NPS MEDICINEWISE

Headache: when is imaging indicated?

Practice Review
MBS data
December 2021

For more information about this Practice Review and RA[a] data, see **nps.org.au/mbs-headimaging2021**

⊢ 000001 000 DHS1
Dr Sam Sample
123 Sample Street
"SAMPLETOWN, ABC, 1234"

Your MBS data are provided confidentially to you only and are intended for personal reflection on your practice.
Data are not used for any regulatory purposes.
For queries about your data or any of this information, contact NPS MedicineWise:
02 8217 8700 @ info@nps.org.au

10 December 2021

Dear Dr Sample,

NPS MedicineWise routinely sends Practice Reviews with a focus on quality use of medicines and medical tests to clinicians to support continuing quality improvement. This Practice Review focuses on **your referrals for head CT and MRI scans** and was developed collaboratively with input from GPs, consumers and a leading neurologist.

Headache is a common presentation

Headache is a common reason for patients to present to a GP.[1] A detailed history and neurological examination is sufficient to establish a diagnosis in most cases.[2] If established that there is no serious underlying disorder, a headache diary can be used to monitor and review patients.[2]

Through the Choosing Wisely Australia initiative, the Australian and New Zealand Association of Neurologists recommend

"Don't perform imaging of the brain for non-acute primary headache disorders."

choosingwisely.org.au/recommendations/anzan2#

Balance the benefits and harms of head imaging

When assessing the need for head imaging, consider potential benefits and harms to avoid inappropriate imaging and to minimise the risk of harms. Head imaging does not reassure patients or lessen anxiety[3] and may identify incidental abnormalities[4] resulting in further unnecessary investigations and treatment.[2]

What other resources do NPS MedicineWise have to support you?

- Find resources to support head imaging at nps.org.au/headimaging
- Go to nps.org.au/professionals/medicalimaging for general resources on imaging.

Time spent reflecting on this Practice Review has been approved for **2 points (CPD Activity)** under the RACGP CPD Program for the 2020–2022 triennium (activity number: **305547**). Questions for reflection are provided for you to record your learning. Answer the CPD questions at nps.org.au/headimagingcpd.

Yours sincerely,

Katherine Burchfield,
Chief Executive Officer
NPS MedicineWise

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PO Box 1147
Strawberry Hills NSW 2012
nps.org.au

P: 02 8217 8700
E: info@nps.org.au

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How to use your confidential Practice Review

This Practice Review is intended to support clinical decisions regarding head imaging by providing an overview of current best practice recommendations alongside your individualised MBS referral data (excludes any private referrals). Your MBS referral data includes all indications where head imaging is requested including, but not limited to, headaches and seizures. Consider your practice profile (see overleaf) and your patients' indications for imaging referrals when reflecting on these data.

How have your head imaging requests changed over time?

In the financial year 2020-21, you requested 21 head CT scans and 5 head MRIs for your patients.

Fig. 1 – Rate of head CT requests over time

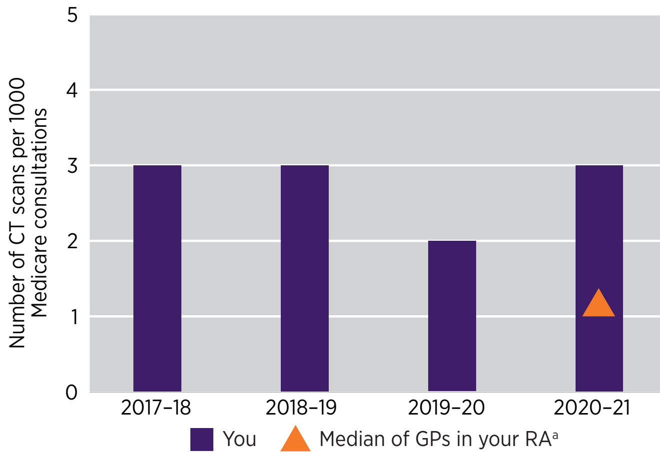
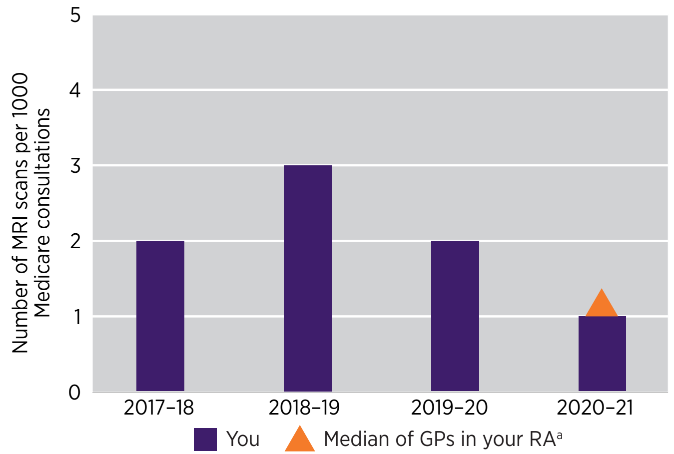


Fig. 2 – Rate of head MRI requests over time



Points for reflection

- Headache in primary care is most often benign. Take a detailed history and perform a targeted examination.[2]

A brief neurological exam can be completed in four minutes (https://youtu.be/5UuQV-0o4CE)

- Head imaging for headaches is usually not required unless a red flag is present (see Box 1).[2]
- Where imaging is considered, the choice of modality (CT or MRI) depends on the context, clinical urgency, cost, potential harms and local resource availabilities.[2]

Box 1. SNOOP mnemonic for red flags for headache[2,5,6]

Stands for	Example
Systemic symptoms	Fever, weight loss
Secondary risk factors	Malignancy, immunosuppression, HIV
Neurological symptoms or abnormal signs	Confusion, impaired alertness or consciousness, focal neurological deficits, papilloedema
Onset	Sudden, abrupt or split second
Older	Onset after age 50 years
Pattern change	Alteration in headache pattern e.g. loss of pain free periods
Precipitated by	Valsalva manoeuvre or exertion, cough
Postural	Positional aggravation

Imaging for unexplained seizures

Neuroimaging is indicated for most new onset seizures.[7] MRI is the preferred imaging modality in non-emergency situations as it provides the best definition of structural brain abnormalities.[7,8]

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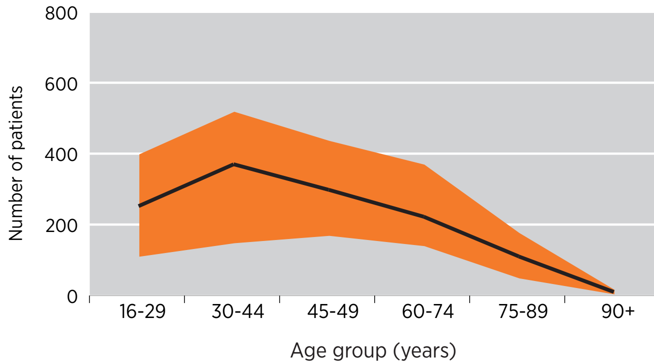
Practice profile

The age profile of your patients compared to other GPs can help you to interpret your imaging referral data.

Your remoteness area (RA[a]) peer group is **Major City.**



The purple line represents the age profile of patients in your practice.
The shaded area lies between the 25th and 75th percentile for GPs in your RA.[a]

Which age groups did you request a head image for in 2020–21?

Fig. 3 – Percentage of your head CT scan requests in 2020–21

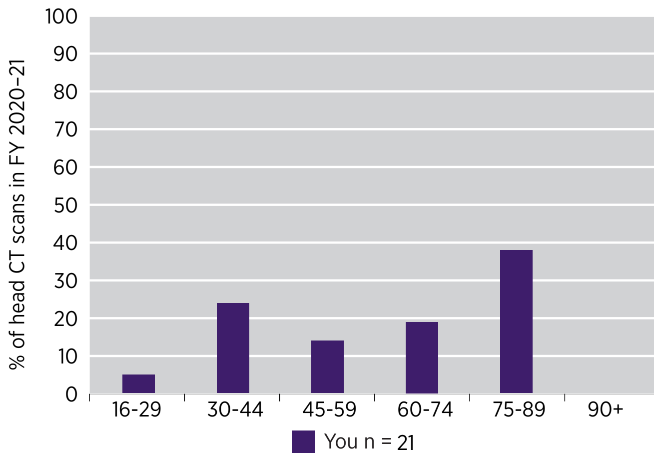
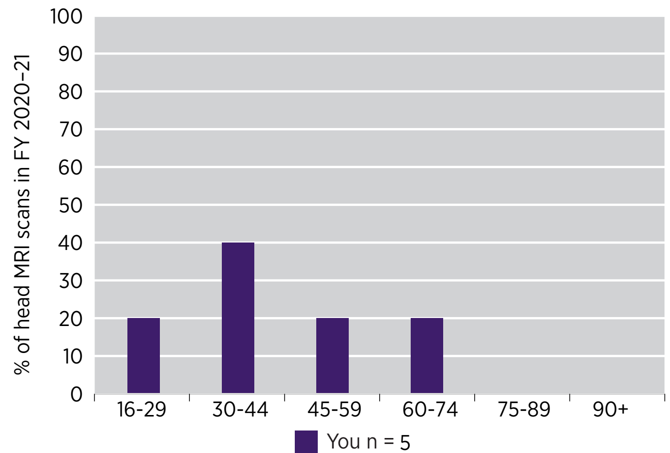


Fig. 4 – Percentage of your head MRI requests in 2020–21



Points for reflection

- MRI and CT can both identify incidental findings which may result in patient anxiety and unnecessary follow-up investigations.[9,10]
- Incidental findings could include normal anatomic variants, transverse sinus asymmetry, non-specific white matter lesions, developmental venous anomalies, lipomas, cysts, small meningiomas, or pituitary adenomas.[6]
- When referring a patient for head imaging, consider discussing with the patient:[7]
  - why a scan might be indicated,
  - the possible outcomes and impacts of the scan,
  - the possibility of a causative lesion being identified,
  - the possibility of no lesions being detected,
  - the possibility of incidental abnormalities being found.

CPD: Questions for reflection

- What approach will you take when deciding whether to refer a patient with headache for imaging?
- What approach will you take when deciding whether to refer a patient with seizure for imaging?
- How will you engage with your patients/carers in shared decision making when deciding whether or not to refer for head imaging?
- How will you discuss the possible harms of head imaging with your patients/carers?
- Describe any identified areas for improvement as a result of reflecting on this Practice Review.

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Practice profile: provided to help you interpret your referral data.

Your Medicare patients (1 July 2020 to 30 June 2021)

Patients	You	Median of GPs in your RA[a]
Total Medicare	**1230**	**1232**

Department of Veterans' Affairs health card holders are not included.

Notes

a. The comparator group 'RA' includes all GPs currently located in a similar geographical location.
b. Data shown are an aggregate of all your provider locations.

The data are not used for any regulatory purposes and NPS MedicineWise provides this information for your reflection only. The data are from Services Australia and include imaging referrals on the MBS for your patients.

References

1. Whitehead MT, et al. J Am Coll Radiol 2019;16:S364-s77.
2. Wronski MZ, Zagami AS. Medicine Today 2015;16:44-6.
3. Howard L, et al. J Neurol Neurosurg Psychiatry 2005;76:1558-64.
4. The Royal Australian College of General Practitioners. MRI of the head for unexplained chronic headache. Melbourne: RACGP 2013 (accessed 22 Aug 2021).
5. Robbins MS. JAMA 2021;325:1874-85.
6. Micieli A, Kingston W. Front Public Health 2019;7:52.
7. The Royal Australian College of General Practitioner. MRI of the head for unexplained seizure(s). Melbourne: RACGP 2013 (accessed 22 Aug 2021).
8. Farrar TW, et al. Medicine Today 2019;20:42-19.
9. Tamangani J. Aust Fam Physician 2016;45:788–92.
10. Håberg AK, et al. PloS one 2016;11(3):e0151080.

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