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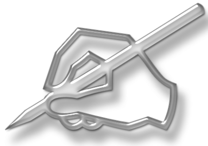
REFERRAL GUIDELINES: NEUROSURGERY



Essential Referral Content

Demographic	Clinical
• Date of birth	• Reason for referral
• Contact details (including mobile phone)	• Duration of symptoms
• Referring GP details	• Relevant pathology & imaging reports
• Interpreter requirements	• Past medical history
• Medicare number	• Current medications

Please provide MRI results where appropriate to expedite patient management.

Medicare rebates now apply for MRIs requested by a GP for patients over 16 years of age for:

- MRI cervical spine for radiculopathy or trauma;
- MRI head for unexplained seizure(s) or chronic headaches with suspected intracranial pathology.

Where unable to obtain an MRI, CT imaging must be included

Please ensure your patient brings their films or CDs to their appointment.

The Alfred Outpatient Referral Form is available to print and fax to the Outpatient Department on 9076 6938

Exclusion Criteria

The following conditions are not routinely seen at the Alfred:

- Patients who are being treated for the same condition at another Victorian public hospital
- Children under 16 years of age are not seen at The Alfred
- Patients with back pain without lower limb pain, or neck pain without arm pain, with unremarkable imaging are not seen in the Neurosurgery Department.

REFERRAL PROCESS: NEUROSURGERY

STEP 1

You will be notified when your referral is received by outpatients.

Essential referral content will be checked. You will be contacted if further information is required.

STEP 2

The referral is triaged by the specialist unit according to clinical urgency.

This determines how long the patient will wait for an appointment.

STEP 3

Patients with **urgent** conditions are scheduled to be seen within 30 days. Patients with **routine** conditions are given the next available appointment according to clinical need.

Both the GP and patient are notified.

Please note: The times to assessment may vary depending on size and staffing of the hospital department.

If you are concerned about the delay of the outpatient appointment or if there is any deterioration in the patient's condition, please contact the Neurosurgery Registrar on call on 9076 2000.

The Alfred gratefully acknowledges the assistance of the Canterbury and District Health Board in New Zealand in developing these guidelines. They are intended as a guide only and have been developed in conjunction with the Heads of Unit of The Alfred.

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Last Reviewed: Jan 2014

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REFERRAL PRIORITY: NEUROSURGERY

The clinical information provided in your referral will determine the triage category. The triage category will affect the timeframe in which that the patient is offered an appointment.

Referral Priority	Appointment Timeframe
Urgent	Within 30 days
Routine	Greater than 30 days depending on clinical need

IMMEDIATE **Direct to the Emergency & Trauma Centre**	**URGENT**	**ROUTINE**
• Subarachnoid haemorrhage • Benign or malignant tumours associated with midline shift, hydrocephalus or severe deficits • Spinal cord compression with severe or rapidly progressive deficit • Blocked or infected VP shunt. • First epileptic seizure • Mass lesion (tumour or abscess) on CT or suspected, with head-ache- with increasing drowsiness, increasing weakness or vomiting	• Most malignant intracranial tumours (high grade glioma, metastasis) • Degenerative spinal disorders with significant deficit • Severe trigeminal neuralgia • Most benign intracranial tumours with minimal or stable deficits • Most peripheral nerve disorders	• Degenerative spinal disorders with minimal or no deficit • Epilepsy/Movement disorders/Chronic pain • Ulnar neuropathy with muscle wasting
Phone the Neurosurgery Registrar on call on 9076 2000 and/or send to The Alfred Emergency & Trauma Centre.	Urgent cases must be discussed with the Neurosurgery Registrar on call to obtain appropriate prioritisation and a referral faxed to 9076 6938.	Fax referral to 9076 6938

If you are concerned about the delay of the outpatient appointment or if there is any deterioration in the patient's condition, please contact the Neurosurgery Registrar on call on 9076 2000.

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Referral Guideline Contents

BRAIN:

- **Tumours:**
  - **- Brain tumours**
  - **- Meningiomas**
  - **- Skull base tumours**
  - **- Pituitary tumours**
- **Vascular Disorders:**
  - **- Aneurysms**
  - **- Arteriovenous malformations (AVMs)**
  - **- Other miscellaneous vascular conditions**
- **Trigeminal neuralgia and other cranial nerve abnormalities**
- **Hydrocephalus and other miscellaneous conditions**

NECK:

- **Neck pain secondary to malignant disease**
- **Neck pain secondary to infection**
- **Neck pain associated with neurological deficit**
- **Cervical myelopathy**
- **Mechanical neck pain without arm pain**
- **Neck pain associated with referred pain to the upper arm without neurological deficit**

BACK:

- **Back pain with nerological and bladder involvement (cauda equina syndrome)**
- **Back pain secondary to neoplastic disease or infection**
- **Back pain and sciatica with neurological deficit**
- **Mechanical lower back pain without lower limb pain**
- **Back pain and sciatica without neurological deficit**
- **Spinal stenosis with limitation of walking distance**

PERIPHERAL NERVES:

- **Carpal tunnel syndrome**
- **Ulnar nerve compression**
- **Occipital neuralgia**

Clinical guidelines for the management of acute low back pain

Key patient information points for acute low back pain

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Brain:

TUMOURS

- Brain tumours
- Meningiomas
- Skull base tumours
- Pituitary tumours

Evaluation	Management	Referral Guidelines
Note family history • CT scan • MRI if available (otherwise performed at the Alfred) • Hormone levels including Prolactin if suspected Pituitary Tumour	The Alfred has a team approach to the management of CNS cancer which includes access to: • Neuro-oncology • Neurology • Neuro-psychology • Epilepsy clinic • Radiotherapy (William Buckland Radiotherapy Centre) • Pain management service • Neuro-rehabilitation (Caulfield General Medical Centre) • Palliative care service	Refer - Urgent to Monday PM clinic (Brain Tumour Clinic) If prolactinoma is confirmed (ie Prolactin level >2000iU) refer to Endocrine Unit. **Please note:** Medicare now provides a rebate for MRI head for unexplained seizures or chronic headaches with suspected intracranial pathology in patients over 16 years of age when requested by a General Practitioner.

VASCULAR DISORDERS

- Aneurysms
- Arteriovenous malformations (AVMs)
- Other miscellaneous vascular conditions

Evaluation	Management	Referral Guidelines
• CT scan • MRI if available (otherwise performed at The Alfred)	The Alfred has facilities for coiling and embolization, stereotactic radio-surgery, neurosurgery, and a Stroke Service. .	Refer - Urgent **Please note:** Medicare now provides a rebate for MRI head for unexplained seizures or chronic headaches with suspected intracranial pathology in patients over 16 years of age when requested by a General Practitioner

TRIGEMINAL NEURALGIA AND OTHER CRANIAL NERVE ABNORMALITIES

Evaluation	Management	Referral Guidelines
• Provide details of severity of pain and other symptoms to assist in triage of appointment • CT scan • MRI if available (otherwise performed at the Alfred)		Refer - Urgent **Please note:** Medicare now provides a rebate for MRI head for unexplained seizures or chronic headaches with sus-pected intracranial pathology in patients over 16 years of age when requested by a General Practitioner

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HYDROCEPHALUS AND OTHER MISCELLANEOUS CONDITIONS

Evaluation	Management	Referral Guidelines
• CT scan • MRI if available (otherwise performed at the Alfred) The Alfred Radiology request form	**Please note:** Medicare now provides a rebate for MRI head for unexplained seizures or chronic headaches with suspected intracranial pathology in patients over 16 years of age when requested by a General Practitioner.	Refer - Urgent

Neck:

NECK PAIN SECONDARY TO MALIGNANT DISEASE

NECK PAIN SECONDARY TO INFECTION

Evaluation	Management	Referral Guidelines
Investigations (only if indicated): • Plain x-ray and CT • FBC/CRP & ESR • Consider calcium and phosphate, protein • Electrophoresis, immunoglobulins, PSA • Rheumatoid serology in specific cases		Refer - Urgent

NECK PAIN ASSOCIATED WITH NEUROLOGICAL DEFICIT

CERVICAL MYELOPATHY

Evaluation	Management	Referral Guidelines
Routine history and examination noting the key points: • Presence and duration of neurological symptoms and signs including evidence of lower limb spasticity • Work status • Weight loss, appetite loss and lethargy • Fever and sweats • Treatment to date • Previous malignant disease • General medical condition **Investigations** (only if indicated): • Plain x-ray, CT & MRI • FBC/CRP & ESR • Consider calcium and phosphate, protein • Electrophoresis, immunoglobulins, PSA • Rheumatoid serology in specific cases	**Please note:** Medicare now provides a rebate for MRI cervical spine for cervical radiculopathy or trauma in patients over 16 years of age when requested by a General Practitioner.	Refer - Urgent

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MECHANICAL NECK PAIN WITHOUT ARM PAIN

Evaluation	Management	Referral Guidelines
		Patients with no referred arm pain or neurological deficit and un-remarkable imaging are not routinely seen.

NECK PAIN ASSOCIATED WITH REFERRED PAIN TO THE UPPER ARM, WITHOUT NEUROLOGICAL DEFICIT

Evaluation	Management	Referral Guidelines
Key points: • Presence and duration of neurological symptoms and signs including evidence of lower limb spasticity • Work status • Weight loss, appetite loss and lethargy • Fever and sweats • Treatment to date • Previous malignant disease • General medical condition **Investigations** (only if indicated): • Plain x-ray & CT • FBC/CRP & ESR • Consider calcium and phosphate, protein • Electrophoresis, immunoglobulins, PSA • Rheumatoid serology in specific cases	• Activity modification • Analgesics • NSAIDs • Consider physiotherapy • Education • Maybe trial of soft collar if severe spasm	Refer if symptoms and signs persist despite adequate management >6/52

Back:

BACK PAIN WITH NEUROLOGICAL AND BLADDER INVOLVEMENT (CAUDA EQUINA SYNDROME)

Evaluation	Management	Referral Guidelines
		Refer IMMEDIATELY - phone Neurosurgery registrar on 9076 2000 and/or send to The Alfred Emergency & Trauma Centre

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BACK PAIN SECONDARY TO NEOPLASTIC DISEASE OR INFECTION

Evaluation	Management	Referral Guidelines
		Refer - Urgent

BACK PAIN AND SCIATICA WITH NEUROLOGICAL DEFICIT

Evaluation	Management	Referral Guidelines
Key Points: • Duration of symptoms • Presence of neurological symptoms and signs • Functional impairment • Time off work • Weight loss, loss of appetite and lethargy • Fever and sweats • Treatment to date • Previous spinal surgery • Previous malignant disease • General medical condition and medication **Investigations** if symptoms persist: • Plain x-rays and CT • FBC/CRP/ESR • Biochemistry (Consider calcium and phosphate, electrophoresis, immunoglobulins, PSA, rheumatoid serology in specific cases).		Refer - Urgent

MECHANICAL LOWER BACK PAIN WITHOUT LOWER LIMB PAIN

Evaluation	Management	Referral Guidelines
		Patients with no referred lower limb pain or neurological deficit and unremarkable imaging are not routinely seen in the Neurosurgery Clinic. The Neurosurgery Department does not include a Chronic Pain service, and as such patients with mechanical lower back pain not requiring surgery should be referred to a more appropriate service, such as Rheumatology or a local physiotherapist.

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BACK PAIN AND SCIATICA WITHOUT NEUROLOGY
SPINAL STENOSIS WITH LIMITATION OF WALKING DISTANCE

Evaluation	Management	Referral Guidelines
See Clinical Guidelines for the management of Acute Low Back Pain Key Points: • Duration of symptoms • Presence of neurological symptoms and signs • Functional impairment • Time off work • Weight loss, loss of appetite and lethargy • Fever and sweats • Treatment to date • Previous spinal surgery • Previous malignant disease General medical condition and medication **Investigations** if symptoms persist: • Plain x-rays and CT • FBC/CRP/ESR • Biochemistry (Consider calcium and phosphate, electrophoresis, immunoglobulins, PSA, rheumatoid serology in specific cases).	• Activity modification • Analgesics and NSAIDs See Clinical Guidelines for the management of Acute Low Back Pain	Refer - Routine if: • significant symptoms persisting > 6/52; • mechanical lower back pain without lower limb pain; • likely to require surgery. Patients suffered back and sciatica without neurology will be seen and assessed by a physiotherapist in The Alfred Neurosurgery clinic. The Neurosurgery Department does not include a Chronic Pain service, and as such patients with mechanical lower back pain not requiring surgery should be referred to a more appropriate service, such as Rheumatology or a local physiotherapist.

Peripheral Nerves:

CARPAL TUNNEL SYNDROME

Evaluation	Management	Referral Guidelines
Nerve conduction studies Phone: 9076 2058 Fax: 9076 6075	Splintage and physiotherapy Consider one steroid injection for carpal tunnel	Refer - Urgent if muscle wasting. Otherwise refer if no improvement >6/52

ULNAR NERVE COMPRESSION

Evaluation	Management	Referral Guidelines
Nerve conduction studies Phone: 9076 2058 Fax: 9076 6075		

OCCIPITAL NEURALGIA

Evaluation	Management	Referral Guidelines
		Refer to the Neurology unit

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CLINICAL GUIDELINES

FOR THE MANAGEMENT OF ACUTE LOW BACK PAIN

These brief clinical guidelines and their supporting base of research evidence are intended to assist in the management of acute back pain. It presents a synthesis of up to date international evidence and makes recommendations on case management.

Recommendations and evidence relate primarily to the first six weeks of an episode, when management decisions may be required in a changing clinical picture. However, the guidelines may also be useful in the sub-acute period.

We are grateful to Mr Greg Malham, Department of Neurosurgery, The Alfred, The Royal College of General Practitioners', Clinical Advisory Standards Group, U.S. Agency for Health Care Policy & Research, Swedish SBU, and N.Z. National Health Committee in the production of these guidelines.

These guidelines are intended for use as a guide only by the whole range of health professionals who advise people with acute low back pain, particularly simple backache.

DIAGNOSTIC TRIAGE

Diagnostic triage is the differential diagnosis between:

- Simple backache (non-specific low back pain) - *over 95% of cases*
- Nerve root pain - *under 5% of cases*
- Possible serious spinal pathology - *under 2% of cases*

CAUDA EQUINA SYDROME **Immediate referral:** • Bilateral nerve pain (leg pain going below knees) • Bladder/bowel dysfunction • Perineal anaesthesia • Progressive weakness
RED FLAGS FOR POSSIBLE SERIOUS SPINAL PATHOLOGY Consider prompt referral (less than 6 weeks): • Unilateral pain (usually going below knee) and weakness or loss of reflex • Features of systemic illness (history of carcinoma, steroid use, HIV, unexplained weight loss, fever or raised CRP/ESR/WCC without other obvious signs) • History of progressive weakness or anaesthesia • Constant unremitting pain
NERVE ROOT PAIN Specialist referral not generally required within first 6 weeks, provided resolving: • Unilateral leg pain worse than low back pain • Radiates to foot or toes • Numbness and paraesthesia in same direction • SLR reproduces leg pain
SIMPLE BACKACHE Specialist referral not required: • Presentation 20-55 years • Lumbosacral, buttocks and thighs • "Mechanical" pain • Patient well

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PRINCIPAL RECOMMENDATIONS		EVIDENCE
ASSESSMENT • Carry out diagnostic triage. • X-rays are not routinely indicated in simple backache • Consider psychosocial "yellow flags"	* *	Diagnostic triage forms basis for referral, investigation and management. Royal College of Radiologists Guidelines Psychosocial factors play an important role in low back pain and disability and influence the patients' response to treatment and rehabilitation
SIMPLE BACKACHE		
DRUG THERAPY • Prescribe analgesics at regular intervals, not p.r.n. • Start with paracetamol. If inadequate, substitute NSAIDs (e.g. ibuprofen or diclofenac) and then paracetamol – weak opioid compound (e.g. panadeine or digesic). Finally, consider adding a short course of muscle relaxant (e.g. diazepam or baclofen). • Avoid strong opioids if possible.	** *** ** ***	Paracetamol effectively reduces low back pain. NSAIDs effectively reduce pain. Paracetamol – weak opioid compounds may be effective when NSAIDs or paracetamol alone are inadequate. Muscle relaxants effectively reduce low back pain.
BED REST • Do not recommend or use bed rest as a treatment. • Some patients may be confined to bed for a few days as a consequence of their pain but this should not be considered a treatment.	***	Bed rest for 2-7 days is worse than placebo or ordinary activity and is not as effective as alternative treatments for relief of pain, rate of recovery, return to daily activities and work.
ADVICE ON STAYING ACTIVE • Advise patients to stay as active as possible and to continue normal daily activities • Advise patients to increase their physical activities progressively over a few days or weeks. • If a patient is working, then advice to stay at work or return to work as soon as possible is probably beneficial.	***	Advice to continue ordinary activity can give equivalent or faster symptomatic recovery from the acute attack and lead to less chronic disability and less time off work.
MANIPULATION • Consider manipulative treatment for patients who need additional help with pain relief or who are failing to return to normal activities	*** ** **	Manipulation can provide short-term improvement in pain and activity levels and higher patient satisfaction The optimum timing for this intervention is unclear. The risks of manipulation are very low in skilled hands.
BACK EXERCISES • Referral for reactivation/rehabilitation should be considered for patients who have not returned to ordinary activities and work by 6 weeks.	*** **	It is doubtful that specific back exercises produce clinically significant improvement in acute low back pain. There is some evidence that exercise programmes and physical reconditioning can improve pain and functional levels in patients with chronic low back pain. There are theoretical arguments for starting this at around 6 weeks.

The evidence is weighted as follows:

*** Generally consistent finding in a majority of acceptable studies

** Either based on a single acceptable study or a weak or inconsistent finding in some of multiple acceptable studies.

* Limited scientific evidence which does not meet all the criteria of "acceptable" studies.

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KEY PATIENT INFORMATION POINTS

For acute low back pain

SIMPLE BACKACHE – Give positive messages:

- There is nothing to worry about. Backache is very common.
- No sign of any serious damage or disease. Full recovery in days or weeks – but may vary.
- No permanent weakness. Recurrence possible – but does not mean re-injury.
- Activity is helpful; too much rest is not. Hurting does not mean harm.

NERVE ROOT PAIN – Give guarded positive messages:

- No cause for alarm. No sign of disease.
- Conservative treatment should suffice – but may take a month or two.
- Full recovery expected – but recurrence possible.

POSSIBLE SERIOUS SPINAL PATHOLOGY – Avoid negative messages:

- Some tests are needed to make the diagnosis.
- Often these tests are negative.
- The specialist will advise on the best treatment.
- Rest or activity avoidance until appointment to see specialist.

PSYCHOSOCIAL "YELLOW FLAGS"

When conducting assessment, it may be useful to consider psychosocial "yellow flags" (beliefs or behaviours on the part of the patient which may predict poor outcomes).

The following factors are important and consistently predict poor outcomes:

- A belief that back pain is harmful or potentially severely disabling.
- Fear-avoidance behaviour and reduced activity levels.
- Tendency to low mood and withdrawal from social interaction.
- Expectation of passive treatment(s) rather than a belief that active participation will help.