR abstract:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*)))
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A.13 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to sleep apnoea population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA – this ceased to be updated after March 2018) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics and quality of life studies.

A.13.1 Health economic studies strategy

Table 18: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 26 November 2019	Exclusions Health economics studies
Embase	2014 – 26 November 2019	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 31 March 2018 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

	exp Sleep Apnea Syndromes/
221.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
222.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
223.	(OSAHS or OSA or OSAS).ti,ab.
224.	(obes* adj3 hypoventil*).ti,ab.
225.	pickwick*.ti,ab.
226.	or/1-6
227.	limit 7 to English language
228.	letter/

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Sleep Apnoea search strategy 5 monitoring

229.	editorial/
230.	news/
231.	exp historical article/
232.	Anecdotes as Topic/
233.	comment/
234.	case report/
235.	(letter or comment*).ti.
236.	or/9-16
237.	randomized controlled trial/ or random*.ti,ab.
238.	17 not 18
239.	animals/ not humans/
240.	exp Animals, Laboratory/
241.	exp Animal Experimentation/
242.	exp Models, Animal/
243.	exp Rodentia/
244.	(rat or rats or mouse or mice).ti.
245.	or/19-25
246.	8 not 26
247.	Economics/
248.	Value of life/
249.	exp "Costs and Cost Analysis"/
250.	exp Economics, Hospital/
251.	exp Economics, Medical/
252.	Economics, Nursing/
253.	Economics, Pharmaceutical/
254.	exp "Fees and Charges"/
255.	exp Budgets/
256.	budget*.ti,ab.
257.	cost*.ti.
258.	(economic* or pharmaco?economic*).ti.
259.	(price* or pricing*).ti,ab.
260.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
261.	(financ* or fee or fees).ti,ab.
262.	(value adj2 (money or monetary)).ti,ab.
263.	or/28-43
264.	27 and 44

Embase (Ovid) search terms

201.	exp Sleep Disordered Breathing/
202.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
203.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
204.	(OSAHS or OSA or OSAS).ti,ab.
205.	(obes* adj3 hypoventil*).ti,ab.
206.	pickwick*.ti,ab.
207.	or/1-6

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Sleep Apnoea search strategy 5 monitoring

208.	limit 7 to English language
209.	letter.pt. or letter/
210.	note.pt.
211.	editorial.pt.
212.	case report/ or case study/
213.	(letter or comment*).ti.
214.	or/9-13
215.	randomized controlled trial/ or random*.ti,ab.
216.	14 not 15
217.	animal/ not human/
218.	nonhuman/
219.	exp Animal Experiment/
220.	exp Experimental Animal/
221.	animal model/
222.	exp Rodent/
223.	(rat or rats or mouse or mice).ti.
224.	or/16-23
225.	8 not 24
226.	health economics/
227.	exp economic evaluation/
228.	exp health care cost/
229.	exp fee/
230.	budget/
231.	funding/
232.	budget*.ti,ab.
233.	cost*.ti.
234.	(economic* or pharmaco?economic*).ti.
235.	(price* or pricing*).ti,ab.
236.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
237.	(financ* or fee or fees).ti,ab.
238.	(value adj2 (money or monetary)).ti,ab.
239.	or/26-38
240.	25 and 39

NHS EED and HTA (CRD) search terms

#36.	MeSH DESCRIPTOR Sleep Apnea Syndromes EXPLODE ALL TREES
#37.	(sleep* adj4 (apn?ea* or hypopn?ea*))
#38.	(sleep* adj4 disorder* adj4 breath*)
#39.	(OSAHS or OSA or OSAS)
#40.	(obes* adj3 hypoventil*)
#41.	(pickwick*)
#42.	#1 OR #2 OR #3 OR #4 OR #5 OR #6

A.13.2 Quality of life studies strategy

Table 19: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	1946 – 26 November 2019	Exclusions Quality of life studies
Embase	1974 – 26 November 2019	Exclusions Quality of life studies

Medline (Ovid) search terms

241.	exp Sleep Apnea Syndromes/
242.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
243.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
244.	(OSAHS or OSA or OSAS).ti,ab.
245.	(obes* adj3 hypoventil*).ti,ab.
246.	pickwick*.ti,ab.
247.	or/1-6
248.	limit 7 to English language
249.	letter/
250.	editorial/
251.	news/
252.	exp historical article/
253.	Anecdotes as Topic/
254.	comment/
255.	case report/
256.	(letter or comment*).ti.
257.	or/9-16
258.	randomized controlled trial/ or random*.ti,ab.
259.	17 not 18
260.	animals/ not humans/
261.	exp Animals, Laboratory/
262.	exp Animal Experimentation/
263.	exp Models, Animal/
264.	exp Rodentia/
265.	(rat or rats or mouse or mice).ti.
266.	or/19-25
267.	8 not 26
268.	quality-adjusted life years/
269.	sickness impact profile/
270.	(quality adj2 (wellbeing or well being)).ti,ab.
271.	sickness impact profile.ti,ab.

272.	disability adjusted life.ti,ab.
273.	(qal* or qtime* or qwb* or daly*).ti,ab.
274.	(euroqol* or eq5d* or eq 5*).ti,ab.
275.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
276.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
277.	(hui or hui1 or hui2 or hui3).ti,ab.
278.	(health* year* equivalent* or hye or hyes).ti,ab.
279.	discrete choice*.ti,ab.
280.	rosser.ti,ab.
281.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
282.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
283.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
284.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
285.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
286.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
287.	or/28-46
288.	27 and 47

Embase (Ovid) search terms

241.	exp Sleep Disordered Breathing/
242.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
243.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
244.	(OSAHS or OSA or OSAS).ti,ab.
245.	(obes* adj3 hypoventil*).ti,ab.
246.	pickwick*.ti,ab.
247.	or/1-6
248.	limit 7 to English language
249.	letter.pt. or letter/
250.	note.pt.
251.	editorial.pt.
252.	case report/ or case study/
253.	(letter or comment*).ti.
254.	or/9-13
255.	randomized controlled trial/ or random*.ti,ab.
256.	14 not 15
257.	animal/ not human/
258.	nonhuman/
259.	exp Animal Experiment/
260.	exp Experimental Animal/
261.	animal model/
262.	exp Rodent/
263.	(rat or rats or mouse or mice).ti.
264.	or/16-23

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265.	8 not 24
266.	quality adjusted life year/
267.	"quality of life index"/
268.	short form 12/ or short form 20/ or short form 36/ or short form 8/
269.	sickness impact profile/
270.	(quality adj2 (wellbeing or well being)).ti,ab.
271.	sickness impact profile.ti,ab.
272.	disability adjusted life.ti,ab.
273.	(qal* or qtime* or qwb* or daly*).ti,ab.
274.	(euroqol* or eq5d* or eq 5*).ti,ab.
275.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
276.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
277.	(hui or hui1 or hui2 or hui3).ti,ab.
278.	(health* year* equivalent* or hye or hyes).ti,ab.
279.	discrete choice*.ti,ab.
280.	rosser.ti,ab.
281.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
282.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
283.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
284.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
285.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
286.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
287.	or/26-46
288.	25 and 47

6 Sleep Apnoea search strategy 6_oral devices

This literature search strategy was used for the following review;

- What is the clinical and cost effectiveness of different types of oral devices for managing obstructive sleep apnoea/hypopnoea syndrome (OSAHS), obesity hypoventilation syndrome and overlap syndrome?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual. {NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.14 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 20: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2019 Issue 11 of 12 CENTRAL to 2019 Issue 11 of 12	None
Epistemonikos (Epistemonikos Foundation)	Inception – 29 November 2018	None

Medline (Ovid) search terms

540.	exp Sleep Apnea Syndromes/
541.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
542.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
543.	(OSAHS or OSA or OSAS).ti,ab.
544.	(obes* adj3 hypoventil*).ti,ab.
545.	pickwick*.ti,ab.
546.	or/1-6
547.	limit 7 to English language
548.	letter/
549.	editorial/
550.	news/
551.	exp historical article/
552.	Anecdotes as Topic/

553.	comment/
554.	case report/
555.	(letter or comment*).ti.
556.	or/9-16
557.	randomized controlled trial/ or random*.ti,ab.
558.	17 not 18
559.	animals/ not humans/
560.	exp Animals, Laboratory/
561.	exp Animal Experimentation/
562.	exp Models, Animal/
563.	exp Rodentia/
564.	(rat or rats or mouse or mice).ti.
565.	or/19-25
566.	8 not 26
567.	exp Orthodontic Appliances/
568.	Orthotic Devices/ or Splints/ or Mandibular Advancement/
569.	((oral or intraoral or intra-oral) adj3 (device* or prosthesis* or appliance* or splint*)).ti,ab.
570.	(MAD or MADs or MAS or MRS).ti,ab.
571.	((dental or orthodontic* or orthosis or orthotic) adj3 (device* or prosthesis* or appliance* or splint*)).ti,ab.
572.	(tongue adj3 (device* or prosthesis* or appliance* or splint* or retain* or reposition* or stabilize* or stabilis* or advancement or advancing or retention or protruding or protrude or protruded or protrusion or forward or mouthpiece*)).ti,ab.
573.	(mandib* adj3 (device* or prosthesis* or appliance* or splint* or advancement or advancing or protruding or protrude or protruded or protrusion or reposition* or position*)).ti,ab.
574.	(Mouth guard* or mouthguard*).ti,ab.
575.	(SleepPro or Somnolis or Somnofit or Snore Defense or Snoreeze or Anti Snore or Anti-Snoring or SnoreWizard or Snore Wizard or VitalSleep).ti,ab.
576.	or/28-36
577.	27 and 37
578.	randomized controlled trial.pt.
579.	controlled clinical trial.pt.
580.	randomi#ed.ti,ab.
581.	placebo.ab.
582.	randomly.ti,ab.
583.	Clinical Trials as topic.sh.
584.	trial.ti.
585.	or/39-45
586.	Meta-Analysis/
587.	exp Meta-Analysis as Topic/
588.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
589.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
590.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
591.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
592.	(search* adj4 literature).ab.

593.	(medline or pubmed or cochrane or embase or psychlit or psychlit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
594.	cochrane.jw.
595.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
596.	or/47-56
597.	38 and (46 or 57)

Embase (Ovid) search terms

566.	exp Sleep Disordered Breathing/
567.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
568.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
569.	(OSAHS or OSA or OSAS).ti,ab.
570.	(obes* adj3 hypoventil*).ti,ab.
571.	pickwick*.ti,ab.
572.	or/1-6
573.	limit 7 to English language
574.	letter.pt. or letter/
575.	note.pt.
576.	editorial.pt.
577.	case report/ or case study/
578.	(letter or comment*).ti.
579.	or/9-13
580.	randomized controlled trial/ or random*.ti,ab.
581.	14 not 15
582.	animal/ not human/
583.	nonhuman/
584.	exp Animal Experiment/
585.	exp Experimental Animal/
586.	animal model/
587.	exp Rodent/
588.	(rat or rats or mouse or mice).ti.
589.	or/16-23
590.	8 not 24
591.	exp orthodontic device/
592.	orthosis/ or splint/ or mandibular advancement/
593.	((oral or intraoral or intra-oral) adj3 (device* or prosthesis* or appliance* or splint*)).ti,ab.
594.	(MAD or MADs or MAS or MRS).ti,ab.
595.	((dental or orthodontic* or orthosis or orthotic) adj3 (device* or prosthesis* or appliance* or splint*)).ti,ab.
596.	(tongue adj3 (device* or prosthesis* or appliance* or splint* or retain* or reposition* or stabiliz* or stabilis* or advancement or advancing or retention or protruding or protrude or protruded or protrusion or forward or mouthpiece*)).ti,ab.
597.	(mandib* adj3 (device* or prosthesis* or appliance* or splint* or advancement or advancing or protruding or protrude or protruded or protrusion or reposition* or position*)).ti,ab.
598.	(Mouth guard* or mouthguard*).ti,ab.
599.	(SleepPro or Somnolis or Somnofit or Snore Defense or Snoreeze or Anti Snore or Anti-Snoring or SnoreWizard or Snore Wizard or VitalSleep).ti,ab.

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Sleep Apnoea search strategy 6_oral devices

600.	or/26-34
601.	25 and 35
602.	random*.ti,ab.
603.	factorial*.ti,ab.
604.	(crossover* or cross over*).ti,ab.
605.	((doubl* or singl*) adj blind*).ti,ab.
606.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
607.	crossover procedure/
608.	single blind procedure/
609.	randomized controlled trial/
610.	double blind procedure/
611.	or/37-45
612.	systematic review/
613.	meta-analysis/
614.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
615.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
616.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
617.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
618.	(search* adj4 literature).ab.
619.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
620.	cochrane.jw.
621.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
622.	or/47-56
623.	36 and (46 or 57)

Cochrane Library (Wiley) search terms

#137.	MeSH descriptor: [Sleep Apnea Syndromes] explode all trees
#138.	(sleep* near/4 (apnea* or apnoea* or hypopnea* or hypopnoea*)):ti,ab
#139.	(sleep* near/4 disorder* near/4 breath*):ti,ab
#140.	(OSAHS or OSA or OSAS):ti,ab
#141.	(obes* near/3 hypoventil*):ti,ab
#142.	pickwick*:ti,ab
#143.	(OR #1-#6)
#144.	MeSH descriptor: [Orthodontic Appliances] explode all trees
#145.	MeSH descriptor: [Orthotic Devices] this term only
#146.	MeSH descriptor: [Splints] this term only
#147.	MeSH descriptor: [Mandibular Advancement] this term only
#148.	((oral or intraoral or intra-oral) near/3 (device* or prosthes* or appliance* or splint*)):ti,ab
#149.	(MAD or MADs or MAS or MRS):ti,ab
#150.	((dental or orthodontic* or orthosis or orthotic) near/3 (device* or prosthes* or appliance* or splint*)):ti,ab
#151.	(tongue near/3 (device* or prosthes* or appliance* or splint* or retain* or reposition* or stabiliz* or stabilis* or advancement or advancing or retention or protruding or protrude or protruded or protrusion or forward or mouthpiece*)):ti,ab
#152.	(mandib* near/3 (device* or prosthes* or appliance* or splint* or advancement or advancing

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	or protruding or protrude or protruded or protrusion or reposition* or position*)):ti,ab
#153.	(Mouth guard* or mouthguard*):ti,ab
#154.	(SleepPro or Somnolis or Somnofit or Snore Defense or Snoreeze or Anti Snore or Anti-Snoring or SnoreWizard or Snore Wizard or VitalSleep):ti,ab
#155.	(OR #8-#18)
#156.	#7 and #19

Epistemonikos search terms

7.	((title:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*) OR abstract:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*)))
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A.15 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to sleep apnoea population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA – this ceased to be updated after March 2018) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics and quality of life studies.

A.15.1 Health economic studies strategy

Table 21: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 26 November 2019	Exclusions Health economics studies
Embase	2014 – 26 November 2019	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 31 March 2018 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

	exp Sleep Apnea Syndromes/
265.	(sleep* adj4 (apn?ea* or hypopn?ea*)):ti,ab.
266.	(sleep* adj4 disorder* adj4 breath*):ti,ab.
267.	(OSAHS or OSA or OSAS):ti,ab.
268.	(obes* adj3 hypoventil*):ti,ab.
269.	pickwick*:ti,ab.
270.	or/1-6
271.	limit 7 to English language
272.	letter/

273.	editorial/
274.	news/
275.	exp historical article/
276.	Anecdotes as Topic/
277.	comment/
278.	case report/
279.	(letter or comment*).ti.
280.	or/9-16
281.	randomized controlled trial/ or random*.ti,ab.
282.	17 not 18
283.	animals/ not humans/
284.	exp Animals, Laboratory/
285.	exp Animal Experimentation/
286.	exp Models, Animal/
287.	exp Rodentia/
288.	(rat or rats or mouse or mice).ti.
289.	or/19-25
290.	8 not 26
291.	Economics/
292.	Value of life/
293.	exp "Costs and Cost Analysis"/
294.	exp Economics, Hospital/
295.	exp Economics, Medical/
296.	Economics, Nursing/
297.	Economics, Pharmaceutical/
298.	exp "Fees and Charges"/
299.	exp Budgets/
300.	budget*.ti,ab.
301.	cost*.ti.
302.	(economic* or pharmaco?economic*).ti.
303.	(price* or pricing*).ti,ab.
304.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
305.	(financ* or fee or fees).ti,ab.
306.	(value adj2 (money or monetary)).ti,ab.
307.	or/28-43
308.	27 and 44

Embase (Ovid) search terms

241.	exp Sleep Disordered Breathing/
242.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
243.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
244.	(OSAHS or OSA or OSAS).ti,ab.
245.	(obes* adj3 hypoventil*).ti,ab.
246.	pickwick*.ti,ab.
247.	or/1-6

248.	limit 7 to English language
249.	letter.pt. or letter/
250.	note.pt.
251.	editorial.pt.
252.	case report/ or case study/
253.	(letter or comment*).ti.
254.	or/9-13
255.	randomized controlled trial/ or random*.ti,ab.
256.	14 not 15
257.	animal/ not human/
258.	nonhuman/
259.	exp Animal Experiment/
260.	exp Experimental Animal/
261.	animal model/
262.	exp Rodent/
263.	(rat or rats or mouse or mice).ti.
264.	or/16-23
265.	8 not 24
266.	health economics/
267.	exp economic evaluation/
268.	exp health care cost/
269.	exp fee/
270.	budget/
271.	funding/
272.	budget*.ti,ab.
273.	cost*.ti.
274.	(economic* or pharmaco?economic*).ti.
275.	(price* or pricing*).ti,ab.
276.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
277.	(financ* or fee or fees).ti,ab.
278.	(value adj2 (money or monetary)).ti,ab.
279.	or/26-38
280.	25 and 39

NHS EED and HTA (CRD) search terms

#43.	MeSH DESCRIPTOR Sleep Apnea Syndromes EXPLODE ALL TREES
#44.	(sleep* adj4 (apn?ea* or hypopn?ea*))
#45.	(sleep* adj4 disorder* adj4 breath*)
#46.	(OSAHS or OSA or OSAS)
#47.	(obes* adj3 hypoventil*)
#48.	(pickwick*)
#49.	#1 OR #2 OR #3 OR #4 OR #5 OR #6

A.15.2 Quality of life studies strategy

Table 22: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	1946 – 26 November 2019	Exclusions Quality of life studies
Embase	1974 – 26 November 2019	Exclusions Quality of life studies

Medline (Ovid) search terms

289.	exp Sleep Apnea Syndromes/
290.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
291.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
292.	(OSAHS or OSA or OSAS).ti,ab.
293.	(obes* adj3 hypoventil*).ti,ab.
294.	pickwick*.ti,ab.
295.	or/1-6
296.	limit 7 to English language
297.	letter/
298.	editorial/
299.	news/
300.	exp historical article/
301.	Anecdotes as Topic/
302.	comment/
303.	case report/
304.	(letter or comment*).ti.
305.	or/9-16
306.	randomized controlled trial/ or random*.ti,ab.
307.	17 not 18
308.	animals/ not humans/
309.	exp Animals, Laboratory/
310.	exp Animal Experimentation/
311.	exp Models, Animal/
312.	exp Rodentia/
313.	(rat or rats or mouse or mice).ti.
314.	or/19-25
315.	8 not 26
316.	quality-adjusted life years/
317.	sickness impact profile/
318.	(quality adj2 (wellbeing or well being)).ti,ab.
319.	sickness impact profile.ti,ab.

320.	disability adjusted life.ti,ab.
321.	(qal* or qtime* or qwb* or daly*).ti,ab.
322.	(euroqol* or eq5d* or eq 5*).ti,ab.
323.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
324.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
325.	(hui or hui1 or hui2 or hui3).ti,ab.
326.	(health* year* equivalent* or hye or hyes).ti,ab.
327.	discrete choice*.ti,ab.
328.	rosser.ti,ab.
329.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
330.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
331.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
332.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
333.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
334.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
335.	or/28-46
336.	27 and 47

Embase (Ovid) search terms

289.	exp Sleep Disordered Breathing/
290.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
291.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
292.	(OSAHS or OSA or OSAS).ti,ab.
293.	(obes* adj3 hypoventil*).ti,ab.
294.	pickwick*.ti,ab.
295.	or/1-6
296.	limit 7 to English language
297.	letter.pt. or letter/
298.	note.pt.
299.	editorial.pt.
300.	case report/ or case study/
301.	(letter or comment*).ti.
302.	or/9-13
303.	randomized controlled trial/ or random*.ti,ab.
304.	14 not 15
305.	animal/ not human/
306.	nonhuman/
307.	exp Animal Experiment/
308.	exp Experimental Animal/
309.	animal model/
310.	exp Rodent/
311.	(rat or rats or mouse or mice).ti.
312.	or/16-23

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313.	8 not 24
314.	quality adjusted life year/
315.	"quality of life index"/
316.	short form 12/ or short form 20/ or short form 36/ or short form 8/
317.	sickness impact profile/
318.	(quality adj2 (wellbeing or well being)).ti,ab.
319.	sickness impact profile.ti,ab.
320.	disability adjusted life.ti,ab.
321.	(qal* or qtime* or qwb* or daly*).ti,ab.
322.	(euroqol* or eq5d* or eq 5*).ti,ab.
323.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
324.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
325.	(hui or hui1 or hui2 or hui3).ti,ab.
326.	(health* year* equivalent* or hye or hyes).ti,ab.
327.	discrete choice*.ti,ab.
328.	rosser.ti,ab.
329.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
330.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
331.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
332.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
333.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
334.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
335.	or/26-46
336.	25 and 47

7 Sleep Apnoea search strategy 7 oxygen therapy

This literature search strategy was used for the following review;

- What is the clinical and cost effectiveness of oxygen therapy adjunctive to ventilatory support for people who do not fulfil long term oxygen therapy (LTOT) criteria for managing obstructive sleep apnoea/hypopnoea syndrome, obesity hypoventilation syndrome and overlap syndrome?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual.{NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.16 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 23: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2019 Issue 11 of 12 CENTRAL to 2019 Issue 11 of 12	None
Epistemonikos (Epistemonikos Foundation)	Inception – 29 November 2018	None

Medline (Ovid) search terms

598.	exp Sleep Apnea Syndromes/
599.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
600.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
601.	(OSAHS or OSA or OSAS).ti,ab.
602.	(obes* adj3 hypoventil*).ti,ab.
603.	pickwick*.ti,ab.
604.	or/1-6
605.	limit 7 to English language

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Sleep Apnoea search strategy 7 oxygen therapy

606.	letter/
607.	editorial/
608.	news/
609.	exp historical article/
610.	Anecdotes as Topic/
611.	comment/
612.	case report/
613.	(letter or comment*).ti.
614.	or/9-16
615.	randomized controlled trial/ or random*.ti,ab.
616.	17 not 18
617.	animals/ not humans/
618.	exp Animals, Laboratory/
619.	exp Animal Experimentation/
620.	exp Models, Animal/
621.	exp Rodentia/
622.	(rat or rats or mouse or mice).ti.
623.	or/19-25
624.	8 not 26
625.	Oxygen Inhalation Therapy/
626.	((oxygen or O2) adj3 (therap* or administrat* or supplement*)).ti,ab.
627.	28 or 29
628.	27 and 30
629.	randomized controlled trial.pt.
630.	controlled clinical trial.pt.
631.	randomi#ed.ti,ab.
632.	placebo.ab.
633.	randomly.ti,ab.
634.	Clinical Trials as topic.sh.
635.	trial.ti.
636.	or/32-38
637.	Meta-Analysis/
638.	exp Meta-Analysis as Topic/
639.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
640.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
641.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
642.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
643.	(search* adj4 literature).ab.
644.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
645.	cochrane.jw.
646.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
647.	or/40-49
648.	Epidemiologic studies/

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649.	Observational study/
650.	exp Cohort studies/
651.	(cohort adj (study or studies or analys* or data)).ti,ab.
652.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
653.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
654.	Controlled Before-After Studies/
655.	Historically Controlled Study/
656.	Interrupted Time Series Analysis/
657.	(before adj2 after adj2 (study or studies or data)).ti,ab.
658.	exp case control studies/
659.	case control*.ti,ab.
660.	Cross-sectional studies/
661.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
662.	or/51-64
663.	31 and (39 or 50 or 65)

Embase (Ovid) search terms

624.	exp Sleep Disordered Breathing/
625.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
626.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
627.	(OSAHS or OSA or OSAS).ti,ab.
628.	(obes* adj3 hypoventil*).ti,ab.
629.	pickwick*.ti,ab.
630.	or/1-6
631.	limit 7 to English language
632.	letter.pt. or letter/
633.	note.pt.
634.	editorial.pt.
635.	case report/ or case study/
636.	(letter or comment*).ti.
637.	or/9-13
638.	randomized controlled trial/ or random*.ti,ab.
639.	14 not 15
640.	animal/ not human/
641.	nonhuman/
642.	exp Animal Experiment/
643.	exp Experimental Animal/
644.	animal model/
645.	exp Rodent/
646.	(rat or rats or mouse or mice).ti.
647.	or/16-23
648.	8 not 24
649.	oxygen therapy/
650.	((oxygen or O2) adj3 (therap* or administrat* or supplement*)).ti,ab.

651.	26 or 27
652.	25 and 28
653.	random*.ti,ab.
654.	factorial*.ti,ab.
655.	(crossover* or cross over*).ti,ab.
656.	((doubl* or singl*) adj blind*).ti,ab.
657.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
658.	crossover procedure/
659.	single blind procedure/
660.	randomized controlled trial/
661.	double blind procedure/
662.	or/30-38
663.	systematic review/
664.	meta-analysis/
665.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
666.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
667.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
668.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
669.	(search* adj4 literature).ab.
670.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
671.	cochrane.jw.
672.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
673.	or/40-49
674.	Clinical study/
675.	Observational study/
676.	family study/
677.	longitudinal study/
678.	retrospective study/
679.	prospective study/
680.	cohort analysis/
681.	follow-up/
682.	cohort*.ti,ab.
683.	58 and 59
684.	(cohort adj (study or studies or analys* or data)).ti,ab.
685.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
686.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
687.	(before adj2 after adj2 (study or studies or data)).ti,ab.
688.	or/51-57,60-64
689.	exp case control study/
690.	case control*.ti,ab.
691.	cross-sectional study/
692.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.

693.	or/65-69
694.	29 and (39 or 50 or 70)

Cochrane Library (Wiley) search terms

#157.	MeSH descriptor: [Sleep Apnea Syndromes] explode all trees
#158.	(sleep* near/4 (apnea* or apnoea* or hypopnea* or hypopnoea*)):ti,ab
#159.	(sleep* near/4 disorder* near/4 breath*):ti,ab
#160.	(OSAHS or OSA or OSAS):ti,ab
#161.	(obes* near/3 hypoventil*):ti,ab
#162.	pickwick*:ti,ab
#163.	(OR #1-#6)
#164.	MeSH descriptor: [Oxygen Inhalation Therapy] explode all trees
#165.	((oxygen or O2) near/3 (therap* or administrat* or supplement*)):ti,ab
#166.	(or #8-#9)
#167.	#7 AND #10

Epistemonikos search terms

8.	((title:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*))) OR (sleep* AND (apn?ea* OR hypopn?ea*))) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*) OR abstract:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*))) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*))
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A.17 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to sleep apnoea population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA – this ceased to be updated after March 2018) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics and quality of life studies.

A.17.1 Health economic studies strategy

Table 24: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 26 November 2019	Exclusions Health economics studies
Embase	2014 – 26 November 2019	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 31 March 2018 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

	exp Sleep Apnea Syndromes/
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Sleep Apnoea search strategy 7 oxygen therapy

309.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
310.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
311.	(OSAHS or OSA or OSAS).ti,ab.
312.	(obes* adj3 hypoventil*).ti,ab.
313.	pickwick*.ti,ab.
314.	or/1-6
315.	limit 7 to English language
316.	letter/
317.	editorial/
318.	news/
319.	exp historical article/
320.	Anecdotes as Topic/
321.	comment/
322.	case report/
323.	(letter or comment*).ti.
324.	or/9-16
325.	randomized controlled trial/ or random*.ti,ab.
326.	17 not 18
327.	animals/ not humans/
328.	exp Animals, Laboratory/
329.	exp Animal Experimentation/
330.	exp Models, Animal/
331.	exp Rodentia/
332.	(rat or rats or mouse or mice).ti.
333.	or/19-25
334.	8 not 26
335.	Economics/
336.	Value of life/
337.	exp "Costs and Cost Analysis"/
338.	exp Economics, Hospital/
339.	exp Economics, Medical/
340.	Economics, Nursing/
341.	Economics, Pharmaceutical/
342.	exp "Fees and Charges"/
343.	exp Budgets/
344.	budget*.ti,ab.
345.	cost*.ti.
346.	(economic* or pharmaco?economic*).ti.
347.	(price* or pricing*).ti,ab.
348.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
349.	(financ* or fee or fees).ti,ab.
350.	(value adj2 (money or monetary)).ti,ab.
351.	or/28-43
352.	27 and 44

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Embase (Ovid) search terms

281.	exp Sleep Disordered Breathing/
282.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
283.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
284.	(OSAHS or OSA or OSAS).ti,ab.
285.	(obes* adj3 hypoventil*).ti,ab.
286.	pickwick*.ti,ab.
287.	or/1-6
288.	limit 7 to English language
289.	letter.pt. or letter/
290.	note.pt.
291.	editorial.pt.
292.	case report/ or case study/
293.	(letter or comment*).ti.
294.	or/9-13
295.	randomized controlled trial/ or random*.ti,ab.
296.	14 not 15
297.	animal/ not human/
298.	nonhuman/
299.	exp Animal Experiment/
300.	exp Experimental Animal/
301.	animal model/
302.	exp Rodent/
303.	(rat or rats or mouse or mice).ti.
304.	or/16-23
305.	8 not 24
306.	health economics/
307.	exp economic evaluation/
308.	exp health care cost/
309.	exp fee/
310.	budget/
311.	funding/
312.	budget*.ti,ab.
313.	cost*.ti.
314.	(economic* or pharmaco?economic*).ti.
315.	(price* or pricing*).ti,ab.
316.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
317.	(financ* or fee or fees).ti,ab.
318.	(value adj2 (money or monetary)).ti,ab.
319.	or/26-38
320.	25 and 39

NHS EED and HTA (CRD) search terms

#50.	MeSH DESCRIPTOR Sleep Apnea Syndromes EXPLODE ALL TREES
#51.	(sleep* adj4 (apn?ea* or hypopn?ea*))
#52.	(sleep* adj4 disorder* adj4 breath*)
#53.	(OSAHS or OSA or OSAS)
#54.	(obes* adj3 hypoventil*)
#55.	(pickwick*)
#56.	#1 OR #2 OR #3 OR #4 OR #5 OR #6

A.17.2 Quality of life studies strategy

Table 25: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	1946 – 26 November 2019	Exclusions Quality of life studies
Embase	1974 – 26 November 2019	Exclusions Quality of life studies

Medline (Ovid) search terms

337.	exp Sleep Apnea Syndromes/
338.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
339.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
340.	(OSAHS or OSA or OSAS).ti,ab.
341.	(obes* adj3 hypoventil*).ti,ab.
342.	pickwick*.ti,ab.
343.	or/1-6
344.	limit 7 to English language
345.	letter/
346.	editorial/
347.	news/
348.	exp historical article/
349.	Anecdotes as Topic/
350.	comment/
351.	case report/
352.	(letter or comment*).ti.
353.	or/9-16
354.	randomized controlled trial/ or random*.ti,ab.
355.	17 not 18
356.	animals/ not humans/
357.	exp Animals, Laboratory/
358.	exp Animal Experimentation/
359.	exp Models, Animal/
360.	exp Rodentia/

361.	(rat or rats or mouse or mice).ti.
362.	or/19-25
363.	8 not 26
364.	quality-adjusted life years/
365.	sickness impact profile/
366.	(quality adj2 (wellbeing or well being)).ti,ab.
367.	sickness impact profile.ti,ab.
368.	disability adjusted life.ti,ab.
369.	(qal* or qtime* or qwb* or daly*).ti,ab.
370.	(euroqol* or eq5d* or eq 5*).ti,ab.
371.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
372.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
373.	(hui or hui1 or hui2 or hui3).ti,ab.
374.	(health* year* equivalent* or hye or hyes).ti,ab.
375.	discrete choice*.ti,ab.
376.	rosser.ti,ab.
377.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
378.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
379.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
380.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
381.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
382.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
383.	or/28-46
384.	27 and 47

Embase (Ovid) search terms

337.	exp Sleep Disordered Breathing/
338.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
339.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
340.	(OSAHS or OSA or OSAS).ti,ab.
341.	(obes* adj3 hypoventil*).ti,ab.
342.	pickwick*.ti,ab.
343.	or/1-6
344.	limit 7 to English language
345.	letter.pt. or letter/
346.	note.pt.
347.	editorial.pt.
348.	case report/ or case study/
349.	(letter or comment*).ti.
350.	or/9-13
351.	randomized controlled trial/ or random*.ti,ab.
352.	14 not 15

353.	animal/ not human/
354.	nonhuman/
355.	exp Animal Experiment/
356.	exp Experimental Animal/
357.	animal model/
358.	exp Rodent/
359.	(rat or rats or mouse or mice).ti.
360.	or/16-23
361.	8 not 24
362.	quality adjusted life year/
363.	"quality of life index"/
364.	short form 12/ or short form 20/ or short form 36/ or short form 8/
365.	sickness impact profile/
366.	(quality adj2 (wellbeing or well being)).ti,ab.
367.	sickness impact profile.ti,ab.
368.	disability adjusted life.ti,ab.
369.	(qal* or qtime* or qwb* or daly*).ti,ab.
370.	(euroqol* or eq5d* or eq 5*).ti,ab.
371.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
372.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
373.	(hui or hui1 or hui2 or hui3).ti,ab.
374.	(health* year* equivalent* or hye or hyes).ti,ab.
375.	discrete choice*.ti,ab.
376.	rosser.ti,ab.
377.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
378.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
379.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
380.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
381.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
382.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
383.	or/26-46
384.	25 and 47

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Sleep Apnoea search strategy 7 oxygen therapy

8 Sleep Apnoea search strategy 8_positive airway pressure devices

This literature search strategy was used for the following reviews;

- What is the comparative clinical and cost effectiveness of different types of positive airway pressure devices (for example, fixed-pressure CPAP, variable-pressure CPAP, bi-level positive airway pressure or other modes of non-invasive ventilation) for managing obstructive sleep apnoea/hypopnoea syndrome, obesity hypoventilation syndrome and overlap syndrome?
- What is the clinical and cost effectiveness of the addition of humidification to positive airway pressure therapy for managing obstructive sleep apnoea/hypopnoea syndrome, obesity hypoventilation syndrome and overlap syndrome?
- What is the clinical and cost-effectiveness of CPAP devices for the treatment of mild OSAHS?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual.{NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.18 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 26: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2019 Issue 11 of 12 CENTRAL to 2019 Issue 11 of 12	None
Epistemonikos (Epistemonikos Foundation)	Inception – 29 November 2018	None

Medline (Ovid) search terms

664.	exp Sleep Apnea Syndromes/
665.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
666.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
667.	(OSAHS or OSA or OSAS).ti,ab.
668.	(obes* adj3 hypoventil*).ti,ab.
669.	pickwick*.ti,ab.

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Sleep Apnoea search strategy 8_positive airway pressure devices

670.	or/1-6
671.	limit 7 to English language
672.	letter/
673.	editorial/
674.	news/
675.	exp historical article/
676.	Anecdotes as Topic/
677.	comment/
678.	case report/
679.	(letter or comment*).ti.
680.	or/9-16
681.	randomized controlled trial/ or random*.ti,ab.
682.	17 not 18
683.	animals/ not humans/
684.	exp Animals, Laboratory/
685.	exp Animal Experimentation/
686.	exp Models, Animal/
687.	exp Rodentia/
688.	(rat or rats or mouse or mice).ti.
689.	or/19-25
690.	8 not 26
691.	Continuous Positive Airway Pressure/
692.	positive airway* pressure.ti,ab.
693.	Continuous Positive Airway* Pressure.kw.
694.	Positive-Pressure Respiration/
695.	(positive adj3 pressure adj (therapy or device* or ventilat*)).ti,ab.
696.	(PAP or CPAP or aPAP or nCPAP or autoCPAP or auto-CPAP).ti,ab.
697.	(biPAP or BPAP or NBiPAP or NBPAP or NIV).ti,ab.
698.	((noninvasive or non-invasive) adj3 ventilat*).ti,ab.
699.	or/28-35
700.	27 and 36
701.	randomized controlled trial.pt.
702.	controlled clinical trial.pt.
703.	randomi#ed.ti,ab.
704.	placebo.ab.
705.	randomly.ti,ab.
706.	Clinical Trials as topic.sh.
707.	trial.ti.
708.	or/38-44
709.	Meta-Analysis/
710.	exp Meta-Analysis as Topic/
711.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
712.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
713.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
714.	(search strategy or search criteria or systematic search or study selection or data

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Sleep Apnoea search strategy 8_positive airway pressure devices

	extraction).ab.
715.	(search* adj4 literature).ab.
716.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
717.	cochrane.jw.
718.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
719.	or/46-55
720.	37 and (45 or 56)

Embase (Ovid) search terms

695.	exp Sleep Disordered Breathing/
696.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
697.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
698.	(OSAHS or OSA or OSAS).ti,ab.
699.	(obes* adj3 hypoventil*).ti,ab.
700.	pickwick*.ti,ab.
701.	or/1-6
702.	limit 7 to English language
703.	letter.pt. or letter/
704.	note.pt.
705.	editorial.pt.
706.	case report/ or case study/
707.	(letter or comment*).ti.
708.	or/9-13
709.	randomized controlled trial/ or random*.ti,ab.
710.	14 not 15
711.	animal/ not human/
712.	nonhuman/
713.	exp Animal Experiment/
714.	exp Experimental Animal/
715.	animal model/
716.	exp Rodent/
717.	(rat or rats or mouse or mice).ti.
718.	or/16-23
719.	8 not 24
720.	positive end expiratory pressure/
721.	positive airway pressure.ti,ab.
722.	Continuous Positive Airway Pressure.kw.
723.	(positive pressure adj2 (therapy or device* or ventilation)).ti,ab.
724.	(PAP or CPAP or aPAP or nCPAP or autoCPAP or auto-CPAP).ti,ab.
725.	(biPAP or BPAP or NBiPAP or NBPAP or NIV).ti,ab.
726.	((noninvasive or non-invasive) adj3 ventilation).ti,ab.
727.	or/26-32
728.	25 and 33
729.	random*.ti,ab.
730.	factorial*.ti,ab.

731.	(crossover* or cross over*).ti,ab.
732.	((doubl* or singl*) adj blind*).ti,ab.
733.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
734.	crossover procedure/
735.	single blind procedure/
736.	randomized controlled trial/
737.	double blind procedure/
738.	or/35-43
739.	systematic review/
740.	meta-analysis/
741.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
742.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
743.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
744.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
745.	(search* adj4 literature).ab.
746.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
747.	cochrane.jw.
748.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
749.	or/45-54
750.	34 and (44 or 55)

Cochrane Library (Wiley) search terms

#168.	MeSH descriptor: [Sleep Apnea Syndromes] explode all trees
#169.	(sleep* near/4 (apnea* or apnoea* or hypopnea* or hypopnoea*)):ti,ab
#170.	(sleep* near/4 disorder* near/4 breath*):ti,ab
#171.	(OSAHS or OSA or OSAS):ti,ab
#172.	(obes* near/3 hypoventil*):ti,ab
#173.	pickwick*:ti,ab
#174.	(OR #1-#6)
#175.	MeSH descriptor: [Continuous Positive Airway Pressure] explode all trees
#176.	positive airway* pressure:ti,ab
#177.	Continuous Positive Airway* Pressure:kw
#178.	(positive near/3 pressure near/3 (therapy or device* or ventilat*)):ti,ab
#179.	(PAP or CPAP or aPAP or nCPAP or autoCPAP or auto-CPAP):ti,ab
#180.	(biPAP or BPAP or NBiPAP or NBPAP or NIV):ti,ab
#181.	((noninvasive or non-invasive) near/3 ventilat*):ti,ab
#182.	MeSH descriptor: [Positive-Pressure Respiration] this term only
#183.	(or #8-#15)
#184.	#7 and #16

Epistemonikos search terms

9.	((title:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*) OR abstract:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR
----	--

	(sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*))
--	---

A.19 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to sleep apnoea population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA – this ceased to be updated after March 2018) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics and quality of life studies.

A.19.1 Health economic studies strategy

Table 27: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 26 November 2019	Exclusions Health economics studies
Embase	2014 – 26 November 2019	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 31 March 2018 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

	exp Sleep Apnea Syndromes/
353.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
354.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
355.	(OSAHS or OSA or OSAS).ti,ab.
356.	(obes* adj3 hypoventil*).ti,ab.
357.	pickwick*.ti,ab.
358.	or/1-6
359.	limit 7 to English language
360.	letter/
361.	editorial/
362.	news/
363.	exp historical article/
364.	Anecdotes as Topic/
365.	comment/
366.	case report/
367.	(letter or comment*).ti.
368.	or/9-16
369.	randomized controlled trial/ or random*.ti,ab.
370.	17 not 18

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Sleep Apnoea search strategy 8_positive airway pressure devices

371.	animals/ not humans/
372.	exp Animals, Laboratory/
373.	exp Animal Experimentation/
374.	exp Models, Animal/
375.	exp Rodentia/
376.	(rat or rats or mouse or mice).ti.
377.	or/19-25
378.	8 not 26
379.	Economics/
380.	Value of life/
381.	exp "Costs and Cost Analysis"/
382.	exp Economics, Hospital/
383.	exp Economics, Medical/
384.	Economics, Nursing/
385.	Economics, Pharmaceutical/
386.	exp "Fees and Charges"/
387.	exp Budgets/
388.	budget*.ti,ab.
389.	cost*.ti.
390.	(economic* or pharmaco?economic*).ti.
391.	(price* or pricing*).ti,ab.
392.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
393.	(financ* or fee or fees).ti,ab.
394.	(value adj2 (money or monetary)).ti,ab.
395.	or/28-43
396.	27 and 44

Embase (Ovid) search terms

321.	exp Sleep Disordered Breathing/
322.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
323.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
324.	(OSAHS or OSA or OSAS).ti,ab.
325.	(obes* adj3 hypoventil*).ti,ab.
326.	pickwick*.ti,ab.
327.	or/1-6
328.	limit 7 to English language
329.	letter.pt. or letter/
330.	note.pt.
331.	editorial.pt.
332.	case report/ or case study/
333.	(letter or comment*).ti.
334.	or/9-13
335.	randomized controlled trial/ or random*.ti,ab.
336.	14 not 15

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337.	animal/ not human/
338.	nonhuman/
339.	exp Animal Experiment/
340.	exp Experimental Animal/
341.	animal model/
342.	exp Rodent/
343.	(rat or rats or mouse or mice).ti.
344.	or/16-23
345.	8 not 24
346.	health economics/
347.	exp economic evaluation/
348.	exp health care cost/
349.	exp fee/
350.	budget/
351.	funding/
352.	budget*.ti,ab.
353.	cost*.ti.
354.	(economic* or pharmaco?economic*).ti.
355.	(price* or pricing*).ti,ab.
356.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
357.	(financ* or fee or fees).ti,ab.
358.	(value adj2 (money or monetary)).ti,ab.
359.	or/26-38
360.	25 and 39

NHS EED and HTA (CRD) search terms

#57.	MeSH DESCRIPTOR Sleep Apnea Syndromes EXPLODE ALL TREES
#58.	(sleep* adj4 (apn?ea* or hypopn?ea*))
#59.	(sleep* adj4 disorder* adj4 breath*)
#60.	(OSAHS or OSA or OSAS)
#61.	(obes* adj3 hypoventil*)
#62.	(pickwick*)
#63.	#1 OR #2 OR #3 OR #4 OR #5 OR #6

A.19.2 Quality of life studies strategy

Table 28: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	1946 – 26 November 2019	Exclusions Quality of life studies
Embase	1974 – 26 November 2019	Exclusions Quality of life studies

Medline (Ovid) search terms

385.	exp Sleep Apnea Syndromes/
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Sleep Apnoea search strategy 8_positive airway pressure devices

386.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
387.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
388.	(OSAHS or OSA or OSAS).ti,ab.
389.	(obes* adj3 hypoventil*).ti,ab.
390.	pickwick*.ti,ab.
391.	or/1-6
392.	limit 7 to English language
393.	letter/
394.	editorial/
395.	news/
396.	exp historical article/
397.	Anecdotes as Topic/
398.	comment/
399.	case report/
400.	(letter or comment*).ti.
401.	or/9-16
402.	randomized controlled trial/ or random*.ti,ab.
403.	17 not 18
404.	animals/ not humans/
405.	exp Animals, Laboratory/
406.	exp Animal Experimentation/
407.	exp Models, Animal/
408.	exp Rodentia/
409.	(rat or rats or mouse or mice).ti.
410.	or/19-25
411.	8 not 26
412.	quality-adjusted life years/
413.	sickness impact profile/
414.	(quality adj2 (wellbeing or well being)).ti,ab.
415.	sickness impact profile.ti,ab.
416.	disability adjusted life.ti,ab.
417.	(qal* or qtime* or qwb* or daly*).ti,ab.
418.	(euroqol* or eq5d* or eq 5*).ti,ab.
419.	(qol* or hq1* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
420.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
421.	(hui or hui1 or hui2 or hui3).ti,ab.
422.	(health* year* equivalent* or hye or hyes).ti,ab.
423.	discrete choice*.ti,ab.
424.	rosser.ti,ab.
425.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
426.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.

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Sleep Apnoea search strategy 8_positive airway pressure devices

427.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
428.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
429.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
430.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
431.	or/28-46
432.	27 and 47

Embase (Ovid) search terms

385.	exp Sleep Disordered Breathing/
386.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
387.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
388.	(OSAHS or OSA or OSAS).ti,ab.
389.	(obes* adj3 hypoventil*).ti,ab.
390.	pickwick*.ti,ab.
391.	or/1-6
392.	limit 7 to English language
393.	letter.pt. or letter/
394.	note.pt.
395.	editorial.pt.
396.	case report/ or case study/
397.	(letter or comment*).ti.
398.	or/9-13
399.	randomized controlled trial/ or random*.ti,ab.
400.	14 not 15
401.	animal/ not human/
402.	nonhuman/
403.	exp Animal Experiment/
404.	exp Experimental Animal/
405.	animal model/
406.	exp Rodent/
407.	(rat or rats or mouse or mice).ti.
408.	or/16-23
409.	8 not 24
410.	quality adjusted life year/
411.	"quality of life index"/
412.	short form 12/ or short form 20/ or short form 36/ or short form 8/
413.	sickness impact profile/
414.	(quality adj2 (wellbeing or well being)).ti,ab.
415.	sickness impact profile.ti,ab.
416.	disability adjusted life.ti,ab.
417.	(qal* or qtime* or qwb* or daly*).ti,ab.
418.	(euroqol* or eq5d* or eq 5*).ti,ab.
419.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
420.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.

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Sleep Apnoea search strategy 8_positive airway pressure devices

421.	(hui or hui1 or hui2 or hui3).ti,ab.
422.	(health* year* equivalent* or hye or hyes).ti,ab.
423.	discrete choice*.ti,ab.
424.	rosser.ti,ab.
425.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
426.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
427.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
428.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
429.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
430.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
431.	or/26-46
432.	25 and 47

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Sleep Apnoea search strategy 8_positive airway pressure devices

9 Sleep Apnoea search strategy 9 position modification

This literature search strategy was used for the following review;

- What is the clinical and cost effectiveness of interventions to modify sleeping position for people with obstructive sleep apnoea/hypopnoea syndrome?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual.{NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.20 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 29: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2019 Issue 11 of 12 CENTRAL to 2019 Issue 11 of 12	None
Epistemonikos (Epistemonikos Foundation)	Inception – 29 November 2018	None

Medline (Ovid) search terms

721.	exp Sleep Apnea Syndromes/
722.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
723.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
724.	(OSAHS or OSA or OSAS).ti,ab.
725.	(obes* adj3 hypoventil*).ti,ab.
726.	pickwick*.ti,ab.
727.	or/1-6
728.	limit 7 to English language

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Sleep Apnoea search strategy 9 position modification

729.	letter/
730.	editorial/
731.	news/
732.	exp historical article/
733.	Anecdotes as Topic/
734.	comment/
735.	case report/
736.	(letter or comment*).ti.
737.	or/9-16
738.	randomized controlled trial/ or random*.ti,ab.
739.	17 not 18
740.	animals/ not humans/
741.	exp Animals, Laboratory/
742.	exp Animal Experimentation/
743.	exp Models, Animal/
744.	exp Rodentia/
745.	(rat or rats or mouse or mice).ti.
746.	or/19-25
747.	8 not 26
748.	Patient Positioning/
749.	Posture/ or Prone Position/ or Supine Position/
750.	((position* or postur*) adj3 (sleep* or modif* or train* or device* or therap* or pillow* or adjust* or manage* or managing or support* or treatment*)).ti,ab.
751.	(position* adj3 (lateral* or supine* or prone*)).ti,ab.
752.	(tennis ball* or TBT or shark fin* or belt* or vest or vests).ti,ab.
753.	or/28-32
754.	27 and 33
755.	randomized controlled trial.pt.
756.	controlled clinical trial.pt.
757.	randomi#ed.ti,ab.
758.	placebo.ab.
759.	randomly.ti,ab.
760.	Clinical Trials as topic.sh.
761.	trial.ti.
762.	or/35-41
763.	Meta-Analysis/
764.	exp Meta-Analysis as Topic/
765.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
766.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
767.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
768.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
769.	(search* adj4 literature).ab.
770.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
771.	cochrane.jw.

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Sleep Apnoea search strategy 9 position modification

772.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
773.	or/43-52
774.	Epidemiologic studies/
775.	Observational study/
776.	exp Cohort studies/
777.	(cohort adj (study or studies or analys* or data)).ti,ab.
778.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
779.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
780.	Controlled Before-After Studies/
781.	Historically Controlled Study/
782.	Interrupted Time Series Analysis/
783.	(before adj2 after adj2 (study or studies or data)).ti,ab.
784.	exp case control studies/
785.	case control*.ti,ab.
786.	Cross-sectional studies/
787.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
788.	or/54-67
789.	34 and (42 or 53 or 68)

Embase (Ovid) search terms

751.	exp Sleep Disordered Breathing/
752.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
753.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
754.	(OSAHS or OSA or OSAS).ti,ab.
755.	(obes* adj3 hypoventil*).ti,ab.
756.	pickwick*.ti,ab.
757.	or/1-6
758.	limit 7 to English language
759.	letter.pt. or letter/
760.	note.pt.
761.	editorial.pt.
762.	case report/ or case study/
763.	(letter or comment*).ti.
764.	or/9-13
765.	randomized controlled trial/ or random*.ti,ab.
766.	14 not 15
767.	animal/ not human/
768.	nonhuman/
769.	exp Animal Experiment/
770.	exp Experimental Animal/
771.	animal model/
772.	exp Rodent/
773.	(rat or rats or mouse or mice).ti.
774.	or/16-23

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Sleep Apnoea search strategy 9 position modification

775.	8 not 24
776.	patient positioning/
777.	body position/ or prone position/ or supine position/
778.	((position* or postur*) adj3 (sleep* or modif* or train* or device* or therap* or pillow* or adjust* or manage* or managing or support* or treatment*)).ti,ab.
779.	(position* adj3 (lateral* or supine* or prone*)).ti,ab.
780.	(tennis ball* or TBT or shark fin* or belt* or vest or vests).ti,ab.
781.	or/26-30
782.	25 and 31
783.	random*.ti,ab.
784.	factorial*.ti,ab.
785.	(crossover* or cross over*).ti,ab.
786.	((doubl* or singl*) adj blind*).ti,ab.
787.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
788.	crossover procedure/
789.	single blind procedure/
790.	randomized controlled trial/
791.	double blind procedure/
792.	or/33-41
793.	systematic review/
794.	meta-analysis/
795.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
796.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
797.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
798.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
799.	(search* adj4 literature).ab.
800.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
801.	cochrane.jw.
802.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
803.	or/43-52
804.	Clinical study/
805.	Observational study/
806.	family study/
807.	longitudinal study/
808.	retrospective study/
809.	prospective study/
810.	cohort analysis/
811.	follow-up/
812.	cohort*.ti,ab.
813.	61 and 62
814.	(cohort adj (study or studies or analys* or data)).ti,ab.
815.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
816.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or

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	review or analys* or cohort* or data)).ti,ab.
817.	(before adj2 after adj2 (study or studies or data)).ti,ab.
818.	or/54-60,63-67
819.	exp case control study/
820.	case control*.ti,ab.
821.	cross-sectional study/
822.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
823.	or/68-72
824.	32 and (42 or 53 or 73)

Cochrane Library (Wiley) search terms

#185.	MeSH descriptor: [Sleep Apnea Syndromes] explode all trees
#186.	(sleep* near/4 (apnea* or apnoea* or hypopnea* or hypopnoea*)):ti,ab
#187.	(sleep* near/4 disorder* near/4 breath*):ti,ab
#188.	(OSAHS or OSA or OSAS):ti,ab
#189.	(obes* near/3 hypoventil*):ti,ab
#190.	pickwick*:ti,ab
#191.	(OR #1-#6)
#192.	MeSH descriptor: [Patient Positioning] this term only
#193.	MeSH descriptor: [Posture] this term only
#194.	MeSH descriptor: [Prone Position] this term only
#195.	MeSH descriptor: [Supine Position] this term only
#196.	((position* or postur*) near/3 (sleep* or modif* or train* or device* or therap* or pillow* or adjust* or manage* or managing or support* or treatment*)):ti,ab
#197.	(position* near/3 (lateral* or supine* or prone*)):ti,ab
#198.	(tennis ball* or TBT or shark fin* or belt* or vest or vests):ti,ab
#199.	(or #8-#14)
#200.	#7 and #15

Epistemonikos search terms

10.	((title:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*) OR abstract:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*)))
-----	---

A.21 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to sleep apnoea population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA – this ceased to be updated after March 2018) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics and quality of life studies.

A.21.1 Health economic studies strategy

Table 30: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 26 November 2019	Exclusions Health economics studies
Embase	2014 – 26 November 2019	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 31 March 2018 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

	exp Sleep Apnea Syndromes/
397.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
398.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
399.	(OSAHS or OSA or OSAS).ti,ab.
400.	(obes* adj3 hypoventil*).ti,ab.
401.	pickwick*.ti,ab.
402.	or/1-6
403.	limit 7 to English language
404.	letter/
405.	editorial/
406.	news/
407.	exp historical article/
408.	Anecdotes as Topic/
409.	comment/
410.	case report/
411.	(letter or comment*).ti.
412.	or/9-16
413.	randomized controlled trial/ or random*.ti,ab.
414.	17 not 18
415.	animals/ not humans/
416.	exp Animals, Laboratory/
417.	exp Animal Experimentation/
418.	exp Models, Animal/
419.	exp Rodentia/
420.	(rat or rats or mouse or mice).ti.
421.	or/19-25
422.	8 not 26
423.	Economics/
424.	Value of life/
425.	exp "Costs and Cost Analysis"/

426.	exp Economics, Hospital/
427.	exp Economics, Medical/
428.	Economics, Nursing/
429.	Economics, Pharmaceutical/
430.	exp "Fees and Charges"/
431.	exp Budgets/
432.	budget*.ti,ab.
433.	cost*.ti.
434.	(economic* or pharmaco?economic*).ti.
435.	(price* or pricing*).ti,ab.
436.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
437.	(financ* or fee or fees).ti,ab.
438.	(value adj2 (money or monetary)).ti,ab.
439.	or/28-43
440.	27 and 44

Embase (Ovid) search terms

361.	exp Sleep Disordered Breathing/
362.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
363.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
364.	(OSAHS or OSA or OSAS).ti,ab.
365.	(obes* adj3 hypoventil*).ti,ab.
366.	pickwick*.ti,ab.
367.	or/1-6
368.	limit 7 to English language
369.	letter.pt. or letter/
370.	note.pt.
371.	editorial.pt.
372.	case report/ or case study/
373.	(letter or comment*).ti.
374.	or/9-13
375.	randomized controlled trial/ or random*.ti,ab.
376.	14 not 15
377.	animal/ not human/
378.	nonhuman/
379.	exp Animal Experiment/
380.	exp Experimental Animal/
381.	animal model/
382.	exp Rodent/
383.	(rat or rats or mouse or mice).ti.
384.	or/16-23
385.	8 not 24
386.	health economics/

387.	exp economic evaluation/
388.	exp health care cost/
389.	exp fee/
390.	budget/
391.	funding/
392.	budget*.ti,ab.
393.	cost*.ti.
394.	(economic* or pharmaco?economic*).ti.
395.	(price* or pricing*).ti,ab.
396.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
397.	(financ* or fee or fees).ti,ab.
398.	(value adj2 (money or monetary)).ti,ab.
399.	or/26-38
400.	25 and 39

NHS EED and HTA (CRD) search terms

#64.	MeSH DESCRIPTOR Sleep Apnea Syndromes EXPLODE ALL TREES
#65.	(sleep* adj4 (apn?ea* or hypopn?ea*))
#66.	(sleep* adj4 disorder* adj4 breath*)
#67.	(OSAHS or OSA or OSAS)
#68.	(obes* adj3 hypoventil*)
#69.	(pickwick*)
#70.	#1 OR #2 OR #3 OR #4 OR #5 OR #6

A.21.2 Quality of life studies strategy

Table 31: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	1946 – 26 November 2019	Exclusions Quality of life studies
Embase	1974 – 26 November 2019	Exclusions Quality of life studies

Medline (Ovid) search terms

433.	exp Sleep Apnea Syndromes/
434.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
435.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
436.	(OSAHS or OSA or OSAS).ti,ab.
437.	(obes* adj3 hypoventil*).ti,ab.
438.	pickwick*.ti,ab.
439.	or/1-6
440.	limit 7 to English language
441.	letter/
442.	editorial/

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Sleep Apnoea search strategy 9 position modification

443.	news/
444.	exp historical article/
445.	Anecdotes as Topic/
446.	comment/
447.	case report/
448.	(letter or comment*).ti.
449.	or/9-16
450.	randomized controlled trial/ or random*.ti,ab.
451.	17 not 18
452.	animals/ not humans/
453.	exp Animals, Laboratory/
454.	exp Animal Experimentation/
455.	exp Models, Animal/
456.	exp Rodentia/
457.	(rat or rats or mouse or mice).ti.
458.	or/19-25
459.	8 not 26
460.	quality-adjusted life years/
461.	sickness impact profile/
462.	(quality adj2 (wellbeing or well being)).ti,ab.
463.	sickness impact profile.ti,ab.
464.	disability adjusted life.ti,ab.
465.	(qal* or qtime* or qwb* or daly*).ti,ab.
466.	(euroqol* or eq5d* or eq 5*).ti,ab.
467.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
468.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
469.	(hui or hui1 or hui2 or hui3).ti,ab.
470.	(health* year* equivalent* or hye or hyes).ti,ab.
471.	discrete choice*.ti,ab.
472.	rosser.ti,ab.
473.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
474.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
475.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
476.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
477.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
478.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
479.	or/28-46
480.	27 and 47

Embase (Ovid) search terms

433.	exp Sleep Disordered Breathing/
434.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.

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Sleep Apnoea search strategy 9 position modification

435.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
436.	(OSAHS or OSA or OSAS).ti,ab.
437.	(obes* adj3 hypoventil*).ti,ab.
438.	pickwick*.ti,ab.
439.	or/1-6
440.	limit 7 to English language
441.	letter.pt. or letter/
442.	note.pt.
443.	editorial.pt.
444.	case report/ or case study/
445.	(letter or comment*).ti.
446.	or/9-13
447.	randomized controlled trial/ or random*.ti,ab.
448.	14 not 15
449.	animal/ not human/
450.	nonhuman/
451.	exp Animal Experiment/
452.	exp Experimental Animal/
453.	animal model/
454.	exp Rodent/
455.	(rat or rats or mouse or mice).ti.
456.	or/16-23
457.	8 not 24
458.	quality adjusted life year/
459.	"quality of life index"/
460.	short form 12/ or short form 20/ or short form 36/ or short form 8/
461.	sickness impact profile/
462.	(quality adj2 (wellbeing or well being)).ti,ab.
463.	sickness impact profile.ti,ab.
464.	disability adjusted life.ti,ab.
465.	(qal* or qtime* or qwb* or daly*).ti,ab.
466.	(euroqol* or eq5d* or eq 5*).ti,ab.
467.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
468.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
469.	(hui or hui1 or hui2 or hui3).ti,ab.
470.	(health* year* equivalent* or hye or hyes).ti,ab.
471.	discrete choice*.ti,ab.
472.	rosser.ti,ab.
473.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
474.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
475.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
476.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
477.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.

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Sleep Apnoea search strategy 9 position modification

478.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
479.	or/26-46
480.	25 and 47

10 Sleep apnoea search strategy 10– prioritisation

This literature search strategy was used for the following review;

- Which people with suspected obstructive sleep apnoea/hypopnoea syndrome, obesity hypoventilation syndrome or overlap syndrome should be prioritised for further assessment?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual. {NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.22 Clinical search literature search strategy

Searches for patient views were run in Medline (OVID), Embase (OVID), CINAHL, Current Nursing and Allied Health Literature (EBSCO) and PsycINFO (ProQuest). Search filters were applied to the search where appropriate.

Table 32: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Qualitative studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Qualitative studies
CINAHL, Current Nursing and Allied Health Literature (EBSCO)	Inception – 20 November 2019	Exclusions
PsycINFO (ProQuest)	Inception – 20 November 2019	Exclusions Qualitative studies

Medline (Ovid) search terms

790.	exp Sleep Apnea Syndromes/
791.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
792.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
793.	(OSAHS or OSA or OSAS).ti,ab.
794.	(obes* adj3 hypoventil*).ti,ab.
795.	pickwick*.ti,ab.
796.	or/1-6
797.	limit 7 to English language
798.	letter/
799.	editorial/
800.	news/
801.	exp historical article/
802.	Anecdotes as Topic/
803.	comment/
804.	case report/
805.	(letter or comment*).ti.
806.	or/9-16
807.	randomized controlled trial/ or random*.ti,ab.

808.	17 not 18
809.	animals/ not humans/
810.	exp Animals, Laboratory/
811.	exp Animal Experimentation/
812.	exp Models, Animal/
813.	exp Rodentia/
814.	(rat or rats or mouse or mice).ti.
815.	or/19-25
816.	8 not 26
817.	Health Priorities/
818.	Needs Assessment/
819.	"Referral and Consultation"/
820.	Delayed Diagnosis/
821.	(referr* or priorit* or delay*).ti,ab.
822.	(further* adj2 (assess* or investigat*)).ti,ab.
823.	((patient* or group*) adj4 (benefit* or harm*)).ti,ab.
824.	exp Patient Care Planning/
825.	Patient Care Team/
826.	"Delivery of Health Care"/
827.	((care or assess*) adj2 (path* or framework* or plan*)).ti,ab.
828.	Decision making/
829.	(patient-cent* adj3 (decision* or tool* or choice*)).ti,ab.
830.	((indicat* or apprais* or appropriateness) adj4 (criteri* or framework* or method*)).ti,ab.
831.	or/28-41
832.	27 and 42
833.	Qualitative research/ or Narration/ or exp Interviews as Topic/ or exp "Surveys and Questionnaires"/ or Health care surveys/
834.	(qualitative or interview* or focus group* or theme* or questionnaire* or survey*).ti,ab.
835.	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-stud* or metathem* or meta-them* or ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic* adj3 analys*) or theoretical sampl* or purposive sampl* or hermeneutic* or heidegger* or husserl* or colaizzi* or van kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*).ti,ab.
836.	or/44-46
837.	43 and 47

Embase (Ovid) search terms

825.	exp Sleep Disordered Breathing/
826.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
827.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
828.	(OSAHS or OSA or OSAS).ti,ab.
829.	(obes* adj3 hypoventil*).ti,ab.
830.	pickwick*.ti,ab.
831.	or/1-6
832.	limit 7 to English language
833.	letter.pt. or letter/
834.	note.pt.

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Sleep apnoea search strategy 10– prioritisation

835.	editorial.pt.
836.	case report/ or case study/
837.	(letter or comment*).ti.
838.	or/9-13
839.	randomized controlled trial/ or random*.ti,ab.
840.	14 not 15
841.	animal/ not human/
842.	nonhuman/
843.	exp Animal Experiment/
844.	exp Experimental Animal/
845.	animal model/
846.	exp Rodent/
847.	(rat or rats or mouse or mice).ti.
848.	or/16-23
849.	8 not 24
850.	*health care planning/
851.	*needs assessment/
852.	*patient referral/
853.	*delayed diagnosis/
854.	(referr* or priorit* or delay*).ti,ab.
855.	(further* adj2 (assess* or investigat*)).ti,ab.
856.	((patient* or group*) adj4 (benefit* or harm*)).ti,ab.
857.	exp *patient care planning/
858.	*patient care/
859.	*health care delivery/
860.	((care or assess*) adj2 (path* or framework* or plan*)).ti,ab.
861.	*decision making/
862.	(patient-cent* adj3 (decision* or tool* or choice*)).ti,ab.
863.	((indicat* or apprais* or appropriateness) adj4 (criteri* or framework* or method*)).ti,ab.
864.	or/26-39
865.	25 and 40
866.	health survey/ or exp questionnaire/ or exp interview/ or qualitative research/ or narrative/
867.	(qualitative or interview* or focus group* or theme* or questionnaire* or survey*).ti,ab.
868.	(metasynthes* or meta-synthes* or metasummar* or meta-summar* or metastud* or meta-stud* or metathem* or meta-them* or ethno* or emic or etic or phenomenolog* or grounded theory or constant compar* or (thematic* adj3 analys*) or theoretical sampl* or purposive sampl* or hermeneutic* or heidegger* or husserl* or colaizzi* or van kaam* or van manen* or giorgi* or glaser* or strauss* or ricoeur* or spiegelberg* or merleau*).ti,ab.
869.	or/42-44
870.	41 and 45

CINAHL (EBSCO) search terms

S52.	(MH "Sleep Apnea Syndromes+")
S53.	TI (sleep* n4 (apn?ea* or hypopn?ea*))
S54.	AB (sleep* n4 (apn?ea* or hypopn?ea*))
S55.	TI (sleep* n4 disorder* n4 breath*)

S56.	AB (sleep* n4 disorder* n4 breath*)
S57.	TI (OSAHS or OSA or OSAS)
S58.	AB (OSAHS or OSA or OSAS)
S59.	TI (obes* n3 hypoventil*)
S60.	AB (obes* n3 hypoventil*)
S61.	TI (pickwick*)
S62.	AB (pickwick*)
S63.	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11
S64.	PT anecdote or PT audiovisual or PT bibliography or PT biography or PT book or PT book review or PT brief item or PT cartoon or PT commentary or PT computer program or PT editorial or PT games or PT glossary or PT historical material or PT interview or PT letter or PT listservs or PT masters thesis or PT obituary or PT pamphlet or PT pamphlet chapter or PT pictorial or PT poetry or PT proceedings or PT "questions and answers" or PT response or PT software or PT teaching materials or PT website
S65.	S12 NOT S13
S66.	(MH "Health Priorities") OR (MH "Needs Assessment") OR (MH "Referral and Consultation") OR (MH "Diagnosis, Delayed")
S67.	TI (referr* or priorit* or delay*)
S68.	AB (referr* or priorit* or delay*)
S69.	TI (further* n2 (assess* or investigat*))
S70.	AB (further* n2 (assess* or investigat*))
S71.	TI ((patient* or group*) n4 (benefit* or harm*))
S72.	AB ((patient* or group*) n4 (benefit* or harm*))
S73.	(MH "Patient Care Plans+") OR (MH "Health Care Delivery")
S74.	TI ((care or assess*) n2 (path* or framework* or plan*))
S75.	AB ((care or assess*) n2 (path* or framework* or plan*))
S76.	(MH "Decision Making")
S77.	TI (patient-cent* n3 (decision* or tool* or choice*))
S78.	AB (patient-cent* n3 (decision* or tool* or choice*))
S79.	TI ((indicat* or apprais* or appropriateness) n4 (criteri* or framework* or method*))
S80.	AB ((indicat* or apprais* or appropriateness) n4 (criteri* or framework* or method*))
S81.	S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29
S82.	S14 AND S30

PsycINFO (ProQuest) search terms

2.	((MAINSUBJECT.EXACT.EXPLODE("Sleep Apnea") OR ti,ab(sleep* NEAR/4 (apn?ea* OR hypopn?ea*)) OR ti,ab(sleep* NEAR/4 disorder* NEAR/4 breath*) OR ti,ab(OSAHS OR OSA OR OSAS) OR ti,ab(obes* NEAR/3 hypoventil*) OR ti,ab(pickwick*)) AND (MAINSUBJECT.EXACT("Professional Referral") OR MAINSUBJECT.EXACT("Needs Assessment") OR ti,ab(referr* OR priorit* OR delay*) OR ti,ab(further* NEAR/2 (assess* OR investigat*)) OR ti,ab((patient* OR group*) NEAR/4 (benefit* OR harm*)) OR MAINSUBJECT.EXACT("Treatment Planning") MAINSUBJECT.EXACT("Decision Making") OR ti,ab((care OR assess*) NEAR/2 (path* OR framework* OR plan*)) OR ti,ab(patient-cent* NEAR/3 (decision* OR tool* OR choice*)) OR ti,ab((indicat* OR apprais* OR appropriateness) NEAR/4 (criteri* OR framework* OR method*))) NOT (su.exact.explode("rodents") OR su.exact.explode("mice") OR (su.exact("animals") NOT (su.exact("human males") OR su.exact("human females")))) OR ti(rat OR rats OR mouse OR mice)) AND ((su.exact.explode("qualitative methods") OR su.exact("narratives") OR su.exact.explode("questionnaires") OR su.exact.explode("interviews") OR su.exact.explode("health care services") OR ti,ab(qualitative
----	---

	OR interview* OR focus group* OR theme* OR questionnaire* OR survey*) OR ti,ab(metasyntes* OR meta-syntes* OR metasummar* OR meta-summar* OR metastud* OR meta-stud* OR metathem* OR meta-them* OR ethno* OR emic OR etic OR phenomenolog* OR grounded theory OR constant compar* OR (thematic* NEAR/3 analys*) OR theoretical- sampl* OR purposive-sampl* OR hermeneutic* OR heidegger* OR husserl* OR colaizzi* OR van kaam* OR van manen* OR giorgi* OR glaser* OR strauss* OR ricoeur* OR spiegelberg* OR merleau*)) AND la.exact("English")
--	--

11 Sleep Apnoea search strategy 11 rhinitis

This literature search strategy was used for the following review;

- What is the clinical and cost effectiveness of treatment of rhinitis to improve symptoms of obstructive sleep apnoea/hypopnoea syndrome, obesity hypoventilation syndrome or overlap syndrome?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual. {NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.23 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 33: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2019 Issue 11 of 12 CENTRAL to 2019 Issue 11 of 12	None
Epistemonikos (Epistemonikos Foundation)	Inception – 29 November 2018	None

Medline (Ovid) search terms

838.	exp Sleep Apnea Syndromes/
839.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
840.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
841.	(OSAHS or OSA or OSAS).ti,ab.
842.	(obes* adj3 hypoventil*).ti,ab.
843.	pickwick*.ti,ab.
844.	or/1-6
845.	limit 7 to English language
846.	letter/

847.	editorial/
848.	news/
849.	exp historical article/
850.	Anecdotes as Topic/
851.	comment/
852.	case report/
853.	(letter or comment*).ti.
854.	or/9-16
855.	randomized controlled trial/ or random*.ti,ab.
856.	17 not 18
857.	animals/ not humans/
858.	exp Animals, Laboratory/
859.	exp Animal Experimentation/
860.	exp Models, Animal/
861.	exp Rodentia/
862.	(rat or rats or mouse or mice).ti.
863.	or/19-25
864.	8 not 26
865.	exp Rhinitis/
866.	(rhinit* or rhinopath* or rhinosinusit* or rhinoconjunctivitis or ozena* or hayfever or hay fever or pollinosis or pollenosis or pollonosis or allerg*).ti,ab.
867.	((nasal or nose) adj3 (congest* or stuffy or clog*)).ti,ab.
868.	(NARES or NAR or LAR or NANIPER or AR or SAR).ti,ab.
869.	exp Histamine Antagonists/
870.	(antihistamin* or anti-histamin* or (histamin* adj3 antagonist*)).ti,ab.
871.	(Desloratadine or Fexofenadine or Ketotifen).ti,ab.
872.	Ketotifen/
873.	Nasal Lavage/ or Administration, Intranasal/ or Nasal Sprays/
874.	((intranasal or intra-nasal or nasal or nose) adj3 (wash* or spray* or mist* or irrigat* or rins* or douch* or lavage* or administrat*)).ti,ab.
875.	(anticholinergic* or anti-cholinergic* or cholinergic antagonist*).ti,ab.
876.	(antimuscarinic* or anti-muscarinic* or muscarnic antagonist*).ti,ab.
877.	Ipratropium.ti,ab.
878.	Ipratropium/
879.	exp Cholinergic Antagonists/
880.	((intranasal or intra-nasal or nasal or inhal*) adj3 (steroid* or corticosteroid*)).ti,ab.
881.	(Beclometasone or Budesonide or Fluticasone or Mometasone).ti,ab.
882.	Beclometasone/
883.	Budesonide/
884.	Fluticasone/
885.	Mometasone Furoate/
886.	(RFA or RFAIT or RFTR or RFVTR).ti,ab.
887.	((radiofrequency or ablat* or reduct*) adj4 (turbinate* or turbinoplast*)).ti,ab.
888.	or/28-50
889.	27 and 51

890.	randomized controlled trial.pt.
891.	controlled clinical trial.pt.
892.	randomi#ed.ti,ab.
893.	placebo.ab.
894.	randomly.ti,ab.
895.	Clinical Trials as topic.sh.
896.	trial.ti.
897.	or/53-59
898.	Meta-Analysis/
899.	exp Meta-Analysis as Topic/
900.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
901.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
902.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
903.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
904.	(search* adj4 literature).ab.
905.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
906.	cochrane.jw.
907.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
908.	or/61-70
909.	Epidemiologic studies/
910.	Observational study/
911.	exp Cohort studies/
912.	(cohort adj (study or studies or analys* or data)).ti,ab.
913.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
914.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
915.	Controlled Before-After Studies/
916.	Historically Controlled Study/
917.	Interrupted Time Series Analysis/
918.	(before adj2 after adj2 (study or studies or data)).ti,ab.
919.	or/72-81
920.	exp case control studies/
921.	case control*.ti,ab.
922.	or/83-84
923.	82 or 85
924.	Cross-sectional studies/
925.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
926.	or/87-88
927.	82 or 89
928.	82 or 85 or 89
929.	52 and (60 or 71 or 91)

Embase (Ovid) search terms

871.	exp Sleep Disordered Breathing/
872.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
873.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
874.	(OSAHS or OSA or OSAS).ti,ab.
875.	(obes* adj3 hypoventil*).ti,ab.
876.	pickwick*.ti,ab.
877.	or/1-6
878.	limit 7 to English language
879.	letter.pt. or letter/
880.	note.pt.
881.	editorial.pt.
882.	case report/ or case study/
883.	(letter or comment*).ti.
884.	or/9-13
885.	randomized controlled trial/ or random*.ti,ab.
886.	14 not 15
887.	animal/ not human/
888.	nonhuman/
889.	exp Animal Experiment/
890.	exp Experimental Animal/
891.	animal model/
892.	exp Rodent/
893.	(rat or rats or mouse or mice).ti.
894.	or/16-23
895.	8 not 24
896.	exp Rhinitis/
897.	(rhinit* or rhinopath* or rhinosinusit* or rhinoconjunctivitis or ozena* or hayfever or hay fever or pollinosis or pollenosis or pollonosis or allerg*).ti,ab.
898.	((nasal or nose) adj3 (congest* or stuffy or clog*)).ti,ab.
899.	(NARES or NAR or LAR or NANIPER or AR or SAR).ti,ab.
900.	exp antihistaminic agent/
901.	(antihistamin* or anti-histamin* or (histamin* adj3 antagonist*)).ti,ab.
902.	(Desloratadine or Fexofenadine or Ketotifen).ti,ab.
903.	nasal lavage/
904.	intranasal drug administration/
905.	nose spray/
906.	((intranasal or intra-nasal or nasal or nose) adj3 (wash* or spray* or mist* or irrigat* or rins* or douch* or lavage* or administrat*)).ti,ab.
907.	(anticholinergic* or anti-cholinergic* or cholinergic antagonist*).ti,ab.
908.	(antimuscarinic* or anti-muscarinic* or muscarnic antagonist*).ti,ab.
909.	lpratropium.ti,ab.
910.	cholinergic receptor blocking agent/
911.	exp cholinergic receptor blocking agent/
912.	((intranasal or intra-nasal or nasal or inhal*) adj3 (steroid* or corticosteroid*)).ti,ab.
913.	(Beclometasone or Budesonide or Fluticasone or Mometasone).ti,ab.

914.	beclometasone/
915.	budesonide/
916.	fluticasone/
917.	mometasone furoate/
918.	(RFA or RFAIT or RFTR or RFVTR).ti,ab.
919.	((radiofrequency or ablat* or reduct*) adj4 (turbinate* or turbinoplast*)).ti,ab.
920.	or/26-49
921.	25 and 50
922.	random*.ti,ab.
923.	factorial*.ti,ab.
924.	(crossover* or cross over*).ti,ab.
925.	((doubl* or singl*) adj blind*).ti,ab.
926.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
927.	crossover procedure/
928.	single blind procedure/
929.	randomized controlled trial/
930.	double blind procedure/
931.	or/52-60
932.	systematic review/
933.	meta-analysis/
934.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
935.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
936.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
937.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
938.	(search* adj4 literature).ab.
939.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
940.	cochrane.jw.
941.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
942.	or/62-71
943.	Clinical study/
944.	Observational study/
945.	family study/
946.	longitudinal study/
947.	retrospective study/
948.	prospective study/
949.	cohort analysis/
950.	follow-up/
951.	cohort*.ti,ab.
952.	80 and 81
953.	(cohort adj (study or studies or analys* or data)).ti,ab.
954.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
955.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.

956.	(before adj2 after adj2 (study or studies or data)).ti,ab.
957.	or/73-79,82-86
958.	exp case control study/
959.	case control*.ti,ab.
960.	or/88-89
961.	87 or 90
962.	cross-sectional study/
963.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
964.	or/92-93
965.	87 or 94
966.	87 or 90 or 94
967.	51 and (61 or 72 or 96)

Cochrane Library (Wiley) search terms

#201.	MeSH descriptor: [Sleep Apnea Syndromes] explode all trees
#202.	(sleep* near/4 (apnea* or apnoea* or hypopnea* or hypopnoea*)):ti,ab
#203.	(sleep* near/4 disorder* near/4 breath*):ti,ab
#204.	(OSAHS or OSA or OSAS):ti,ab
#205.	(obes* near/3 hypoventil*):ti,ab
#206.	pickwick*:ti,ab
#207.	(OR #1-#6)
#208.	MeSH descriptor: [Rhinitis] explode all trees
#209.	(rhinit* or rhinopath* or rhinosinusit* or rhinoconjunctivitis or ozena* or hayfever or hay fever or pollinosis or pollenosis or pollonosis or allerg*):ti,ab
#210.	((nasal or nose) near/3 (congest* or stuffy)):ti,ab
#211.	(NARES or NAR or LAR or NANIPER or AR or SAR):ti,ab
#212.	MeSH descriptor: [Histamine Antagonists] explode all trees
#213.	(antihistamin* or anti-histamin* or (histamin* near/3 antagonist*)):ti,ab
#214.	(Desloratadine or Fexofenadine or Ketotifen):ti,ab
#215.	MeSH descriptor: [Ketotifen] this term only
#216.	MeSH descriptor: [Nasal Lavage] this term only
#217.	MeSH descriptor: [Administration, Intranasal] this term only
#218.	MeSH descriptor: [Nasal Sprays] this term only
#219.	((intranasal or intra-nasal or nasal or nose) near/3 (wash* or spray* or mist* or irrigat* or rins* or douch* or lavage* or administrat*)):ti,ab
#220.	(anticholinergic* or anti-cholinergic* or cholinergic antagonist*):ti,ab
#221.	(antimuscarinic* or anti-muscarinic* or muscarnic antagonist*):ti,ab
#222.	Ipratropium:ti,ab
#223.	MeSH descriptor: [Ipratropium] explode all trees
#224.	MeSH descriptor: [Cholinergic Agonists] explode all trees
#225.	((intranasal or intra-nasal or nasal or inhal*) near/3 (steroid* or corticosteroid*)):ti,ab
#226.	(Beclometasone or Budesonide or Fluticasone or Mometasone):ti,ab
#227.	MeSH descriptor: [Beclomethasone] this term only
#228.	MeSH descriptor: [Budesonide] this term only
#229.	MeSH descriptor: [Fluticasone] this term only
#230.	MeSH descriptor: [Mometasone Furoate] this term only

#231.	(RFA or RFAIT or RFTR or RFVTR):ti,ab
#232.	((radiofrequency or ablat* or reduct*) near/4 (turbinate* or turbinoplast*)):ti,ab
#233.	(or #8-#32)
#234.	#7 AND #33

Epistemonikos search terms

11.	((title:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*))) OR (sleep* AND (apn?ea* OR hypopn?ea*))) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*) OR abstract:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*))) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*))
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A.24 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to sleep apnoea population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA – this ceased to be updated after March 2018) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics and quality of life studies.

A.24.1 Health economic studies strategy

Table 34: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 26 November 2019	Exclusions Health economics studies
Embase	2014 – 26 November 2019	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 31 March 2018 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

	exp Sleep Apnea Syndromes/
441.	(sleep* adj4 (apn?ea* or hypopn?ea*)):ti,ab.
442.	(sleep* adj4 disorder* adj4 breath*):ti,ab.
443.	(OSAHS or OSA or OSAS):ti,ab.
444.	(obes* adj3 hypoventil*):ti,ab.
445.	pickwick*:ti,ab.
446.	or/1-6
447.	limit 7 to English language
448.	letter/
449.	editorial/
450.	news/

451.	exp historical article/
452.	Anecdotes as Topic/
453.	comment/
454.	case report/
455.	(letter or comment*).ti.
456.	or/9-16
457.	randomized controlled trial/ or random*.ti,ab.
458.	17 not 18
459.	animals/ not humans/
460.	exp Animals, Laboratory/
461.	exp Animal Experimentation/
462.	exp Models, Animal/
463.	exp Rodentia/
464.	(rat or rats or mouse or mice).ti.
465.	or/19-25
466.	8 not 26
467.	Economics/
468.	Value of life/
469.	exp "Costs and Cost Analysis"/
470.	exp Economics, Hospital/
471.	exp Economics, Medical/
472.	Economics, Nursing/
473.	Economics, Pharmaceutical/
474.	exp "Fees and Charges"/
475.	exp Budgets/
476.	budget*.ti,ab.
477.	cost*.ti.
478.	(economic* or pharmaco?economic*).ti.
479.	(price* or pricing*).ti,ab.
480.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
481.	(financ* or fee or fees).ti,ab.
482.	(value adj2 (money or monetary)).ti,ab.
483.	or/28-43
484.	27 and 44

Embase (Ovid) search terms

401.	exp Sleep Disordered Breathing/
402.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
403.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
404.	(OSAHS or OSA or OSAS).ti,ab.
405.	(obes* adj3 hypoventil*).ti,ab.
406.	pickwick*.ti,ab.
407.	or/1-6
408.	limit 7 to English language

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Sleep Apnoea search strategy 11 rhinitis

409.	letter.pt. or letter/
410.	note.pt.
411.	editorial.pt.
412.	case report/ or case study/
413.	(letter or comment*).ti.
414.	or/9-13
415.	randomized controlled trial/ or random*.ti,ab.
416.	14 not 15
417.	animal/ not human/
418.	nonhuman/
419.	exp Animal Experiment/
420.	exp Experimental Animal/
421.	animal model/
422.	exp Rodent/
423.	(rat or rats or mouse or mice).ti.
424.	or/16-23
425.	8 not 24
426.	health economics/
427.	exp economic evaluation/
428.	exp health care cost/
429.	exp fee/
430.	budget/
431.	funding/
432.	budget*.ti,ab.
433.	cost*.ti.
434.	(economic* or pharmaco?economic*).ti.
435.	(price* or pricing*).ti,ab.
436.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
437.	(financ* or fee or fees).ti,ab.
438.	(value adj2 (money or monetary)).ti,ab.
439.	or/26-38
440.	25 and 39

NHS EED and HTA (CRD) search terms

#71.	MeSH DESCRIPTOR Sleep Apnea Syndromes EXPLODE ALL TREES
#72.	(sleep* adj4 (apn?ea* or hypopn?ea*))
#73.	(sleep* adj4 disorder* adj4 breath*)
#74.	(OSAHS or OSA or OSAS)
#75.	(obes* adj3 hypoventil*)
#76.	(pickwick*)
#77.	#1 OR #2 OR #3 OR #4 OR #5 OR #6

A.24.2 Quality of life studies strategy

Table 35: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	1946 – 26 November 2019	Exclusions Quality of life studies
Embase	1974 – 26 November 2019	Exclusions Quality of life studies

Medline (Ovid) search terms

481.	exp Sleep Apnea Syndromes/
482.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
483.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
484.	(OSAHS or OSA or OSAS).ti,ab.
485.	(obes* adj3 hypoventil*).ti,ab.
486.	pickwick*.ti,ab.
487.	or/1-6
488.	limit 7 to English language
489.	letter/
490.	editorial/
491.	news/
492.	exp historical article/
493.	Anecdotes as Topic/
494.	comment/
495.	case report/
496.	(letter or comment*).ti.
497.	or/9-16
498.	randomized controlled trial/ or random*.ti,ab.
499.	17 not 18
500.	animals/ not humans/
501.	exp Animals, Laboratory/
502.	exp Animal Experimentation/
503.	exp Models, Animal/
504.	exp Rodentia/
505.	(rat or rats or mouse or mice).ti.
506.	or/19-25
507.	8 not 26
508.	quality-adjusted life years/
509.	sickness impact profile/
510.	(quality adj2 (wellbeing or well being)).ti,ab.
511.	sickness impact profile.ti,ab.

512.	disability adjusted life.ti,ab.
513.	(qal* or qtime* or qwb* or daly*).ti,ab.
514.	(euroqol* or eq5d* or eq 5*).ti,ab.
515.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
516.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
517.	(hui or hui1 or hui2 or hui3).ti,ab.
518.	(health* year* equivalent* or hye or hyes).ti,ab.
519.	discrete choice*.ti,ab.
520.	rosser.ti,ab.
521.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
522.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
523.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
524.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
525.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
526.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
527.	or/28-46
528.	27 and 47

Embase (Ovid) search terms

481.	exp Sleep Disordered Breathing/
482.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
483.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
484.	(OSAHS or OSA or OSAS).ti,ab.
485.	(obes* adj3 hypoventil*).ti,ab.
486.	pickwick*.ti,ab.
487.	or/1-6
488.	limit 7 to English language
489.	letter.pt. or letter/
490.	note.pt.
491.	editorial.pt.
492.	case report/ or case study/
493.	(letter or comment*).ti.
494.	or/9-13
495.	randomized controlled trial/ or random*.ti,ab.
496.	14 not 15
497.	animal/ not human/
498.	nonhuman/
499.	exp Animal Experiment/
500.	exp Experimental Animal/
501.	animal model/
502.	exp Rodent/
503.	(rat or rats or mouse or mice).ti.
504.	or/16-23

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Sleep Apnoea search strategy 11 rhinitis

505.	8 not 24
506.	quality adjusted life year/
507.	"quality of life index"/
508.	short form 12/ or short form 20/ or short form 36/ or short form 8/
509.	sickness impact profile/
510.	(quality adj2 (wellbeing or well being)).ti,ab.
511.	sickness impact profile.ti,ab.
512.	disability adjusted life.ti,ab.
513.	(qal* or qtime* or qwb* or daly*).ti,ab.
514.	(euroqol* or eq5d* or eq 5*).ti,ab.
515.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
516.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
517.	(hui or hui1 or hui2 or hui3).ti,ab.
518.	(health* year* equivalent* or hye or hyes).ti,ab.
519.	discrete choice*.ti,ab.
520.	rosser.ti,ab.
521.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
522.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
523.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
524.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
525.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
526.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
527.	or/26-46
528.	25 and 47

Sleep Apnoea search strategy 11 rhinitis

This literature search strategy was used for the following review;

- What is the clinical and cost effectiveness of treatment of rhinitis to improve symptoms of obstructive sleep apnoea/hypopnoea syndrome, obesity hypoventilation syndrome or overlap syndrome?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual. {NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.25 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 36: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies Observational studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2019 Issue 11 of 12 CENTRAL to 2019 Issue 11 of 12	None
Epistemonikos (Epistemonikos Foundation)	Inception – 29 November 2018	None

Medline (Ovid) search terms

930.	exp Sleep Apnea Syndromes/
931.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
932.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
933.	(OSAHS or OSA or OSAS).ti,ab.
934.	(obes* adj3 hypoventil*).ti,ab.
935.	pickwick*.ti,ab.

936.	or/1-6
937.	limit 7 to English language
938.	letter/
939.	editorial/
940.	news/
941.	exp historical article/
942.	Anecdotes as Topic/
943.	comment/
944.	case report/
945.	(letter or comment*).ti.
946.	or/9-16
947.	randomized controlled trial/ or random*.ti,ab.
948.	17 not 18
949.	animals/ not humans/
950.	exp Animals, Laboratory/
951.	exp Animal Experimentation/
952.	exp Models, Animal/
953.	exp Rodentia/
954.	(rat or rats or mouse or mice).ti.
955.	or/19-25
956.	8 not 26
957.	exp Rhinitis/
958.	(rhinit* or rhinopath* or rhinosinusit* or rhinoconjunctivitis or ozena* or hayfever or hay fever or pollinosis or pollenosis or pollonosis or allerg*).ti,ab.
959.	((nasal or nose) adj3 (congest* or stuffy or clog*)).ti,ab.
960.	(NARES or NAR or LAR or NANIPER or AR or SAR).ti,ab.
961.	exp Histamine Antagonists/
962.	(antihistamin* or anti-histamin* or (histamin* adj3 antagonist*)).ti,ab.
963.	(Desloratadine or Fexofenadine or Ketotifen).ti,ab.
964.	Ketotifen/
965.	Nasal Lavage/ or Administration, Intranasal/ or Nasal Sprays/
966.	((intranasal or intra-nasal or nasal or nose) adj3 (wash* or spray* or mist* or irrigat* or rins* or douch* or lavage* or administrat*)).ti,ab.
967.	(anticholinergic* or anti-cholinergic* or cholinergic antagonist*).ti,ab.
968.	(antimuscarinic* or anti-muscarinic* or muscarnic antagonist*).ti,ab.
969.	Ipratropium.ti,ab.
970.	Ipratropium/
971.	exp Cholinergic Antagonists/
972.	((intranasal or intra-nasal or nasal or inhal*) adj3 (steroid* or corticosteroid*)).ti,ab.
973.	(Beclometasone or Budesonide or Fluticasone or Mometasone).ti,ab.
974.	Beclometasone/
975.	Budesonide/
976.	Fluticasone/
977.	Mometasone Furoate/
978.	(RFA or RFAIT or RFTR or RFVTR).ti,ab.

979.	((radiofrequency or ablat* or reduct*) adj4 (turbinate* or turbinoplast*)).ti,ab.
980.	or/28-50
981.	27 and 51
982.	randomized controlled trial.pt.
983.	controlled clinical trial.pt.
984.	randomi#ed.ti,ab.
985.	placebo.ab.
986.	randomly.ti,ab.
987.	Clinical Trials as topic.sh.
988.	trial.ti.
989.	or/53-59
990.	Meta-Analysis/
991.	exp Meta-Analysis as Topic/
992.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
993.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
994.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
995.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
996.	(search* adj4 literature).ab.
997.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
998.	cochrane.jw.
999.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
1000.	or/61-70
1001.	Epidemiologic studies/
1002.	Observational study/
1003.	exp Cohort studies/
1004.	(cohort adj (study or studies or analys* or data)).ti,ab.
1005.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
1006.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
1007.	Controlled Before-After Studies/
1008.	Historically Controlled Study/
1009.	Interrupted Time Series Analysis/
1010.	(before adj2 after adj2 (study or studies or data)).ti,ab.
1011.	or/72-81
1012.	exp case control studies/
1013.	case control*.ti,ab.
1014.	or/83-84
1015.	82 or 85
1016.	Cross-sectional studies/
1017.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
1018.	or/87-88
1019.	82 or 89
1020.	82 or 85 or 89

1021.	52 and (60 or 71 or 91)
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Embase (Ovid) search terms

968.	exp Sleep Disordered Breathing/
969.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
970.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
971.	(OSAHS or OSA or OSAS).ti,ab.
972.	(obes* adj3 hypoventil*).ti,ab.
973.	pickwick*.ti,ab.
974.	or/1-6
975.	limit 7 to English language
976.	letter.pt. or letter/
977.	note.pt.
978.	editorial.pt.
979.	case report/ or case study/
980.	(letter or comment*).ti.
981.	or/9-13
982.	randomized controlled trial/ or random*.ti,ab.
983.	14 not 15
984.	animal/ not human/
985.	nonhuman/
986.	exp Animal Experiment/
987.	exp Experimental Animal/
988.	animal model/
989.	exp Rodent/
990.	(rat or rats or mouse or mice).ti.
991.	or/16-23
992.	8 not 24
993.	exp Rhinitis/
994.	(rhinit* or rhinopath* or rhinosinusit* or rhinoconjunctivitis or ozena* or hayfever or hay fever or pollinosis or pollenosis or pollonosis or allerg*).ti,ab.
995.	((nasal or nose) adj3 (congest* or stuffy or clog*)).ti,ab.
996.	(NARES or NAR or LAR or NANIPER or AR or SAR).ti,ab.
997.	exp antihistaminic agent/
998.	(antihistamin* or anti-histamin* or (histamin* adj3 antagonist*)).ti,ab.
999.	(Desloratadine or Fexofenadine or Ketotifen).ti,ab.
1000.	nasal lavage/
1001.	intranasal drug administration/
1002.	nose spray/
1003.	((intranasal or intra-nasal or nasal or nose) adj3 (wash* or spray* or mist* or irrigat* or rins* or douch* or lavage* or administrat*)).ti,ab.
1004.	(anticholinergic* or anti-cholinergic* or cholinergic antagonist*).ti,ab.
1005.	(antimuscarinic* or anti-muscarinic* or muscarnic antagonist*).ti,ab.
1006.	Ipratropium.ti,ab.
1007.	cholinergic receptor blocking agent/
1008.	exp cholinergic receptor blocking agent/

1009.	((intranasal or intra-nasal or nasal or inhal*) adj3 (steroid* or corticosteroid*)).ti,ab.
1010.	(Beclometasone or Budesonide or Fluticasone or Mometasone).ti,ab.
1011.	beclometasone/
1012.	budesonide/
1013.	fluticasone/
1014.	mometasone furoate/
1015.	(RFA or RFAIT or RFTR or RFVTR).ti,ab.
1016.	((radiofrequency or ablat* or reduct*) adj4 (turbinate* or turbinoplast*)).ti,ab.
1017.	or/26-49
1018.	25 and 50
1019.	random*.ti,ab.
1020.	factorial*.ti,ab.
1021.	(crossover* or cross over*).ti,ab.
1022.	((doubl* or singl*) adj blind*).ti,ab.
1023.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
1024.	crossover procedure/
1025.	single blind procedure/
1026.	randomized controlled trial/
1027.	double blind procedure/
1028.	or/52-60
1029.	systematic review/
1030.	meta-analysis/
1031.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
1032.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
1033.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
1034.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
1035.	(search* adj4 literature).ab.
1036.	(medline or pubmed or cochrane or embase or psychlit or psychlit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
1037.	cochrane.jw.
1038.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
1039.	or/62-71
1040.	Clinical study/
1041.	Observational study/
1042.	family study/
1043.	longitudinal study/
1044.	retrospective study/
1045.	prospective study/
1046.	cohort analysis/
1047.	follow-up/
1048.	cohort*.ti,ab.
1049.	80 and 81
1050.	(cohort adj (study or studies or analys* or data)).ti,ab.
1051.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.

1052.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
1053.	(before adj2 after adj2 (study or studies or data)).ti,ab.
1054.	or/73-79,82-86
1055.	exp case control study/
1056.	case control*.ti,ab.
1057.	or/88-89
1058.	87 or 90
1059.	cross-sectional study/
1060.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
1061.	or/92-93
1062.	87 or 94
1063.	87 or 90 or 94
1064.	51 and (61 or 72 or 96)

Cochrane Library (Wiley) search terms

#235.	MeSH descriptor: [Sleep Apnea Syndromes] explode all trees
#236.	(sleep* near/4 (apnea* or apnoea* or hypopnea* or hypopnoea*)):ti,ab
#237.	(sleep* near/4 disorder* near/4 breath*):ti,ab
#238.	(OSAHS or OSA or OSAS):ti,ab
#239.	(obes* near/3 hypoventil*):ti,ab
#240.	pickwick*:ti,ab
#241.	(OR #1-#6)
#242.	MeSH descriptor: [Rhinitis] explode all trees
#243.	(rhinit* or rhinopath* or rhinosinusit* or rhinoconjunctivitis or ozena* or hayfever or hay fever or pollinosis or pollenosis or pollonosis or allerg*):ti,ab
#244.	((nasal or nose) near/3 (congest* or stuffy)):ti,ab
#245.	(NARES or NAR or LAR or NANIPER or AR or SAR):ti,ab
#246.	MeSH descriptor: [Histamine Antagonists] explode all trees
#247.	(antihistamin* or anti-histamin* or (histamin* near/3 antagonist*)):ti,ab
#248.	(Desloratadine or Fexofenadine or Ketotifen):ti,ab
#249.	MeSH descriptor: [Ketotifen] this term only
#250.	MeSH descriptor: [Nasal Lavage] this term only
#251.	MeSH descriptor: [Administration, Intranasal] this term only
#252.	MeSH descriptor: [Nasal Sprays] this term only
#253.	((intranasal or intra-nasal or nasal or nose) near/3 (wash* or spray* or mist* or irrigat* or rins* or douch* or lavage* or administrat*)):ti,ab
#254.	(anticholinergic* or anti-cholinergic* or cholinergic antagonist*):ti,ab
#255.	(antimuscarinic* or anti-muscarinic* or muscarnic antagonist*):ti,ab
#256.	Ipratropium:ti,ab
#257.	MeSH descriptor: [Ipratropium] explode all trees
#258.	MeSH descriptor: [Cholinergic Agonists] explode all trees
#259.	((intranasal or intra-nasal or nasal or inhal*) near/3 (steroid* or corticosteroid*)):ti,ab
#260.	(Beclometasone or Budesonide or Fluticasone or Mometasone):ti,ab
#261.	MeSH descriptor: [Beclomethasone] this term only
#262.	MeSH descriptor: [Budesonide] this term only

#263.	MeSH descriptor: [Fluticasone] this term only
#264.	MeSH descriptor: [Mometasone Furoate] this term only
#265.	(RFA or RFAIT or RFTR or RFVTR):ti,ab
#266.	((radiofrequency or ablat* or reduct*) near/4 (turbinate* or turbinoplast*)):ti,ab
#267.	(or #8-#32)
#268.	#7 AND #33

Epistemonikos search terms

12.	((title:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*))) OR (sleep* AND (apn?ea* OR hypopn?ea*))) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*) OR abstract:((sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*))) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*))
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A.26 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to sleep apnoea population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA – this ceased to be updated after March 2018) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics and quality of life studies.

A.26.1 Health economic studies strategy

Table 37: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 26 November 2019	Exclusions Health economics studies
Embase	2014 – 26 November 2019	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 31 March 2018 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

	exp Sleep Apnea Syndromes/
485.	(sleep* adj4 (apn?ea* or hypopn?ea*)):ti,ab.
486.	(sleep* adj4 disorder* adj4 breath*):ti,ab.
487.	(OSAHS or OSA or OSAS):ti,ab.
488.	(obes* adj3 hypoventil*):ti,ab.
489.	pickwick*:ti,ab.
490.	or/1-6
491.	limit 7 to English language
492.	letter/

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Sleep Apnoea search strategy 11 rhinitis

493.	editorial/
494.	news/
495.	exp historical article/
496.	Anecdotes as Topic/
497.	comment/
498.	case report/
499.	(letter or comment*).ti.
500.	or/9-16
501.	randomized controlled trial/ or random*.ti,ab.
502.	17 not 18
503.	animals/ not humans/
504.	exp Animals, Laboratory/
505.	exp Animal Experimentation/
506.	exp Models, Animal/
507.	exp Rodentia/
508.	(rat or rats or mouse or mice).ti.
509.	or/19-25
510.	8 not 26
511.	Economics/
512.	Value of life/
513.	exp "Costs and Cost Analysis"/
514.	exp Economics, Hospital/
515.	exp Economics, Medical/
516.	Economics, Nursing/
517.	Economics, Pharmaceutical/
518.	exp "Fees and Charges"/
519.	exp Budgets/
520.	budget*.ti,ab.
521.	cost*.ti.
522.	(economic* or pharmaco?economic*).ti.
523.	(price* or pricing*).ti,ab.
524.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
525.	(financ* or fee or fees).ti,ab.
526.	(value adj2 (money or monetary)).ti,ab.
527.	or/28-43
528.	27 and 44

Embase (Ovid) search terms

441.	exp Sleep Disordered Breathing/
442.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
443.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
444.	(OSAHS or OSA or OSAS).ti,ab.
445.	(obes* adj3 hypoventil*).ti,ab.
446.	pickwick*.ti,ab.
447.	or/1-6

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Sleep Apnoea search strategy 11 rhinitis

448.	limit 7 to English language
449.	letter.pt. or letter/
450.	note.pt.
451.	editorial.pt.
452.	case report/ or case study/
453.	(letter or comment*).ti.
454.	or/9-13
455.	randomized controlled trial/ or random*.ti,ab.
456.	14 not 15
457.	animal/ not human/
458.	nonhuman/
459.	exp Animal Experiment/
460.	exp Experimental Animal/
461.	animal model/
462.	exp Rodent/
463.	(rat or rats or mouse or mice).ti.
464.	or/16-23
465.	8 not 24
466.	health economics/
467.	exp economic evaluation/
468.	exp health care cost/
469.	exp fee/
470.	budget/
471.	funding/
472.	budget*.ti,ab.
473.	cost*.ti.
474.	(economic* or pharmaco?economic*).ti.
475.	(price* or pricing*).ti,ab.
476.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
477.	(financ* or fee or fees).ti,ab.
478.	(value adj2 (money or monetary)).ti,ab.
479.	or/26-38
480.	25 and 39

NHS EED and HTA (CRD) search terms

#78.	MeSH DESCRIPTOR Sleep Apnea Syndromes EXPLODE ALL TREES
#79.	(sleep* adj4 (apn?ea* or hypopn?ea*))
#80.	(sleep* adj4 disorder* adj4 breath*)
#81.	(OSAHS or OSA or OSAS)
#82.	(obes* adj3 hypoventil*)
#83.	(pickwick*)
#84.	#1 OR #2 OR #3 OR #4 OR #5 OR #6

A.26.2 Quality of life studies strategy

Table 38: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	1946 – 26 November 2019	Exclusions Quality of life studies
Embase	1974 – 26 November 2019	Exclusions Quality of life studies

Medline (Ovid) search terms

529.	exp Sleep Apnea Syndromes/
530.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
531.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
532.	(OSAHS or OSA or OSAS).ti,ab.
533.	(obes* adj3 hypoventil*).ti,ab.
534.	pickwick*.ti,ab.
535.	or/1-6
536.	limit 7 to English language
537.	letter/
538.	editorial/
539.	news/
540.	exp historical article/
541.	Anecdotes as Topic/
542.	comment/
543.	case report/
544.	(letter or comment*).ti.
545.	or/9-16
546.	randomized controlled trial/ or random*.ti,ab.
547.	17 not 18
548.	animals/ not humans/
549.	exp Animals, Laboratory/
550.	exp Animal Experimentation/
551.	exp Models, Animal/
552.	exp Rodentia/
553.	(rat or rats or mouse or mice).ti.
554.	or/19-25
555.	8 not 26
556.	quality-adjusted life years/
557.	sickness impact profile/
558.	(quality adj2 (wellbeing or well being)).ti,ab.
559.	sickness impact profile.ti,ab.

560.	disability adjusted life.ti,ab.
561.	(qal* or qtime* or qwb* or daly*).ti,ab.
562.	(euroqol* or eq5d* or eq 5*).ti,ab.
563.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
564.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
565.	(hui or hui1 or hui2 or hui3).ti,ab.
566.	(health* year* equivalent* or hye or hyes).ti,ab.
567.	discrete choice*.ti,ab.
568.	rosser.ti,ab.
569.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
570.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
571.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
572.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
573.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
574.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
575.	or/28-46
576.	27 and 47

Embase (Ovid) search terms

529.	exp Sleep Disordered Breathing/
530.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
531.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
532.	(OSAHS or OSA or OSAS).ti,ab.
533.	(obes* adj3 hypoventil*).ti,ab.
534.	pickwick*.ti,ab.
535.	or/1-6
536.	limit 7 to English language
537.	letter.pt. or letter/
538.	note.pt.
539.	editorial.pt.
540.	case report/ or case study/
541.	(letter or comment*).ti.
542.	or/9-13
543.	randomized controlled trial/ or random*.ti,ab.
544.	14 not 15
545.	animal/ not human/
546.	nonhuman/
547.	exp Animal Experiment/
548.	exp Experimental Animal/
549.	animal model/
550.	exp Rodent/
551.	(rat or rats or mouse or mice).ti.
552.	or/16-23

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Sleep Apnoea search strategy 11 rhinitis

553.	8 not 24
554.	quality adjusted life year/
555.	"quality of life index"/
556.	short form 12/ or short form 20/ or short form 36/ or short form 8/
557.	sickness impact profile/
558.	(quality adj2 (wellbeing or well being)).ti,ab.
559.	sickness impact profile.ti,ab.
560.	disability adjusted life.ti,ab.
561.	(qal* or qtime* or qwb* or daly*).ti,ab.
562.	(euroqol* or eq5d* or eq 5*).ti,ab.
563.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
564.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
565.	(hui or hui1 or hui2 or hui3).ti,ab.
566.	(health* year* equivalent* or hye or hyes).ti,ab.
567.	discrete choice*.ti,ab.
568.	rosser.ti,ab.
569.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
570.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
571.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
572.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
573.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
574.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
575.	or/26-46
576.	25 and 47

12 Sleep Apnoea search strategy 12_surgery

This literature search strategy was used for the following reviews;

- What is the clinical and cost effectiveness of upper airway surgical interventions for people with obstructive sleep apnoea/hypopnoea syndrome?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual. {NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.27 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 39: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Randomised controlled trials Systematic review studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2019 Issue 11 of 12 CENTRAL to 2019 Issue 11 of 12	None
Epistemonikos (Epistemonikos Foundation)	Inception – 29 November 2018	None

Medline (Ovid) search terms

1022.	exp Sleep Apnea Syndromes/
1023.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
1024.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
1025.	(OSAHS or OSA or OSAS).ti,ab.
1026.	(obes* adj3 hypoventil*).ti,ab.
1027.	pickwick*.ti,ab.
1028.	or/1-6
1029.	limit 7 to English language
1030.	letter/
1031.	editorial/
1032.	news/
1033.	exp historical article/
1034.	Anecdotes as Topic/
1035.	comment/

1036.	case report/
1037.	(letter or comment*).ti.
1038.	or/9-16
1039.	randomized controlled trial/ or random*.ti,ab.
1040.	17 not 18
1041.	animals/ not humans/
1042.	exp Animals, Laboratory/
1043.	exp Animal Experimentation/
1044.	exp Models, Animal/
1045.	exp Rodentia/
1046.	(rat or rats or mouse or mice).ti.
1047.	or/19-25
1048.	8 not 26
1049.	otorhinolaryngologic surgical procedures/ or adenoidectomy/ or laryngoplasty/ or laryngoscopy/ or nasal surgical procedures/ or rhinoplasty/ or tonsillectomy/ or tracheostomy/ or tracheotomy/
1050.	exp Surgery, oral/ or Oral Surgical Procedures/
1051.	Tongue/su or Nose/su or Mouth/su or Palate/su or Paranasal Sinuses/su
1052.	((surg* or operat*) adj3 (pharyn* or nasal* or intranasal* or sinonasal* or paranasal* or turbinate* or palate* or palatal or uvula* or upper-airway* or upperairway* or tongue* or jaw* or adenoid* or tonsil* or endoscopic*).ti,ab.
1053.	(septoplast* or rhinoplast* or polypectom* or turbinectom*).ti,ab.
1054.	((surg* or operat*) adj3 (oral* or transoral or trans-oral or oropharyng* or nasopharyng* or otorhinolaryng* or maxillofacial or maxillo-facial or hypopharyn* or facial)).ti,ab.
1055.	(uvulopalatopharyngoplast* or uppp or uvpp or upp or uvulopalatal or upf or palatoplast* or pharyngoplast* or palatopharyngoplast* or ppp or uvulopalatoplast* or laup).ti,ab.
1056.	(tonsillectom* or tonsillotom* or adenotonsillectom* or adenoidectom* or orthognathic).ti,ab.
1057.	(palat* adj3 (advanc* or implant*).ti,ab.
1058.	(intrapalat* adj3 resection*).ti,ab.
1059.	((tori or torus) adj3 (excis* or remov* or reduc* or surg*).ti,ab.
1060.	(sagittal adj3 (ramus or osteotom*).ti,ab.
1061.	Glossectomy/ or Osteotomy, Le Fort/ or Osteotomy, Sagittal Split Ramus/
1062.	(glossectom* or lingualplast*).ti,ab.
1063.	((hyoid or tongue*) adj3 (myotom* or suspens* or advanc* or reduc* or ablat* or stabili*).ti,ab.
1064.	(TCRFTA or tissue ablat*).ti,ab.
1065.	((((genioglossus or genioglossal) adj3 advanc*) or genial tubercle advanc*).ti,ab.
1066.	Mandibular Advancement/
1067.	MMA.ti,ab.
1068.	((maxillomandibular or maxillo-mandibular or maxillary or mandibular or bimaxillary or bi-maxillary) adj3 (advanc* or osteotom* or surg* or operat*).ti,ab.
1069.	(tracheotom* or tracheostom* or minitracheostom* or mini-tracheostom* or epiglottoplast*).ti,ab.
1070.	Radiofrequency ablation/
1071.	((radio frequency or radiofrequency) adj3 ablat*).ti,ab.
1072.	((upper airway or upperairway or hypoglossal) adj3 stimulat*).ti,ab.

1073.	or/28-51
1074.	27 and 52
1075.	randomized controlled trial.pt.
1076.	controlled clinical trial.pt.
1077.	randomi#ed.ti,ab.
1078.	placebo.ab.
1079.	randomly.ti,ab.
1080.	Clinical Trials as topic.sh.
1081.	trial.ti.
1082.	or/54-60
1083.	Meta-Analysis/
1084.	exp Meta-Analysis as Topic/
1085.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
1086.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
1087.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
1088.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
1089.	(search* adj4 literature).ab.
1090.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
1091.	cochrane.jw.
1092.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
1093.	or/62-71
1094.	53 and (61 or 72)

Embase (Ovid) search terms

1065.	exp Sleep Disordered Breathing/
1066.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
1067.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
1068.	(OSAHS or OSA or OSAS).ti,ab.
1069.	(obes* adj3 hypoventil*).ti,ab.
1070.	pickwick*.ti,ab.
1071.	or/1-6
1072.	limit 7 to English language
1073.	letter.pt. or letter/
1074.	note.pt.
1075.	editorial.pt.
1076.	case report/ or case study/
1077.	(letter or comment*).ti.
1078.	or/9-13
1079.	randomized controlled trial/ or random*.ti,ab.
1080.	14 not 15
1081.	animal/ not human/
1082.	nonhuman/
1083.	exp Animal Experiment/
1084.	exp Experimental Animal/

1085.	animal model/
1086.	exp Rodent/
1087.	(rat or rats or mouse or mice).ti.
1088.	or/16-23
1089.	8 not 24
1090.	ear nose throat surgery/ or endoscopic sinus surgery/ or nose surgery/ or nose reconstruction/ or throat surgery/ or adenoidectomy/ or laryngoplasty/ or laryngoscopy/ or tonsillectomy/ or tracheostomy/ or tracheotomy/
1091.	oral surgery/ or orthognathic surgery/
1092.	Tongue/su or Nose/su or Mouth/su or Palate/su or Paranasal Sinuses/su
1093.	((surg* or operat*) adj3 (pharyn* or nasal* or intranasal* or sinonasal* or paranasal* or turbinate* or palate* or palatal or uvula* or upper-airway* or upperairway* or tongue* or jaw* or adenoid* or tonsil* or endoscopic*)).ti,ab.
1094.	(septoplast* or rhinoplast* or polypectom* or turbinectom*).ti,ab.
1095.	((surg* or operat*) adj3 (oral* or transoral or trans-oral or oropharyng* or nasopharyng* or otorhinolaryng* or maxillofacial or maxillo-facial or hypopharyn* or facial)).ti,ab.
1096.	(uvulopalatopharyngoplast* or uppp or uvpp or upp or uvulopalatal or upf or palatoplast* or pharyngoplast* or palatopharyngoplast* or ppp or uvulopalatoplast* or laup).ti,ab.
1097.	(tonsillectom* or tonsillotom* or adenotonsillectom* or adenoidectom* or orthognathic).ti,ab.
1098.	(palat* adj3 (advanc* or implant*)).ti,ab.
1099.	(intrapalat* adj3 resection*).ti,ab.
1100.	((tori or torus) adj3 (excis* or remov* or reduc* or surg*)).ti,ab.
1101.	(sagittal adj3 (ramus or osteotom*)).ti,ab.
1102.	glossectomy/ or Le Fort osteotomy/ or sagittal split ramal osteotomy/
1103.	(glossectom* or lingualplast*).ti,ab.
1104.	((hyoid or tongue*) adj3 (myotom* or suspens* or advanc* or reduc* or ablat* or stabili*).ti,ab.
1105.	(TCRFTA or tissue ablat*).ti,ab.
1106.	((genioglossus or genioglossal) adj3 advanc*) or genial tubercle advanc*).ti,ab.
1107.	mandibular advancement/
1108.	MMA.ti,ab.
1109.	((maxillomandibular or maxillo-mandibular or maxillary or mandibular or bimaxillary or bi-maxillary) adj3 (advanc* or osteotom* or surg* or operat*)).ti,ab.
1110.	(tracheotom* or tracheostom* or minitracheostom* or mini-tracheostom* or epiglottoplast*).ti,ab.
1111.	radiofrequency ablation/
1112.	((radio frequency or radiofrequency) adj3 ablat*).ti,ab.
1113.	((upper airway or upperairway or hypoglossal) adj3 stimulat*).ti,ab.
1114.	or/26-49
1115.	25 and 50
1116.	random*.ti,ab.
1117.	factorial*.ti,ab.
1118.	(crossover* or cross over*).ti,ab.
1119.	((doubl* or singl*) adj blind*).ti,ab.
1120.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
1121.	crossover procedure/

1122.	single blind procedure/
1123.	randomized controlled trial/
1124.	double blind procedure/
1125.	or/52-60
1126.	systematic review/
1127.	meta-analysis/
1128.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
1129.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
1130.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
1131.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
1132.	(search* adj4 literature).ab.
1133.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
1134.	cochrane.jw.
1135.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
1136.	or/62-71
1137.	51 and (61 or 72)

Cochrane Library (Wiley) search terms

#269.	MeSH descriptor: [Sleep Apnea Syndromes] explode all trees
#270.	(sleep* near/4 (apnea* or apnoea* or hypopnea* or hypopnoea*)):ti,ab
#271.	(sleep* near/4 disorder* near/4 breath*):ti,ab
#272.	(OSAHS or OSA or OSAS):ti,ab
#273.	(obes* near/3 hypoventil*):ti,ab
#274.	pickwick*:ti,ab
#275.	(OR #1-#6)
#276.	MeSH descriptor: [Otorhinolaryngologic Surgical Procedures] this term only
#277.	MeSH descriptor: [Adenoidectomy] this term only
#278.	MeSH descriptor: [Laryngoplasty] this term only
#279.	MeSH descriptor: [Laryngoscopy] this term only
#280.	MeSH descriptor: [Nasal Surgical Procedures] this term only
#281.	MeSH descriptor: [Rhinoplasty] this term only
#282.	MeSH descriptor: [Tonsillectomy] this term only
#283.	MeSH descriptor: [Tracheostomy] this term only
#284.	MeSH descriptor: [Tracheotomy] this term only
#285.	MeSH descriptor: [Surgery, Oral] explode all trees
#286.	MeSH descriptor: [Oral Surgical Procedures] this term only
#287.	MeSH descriptor: [Tongue] this term only and with qualifier(s): [surgery - SU]
#288.	MeSH descriptor: [Nose] this term only and with qualifier(s): [surgery - SU]
#289.	MeSH descriptor: [Mouth] this term only and with qualifier(s): [surgery - SU]
#290.	MeSH descriptor: [Palate] this term only and with qualifier(s): [surgery - SU]
#291.	MeSH descriptor: [Paranasal Sinuses] this term only and with qualifier(s): [surgery - SU]
#292.	((surg* or operat*) NEAR/3 (pharyn* or nasal* or intranasal* or sinonasal* or paranasal* or turbinate* or palate* or palatal or uvula* or upper-airway* or upperairway* or tongue* or jaw* or adenoid* or tonsil* or endoscopic*)):ti,ab

#293.	(septoplast* or rhinoplast* or polypectom* or turbinectom*):ti,ab
#294.	((surg* or operat*) NEAR/3 (oral* or transoral or trans-oral or oropharyng* or nasopharyng* or otorhinolaryng* or maxillofacial or maxillo-facial or hypopharyn* or facial)):ti,ab
#295.	(uvulopalatopharyngoplast* or uppp or uvvp or upp or uvulopalatal or upf or palatoplast* or pharyngoplast* or palatopharyngoplast* or ppp or uvulopalatoplast* or laup):ti,ab
#296.	(tonsillectom* or tonsillotom* or adenotonsillectom* or adenoidectom* or orthognathic):ti,ab
#297.	(palat* NEAR/3 (advanc* or implant*)):ti,ab
#298.	(intrapalat* NEAR/3 resection*):ti,ab
#299.	((tori or torus) NEAR/3 (excis* or remov* or reduc* or surg*)):ti,ab
#300.	(sagittal NEAR/3 (ramus or osteotom*)):ti,ab
#301.	MeSH descriptor: [Glossectomy] this term only
#302.	MeSH descriptor: [Osteotomy, Le Fort] this term only
#303.	MeSH descriptor: [Osteotomy, Sagittal Split Ramus] this term only
#304.	(glossectom* or lingualplast*):ti,ab
#305.	((hyoid or tongue*) NEAR/3 (myotom* or suspens* or advanc* or reduc* or ablat* or stabili*)):ti,ab
#306.	(TCRFTA or tissue ablat*):ti,ab
#307.	((genioglossus or genioglossal) NEAR/3 advanc*) or genial tubercle advanc*):ti,ab
#308.	MeSH descriptor: [Mandibular Advancement] this term only
#309.	MMA:ti,ab
#310.	((maxillomandibular or maxillo-mandibular or maxillary or mandibular or bimaxillary or bi-maxillary) NEAR/3 (advanc* or osteotom* or surg* or operat*)):ti,ab
#311.	(tracheotom* or tracheostom* or minitracheostom* or mini-tracheostom* or epiglottoplast*):ti,ab
#312.	MeSH descriptor: [Radiofrequency Ablation] this term only
#313.	((radio frequency or radiofrequency) near/3 ablat*):ti,ab
#314.	((upper airway or upperairway or hypoglossal) NEAR/3 stimulat*):ti,ab
#315.	(OR #8-#46)
#316.	#7 AND #47

Epistemonikos search terms

13.	((title:(sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*) OR abstract:(sleep apnea syndromes) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (apn?ea* OR hypopn?ea*)) OR (sleep* AND (disorder* OR breath*)) OR (OSAHS OR OSA OR OSAS) OR (obes* AND hypoventil*) OR pickwick*))
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A.28 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to sleep apnoea population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA – this ceased to be updated after March 2018) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics and quality of life studies.

A.28.1 Health economic studies strategy

Table 40: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 26 November 2019	Exclusions Health economics studies
Embase	2014 – 26 November 2019	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 31 March 2018 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

	exp Sleep Apnea Syndromes/
529.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
530.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
531.	(OSAHS or OSA or OSAS).ti,ab.
532.	(obes* adj3 hypoventil*).ti,ab.
533.	pickwick*.ti,ab.
534.	or/1-6
535.	limit 7 to English language
536.	letter/
537.	editorial/
538.	news/
539.	exp historical article/
540.	Anecdotes as Topic/
541.	comment/
542.	case report/
543.	(letter or comment*).ti.
544.	or/9-16
545.	randomized controlled trial/ or random*.ti,ab.
546.	17 not 18
547.	animals/ not humans/
548.	exp Animals, Laboratory/
549.	exp Animal Experimentation/
550.	exp Models, Animal/
551.	exp Rodentia/
552.	(rat or rats or mouse or mice).ti.
553.	or/19-25
554.	8 not 26
555.	Economics/
556.	Value of life/
557.	exp "Costs and Cost Analysis"/

558.	exp Economics, Hospital/
559.	exp Economics, Medical/
560.	Economics, Nursing/
561.	Economics, Pharmaceutical/
562.	exp "Fees and Charges"/
563.	exp Budgets/
564.	budget*.ti,ab.
565.	cost*.ti.
566.	(economic* or pharmaco?economic*).ti.
567.	(price* or pricing*).ti,ab.
568.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
569.	(financ* or fee or fees).ti,ab.
570.	(value adj2 (money or monetary)).ti,ab.
571.	or/28-43
572.	27 and 44

Embase (Ovid) search terms

481.	exp Sleep Disordered Breathing/
482.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
483.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
484.	(OSAHS or OSA or OSAS).ti,ab.
485.	(obes* adj3 hypoventil*).ti,ab.
486.	pickwick*.ti,ab.
487.	or/1-6
488.	limit 7 to English language
489.	letter.pt. or letter/
490.	note.pt.
491.	editorial.pt.
492.	case report/ or case study/
493.	(letter or comment*).ti.
494.	or/9-13
495.	randomized controlled trial/ or random*.ti,ab.
496.	14 not 15
497.	animal/ not human/
498.	nonhuman/
499.	exp Animal Experiment/
500.	exp Experimental Animal/
501.	animal model/
502.	exp Rodent/
503.	(rat or rats or mouse or mice).ti.
504.	or/16-23
505.	8 not 24
506.	health economics/

507.	exp economic evaluation/
508.	exp health care cost/
509.	exp fee/
510.	budget/
511.	funding/
512.	budget*.ti,ab.
513.	cost*.ti.
514.	(economic* or pharmaco?economic*).ti.
515.	(price* or pricing*).ti,ab.
516.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
517.	(financ* or fee or fees).ti,ab.
518.	(value adj2 (money or monetary)).ti,ab.
519.	or/26-38
520.	25 and 39

NHS EED and HTA (CRD) search terms

#85.	MeSH DESCRIPTOR Sleep Apnea Syndromes EXPLODE ALL TREES
#86.	(sleep* adj4 (apn?ea* or hypopn?ea*))
#87.	(sleep* adj4 disorder* adj4 breath*)
#88.	(OSAHS or OSA or OSAS)
#89.	(obes* adj3 hypoventil*)
#90.	(pickwick*)
#91.	#1 OR #2 OR #3 OR #4 OR #5 OR #6

A.28.2 Quality of life studies strategy

Table 41: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	1946 – 26 November 2019	Exclusions Quality of life studies
Embase	1974 – 26 November 2019	Exclusions Quality of life studies

Medline (Ovid) search terms

577.	exp Sleep Apnea Syndromes/
578.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
579.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
580.	(OSAHS or OSA or OSAS).ti,ab.
581.	(obes* adj3 hypoventil*).ti,ab.
582.	pickwick*.ti,ab.
583.	or/1-6
584.	limit 7 to English language
585.	letter/
586.	editorial/

587.	news/
588.	exp historical article/
589.	Anecdotes as Topic/
590.	comment/
591.	case report/
592.	(letter or comment*).ti.
593.	or/9-16
594.	randomized controlled trial/ or random*.ti,ab.
595.	17 not 18
596.	animals/ not humans/
597.	exp Animals, Laboratory/
598.	exp Animal Experimentation/
599.	exp Models, Animal/
600.	exp Rodentia/
601.	(rat or rats or mouse or mice).ti.
602.	or/19-25
603.	8 not 26
604.	quality-adjusted life years/
605.	sickness impact profile/
606.	(quality adj2 (wellbeing or well being)).ti,ab.
607.	sickness impact profile.ti,ab.
608.	disability adjusted life.ti,ab.
609.	(qal* or qtime* or qwb* or daly*).ti,ab.
610.	(euroqol* or eq5d* or eq 5*).ti,ab.
611.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
612.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
613.	(hui or hui1 or hui2 or hui3).ti,ab.
614.	(health* year* equivalent* or hye or hyes).ti,ab.
615.	discrete choice*.ti,ab.
616.	rosser.ti,ab.
617.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
618.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
619.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
620.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
621.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
622.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
623.	or/28-46
624.	27 and 47

Embase (Ovid) search terms

577.	exp Sleep Disordered Breathing/
578.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.

579.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
580.	(OSAHS or OSA or OSAS).ti,ab.
581.	(obes* adj3 hypoventil*).ti,ab.
582.	pickwick*.ti,ab.
583.	or/1-6
584.	limit 7 to English language
585.	letter.pt. or letter/
586.	note.pt.
587.	editorial.pt.
588.	case report/ or case study/
589.	(letter or comment*).ti.
590.	or/9-13
591.	randomized controlled trial/ or random*.ti,ab.
592.	14 not 15
593.	animal/ not human/
594.	nonhuman/
595.	exp Animal Experiment/
596.	exp Experimental Animal/
597.	animal model/
598.	exp Rodent/
599.	(rat or rats or mouse or mice).ti.
600.	or/16-23
601.	8 not 24
602.	quality adjusted life year/
603.	"quality of life index"/
604.	short form 12/ or short form 20/ or short form 36/ or short form 8/
605.	sickness impact profile/
606.	(quality adj2 (wellbeing or well being)).ti,ab.
607.	sickness impact profile.ti,ab.
608.	disability adjusted life.ti,ab.
609.	(qal* or qtime* or qwb* or daly*).ti,ab.
610.	(euroqol* or eq5d* or eq 5*).ti,ab.
611.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
612.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
613.	(hui or hui1 or hui2 or hui3).ti,ab.
614.	(health* year* equivalent* or hye or hyes).ti,ab.
615.	discrete choice*.ti,ab.
616.	rosser.ti,ab.
617.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
618.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
619.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
620.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
621.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.

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Sleep Apnoea search strategy 12_surgery

622.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
623.	or/26-46
624.	25 and 47

13 Sleep apnoea search strategy 13 – who to suspect

This literature search strategy was used for the following review;

- In whom should obstructive sleep apnoea/hypopnoea syndrome, obesity hypoventilation syndrome or overlap syndrome be suspected (for example, based on symptoms or coexisting conditions)?

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual.{NICE2014}

For more information, please see the Methods Report published as part of the accompanying documents for this guideline.

A.29 Clinical search literature search strategy

Searches were constructed using the following approaches:

- Population AND Prognostic/risk factor terms AND Study filter(s)

Table 42: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (OVID)	1946 – 20 November 2019	Exclusions Observational studies
Embase (OVID)	1974 – 20 November 2019	Exclusions Observational studies

Medline (Ovid) search terms

1095.	exp Sleep Apnea Syndromes/
1096.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
1097.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
1098.	(OSAHS or OSA or OSAS).ti,ab.
1099.	(obes* adj3 hypoventil*).ti,ab.
1100.	pickwick*.ti,ab.
1101.	or/1-6
1102.	limit 7 to English language
1103.	letter/
1104.	editorial/
1105.	news/
1106.	exp historical article/
1107.	Anecdotes as Topic/
1108.	comment/
1109.	case report/
1110.	(letter or comment*).ti.
1111.	or/9-16
1112.	randomized controlled trial/ or random*.ti,ab.
1113.	17 not 18
1114.	animals/ not humans/

1115.	exp Animals, Laboratory/
1116.	exp Animal Experimentation/
1117.	exp Models, Animal/
1118.	exp Rodentia/
1119.	(rat or rats or mouse or mice).ti.
1120.	or/19-25
1121.	8 not 26
1122.	exp "signs and symptoms"/
1123.	symptom assessment/
1124.	diagnosis/ or prognosis/
1125.	(clinical adj3 (manifestation* or feature* or finding* or aspect* or marker*)).ti,ab.
1126.	(presenting adj3 (feature* or finding* or factor*)).ti,ab.
1127.	presentation*.ti,ab.
1128.	(physical adj3 (manifestation* or characteristic* or feature* or finding*)).ti,ab.
1129.	(sign or signs or symptom* or recogni* or identif* or complain*).ti,ab.
1130.	(diagnos* or prognos* or assess* or criteria* or predict*).ti,ab.
1131.	or/28-36
1132.	Snoring/
1133.	(snore* or snoring).ti,ab.
1134.	((unrefresh* or un-refres* or daytime or day-time or fragment*) adj3 sleep*).ti,ab.
1135.	(nocturia or tired* or insomnia* or headache* or somnolence or drows* or fatigue* or sleepiness).ti,ab.
1136.	(ankle* adj3 (swell* or swollen)).ti,ab.
1137.	((elevate* or high*) adj3 (hemoglobin or haemoglobin or hb or hgb)).ti,ab.
1138.	(cognitive dysfunction* or brian fog or memor* impairment*).ti,ab.
1139.	or/38-44
1140.	((resistan* or nocturnal or nondipping or non-dipping) adj2 hypertension).ti,ab.
1141.	(resistan* adj2 arrhythmia*).ti,ab.
1142.	((atrial or atria or atrium or auricular) adj3 fibrillat*).ti,ab.
1143.	*Atrial Fibrillation/
1144.	((diabet* adj2 (type 2 or type ii) or T2D).ti.
1145.	((diabetic macular adj (odema or edema)) or DME).ti,ab.
1146.	*Aortic Aneurysm/
1147.	aortic aneurysm*.ti,ab.
1148.	((heart or cardiac or myocardial) adj2 (failure or decompensation)).ti,ab.
1149.	*Heart Failure/
1150.	*cardiovascular diseases/ or *cardiovascular abnormalities/ or *cardiovascular infections/ or *heart diseases/ or *vascular diseases/
1151.	(cardiovascular adj2 event*).ti,ab.
1152.	*Stroke/
1153.	(stroke or strokes).ti,ab.
1154.	*Down Syndrome/
1155.	(down* syndrome* or mongolism or trisomy 21).ti,ab.
1156.	*Acromegaly/
1157.	acromegal*.ti,ab.

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Sleep apnoea search strategy 13 – who to suspect

1158.	((Body mass index or BMI) adj2 >30).ti,ab.
1159.	exp *Obesity/ or exp *Overweight/
1160.	(obesity or obese or overweight or over-weight or over weight).ti.
1161.	or/46-66
1162.	27 and (37 or 45 or 67)
1163.	Epidemiologic studies/
1164.	Observational study/
1165.	exp Cohort studies/
1166.	(cohort adj (study or studies or analys* or data)).ti,ab.
1167.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
1168.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
1169.	Controlled Before-After Studies/
1170.	Historically Controlled Study/
1171.	Interrupted Time Series Analysis/
1172.	(before adj2 after adj2 (study or studies or data)).ti,ab.
1173.	or/69-78
1174.	exp case control studies/
1175.	case control*.ti,ab.
1176.	or/80-81
1177.	79 or 82
1178.	Cross-sectional studies/
1179.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
1180.	or/84-85
1181.	79 or 86
1182.	79 or 82 or 86
1183.	68 and 88

Embase (Ovid) search terms

1138.	exp Sleep Disordered Breathing/
1139.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
1140.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
1141.	(OSAHS or OSA or OSAS).ti,ab.
1142.	(obes* adj3 hypoventil*).ti,ab.
1143.	pickwick*.ti,ab.
1144.	or/1-6
1145.	limit 7 to English language
1146.	letter.pt. or letter/
1147.	note.pt.
1148.	editorial.pt.
1149.	case report/ or case study/
1150.	(letter or comment*).ti.
1151.	or/9-13
1152.	randomized controlled trial/ or random*.ti,ab.
1153.	14 not 15

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1154.	animal/ not human/
1155.	nonhuman/
1156.	exp Animal Experiment/
1157.	exp Experimental Animal/
1158.	animal model/
1159.	exp Rodent/
1160.	(rat or rats or mouse or mice).ti.
1161.	or/16-23
1162.	8 not 24
1163.	symptom assessment/
1164.	diagnosis/
1165.	prognosis/
1166.	(clinical adj3 (manifestation* or feature* or finding* or aspect* or marker*)).ti,ab.
1167.	(presenting adj3 (feature* or finding* or factor*)).ti,ab.
1168.	presentation*.ti,ab.
1169.	(physical adj3 (manifestaion* or characteristic* or feature* or finding*)).ti,ab.
1170.	(sign or signs or symptom* or recogni* or identif* or complain*).ti,ab.
1171.	(diagnos* or prognos* or assess* or criteria* or predict*).ti,ab.
1172.	symptomatology/
1173.	or/26-35
1174.	*snoring/
1175.	(snore* or snoring).ti,ab.
1176.	((unrefresh* or un-refres* or daytime or day-time or fragment*) adj3 sleep*).ti,ab.
1177.	(nocturia or tired* or insomnia* or headache* or somnolence or drows* or fatigue* or sleepiness).ti,ab.
1178.	(ankle* adj3 (swell* or swollen)).ti,ab.
1179.	((elevate* or high*) adj3 (hemoglobin or haemoglobin or hb or hgb)).ti,ab.
1180.	(cognitive dysfunction* or brian fog or memor* impairment*).ti,ab.
1181.	or/37-43
1182.	((resistan* or nocturnal or nondipping or non-dipping) adj2 hypertension).ti,ab.
1183.	(resistan* adj2 arrhythmia*).ti,ab.
1184.	((atrial or atria or atrium or auricular) adj3 fibrillat*).ti,ab.
1185.	*atrial fibrillation/
1186.	((diabet* adj2 (type 2 or type ii) or T2D).ti.
1187.	((diabetic macular adj (odema or edema)) or DME).ti,ab.
1188.	*aortic aneurysm/
1189.	aortic aneurysm*.ti,ab.
1190.	((heart or cardiac or myocardial) adj2 (failure or decompensation)).ti,ab.
1191.	*heart failure/
1192.	*cardiovascular disease/ or *cardiovascular malformation/ or *cardiovascular infection/ or *heart disease/ or *vascular disease/
1193.	(cardiovascular adj2 event*).ti,ab.
1194.	*cerebrovascular accident/
1195.	(stroke or strokes).ti,ab.
1196.	*Down syndrome/

1197.	(down* syndrome* or mongolism or trisomy 21).ti,ab.
1198.	*acromegaly/
1199.	acromegal*.ti,ab.
1200.	((Body mass index or BMI) adj2 >30).ti,ab.
1201.	exp *obesity/
1202.	(obesity or obese or overweight or over-weight or over weight).ti.
1203.	or/45-65
1204.	25 and (36 or 44 or 66)
1205.	Clinical study/
1206.	Observational study/
1207.	family study/
1208.	longitudinal study/
1209.	retrospective study/
1210.	prospective study/
1211.	cohort analysis/
1212.	follow-up/
1213.	cohort*.ti,ab.
1214.	75 and 76
1215.	(cohort adj (study or studies or analys* or data)).ti,ab.
1216.	((follow up or observational or uncontrolled or non randomi#ed or epidemiologic*) adj (study or studies or data)).ti,ab.
1217.	((longitudinal or retrospective or prospective or cross sectional) and (study or studies or review or analys* or cohort* or data)).ti,ab.
1218.	(before adj2 after adj2 (study or studies or data)).ti,ab.
1219.	or/68-74,77-81
1220.	exp case control study/
1221.	case control*.ti,ab.
1222.	or/83-84
1223.	82 or 85
1224.	cross-sectional study/
1225.	(cross sectional and (study or studies or review or analys* or cohort* or data)).ti,ab.
1226.	or/87-88
1227.	82 or 89
1228.	82 or 85 or 89
1229.	67 and 91

A.30 Health Economics literature search strategy

A.31 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to sleep apnoea population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA – this ceased to be updated after March 2018) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics and quality of life studies.

A.31.1 Health economic studies strategy

Table 43: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 26 November 2019	Exclusions Health economics studies
Embase	2014 – 26 November 2019	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - Inception – 31 March 2018 NHSEED - Inception to March 2015	None

Medline (Ovid) search terms

	exp Sleep Apnea Syndromes/
573.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
574.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
575.	(OSAHS or OSA or OSAS).ti,ab.
576.	(obes* adj3 hypoventil*).ti,ab.
577.	pickwick*.ti,ab.
578.	or/1-6
579.	limit 7 to English language
580.	letter/
581.	editorial/
582.	news/
583.	exp historical article/
584.	Anecdotes as Topic/
585.	comment/
586.	case report/
587.	(letter or comment*).ti.
588.	or/9-16
589.	randomized controlled trial/ or random*.ti,ab.
590.	17 not 18
591.	animals/ not humans/
592.	exp Animals, Laboratory/
593.	exp Animal Experimentation/
594.	exp Models, Animal/
595.	exp Rodentia/
596.	(rat or rats or mouse or mice).ti.
597.	or/19-25
598.	8 not 26
599.	Economics/
600.	Value of life/
601.	exp "Costs and Cost Analysis"/

602.	exp Economics, Hospital/
603.	exp Economics, Medical/
604.	Economics, Nursing/
605.	Economics, Pharmaceutical/
606.	exp "Fees and Charges"/
607.	exp Budgets/
608.	budget*.ti,ab.
609.	cost*.ti.
610.	(economic* or pharmaco?economic*).ti.
611.	(price* or pricing*).ti,ab.
612.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
613.	(financ* or fee or fees).ti,ab.
614.	(value adj2 (money or monetary)).ti,ab.
615.	or/28-43
616.	27 and 44

Embase (Ovid) search terms

521.	exp Sleep Disordered Breathing/
522.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
523.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
524.	(OSAHS or OSA or OSAS).ti,ab.
525.	(obes* adj3 hypoventil*).ti,ab.
526.	pickwick*.ti,ab.
527.	or/1-6
528.	limit 7 to English language
529.	letter.pt. or letter/
530.	note.pt.
531.	editorial.pt.
532.	case report/ or case study/
533.	(letter or comment*).ti.
534.	or/9-13
535.	randomized controlled trial/ or random*.ti,ab.
536.	14 not 15
537.	animal/ not human/
538.	nonhuman/
539.	exp Animal Experiment/
540.	exp Experimental Animal/
541.	animal model/
542.	exp Rodent/
543.	(rat or rats or mouse or mice).ti.
544.	or/16-23
545.	8 not 24
546.	health economics/

547.	exp economic evaluation/
548.	exp health care cost/
549.	exp fee/
550.	budget/
551.	funding/
552.	budget*.ti,ab.
553.	cost*.ti.
554.	(economic* or pharmaco?economic*).ti.
555.	(price* or pricing*).ti,ab.
556.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
557.	(financ* or fee or fees).ti,ab.
558.	(value adj2 (money or monetary)).ti,ab.
559.	or/26-38
560.	25 and 39

NHS EED and HTA (CRD) search terms

#92.	MeSH DESCRIPTOR Sleep Apnea Syndromes EXPLODE ALL TREES
#93.	(sleep* adj4 (apn?ea* or hypopn?ea*))
#94.	(sleep* adj4 disorder* adj4 breath*)
#95.	(OSAHS or OSA or OSAS)
#96.	(obes* adj3 hypoventil*)
#97.	(pickwick*)
#98.	#1 OR #2 OR #3 OR #4 OR #5 OR #6

A.31.2 Quality of life studies strategy

Table 44: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	1946 – 26 November 2019	Exclusions Quality of life studies
Embase	1974 – 26 November 2019	Exclusions Quality of life studies

Medline (Ovid) search terms

625.	exp Sleep Apnea Syndromes/
626.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.
627.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
628.	(OSAHS or OSA or OSAS).ti,ab.
629.	(obes* adj3 hypoventil*).ti,ab.
630.	pickwick*.ti,ab.
631.	or/1-6
632.	limit 7 to English language
633.	letter/
634.	editorial/

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Sleep apnoea search strategy 13 – who to suspect

635.	news/
636.	exp historical article/
637.	Anecdotes as Topic/
638.	comment/
639.	case report/
640.	(letter or comment*).ti.
641.	or/9-16
642.	randomized controlled trial/ or random*.ti,ab.
643.	17 not 18
644.	animals/ not humans/
645.	exp Animals, Laboratory/
646.	exp Animal Experimentation/
647.	exp Models, Animal/
648.	exp Rodentia/
649.	(rat or rats or mouse or mice).ti.
650.	or/19-25
651.	8 not 26
652.	quality-adjusted life years/
653.	sickness impact profile/
654.	(quality adj2 (wellbeing or well being)).ti,ab.
655.	sickness impact profile.ti,ab.
656.	disability adjusted life.ti,ab.
657.	(qal* or qtime* or qwb* or daly*).ti,ab.
658.	(euroqol* or eq5d* or eq 5*).ti,ab.
659.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
660.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
661.	(hui or hui1 or hui2 or hui3).ti,ab.
662.	(health* year* equivalent* or hye or hyes).ti,ab.
663.	discrete choice*.ti,ab.
664.	rosser.ti,ab.
665.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
666.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
667.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
668.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
669.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.
670.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
671.	or/28-46
672.	27 and 47

Embase (Ovid) search terms

625.	exp Sleep Disordered Breathing/
626.	(sleep* adj4 (apn?ea* or hypopn?ea*)).ti,ab.

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Sleep apnoea search strategy 13 – who to suspect

627.	(sleep* adj4 disorder* adj4 breath*).ti,ab.
628.	(OSAHS or OSA or OSAS).ti,ab.
629.	(obes* adj3 hypoventil*).ti,ab.
630.	pickwick*.ti,ab.
631.	or/1-6
632.	limit 7 to English language
633.	letter.pt. or letter/
634.	note.pt.
635.	editorial.pt.
636.	case report/ or case study/
637.	(letter or comment*).ti.
638.	or/9-13
639.	randomized controlled trial/ or random*.ti,ab.
640.	14 not 15
641.	animal/ not human/
642.	nonhuman/
643.	exp Animal Experiment/
644.	exp Experimental Animal/
645.	animal model/
646.	exp Rodent/
647.	(rat or rats or mouse or mice).ti.
648.	or/16-23
649.	8 not 24
650.	quality adjusted life year/
651.	"quality of life index"/
652.	short form 12/ or short form 20/ or short form 36/ or short form 8/
653.	sickness impact profile/
654.	(quality adj2 (wellbeing or well being)).ti,ab.
655.	sickness impact profile.ti,ab.
656.	disability adjusted life.ti,ab.
657.	(qal* or qtime* or qwb* or daly*).ti,ab.
658.	(euroqol* or eq5d* or eq 5*).ti,ab.
659.	(qol* or hql* or hqol* or h qol* or hrqol* or hr qol*).ti,ab.
660.	(health utility* or utility score* or disutilit* or utility value*).ti,ab.
661.	(hui or hui1 or hui2 or hui3).ti,ab.
662.	(health* year* equivalent* or hye or hyes).ti,ab.
663.	discrete choice*.ti,ab.
664.	rosser.ti,ab.
665.	(willingness to pay or time tradeoff or time trade off or tto or standard gamble*).ti,ab.
666.	(sf36* or sf 36* or short form 36* or shortform 36* or shortform36*).ti,ab.
667.	(sf20 or sf 20 or short form 20 or shortform 20 or shortform20).ti,ab.
668.	(sf12* or sf 12* or short form 12* or shortform 12* or shortform12*).ti,ab.
669.	(sf8* or sf 8* or short form 8* or shortform 8* or shortform8*).ti,ab.

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Sleep apnoea search strategy 13 – who to suspect

670.	(sf6* or sf 6* or short form 6* or shortform 6* or shortform6*).ti,ab.
671.	or/26-46
672.	25 and 47