RACGP

Curriculum and syllabus for Australian general practice (7th edition)

Neurological presentations

RACGP Curriculum and syllabus for Australian general practice (7th edition): Neurological presentations.

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We acknowledge the Traditional Custodians of the lands and seas on which we work and live, and pay our respects to Elders, past, present and future.

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Neurological presentations

Context

Neurological presentations account for more than 4% of presentations in Australian general practice.[1] GPs are central to identifying, evaluating, and managing neurological disorders – ranging from headaches to stroke prevention in chronic disease contexts.

Headache accounts for 1.7% of GP encounters, making it the most common neurological presentation.[1] With causes varying from tension-type headaches to life-threatening conditions, GPs must distinguish 'red-flag' symptoms to decide on further investigation or urgent referral.

Emergencies such as status epilepticus, subarachnoid haemorrhage, and stroke require prompt recognition and management to optimise outcomes. GPs must also diagnose and initiate treatment for meningitis, which can present at any stage in its course.[2]

It is estimated 425,000 Australians lived with dementia in 2024 (16 out of every 1,000 people) rising sharply with age. Dementia is the leading cause of death in females and second in males. Early detection enhances management and care planning.[3]

Neurological conditions also affect the young, with brain cancers being the third leading cause of death in those aged one to 14 years.[4] Approximately one in 20 children will experience a febrile convulsion and often prompt parental anxiety. Reassurance and education are key to management and a common aspect of day-to-day general practice.

Epilepsy can develop at any stage of life and has a population prevalence of 0.6%.[5] Seizure control is achieved in 60–70% of cases with medication.[6] GPs play a vital role in diagnosis, ongoing treatment, and monitoring – supporting patients' medical and psychosocial needs.[6]

Stroke remains a significant burden, particularly among adults aged 85 and over, where it is the third leading contributor to disease burden.[4] Through proactive management of hypertension, diabetes, and lifestyle risk factors, GPs can significantly reduce neurological complications.

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Learning outcomes

The GP is able to:

- demonstrate an efficient and effective approach to assessment and management of common neurological presentations such as headache, vertigo or dizziness, concussion, or peripheral neuropathies
- manage time sensitive neurological presentations, including seizures and cerebrovascular accidents
- formulate an approach to management for ongoing undifferentiated neurological presentations
- utilise relevant screening tools and investigations for neurological conditions
- adapt communication to meet the needs of those with impairment due to disease process (eg patients with dementia or acquired brain injury)
- discuss the epidemiology of common and significant neurological disorders, and the application of screening and early detection
- demonstrate an efficient and effective approach to assessment and management of common sleep presentations
- discuss and integrate medico-legal requirements when obtaining informed consent from a patient with reduced or no capacity for consent
- complete certificates and other documents ethically and legally, including fitness to drive and capacity for work certification for patients with neurological conditions.

Key areas of learning

Perform a complete neurological examination and also, when appropriate, be able to perform a targeted examination relevant to the patient and the presentation.

Recognise, assess and manage a child with:

- febrile convulsions
- cerebral palsy
- autism spectrum disorder
- delay or regression in developmental milestones
- epilepsy
- spina bifida
- brain tumour.

Diagnose and manage the following presentations:

- headache or facial pain
- dizziness or vertigo
- gradual cognitive decline
- numbness, paraesthesia, and neuropathic pain
- acute, subacute, or episodic changes in mental status or level of consciousness
- aphasia
- back of neck pain
- blurry vision or diplopia
- dysarthria or dysphagia
- weakness – focal or generalised
- involuntary movements
- urinary or faecal incontinence / retention
- unsteadiness, gait disturbance, or falls.

Diagnose and manage the following emergency presentations:

- acute stroke (ischaemic or haemorrhagic) or transient ischaemic attack (TIA)
- head trauma
- acute visual loss
- delirium
- central nervous system infection, including encephalitis, meningitis, cerebral abscess, and epidural abscess
- encephalopathy
- Guillain-Barré syndrome
- increased intracranial pressure
- status epilepticus
- subarachnoid haemorrhage
- cauda equina syndrome
- Ramsay Hunt syndrome.

Diagnose and manage common neurological disorders:

- Alzheimer's disease
- multi-infarct dementia
- Bell's palsy
- carpal tunnel syndrome
- epilepsy
- essential tremor
- headache (tension, migraine, cluster, and medication overuse)
- Parkinson's disease
- peripheral neuropathy (motor, sensory, and autonomic)
- concussion
- benign paroxysmal positional vertigo
- benign intracranial hypertension
- traumatic brain injury
- trigeminal neuralgia
- motion sickness.

Diagnose and manage common sleep disorders:

- obstructive sleep apnoea
- restless leg syndrome and periodic limb movement
- sleep problems including insomnia and sleepwalking.

Diagnose and manage less common neurological disorders:

- multiple sclerosis
- intracranial bleeding (extradural and subdural haemorrhage)
- myasthenia gravis
- motor neurone disease
- polyneuropathy
- myopathy (inherited or acquired)
- other types of dementia, including Lewy body dementia, frontotemporal dementia, and mixed dementia
- brain tumours; benign and malignant, primary and secondary
- berry aneurysm
- Korsakoff syndrome and Wernicke encephalopathy
- Huntington's disease
- normal pressure hydrocephalus
- Arnold Chiari malformation
- hypersomnolence and narcolepsy.

Demonstrate appropriate referral and interpretation of results of investigations for neurological conditions including nerve conduction studies, EEG, and diagnostic imaging.

Discuss primary and secondary prevention actions for a range of neurological conditions.

Describe the public health implications of neurological conditions including concussion.

Understand the medico-legal considerations for neurological or sleep presentations / disorders, such as fitness to drive, ability to fulfil a job role safely, or ability to provide consent.

Opportunities for learning

Words of wisdom

- Beware of using dopamine antagonists, such as metoclopramide and prochlorperazine, in patients with Parkinson's disease.

- Getting a good history is important to help you distinguish between many different neurological presentations, such as headaches. It will ensure you implement appropriate management. Having a clear understanding of the symptoms and a timeline of events will help you narrow down your differentials. Similarly, a good examination is invaluable in diagnosis (eg Bell's palsy). Spend time practising these skills.

- Patients who present with acute neurological signs and symptoms, including headache and altered level of consciousness, may have had a stroke and should be managed urgently. Remember that strokes can also occur in children.

- It is important to clarify what a patient means by 'dizziness'. The causes of dizziness include a range of conditions, while vertigo is more likely to be related to the inner ear or neurological system. Have a clear approach to both and clear explanations for the patient.

- Febrile convulsions, while low risk in terms of complications, do have a risk of recurrence and are very distressing for parents. It is important to spend time explaining to parents about the condition and how to manage when their child has fever in the future. A well written handout can be invaluable.

Learning strategies

On your own

Review the time-critical neurological presentations / diagnoses. Make a list of the presentations which require immediate identification and transfer to hospital. Define the referral pathways in your local area.

- *What red flags do you need to be aware of? How can you ensure you don't miss these?*
- *Where is the closest interventional neurology centre? What are their referral criteria? Where is your closest neurosurgical centre? Can you call them for management support before and during transport? Where else could you find this information?*
- *How does the location of your practice influence management and referral, including time factors?*

Randomly select 10 of your patients from the practice database. Audit their medical records for documentation of alcohol intake, smoking history, blood pressure, and other factors that contribute to cerebrovascular disease.

- *Were you surprised by the results? How many patients had multiple risk factors noted? Were there any patients who didn't have this data recorded?*
- *How could you improve your screening for risk factors?*

With a supervisor

Present a case to your supervisor of a patient who presented with a neurological presentation.

- *What was your clinical reasoning that led to the diagnosis? Did you exclude all other possible differential diagnoses?*
- *Would your supervisor have approached the case differently? Would your supervisor have considered other differential diagnoses?*

Review a case where the patient presented with an undifferentiated neurological symptom or symptoms, such as headaches or having a 'funny turn'. Discuss with your supervisor the probable diagnosis, red flags and conditions not to be missed, and develop a management plan for the patient.

- *Ask your supervisor for feedback. What would your supervisor have done differently?*
- *How did you manage the uncertainty of this case? Did you ever identify a diagnosis? If not, how did you explain this to the patient?*

Prepare a short educational talk on an aspect of neurology. For example, genetic testing for Alzheimer's disease, non-pharmacological management of tension headaches, management of diabetic neuropathy, or advances in management of stroke / transient ischaemic attack. Present this at a practice meeting.

- *What did you learn in doing this talk? How will you change (or not change) your practice based on what you've learnt?*
- *What did the audience take away from the talk? Did they have any additional insights?*

In a small group

Role-play a neurological examination for a patient presenting with neurological symptoms, such as headache, pins and needles in the right hand, and dizziness. Have one person examining, one person being examined, and observers who provide feedback. Swap roles. Then discuss what findings you might expect in the following conditions: Parkinson's disease, two days post-concussion, left side cerebrovascular accident, Bell's palsy, motor neurone disease.

- *Did you miss any part of the examination? How does the examination differ for different presenting problems?*
- *What findings would you expect in different neurological conditions?*

Role-play the following scenario. A parent brings their two-year-old daughter for an urgent after-hours appointment, because she fell one metre off a slide at the playground. It happened 30 minutes ago, and the girl did not seem to lose consciousness. She has now vomited once and is refusing food.

- *How do you approach this situation? What further history do you need? What examination would you do? How would you manage this scenario? Are there guidelines to help you?*
- *How would your management change if you were in a rural or remote location?*
- *What advice would you give to the parent?*

In a small group, have one person role-play the doctor, and the rest of the group pretend they have just been diagnosed with Parkinson's disease. Take it in turns to ask the 'doctor' questions about the condition. At the end of each question, give feedback to the 'doctor'.

- *What questions were asked when you played the doctor? Were you able to answer them? If you couldn't, were you able to admit this and create a plan for finding out the answers? Do you have knowledge gaps you need to address?*
- *Was it difficult breaking bad news to the 'patients'?*

With a friend or family member

Ask your friend or family member to imagine that they have a child who had a febrile convulsion.

- *How do you explain febrile convulsions to them?*
- *What is your treatment plan? What safety nets would you put in place?*
- *Are there handouts that you could use to help reinforce the information?*

Explain dementia to a friend or family member.

- *Ask them to explain it back to you. Did they understand the important information? How could you improve your explanation so that it is easier to understand? Are there any handouts you could use?*

Case example

Heidi, a 23-year-old woman, is a long-term patient of yours. She presents today with increasingly frequent headaches for the past three months associated with vomiting. Prior to this she had only occasional headaches, and they always resolved spontaneously or with simple analgesia, and didn't require time off work or study. She is a third-year medical student and is coming up to her end-of-year exams.

In a case-based discussion, questions relating to each role could be:

Communicator

- What elements of the history might change the communication style you use with Heidi? How would you change your communication if Heidi were from a non-English speaking background?
- What if Heidi identified as Aboriginal or Torres Strait Islander?
- If you assessed the cause was migraines, how would you share the decision making with Heidi about the management options?

Clinician

- What else do you need to ask about? What are the key elements of the history? What elements of the history will help you to distinguish between different types of headaches, such as migraine and tension headache?
- What examination would you perform? How would you vary your examination for different age groups, for example, a child compared to an older person?
- What are the red flags for this presentation?
- If you were considering a diagnosis of sex / orgasm headache, what serious conditions would you need to exclude before making this diagnosis?
- What findings in the history and examination would lead you to suspect raised intracranial pressure?
- In what circumstances would you request imaging? What is the most appropriate form of imaging?
- After assessing Heidi, it is apparent that the headaches are brought on by sexual intercourse. How would you manage sex / orgasm headache?
- What would your management be if your diagnosis were migraine or tension headache or cluster headache?
- When would you refer and who would you refer to? Would you manage the situation differently in a rural or remote location with no local neurologist?
- If your diagnosis were tension headache, and Heidi told you that at least five other students in her year were having similar symptoms, with headaches becoming more severe and frequent around exam time, what could you do in partnership with the medical school to prevent / address this issue?
- What initial management would you consider if the cause of Heidi's headaches was not clear? Would you order a CT or MRI of the head if the cause seemed benign, but you were still uncertain as to the diagnosis?
- On examination, you find that Heidi has a temperature of 38.2 degrees Celsius and is unable to flex her neck. How does this change your management? What are the essential first steps in management?
- What are the red flags that would prompt you to refer urgently to a higher level of care?

Health advocate and leader

- What are the Medicare rebate requirements for an MRI of the head?

Professional

- You work in a rural practice, and also at the rural clinical school where Heidi is a student. How would you manage the patient–doctor relationship and protect confidentiality?
- How might you manage the situation if the diagnosis were tension headache, but Heidi insisted on further investigation, including an MRI?
- Thinking of the broader differential diagnoses, are there any that would require a mandatory report to Ahpra?

- Heidi asks you for a medical certificate for special consideration for her exams, based on recurrent severe headaches. How would you approach this situation?

Scientist, educator and researcher

- What clinical guidelines may be relevant for Heidi?
- What is a researchable question that may be relevant to Heidi's diagnosis or care?

Learning resources

The curriculum website includes learning resources within each unit.

Assessment

Content in this unit will be assessed in a variety of ways.

Workplace based assessments

Mini-CEX	RCA	MSF	CBD	Reflective exercise	Audit	Mid and end term assessment

Fellowship examinations

AKT	KFP	CCE

KEY

- Expected to be assessed here always
- Often assessed here but not in every example / case / assessment
- May at times be here or contribute to the assessment

ABBREVIATIONS

Mini-CEX – Mini-clinical evaluation exercise
RCA – Random case analysis
MSF – Multi source feedback
CBD – Case-based discussion
AKT – Applied knowledge test
KFP – Key feature problem
CCE – Clinical competency exam