2022 RACGP curriculum and syllabus for Australian general practice

Neurological presentations

Rationale

Instructions

This section provides a summary of the area of practice for this unit and highlights the importance of this topic to general practice and the role of the GP.

Neurological presentations make up over 4% of presentations in Australian general practice. General practitioners (GPs) play a key role in recognising, assessing and treating neurological conditions, including sleep disorders. They also play an important role in preventing possible neurological complications (eg stroke and neuropathies) while managing chronic diseases.

Headache accounts for 1.7% of GP encounters, making it the most common neurological presentation. There are multiple causes of headache and GPs need to differentiate between a simple tension-type headache and more severe red flag conditions, of which headache may be a symptom.

Neurological emergencies, including status epilepticus, subarachnoid haemorrhage and acute stroke are time dependent, and immediate recognition, treatment and escalation to a suitable level of care are essential for the best patient outcomes. Meningitis has many different aetiologies, and many cases present to their GP during the course of the illness. The ability to diagnose and initiate treatment is an essential aspect of general practice to improve outcomes. 4.5

Dementia accounts for approximately 1.6% of GP encounters,⁶ and is the second leading cause of death in people aged 75 years and older.⁷ With the ageing population, new prevalence estimates for dementia reveal that 3.4% of patients aged 65 years or older had a new record of dementia,⁶ making this an important condition for GPs to consider. Early detection of dementia and other neurological conditions improves outcomes. This includes, for example, the early diagnosis of Parkinson's disease, multiple sclerosis and Huntington's disease.

Neurological conditions also affect the young, with brain cancers being the third leading cause of death in those aged one to 14 years. Febrile convulsions also commonly occur in children, with approximately one in 20 children experiencing one or more. This can be a source of great distress for parents.

Reassurance and education of the parents is the mainstay of management and is a common aspect of day-to-day general practice.⁸

Epilepsy can develop at any stage of life, but more commonly presents in childhood and adolescence, with a second peak in adults over the age of 60. Approximately 14,600 people are diagnosed with epilepsy each year. Of those with epilepsy, approximately 70% gain control of their seizures with medication. The psychological and social impacts are immense, including impacts on education, employment and lifestyle. GPs therefore play an important role in the diagnosis and ongoing management and monitoring of people with epilepsy.

GPs are also integral to the prevention of neurological complications of chronic diseases such as hypertension and diabetes. More than one hundred stroke events occur every day, making it the third highest cause of disease burden in adults aged 85 years and over. GPs are well placed to promote lifestyle changes and disease management in patients at risk of these types of neurological complications.

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Competencies and learning outcomes

Instructions

This section lists the knowledge, skills and attitudes that are expected of a GP for this contextual unit. These are expressed as measurable learning outcomes, listed in the left column. These learning outcomes align to the core competency outcomes of the seven core units, which are listed in the column on the right.

Communication and the patient-doctor relationship	
Learning outcomes	Related core competency outcomes
The GP is able to:	
demonstrate a professional and culturally sensitive approach to the assessment and management of neurological presentations	1.1.1, AH1.3.1, 1.3.1, 1.4.3, 1.4.5, AH1.4.1
discuss how communication might be adjusted to the needs of those with impairment due to disease process, for example, patients with dementia or acquired brain injury	1.1.2, 1.1.6, 1.4.1, 1.4.5
 communicate effectively with patients, their family and carers regarding neurological conditions, taking into account health literacy 	1.1.1, 1.1.3, 1.2.1, 1.4.3, 1.4.4

Applied knowledge and skills	
Learning outcomes	Related core competency outcomes
The GP is able to:	

Applied knowledge and skills	
assess neurological conditions in people of all ages using relevant screening tools and investigations	2.1.1, 2.1.1, 2.1.3, 2.1.4, 2.1.5, 2.1.6, 2.1.7, 2.1.8
 manage neurological conditions in patients, including addressing the psychological and social aspects of disease 	2.1.9, AH2.1.2, 2.2.2, 2.3.1
 recognise the need for and implement multidisciplinary team care 	2.3.1, 2.3.2, 2.3.4, AH2.3.1, AH2.3.2, RH2.3.1
identify red flags in neurological presentations	2.1.3, 2.3.3
manage uncertainty and formulate an approach to management for ongoing undifferentiated neurological presentations	2.1.10

Population health and the context of general practice		
Learning outcomes	Related core competency outcomes	
The GP is able to:		
 discuss the epidemiology of common and significant neurological disorders, and the application of screening and/or early detection 	3.1.1, 3.1.2, 3.1.3	
describe the barriers to equitable management of acute and chronic neurological disorders in Australia	3.2.1, 3.2.4, AH3.2.1, RH3.2.1	
engage in health promotion activities to encourage risk factor modification and early identification of neurological disorders	3.1.1, 3.1.4, RH3.2.1	

Professional and ethical role	
Learning outcomes	Related core competency outcomes
The GP is able to:	
participate in clinical audits regarding the management of neurological presentations	4.4.2

Organisational and legal dimensions	
Learning outcomes	Related core competency outcomes
The GP is able to:	
discuss and integrate medico-legal requirements when obtaining informed consent from a patient with reduced or no capacity for consent	5.2.2, 5.2.3
complete certificates ethically and legally, including fitness to drive and capacity for work certification	5.2.3, 5.2.4

Words of wisdom

Instructions

This section includes tips related to this unit from experienced GPs. This list is in no way exhaustive but gives you tips to consider applying to your practice.

Extension exercise: Speak to your study group or colleagues to see if they have further tips to add to the list.

- 1. Beware of using dopamine antagonists, such as metoclopramide and prochlorperazine, in patients with Parkinson's disease.
- 2. Most of a neurological assessment of a child can be achieved through play. For example, fine motor function and coordination can be assessed by asking the child to draw a picture, or to stack blocks on top of each other.
- 3. 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.
- **4.** 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.
- 5. 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.
- 6. 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.
- 7. Memory loss is often attributed to dementia and managed as such, but it is important to screen for underlying causes, especially depression, as these may mimic dementia but have different management options.

Case consultation example

Instructions

- 1. Read this example of a common case consultation for this unit in general practice.
- 2. Thinking about the case example, reflect on and answer the questions in the table below.

You can do this either on your own or with a study partner or supervisor.

The questions in the table below are ordered according to the <u>RACGP clinical exam assessment areas</u> (https://www.racgp.org.au/getmedia/f93428f5-c902-44f2-b98a-e56d9680e8ab/Clinical-Competency-Rubric.pdf.aspx) and domains, to prompt you to think about different aspects of the case example.

Note that these are <u>examples only</u> of questions that may be asked in your assessments.

Extension exercise: Create your own questions or develop a new case to further your learning.



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.

Questions for you to consider		Domains
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 is she were an Aboriginal or Torres Strait Islander?	1. Communication and consultation skills	1,2,5
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?	2. Clinical information gathering and interpretation	2
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?	3. Making a diagnosis, decision making and reasoning	2
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?	4. Clinical management and therapeutic reasoning	2

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Questions for you to consider		Domains
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?	5. Preventive and population health	1,2,3
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?	6. Professionalism	4
How might you manage the situation if the diagnosis were tension headache, but Heidi insisted on further investigation, including an MRI? What if she requested special consideration for exams? How do you maintain boundaries?		
Thinking of the broader differential diagnoses, are there any that would require a mandatory report to AHPRA?	7. General practice systems and regulatory requirement	5
What are the Medicare rebate requirements for an MRI of the head?		
Heidi asks you for a medical certificate for special consideration for her exams, based on recurrent severe headaches. How would you approach this situation?		
In which situations would you consider an occipital nerve block?	8. Procedural skills	2
What initial management would you consider if the cause of Heidi's headaches was not clear? Would you order a CT/MRI of the head if the cause seemed benign, but you were still uncertain as to the diagnosis?	9. Managing uncertainty	2
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?	10. Identifying and managing the significantly ill patient	2
What are the red flags that would prompt you to refer urgently to a higher level of care?		

Learning strategies

Instructions

This section has some suggestions for how you can learn this unit. These learning suggestions will help you apply your knowledge to your clinical practice and build your skills and confidence in all of the broader competencies required of a GP.

There are suggestions for activities to do:

- on your own
- with a supervisor or other colleague
- in a small group
- with a non-medical person, such as a friend or family member.

Within each learning strategy is a hint about how to self-evaluate your learning in this core unit.



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 (TIA). 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 an observer/s who provides 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 (CVA), 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 father brings his 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 father?

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?

Guiding topics and content areas

Instructions

These are examples of topic areas for this unit that can be used to help guide your study.

Note that this is <u>not a complete or exhaustive list</u>, but rather a starting point for your learning.

- Take an appropriate neurological history and perform a neurological examination relevant to the patient and the presentation.
- Recognise, assess and manage a child with:
 - cerebral palsy
 - o spina bifida
 - autism spectrum disorder
 - attention deficit hyperactivity disorder
 - o delay or regression in developmental milestones
 - o brain tumour
 - febrile convulsions
 - o epilepsy.
- Diagnose and manage the following presentations:
 - o acute, subacute or episodic changes in mental status or level of consciousness
 - gradual cognitive decline
 - o aphasia
 - headache or facial pain
 - back of neck pain
 - blurry vision or diplopia
 - dizziness or vertigo
 - dysarthria or dysphagia
 - weakness focal or generalised
 - involuntary movements
 - o numbness, paraesthesia and neuropathic pain
 - o urinary or faecal incontinence/retention
 - o unsteadiness, gait disturbance or falls
 - sleep problems including insomnia and sleepwalking
 - hearing loss
- Diagnose and manage the following emergency presentations:
 - o acute stroke (ischaemic or haemorrhagic) or transient ischaemic attack (TIA)
 - acute visual loss
 - o central nervous system infection, including encephalitis, meningitis, cerebral abscess and epidural abscess
 - encephalopathy
 - Guillain-Barré syndrome
 - head trauma
 - increased intracranial pressure
 - status epilepticus
 - subarachnoid haemorrhage
 - o cauda equina syndrome
 - o delirium
 - Ramsay Hunt syndrome.
- Diagnose and manage common neurological disorders:
 - Alzheimer's disease
 - o multi-infarct dementia
 - Bell's palsy
 - o carpal tunnel syndrome
 - epilepsy
 - essential tremor
 - headache (tension, migraine, cluster, medication overuse)
 - Parkinson's disease

- o peripheral neuropathy (motor, sensory and autonomic)
- benign intracranial hypertension
- concussion
- traumatic brain injury
- trigeminal neuralgia
- benign paroxysmal positional vertigo
- o restless leg syndrome and periodic limb movement
- o motion sickness.
- Diagnose and manage less common neurological disorders:
 - o multiple sclerosis
 - o myasthenia gravis
 - motor neurone disease
 - polyneuropathy
 - myopathy (inherited or acquired)
 - o ther types of dementia, including Lewy body dementia, frontotemporal dementia, and mixed dementia
 - berry aneurysm
 - o Korsakoff syndrome and Wernicke encephalopathy
 - Huntington's disease
 - o normal pressure hydrocephalus
 - o Arnold Chiari malformation
 - o brain tumours, benign and malignant
 - hypersomnolence and narcolepsy
 - o ther intracranial bleeding (extradural and subdural haemorrhage).
- Counsel, and appropriately refer for genetic testing and counselling, the patient with a neurological illness with a genetic component, or with a family history of a neurological illness with a genetic component. This includes, but is not limited to, Huntington's disease, frontotemporal dementia, and certain brain tumours/cancer syndromes.
- Understand the medico-legal considerations for neurological presentations/disorders, such as fitness to drive or ability to fulfil a job role safely.

Learning resources

Instructions

The following list of resources is provided as a starting point to help guide your learning only and is not an exhaustive list of all resources. It is your responsibility as an independent learner to identify further resources suited to your learning needs, and to ensure that you refer to the most up-to-date guidelines on a particular topic area, noting that any assessments will utilise current guidelines.

Journal articles

This issue provides a concise overview of the common neurological presentations in general practice.

• Neurology (http://www1.racgp.org.au/ajgp/2018/september/neurology). Aust J Gen Pract 2018;47(9).

A comprehensive overview of insomnia and how to assess it.

• Grima N, Bei B, Mansfield D. <u>Insomnia theory and assessment (http://www1.racgp.org.au/ajgp/2019/april/insomnia-theory-and-assessment)</u>. Aust J Gen Pract 2019;48(4):193–97.

A comprehensive overview of the management of insomnia, including non-pharmacological treatment approaches.

• Grima N, Bei B, Mansfield D. <u>Insomnia management (http://www1.racgp.org.au/ajgp/2019/april/insomnia-management)</u>. Aust J Gen Pract 2019;48(4):198–202.

An outline of the differences between types of headaches.

• Beran RG. Management of chronic headache (http://www.racgp.org.au/afp/2014/march/chronic-headache). Aust Fam Physician 2014;43(3):106–10.

Outlines an approach to management of migraines

• Jenkins B. <u>Migraine management (http://www.nps.org.au/australian-prescriber/articles/migraine-management)</u>. Aust Prescr 2020;43:148–51.

Textbooks

A comprehensive resource for the pharmacological management of neurological diseases.

• Neurology. In: Therapeutic Guidelines (http://www.tg.org.au) [digital]. Melbourne: Therapeutic Guidelines Limited; 2017

A good overview of the diagnostic frameworks, and initial approach to management for various neurological conditions.

• Murtagh J. Murtagh's Diagnostic Strategies. 1st edn. North Ryde: McGraw-Hill Education, 2016.

Online resources

A diagnostic tool for motor neurone disease.

• MND Australia. <u>Painless, progressive weakness – could this be motor neurone disease? (http://www.racgp.org.au/clinical-resources/clinical-guidelines/guidelines-by-topic/view-all-guidelines-by-topic/neurology/painless-progressive-weakness-could-this-be-motor)</u>

Training resources, including free online modules and podcasts, and clinical resources for managing dementia in general practice.

• Dementia Training Australia. <u>GP dementia resources, training and education support (https://dta.com.au/general-practitioners/).</u>

Learning activities

- The Royal Australian College of General Practitioners. <u>gplearning (http://www.racgp.org.au/education/professional-development/online-learning/gplearning)</u>:
 - An update on current management of epilepsy.
 - Advances in epilepsy management.
 - An overview of neurological presentations.
 - check, unit 552, August 2018: Neurology.
 - An overview of the genetics of disorders, such as Huntington's disease.
 - check, unity 557, January-February 2019: Genetics.
 - Covers the presentation and management of many CNS problems.
 - check, unit 565, October 2019: Central nervous system.
 - An overview of the diagnosis and management of sleep disorders, including narcolepsy and restless legs syndrome.
 - check, unit 570, April 2020: Sleep.

Other

Helpful guidelines on common and serious neurological presentations in children; for example, febrile convulsions and meningitis.

• The Royal Children's Hospital, Melbourne. Clinical Practice Guidelines (https://www.rch.org.au/clinicalguide/).

National guidelines on concussion in sport to help assist decision-making on treatment, including when to allow athletes (children and adults) to return to sport after concussion.

• SportAus. Concussion in Sport Australia Position Statement (http://www.concussioninsport.gov.au).

This contextual unit relates to the other unit/s of:

- Child and youth health (https://www.racgp.org.au/curriculum-and-syllabus/units/child-and-youth-health)
- Disability care (https://www.racgp.org.au/curriculum-and-syllabus/units/disability-care)
- Emergency medicine (https://www.racgp.org.au/curriculum-and-syllabus/units/emergency-medicine)
- <u>Eye presentations (https://www.racgp.org.au/curriculum-and-syllabus/units/eye-presentations)</u>
- Infectious diseases (https://www.racgp.org.au/curriculum-and-syllabus/units/infectious-diseases)
- Musculoskeletal presentations (https://www.racgp.org.au/curriculum-and-syllabus/units/musculoskeletal-presentations)
- Older person's health (https://www.racgp.org.au/curriculum-and-syllabus/units/older-person-s-health)
- Palliative care (https://www.racgp.org.au/curriculum-and-syllabus/units/palliative-care)

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