Obstructive Sleep Apnoea (OSA) - Suspected

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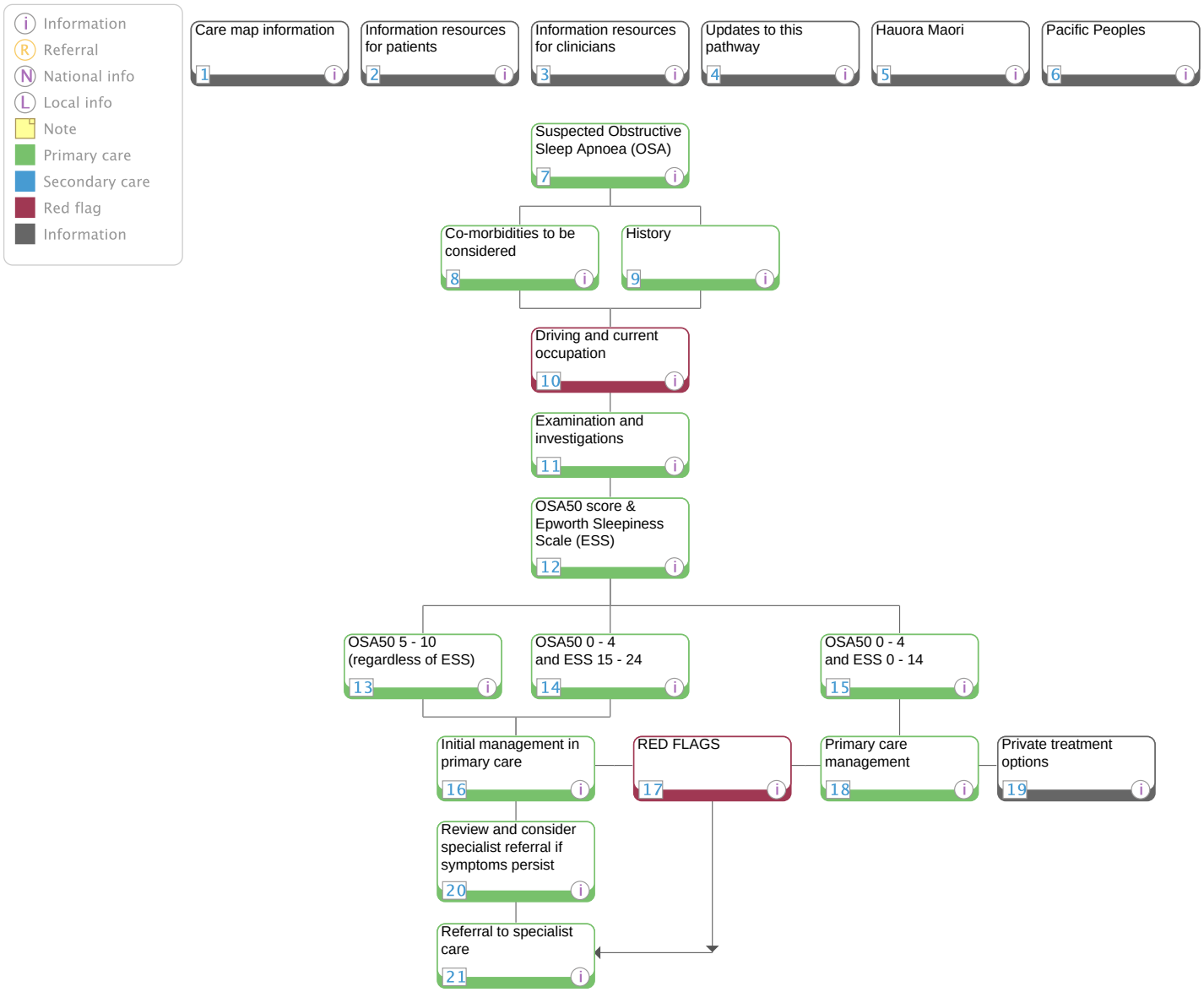

Published: 18-Feb-2016 Valid until: 30-Jun-2019 Printed on: 12-Jul-2018

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Obstructive Sleep Apnoea (OSA) - Suspected

1 Care map information

Quick info:

Scope:

- diagnosis of obstructive sleep apnoea/hypopnoea syndrome (OSAS) for adults 16 years and above
- referral criteria to sleep disorder clinics in secondary care

Out of scope

- other causes of daytime sleepiness
- children under age of 16 years

Definition:

Obstructive sleep apnoea syndrome (OSAS) is the coexistence of excessive daytime sleepiness with irregular breathing at night [1].

OSAS is caused by intermittent, repeated collapse of the upper airway, which can be complete or partial and leads to a temporary (at least 10 seconds) pause of breathing (apnoea).

Prevalence [1]:

- OSAS in New Zealand is reported to be 4% in adult males and 2% in adult females
- rates are elevated among Maori and Pacific peoples
- Maori and Pacific peoples tend to present with more severe forms of OSAS and increased co-morbidities
- higher rates of obesity among Maori and Pacific peoples is thought to be principle reason for increased prevalence
- OSA is twice as common in Maori males compared to non-Maori males

Features of sleep disordered breathing are very common, particularly in men aged over 30 with around 25% having one or more symptoms. Only a small proportion of these (4%) will have clinically significant obstructive sleep apnoea [3].

Population prevalence of OSA symptoms and clinically significant OSA:

- symptom - witnessed apnoeas:
  - Maori men 30.25%, non-Maori men 18.30%
- symptom - always snoring:
  - Maori men 16.22%, non Maori men 10.14%
- symptom - unrefreshing sleep:
  - Maori men 46.61%, non Maori men 47.30%
- symptom - excessive daytime sleepiness (ESS >10):
  - Maori men 24.60%, non Maori men 15.58%
- clinically significant Obstructive Sleep Apnoea:
  - Maori men 4.40% non Maori men 4.10%

Risk factors [1]:

- obesity is a major risk factor for OSA:
  - between 40 - 90% of people with OSA are obese
  - it has been estimated that a 1 kg/m^2 increase in BMI in a person who is obese, results in a 30% increase in the relative risk of clinically significant sleep apnoea occurring in the next 4 years
- smoking is associated with an increased prevalence of OSAS
- alcohol use can increase sleep apnoea duration, possibly by reducing muscle tone
- incidence of OSAS is increased in people with hypothyroidism and females with polycystic ovary syndrome
- moderate to severe OSA is independently associated with an increased risk of all-cause mortality
- OSA is associated with increased cardiovascular risk. A predominant feature of OSAS is chronic, intermittent hypoxia, which associated with the development of hypertension and hypertensive cardiomyopathy
- insulin resistance and abnormal lipid metabolism have been independently associated with OSA

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References:
1. bpacnz. Obstructive sleep apnoea in adults. BPJ 2012;48. Available from: www.bpac.org.nz (Accessed Sept, 2015).
3. Mihaere KM, Harris R, Gander PH, et al. Obstructive Sleep Apnoea in New Zealand Adults:Prevalence and Risk Factors Among Maori and non-Maori. Sleep. 2009; 32(7):949-56.

2 Information resources for patients

Quick info:

Obstructive Sleep Apnea - Sleep Health Foundation

Sleep Apnoea Association of NZ

'Obstructive sleep apnoea syndrome' (PDF) from 'Patient' UK.

'For Patients'. Association for Respiratory Technology & Physiology (ARTP)

3 Information resources for clinicians

Quick info:

Obstructive Sleep Apnea - Sleep Health Foundation

The Best Practice Advocacy Centre New Zealand (bpac ^{nz}) Sleep Apnoea in Adults

New Zealand Land Transport Agency. NZTA information for medical practitioners

New Zealand Transport agency. Fatigue Resources

Sleep Apnoea Association of NZ

4 Updates to this pathway

Quick info:

This care map has been developed in line with consideration to evidenced based guidelines. For further information on contributors and references please see the Pathway's Provenance Certificate.

Published: January 2015

Review Date: January 2016

5 Hauora Maori

Quick info:

Maori are a diverse people and whilst there is no single Maori identity, it is vital practitioners offer culturally appropriate care when working with Maori whanau. It is important for practitioners to have a baseline understanding of the issues surrounding Maori health. This knowledge can be actualised by (not in any order of priority):

- clinicians acknowledging Te Whare Tapa Wha (Maori model of health) when working with Maori whanau
- asking Maori clients if they would like their whanau or significant others to be involved in assessment and treatment
- asking Maori clients about any particular cultural beliefs they or their whanau have that might impact on assessment and treatment of the particular health issues
- consider the importance of introductions and mihimihi ('whanaungatanga') - a process that enables the exchange of information to support interaction and meaningful connections. This means taking a little time to ask where this person is from or where

they have significant connections to. This information is reciprocated; i.e. the health professional also shares where they are from

- knowledge of the Hawke's Bay health sector's strategies and initiatives for improving Maori health and wellbeing
- having a historical overview of legislation that has impacted on Maori wellbeing

Training is available through the Hawke's Bay District Health Board (DHB) to assist you to better understand Maori culture and to better engage with Maori patients. Contact the coordinator (education@hbdhb.govt.nz) to request details of the next courses.

For more information on the regional and national Maori Health Strategies go to:

- **Mai** Maori Health Strategy 2014-2019 - Full file or Summary Diagram
- **He Korowai Oranga**: Maori Health Strategy - sets the Government's overarching framework to achieving the best health outcomes for Maori.

Hawke's Bay DHB contracts Maori Providers mobile nursing teams. A referral to one of these providers may assist Maori patients to feel more comfortable about receiving services.

Central Hawke's Bay:

- Central Health

Hastings:

- Te Taiwhenua o Heretaunga
- Kahungunu Health Services (Choices)

Napier:

- Te Kupenga Hauora

Wairoa:

- Kahungunu Executive

6 Pacific Peoples

Quick info:

Pacific people value their culture, language, families, education and their health and wellbeing. Many Pacific families have a religious affiliation to a local church group. The Pacific people are a diverse and dynamic population:

- more than 22 nations represented in New Zealand
- each with their own unique culture, language, history, and health status
- share many similarities which we have shared with you here in order to help you work with Pacific patients more effectively
- for many families language, cost and access to care are barriers

Pacific ethnic groups in Hawke's Bay include Samoa, Cook Islands, Fiji, Tonga, Tokelau, Kiribati, and Tuvalu. Samoan and Cook Island groups are the largest and make up two thirds of the total Pacific population. There is a growing trend of inter-ethnic relationships and New Zealand born Pacific populations.

Acknowledge The FonoFale Model (Pacific model of health) when working with Pacific peoples and families.

General guidelines when working with Pacific peoples and families (information developed by Central PHO, Manawatu):

- cultural protocols and greetings
- building relationships with your Pacific patients
- involving family support and religion during assessments and in the hospital
- home visits

Hawke's Bay-based resources:

- HBDHB interpreting service
  - 06 878 8109 ext 5805 (no charge for hospital patients; charges apply for community-based translations)
- Tim Hutchins - Pacific Navigation Services Ltd - 0279 719 199
- Services to assist Pacific peoples to access healthcare (SIA)
- Improving the Health of Pacific People in Hawke's Bay - Pacific Health Action Plan

Ministry of Health resources:

- Ala Mo'ui - Pathways to Pacific Health and Wellbeing 2014-2018
- Primary Care for Pacific People: A Pacific and health systems approach

- Health education resources in Pacific languages (links to a web page where you can download resources)

7 Suspected Obstructive Sleep Apnoea (OSA)

Quick info:

Obstructive sleep apnoea syndrome (OSAS) is the coexistence of excessive daytime sleepiness with irregular breathing at night [2].

OSA is caused by intermittent, repeated collapse of the upper airway, which can be complete or partial and leads to a temporary (at least 10 seconds) pause of breathing (apnoea). Infrequent apnoeas (less than 5 per hour) is normal.

References:

2. Scottish Intercollegiate Guidelines Network (SIGN). Management of obstructive sleep apnoea/hypopnoea syndrome in adults. A national clinical guideline. Edinburgh: SIGN; 2003. Available from: http://www.sign.ac.uk/pdf/sign73.pdf

8 Co-morbidities to be considered

Quick info:

If the following conditions are present, ensure details are included in referral.

Co-morbidities:

- cor pulmonale [1]
- respiratory failure/severe pulmonary disease [1]
- significant neurological or neuromuscular disease [1]
- uncontrolled hypertension [4]
- unstable angina/ischaemic heart disease
- pregnancy
- recent cerebrovascular disease
- congestive heart failure

References:

1. Scottish Intercollegiate Guidelines Network (SIGN). Management of obstructive sleep apnoea/hypopnoea syndrome in adults. A national clinical guideline. Edinburgh: SIGN; 2003. Available from: http://www.sign.ac.uk/pdf/sign73.pdf
4. Map of Medicine (MoM). London: MoM; 2010.

9 History

Quick info:

Daytime features of obstructive sleep apnoea syndrome [5,6]:

- excessive daytime sleepiness
- impaired alertness
- impaired concentration/cognitive function
- unrefreshing sleep
- irritability/personality change
- decreased libido/sexual dysfunction
- morning headaches

Nocturnal features of OSA may include [5,6]:

- snoring
- choking episodes during sleep
- witnessed apnoea
- restless sleep

References:
5. National Institute for Health and Care Excellence (NICE). Continuous positive airway pressure for the treatment of obstructive sleep apnoea/hypopnoea syndrome. Technology appraisals 139. London: NICE; 2008.
6. Clinical Knowledge Summaries (CKS). Sleep apnoea. July 2013. Newcastle Upon Tyne: CKS; 2013.

10 Driving and current occupation

Quick info:

Ask about the patient's driving habits:

- symptoms when driving - if unsafe when driving advise to stop driving. See NZTA information for medical practitioners
- history of MVA or near misses
- number of hours per week driving

Ask about the patient's occupation:

- typically, the following personnel require extra vigilance – vigilance critical occupations include:
  - drivers; especially professional drivers e.g. passenger or heavy traffic
  - pilots
  - operators of heavy machinery

Driving should be restricted or cease for individuals who meet the high#risk driver profile, as follows:

- are suspected of having OSA where there is a high level of concern regarding the risk of excessive sleepiness while driving
- individual is waiting for the diagnosis to be confirmed by a sleep study
- complaint of severe daytime sleepiness and have a history of sleep#related motor vehicle crashes or there is an equivalent level of concern
- have a sleep study that demonstrates severe OSA and either it is untreatable or the individual is unwilling or unable to accept treatment

Individuals may resume driving or can drive if their OSA is adequately treated under specialist supervision, with satisfactory control of symptoms.

The Agency may impose licence conditions for regular medical assessment. Medical follow#up may be delegated to the General Practitioner.

Extract from NZTA medical aspects of fitness to drive

NZTA fact sheet. Fatigue, stay awake while you're driving.

11 Examination and investigations

Quick info:

Physical examination alone does not allow accurate diagnosis, but it helps to exclude other causes of symptoms, and identifies predisposing factors [2]

Examination should include:

- documentation of weight and height
- calculate BMI
- measure waist circumference at level of umbilicus
- measure neck circumference
- assess nasal patency
- assess dentition and presence or absence of teeth
- assess pharyngeal appearance (tonsillar size, uvular appearance, lumen size), consider Mallampati score
- measure blood pressure (BP)

Investigations:

- a recent full blood count, HbA1c, TSH

References:
2. Scottish Intercollegiate Guidelines Network (SIGN). Management of obstructive sleep apnoea/hypopnoea syndrome in adults. A national clinical guideline. Edinburgh: SIGN; 2003. Available from: http://www.sign.ac.uk/pdf/sign73.pdf

12 OSA50 score & Epworth Sleepiness Scale (ESS)

Quick info:

Please determine both OSA50 score [7] and complete ESS questionnaire. Include information in referral.

OSA50 scoring system (out of 10 points):

- **O**besity. Waist circumference **score 3 if**.
  - males >102cm
  - females >88cm
- **S**noring. Has snoring ever bothered other people? **if yes, score 3**
- **A**pnoeas. Has anyone noticed stop breathing during sleep? **if yes, score 2**
- **50**. If over 50 years, **score 2**

OSA50 can be used to assess probability of OSA as opposed to uncomplicated sleep disordered breathing.

- low risk of OSA: 0 - 4
- possible risk of OSA 5 - 10

Assess symptom severity on the Epworth Sleepiness Scale (ESS):

- normal range: less than 11
- mild subjective daytime sleepiness: 11-14
- moderate subjective daytime sleepiness: 15-18
- severe subjective daytime sleepiness: more than 18

NB: the ESS is not a screening tool but can aid referral decisions

Differential diagnosis:

- insufficient sleep, e.g. poor sleep hygiene, shift workers
- interrupted sleep, e.g. restless leg syndrome/periodic limb movement disorder
- other medical conditions, e.g. as chronic pain, asthma
- intrinsic sleepiness, e.g. narcolepsy, myotonic dystrophy
- iatrogenic sleepiness, e.g. drug related (sedatives, alcohol, stimulants)
- features of hypothyroidism
- consider depression as this may mimic some of the features, especially around sleepiness
- shift work also impacts on sleep related problems, see coping with shift work
- old age - ageing is associated with changes in sleep pattern leading to daytime sleepiness and apnoeas are more common

References:
7. A simplified model of screening questionnaire and home monitoring for obstructive sleep apnoea in primary care. Thorax, BMJ, 2011;66:213-219 doi:10.1136/thx.2010.152801 (accessed October 2015)

13 OSA50 5 - 10 (regardless of ESS)

Quick info:

Possible risk of Obstructive sleep Apnoea (OSA).

14 OSA50 0 - 4 and ESS 15 - 24

Quick info:

Low probability of obstructive sleep apnoea (OSA) and consider other causes of sleepiness:

- insufficient sleep, e.g. poor sleep hygiene, shift workers
- interrupted sleep, e.g. restless leg syndrome/periodic limb movement disorder
- other medical conditions, e.g. as chronic pain, asthma
- intrinsic sleepiness, e.g. narcolepsy, myotonic dystrophy
- iatrogenic sleepiness, e.g. drug related (sedatives, alcohol, stimulants)
- features of hypothyroidism
- consider depression as this may mimic some of the features, especially around sleepiness
- shift work also impacts on sleep related problems
- old age - ageing is associated with changes in sleep pattern leading to daytime sleepiness and apnoeas are more common

If no obvious alternative for excessive daytime sleepiness is identified, follow initial management in primary care.

15 OSA50 0 - 4 and ESS 0 - 14

Quick info:

Isolated snoring or infrequent apnoeas can be considered normal and in the absence of excessive daytime sleepiness further investigation for sleep disordered breathing may not be required.

16 Initial management in primary care

Quick info:

All patients should be advised regarding the following lifestyle changes. In mild obstructive sleep apnoea (OSA) lifestyle changes may provide adequate symptom control [2]:

- weight loss (where appropriate)
- reduce alcohol consumption, especially before bedtime
- reduce sedative medications
- smoking cessation
- good sleep hygiene:
  - long period of continuous sleep (8 hours) at night
  - ensure a regular sleep wave pattern with sufficient sleep time
  - avoiding cat-naps

Lifestyle information:

- healthy sleep (moe)
- Smoking cessation
- green prescription
- food for health available in Maori, Cook Island Maori, samoan, Fijian, Niuean, Tokelauan, Tongan
- physical activity for health

If patients have upper airway symptoms (e.g. nasal stuffiness) consider referring to Rhinosinusitis clinical pathway

References:

2. Scottish Intercollegiate Guidelines Network (SIGN). Management of obstructive sleep apnoea/hypopnoea syndrome in adults. A national clinical guideline. Edinburgh: SIGN; 2003. Available from: http://www.sign.ac.uk/pdf/sign73.pd

17 RED FLAGS

Quick info:

Patients should be referred promptly to the hospital sleep apnoea service if any red flags are present, such as [2]:

- cor pulmonale
- respiratory failure/severe pulmonary
- high risk occupations eg heavy machinery operator
- extreme sleepiness leading to risk of danger to self or others e.g. sleepy driver
- planned general anaesthetic
- employment at risk

If unsure regarding priority, please contact Respiratory service at Regional hospital - 068788109 ext 4729

References:

2. Scottish Intercollegiate Guidelines Network (SIGN). Management of obstructive sleep apnoea/hypopnoea syndrome in adults. A national clinical guideline. Edinburgh: SIGN; 2003. Available from: http://www.sign.ac.uk/pdf/sign73.pd

18 Primary care management

Quick info:

All patients should be advised regarding the following lifestyle changes. In mild OSA, lifestyle changes may provide adequate symptom control [2]:

- weight loss (where appropriate)
- reduce alcohol consumption, especially before bedtime
- reduce sedative medications
- smoking cessation
- good sleep hygiene:
  - long period of continuous sleep (8 hours) at night
  - ensure a regular sleep wave pattern with sufficient sleep time
  - avoiding cat-naps

Lifestyle information:

- healthy sleep (moe)
- smoking cessation
- green prescription
- food for health available in Maori, Cook Island Maori, samoan, Fijian, Niuean, Tokelauan, Tongan.
- physical activity for health

If patients have upper airway symptoms (eg nasal stuffiness) consider referring to Rhinosinusitis clinical pathway

If red flags present consider referral to specialist sleep apnoea service.

References:

2. Scottish Intercollegiate Guidelines Network (SIGN). Management of obstructive sleep apnoea/hypopnoea syndrome in adults. A national clinical guideline. Edinburgh: SIGN; 2003. Available from: http://www.sign.ac.uk/pdf/sign73.pd

19 Private treatment options

Quick info:

For patients with isolated snoring and/or no significant day time sleepiness, private options are available:

- ENT referral to private specialist
- referral to an oral device provider for mandibular advancements
- private sleep services

Published: 18-Feb-2016 Valid until: 30-Jun-2019 Printed on: 12-Jul-2018

20 Review and consider specialist referral if symptoms persist

Quick info:

Review after 3 - 6 months and if symptoms are resolving, continue with conservative management.

If patients have red flags at presentation or are unlikely to respond to trial of conservative treatment, prompt referral to specialist sleep services advised.

Review period will be dependent on symptoms experienced and is subject to clinical experience and judgement.

21 Referral to specialist care

Quick info:

Information required in e-referral to Regional Hospital Respiratory Services Sleep Service:

- OSA50 and ESS score
- BMI / waist circumference
- complete e-referral template
  - snoring
  - observed apnoeas
  - high risk driver
  - job at risk
  - significant co-morbidities

Published: 18-Feb-2016 Valid until: 30-Jun-2019 Printed on: 12-Jul-2018

Obstructive Sleep Apnoea Provenance Certificate

Overview

This document describes the provenance of Hawke's Bay's District Health Board's obstructive sleep apnoea Pathway. It was developed in August 2015 – November 2015 and first published in December 2016. A review of the Pathway is due in December 2016

The Collaborative Clinical Pathways programme is one initiative stemming from the *Transform and Sustain* agenda. The main aims of CCP are to:

- Identify opportunities to improve how health and disability care is planned and delivered within the district to improve patient access to a wider range of health services that are both closer to home and reduce avoidable hospital admissions.
- Provide health professionals throughout the Hawke's Bay district with best practice, evidence-based clinical pathways that are available at the point of care.

Outcomes we expect to achieve include faster access to definitive care, improved health equity and outcomes, better value from publically-funded resources, and better patient experience through clear expectations, improved access and greater health literacy. These outcomes are clearly aligned to the NZ healthcare *Triple Aim* and *Better, Sooner, More Convenient* policy directions.

Editorial methodology

This Pathway was based on high-quality information and known Best Practice guidelines from New Zealand and around the world including Map of Medicine editorial methodology. It was developed by individuals with front-line clinical experience (see Contributors section of this document) and has undergone consultation to gain feedback and input from the wider clinical community.

Map of Medicine Pathways are constantly updated in response to new evidence. Continuous evidence searching means that Pathways can be updated rapidly in response to any change in the information landscape. Indexed and grey literature is monitored for new evidence, and feedback is collected from users year-round. The information is triaged so that important changes to the information landscape are incorporated into the Pathways through the quarterly publication cycle.

An update to this Pathway is scheduled for 12 months after first publication. However, feedback is welcomed at any time, with important updates added at the earliest opportunity within the Map of Medicine publishing schedule (the third Friday of each month).

References

This Pathway has been developed according to the Map of Medicine editorial methodology. Its content is based on high-quality guidelines and practice-based knowledge provided by contributors with front-line clinical experience. Feedback on this Pathway was received from stakeholders during a consultation process.

1	bpacnz. Obstructive sleep apnoea in adults. BPJ 2012;48. Available from: www.bpac.org.nz (Accessed Sept, 2015).
2	Scottish Intercollegiate Guidelines Network (SIGN). Management of obstructive sleep apnoea/hypopnoea syndrome in adults. A national clinical guideline. Edinburgh: SIGN; 2003. Available from: http://www.sign.ac.uk/pdf/sign73.pdf
3	Mihaere KM, Harris R, Gander PH, et al. Obstructive Sleep Apnoea in New Zealand Adults: Prevalence and Risk Factors Among Maori and non-Maori. Sleep. 2009; 32(7):949-56
4	Map of Medicine (MoM). London: MoM; 2010.
5	National Institute for Health and Care Excellence (NICE). Continuous positive airway pressure for the treatment of obstructive sleep apnoea/hypopnoea syndrome. Technology appraisals 139. London: NICE; 2008.
6	Clinical Knowledge Summaries (CKS). Sleep apnoea. July 2013. Newcastle Upon Tyne: CKS; 2013.
7	A simplified model of screening questionnaire and home monitoring for obstructive sleep apnoea in primary care. Thorax, BMJ, 2011;66:213-219 doi:10.1136/thx.2010.152801 (accessed October 2015)

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Disclaimers

Clinical Pathways Steering Group, Hawke's Bay DHB and Health Hawke's Bay – Te Oranga Hawke's Bay

It is not the function of the Clinical Pathways Steering Group, Hawke's Bay DHB and Health Hawke's Bay – Te Oranga Hawke's Bay to substitute for the role of the clinician, but to support the clinician in enabling access to know-how and knowledge. Users of the Map of Medicine are therefore urged to use their own professional judgement to ensure that the patient receives the best possible care. Whilst reasonable efforts have been made to ensure the accuracy of the information on this online clinical knowledge resource, we cannot guarantee its correctness and completeness. The information on the Map of Medicine is subject to change and we cannot guarantee that it is up-to-date.