Document Control

Title

Protocol for the management of Ear Pain (over 2 years of age) in MIUs and Emergency Department

Author	**Author's job title** Professional Lead, Minor Injuries Unit
Directorate Emergency Services, Logistics and Resilience	**Department** Emergency Department

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0.1	Apr 2015	Draft	Initial version for consultation
1.0	Apr 2016	Final	Approved by Ben Leger(Clinician) and Chris Bowman (Clinical Director) June 2015 and published on Bob.
1.1	Jan 2018	Revision	Addition of Sofradex® (framycetin, dexamethasone, gramicidin) ear/eye drops to acute otititis externa protocol due to out of stock, update to protocol references.
2.0	May 2018	Revision	Inclusion of reference to new NICE Guideline on otitis media, submitted to DTC for approval. Approved at DTC on 19th July.
3.0	Jul 2019	Revision	Addition of new eardrop Cilodex® for otitis externa. Review of all references, no other new information found for inclusion. Updated logo and amendment to title – removing reference to WICs. Dates for review updated.

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Consulted with the following stakeholders:
(list all)

- Samantha Dymond, antibiotic pharmacist
- MIU Leads
- Tom Lewis, Consultant microbiologist

Approval and Review Process

- Lead Clinician for Emergency Department

Local Archive Reference G:\Policies and Protocols **Local Path** MIU **Filename** Protocol for Ear Pain (over 2 years of age) V1.3 Jul19	
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1. Table of Contents

2. Purpose

This Ear Pain Protocol is for the use by staff employed by Northern Devon Healthcare Trust who have achieved the agreed clinical competencies to work under this protocol.

The Protocol applies to patients who are 2 years of age or over, and who present to MIU or ED with acute symptoms which have not been previously treated.

3. Presenting Symptoms

3.1. General presenting symptoms

- Pain
- Pyrexia
- Coryza
- Unwell
- Dizziness
- Tinnitus
- Itching sensation
- Discharge
- Loss of hearing

4. History

4.1. Refer to Protocol for History Taking and Clinical Documentation.

4.2. Ask about and document all findings fully – positive and negative in case of future litigation:

- Onset, duration and progression of symptoms (under 3 days and mild symptoms on examination with no complicating factors is likely to be self-limiting for ear infections. Reassure patient and discharge with safety-netting and self-care advice to keep an eye on symptoms)
- Apparent site of ear problem (diagrams or photographs may be useful for foreign bodies, or where referral is necessary)
- Whether the ear pain problem(s) is/are any of the conditions described in the diagnostic criteria in section 5, below.
- Whether the ear pain problem has happened before, and what was done about it last time.
- Take an allergy history
- Take a medications history

- Ascertain if any other medical conditions, chronic or recent/acute episodes of illness.

- Ascertain if the patient has any long-term devices or previous surgical interventions close to the ear such as: cerebral shunt ±drainage tubes, plates/rods or wires fixing bones in place, skin grafts, prostheses (e.g. implanted hearing aids, tracheostomy), cosmetic procedures, keyhole surgery, neck lymph node biopsy, parathyroid/thyroid surgery, tonsillectomy, radiotherapy.

- Explore possible causes:

  - Use of hearing aids, ear plugs, cotton buds, occupational headphone/ ear defenders
  - Trauma to ear canal from cleaning, scratching or instrumentation
  - Recent trauma to ear – deep sea diving, flying, injury to head/ear, piercing, habitual picking (children and adults with learning difficulties or other mental health problems), syringing ear wax
  - Dermatoses
  - Previous topical treatments for otitis externa or otitis media
  - Recent ENT, dental, neurosurgery, ocular or other procedure (e.g. biopsy) involving ear/head/neck
  - Radiotherapy to ear / head / neck
  - Exposure to water or humid climate
  - Underlying skin condition such as psoriasis, eczema, acne vulgaris
  - Underlying chronic condition (particularly for recurrent symptoms) such as diabetes, cancer, organ failure or transplant
  - Recent coryzal illness
  - History of dermatological malignancy on the ears / areas with extensive sun exposure elsewhere on the body
  - Recent change in personal hygiene/cosmetic products
  - Exposure to noise
  - Ototoxic medications e.g. aspirin/NSAIDs, aminoglycoside antibiotics, loop diuretics, cytotoxic drugs
  - (Tinnitus only): Otosclerosis, or family history of otosclerosis
  - (Tinnitus only): Multiple sclerosis, diabetes or thyroid disease

- Ask about first aid measures already taken, or treatments received if patient is returning with recurrence of symptoms
- Consult Labcentre and document any recent ear/nose/throat swab results, check MRSA status, ESBL status

5. Clinical Examination

5.1. Examine the patient and document fully the following information, positive and negative findings in case of future litigation:

- Inspect external ear and surrounding skin for: swelling / inflammation and record:

  - Lacerations and infected piercings

- Haematoma or bruising
- Discharge, blood or otorrhoea

- Examine the ear canal and record:
  - Swelling and inflammation
  - Boils/furuncles, presence or absence of fluctuance or discharge and its appearance
  - Ear wax presence or absence
  - Foreign body (position, size and substance) NB. Organic matter is more likely to cause infection than synthetic substances such as plastic
- If possible to visualise, examine the ear drum and record:
  - Colour
  - Perforation / scarring
  - Bulging
  - Fluid / discharge and its appearance
  - Grommets / other surgically inserted devices and their appearance
- Palpate lymph glands and nodes for tenderness and swelling/lumps
- Examine tragus, pinna and mastoid for swelling and tenderness
- Examine the throat for associated symptoms (refer to protocol for the management of sore throat)
- Tenderness on examination, and how far this extends away from the obvious site of inflammation.
- Sensation and circulation around the affected area.
- Range of movement of eyes, jaw and neck.
- Vital signs: Temperature.
- If systemically unwell include heart rate, blood pressure and respirations. S_aO_2 level. Capillary refill time. (Appendix A / B)
- **NB** If recurring condition check patient's Blood Sugar (BM)
- If tympanic membrane (ear drum) cannot be visualised, perforation can be assumed if any of the following apply:
  - Tympanostomy tube inserted in the past 12 months and no documentation of extrusion and closure of the tympanic membrane in patient notes
  - Can blow air out of the ear when the nose is pinched
  - Can taste medication placed in the ear
- For head or neck injury, or where there is suspicion of new onset neurological deficit from history taking, record a full set of neurological observations as per protocol for minor head injury / traumatic neck pain
- For foreign body refer to protocol for removal of foreign body from ear / nose
- Refer any severe ear trauma to medical practitioner or secondary care
- Refer any suspected mastoiditis to medical practitioner or Ear, Nose and Throat team

5.2. Signs Specific to Acute Otitis Externa (including furuncles)

- Red, swollen or eczematous appearance to ear canal, external ear or both areas, with shedding of scaly skin
- Swelling in ear canal with no other distinguishing features typically indicates early localised otitis externa
- Swelling in ear canal with white or yellow centre filled with pus (a furuncle), which may eventually occlude the ear canal, typically seen in later otitis externa.
- Serious or purulent discharge maybe present in ear canal
- Inflamed eardrum NB. May be difficult to visualise if ear canal is narrowed or filled with debris.
- Itch (intermittent, recurring) is typical
- Severe localised pain, disproportionate to the size of the lesion visualised is typical
- Pain that is made worse when the pinna or tragus is moved, or when otoscope is inserted is typical
- Patients describe tenderness or discomfort when moving their jaw
- Less commonly regional lymphadenitis presenting as tenderness on examination
- Rarely, patients describe sudden relief of pain if the furuncle in localised otitis externa bursts
- Rarely, patients describe a loss of hearing if the swelling is sufficient to completely occlude the ear canal

Signs that may rule out acute otitis externa:

- Lack of earwax in external ear canal
- Signs of impacted earwax in external ear canal
- Otorrhoea from further into the ear canal (otitis media), particularly if patient is younger or has history of grommets
- Dry, hypertrophic skin which may have at least partially blocked the ear canal.
- Pain on manipulation of the external ear canal and auricle.
- Constant itch in the ear
- Mild discomfort
- Mild pain
- Skin conditions – seborrhoeic dermatitis, atopic dermatitis, dermatophytosis, psoriasis, acne, herpes simplex, herepes zoster, lupus erythematosus. (These may be risk factors for developing otitis externa, or the underlying cause of it)
- Referred pain which may originate from sphenoidal sinus, teeth, neck or throat (examine as per appropriate protocol if able, or refer if no protocol)

5.3. Signs Specific to Acute Otitis Media

- Acute onset of earache, which steadily worsens over a few days
- May be accompanied by a temperature
- Younger children may present pulling, rubbing or tugging the ear

- Younger children may present with non-specific symptoms such as fever, irritability, crying, poor feeding, restlessness at night, cough or rhinorrhoea.
- Discharge in external auditory canal
- In younger children, there may be co-existing systemic illness such as bronchiolitis or bacteraemia

Signs that may rule out acute otitis media:

- Mild redness of the tympanic membrane, without bulging, and with accompanying coryzal illness or upper respiratory tract infection
- Fluid in the middle ear without symptoms or signs of acute inflammation of the tympanic membrane
- Persistent inflammation and perforation of the tympanic membrane with draining exudate for more than 2 weeks (possibly with associated cholesteatoma)
- Haemorrhagic bullae (blisters) on the tympanic membrane. These are usually caused by Mycoplasma pneumonia and have a 90% spontaneous resolution rate.

5.4. Signs Specific to Perforated Tympanic Membrane

- Sharp pain inside ear, followed by
- Sudden onset of deafness
- Older children and adults with otitis media may be able to describe a history of increasingly severe pain, followed by a sudden sharp pain inside the ear which results in otorrhoea and deafness.
- May also be caused by insertion of foreign object into ear canal, trauma to head/ear.

5.5. Signs Specific to Tinnitus

- Discrete episodes of noise affecting one or both ears
- Hearing loss on one or both sides during attacks
- Continuous background noise affecting one or both ears
- Dizziness or vertigo

5.6. Signs Specific to Foreign body in ear

- Common in younger children and adults with behavioural problems
- Assess safeguarding for vulnerable patients

6. Exclusions and Referral

6.1. Red flags to refer to the ED

- Granulation tissue at bone-cartilage junction of ear canal, or exposed bone in the ear canal
- Facial nerve palsy

- Temperature over 39^{o}C, systemically unwell patient
- Mastoid tenderness or swelling associated with general malaise
- Pain and headache, more severe than clinical signs would suggest
- Vertigo
- History of rapidly spreading cellulitis or extensive spread around the ear
- Profound hearing loss, without evidence of occlusion on examination of ear canal
- Neoplasm, or swelling in the ear canal that bleeds easily on contact.
- People who are divers, have recently travelled by air or have received a blow to the ear/head
- Eroding epithelial tissue in the middle ear and mastoid, with discharge in the ear canal
- Foreign body which cannot be extracted safely by Nurse Practitioner (e.g. suspected to have perforated the ear drum or damaged other internal structures, associated with significant bleeding, failed attempt(s), unco-operative patient who requires sedation)
- Patients with Down's syndrome or cleft palate who present with otitis media and effusion
- Signs suggesting meningitis
- Patients requiring incision and drainage of large or difficult-to-reach furuncles or where the patient requires restraint or sedation to achieve clearance.
- Previous episodes of severe infection or sepsis requiring hospital admission following ear infection in the past.
- Tinnitus with any of the following:
    - ⇨ Sudden onset pulsatile tinnitus, or objective tinnitus (noises can be heard on examination)
    - ⇨ Associated with significant neurological symptoms/signs e.g. facial weakness
    - ⇨ Secondary to head trauma
    - ⇨ Associated with unexplained sudden hearing loss, or unilateral/asymmetric hearing loss
    - ⇨ Unilateral symptoms only
    - ⇨ Associated with persistent otalgia or otorrhoea that does not resolve with routine treatment
    - ⇨ Associated with vestibular symptoms e.g. dizziness, vertigo

6.2. Referral to other care providers

- Chronic or recurrent symptoms outside the scope of this protocol – refer to GP
- Tinnitus without red flag criteria – refer to GP routinely
- Patients with penicillin allergy who otherwise fit the criteria for receiving antibiotics under PGD for otitis media – refer to GP or OOH Devon Doctors
- Previous topical or systemic antibiotics for unresolved infections, and no or mild systemic symptoms – refer to GP routinely unless symptoms distressing, when referral to OOH Devon Doctors may be appropriate
- Impacted ear wax – refer to GP routinely

7. TREATMENT

7.1. General Self-Care Advice

- Impaction of ear wax can be treated by the GP. Advise patient to commence instilling 2 drops of olive oil twice daily prior to booking an appointment with Practice Nurse to arrange definitive treatment
- For mild symptoms advise that most ear infections start to resolve spontaneously without antibiotics within about 4 days of onset
- Advise antibiotics should only be started if symptoms are not improving within 4 days of the onset of symptoms, or if there are additional systemic symptoms in addition to the ear pain, or symptoms become worse after the initial presentation
- Patients should be advised to look out for red flag symptoms and seek urgent medical attention if these occur after assessment and discharge from MIU/Nurse practitioner e.g.
    - ⇨ pain worsening or uncontrolled despite optimal use of OTC pain relief,
    - ⇨ sudden onset of discharge from ear following “popping” sensation with pain,
    - ⇨ new onset or worsening fevers and rigors,
    - ⇨ symptoms of meningitis
    - ⇨ sudden profound deafness with or without accompanying symptoms,
    - ⇨ rapidly spreading cellulitis outside external ear structures,
    - ⇨ involvement of other structures in head/nose/throat/eyes,
    - ⇨ any nerve palsy,
    - ⇨ new onset dizziness or nausea associated with infection or head trauma.
- Avoid damage to the external ear canal
    - ➢ If earwax is a problem, patients should seek professional advice and have it removed safely to avoid damaging the ear canal or getting foreign bodies stuck in the ear canal
    - ➢ Cotton buds, toothpicks or other objects should not be used to clean the ear canal
- Keep the external ear and ear canals clean and dry:
    - ➢ People with any acute ear infections should abstain from water sports (including swimming and surfing) for at least 7-10 days and definitely during their antibiotic treatment course, or whilst the area is still inflamed or sore.
    - ➢ People with perforated eardrums should stay away from water (including swimming and surfing) until healing is confirmed at a follow-up appointment with the GP, which may take up to 6 weeks.
    - ➢ Patients can use a hair dryer at the lowest heat setting to gently dry the ear canal after hair washing, bathing or swimming
    - ➢ Use a separate face cloth to gently sponge clean the outside of the infected ear, use clean warm water and dry the ear thoroughly after cleansing. Avoid sluicing the ear out with volumes of tap water to

remove discharge/crusting, as this can result in further superinfection
- Keep cosmetic/bathing products out of the ear when washing
- When recovery is confirmed, patients should use ear plugs or a tight-fitting swimming cap when participating in water sports activities.

- Ensure good skincare and hygiene in and around ears
  - If allergic or sensitive to ear plugs / hearing aids / earrings, avoid them or use hypoallergenic alternatives. Refer to audiology for suspected allergy to hearing aids.
  - Clean and sterilize devices used in or around infected ears to prevent re-infection, or use new ones when treatment/hygiene measures commence, e.g. hearing aids, ear defenders, ear plugs, headphones, earrings, swimming caps, other headgear in contact with the ears
  - If patient has a chronic skin condition, such as eczema or psoriasis, this should be well-controlled wherever possible. Refer to dermatology if needed.
  - Do not share earphones/ear defenders/swimming caps/earrings/bedding such as pillows/hats with others, to prevent the spread of infection
  - Wash bedding, pyjamas and soft toys and any other soft furnishings which have had discharge/otorrhoea on them to avoid reinfection
- Acidifying the external ear canal might help to prevent infection, and could be recommended for patients to consider trying if they are often in water or wear ear defenders / ear plugs for work (and at risk of recurrence of infection). Over the counter products such as EarCalm® acetic acid 2% spray or drops can be purchased from Pharmacies and used before and after water sports, and at bedtime **for patients 12 years and over**. Younger patients will need a prescription from their GP for this product.
- Paracetamol or ibuprofen can be used for relief of pain and fever, both can be purchased over the counter. The two drugs should not be given simultaneously, but if needed for recurrence of pain or distress associated with fever before the next dose is due, it is possible to add in the second drug and use the two alternately.
- Protect ears from loud noises to avoid damage to hearing
- Applying a heat pad to the ear/head on the affected side may sometimes relieve discomfort in otitis media
- Patients should be advised to avoid flying, diving or taking part in activities which involve pressure changes on the eardrum for at least the duration of fever for infections of the middle ear and mastoid bones, and for up to a month where there has been a perforation of the tympanic membrane with or without infection.

7.2. Acute Otitis Externa

- Localised infection: Analgesia as PGD or OTC

- Consider incision and drainage of small pustule near the entrance to the ear canal
- Flumetasone 0.02% / Clioquinol 1% as per PGD, Sofradex® (framycetin, dexamethasone and gramicidin), or Cilodex® (ciprofloxacin 3mg/ml and dexamethasone 1mg/ml) ear drops as per PGD as per stock availability.
- GP follow up if no improvement
- Oral antibiotics are rarely indicated. Only consider issuing PGD flucloxacillin or doxycycline to patients who have not received prior topical or systemic antibiotic treatment, do not require admission to hospital, and present with any of the following:
    - ⇨ Furuncle not amenable to incision and drainage, or signs of spreading infection around furuncle
    - ⇨ Cellulitis spreading beyond the ear canal to the pinna, neck or face which is not associated with mastoid tenderness or systemic symptoms of infection (commence treatment, and refer to ENT to exclude malignant otitis externa)
    - ⇨ Systemic signs of infection, such as fever
    - ⇨ Immune compromise, and severe infection (but not requiring red flag referral) or high risk of severe infection

7.3. Acute Otitis Media

- Administer analgesia as Patient Group Direction (PGD) or Over The Counter Medicine (OTC)
- Advise rest and increase fluids
- Advise they may experience short term loss of hearing
- Offer reassurance that antibiotics are usually not needed because they are likely to make little difference to the symptoms, may cause adverse reactions and unnecessary use leads to resistance.
- According to PHE Common Infections Guidance December 2017: 60% cases acute otitis media resolve in 24 hours without antibiotics, antibiotics reduce pain only at 2 days and do not prevent deafness. Acute complications such as mastoiditis are rare, with or without antibiotics
- Advise that there is no evidence to support the use of decongestants or antihistamines for relief of symptoms of otitis media.
- PGD amoxicillin for patients presenting with otitis media with bulging tympanic membrane or ruptured tympanic membrane, **who have not had previous antibiotic treatment for this episode of acute otitis media**, and any of the following:
    - ⇨ Patients whose symptoms have not improved within 4 days of onset
    - ⇨ Patients who have symptoms of otitis media and are systemically unwell, but do not require admission
    - ⇨ Any child with acute onset of symptoms, perforation of the ear drum and discharge in the ear canal
    - ⇨ Patients re-presenting, whose symptoms have worsened after initial consultation

- ⇨ Patients who are at high risk of complications due to significant heart, lung, kidney, liver or neuromuscular disease or immunocompromise

7.4. Perforation of Tympanic Membrane

- Advise that the perforation will usually heal spontaneously, which may take a month to six weeks.
- Analgesia as PGD or OTC
- Advise if increase pain or bloody discharge see GP
- Advise to see GP within 6 weeks to confirm healing

7.5. Tinnitus

- Refer to GP for definitive diagnosis in non-urgent scenarios, or if red flag signs refer on to ED for urgent assessment

8. Discharge Pathway

Assess and document pain score prior to discharge

Ensure patient is issued with appropriate advice sheet (if available) and that patient understands the need to return if symptoms change or worsen.

Discuss home analgesia with patient, parent or carer and advise OTC medication or administer TTO medication as per PGD.

8.1. DOCUMENTATION TO BE COMPLETED

- Clinical treatment record as per Documentation & record keeping policies. Copy of clinical treatment record to General Practitioner; to be sent to surgery as per Record keeping policy.
- For patients being transferred to secondary care, ensure a copy of the clinical treatment record is sent with patient. A copy will also be sent to surgery in normal manner.
- **For patients seeing their General Practitioner in next 24 hours ensure patient is given a copy of the clinical treatment record to take with them. A copy will also be sent to surgery in the normal manner.**

8.2. BEFORE DISCHARGE ENSURE

- Those patients who have been referred for further acute intervention has appropriate transport to meet their needs, all relevant treatment has been prescribed and administered and correct information and documentation is given to the patient.
- The patient understands that if condition deteriorates or they have further concerns they should seek further advice.

- The patient demonstrates understanding of advice given during consultation.
- The patient has been provided with written advice leaflet to re-enforce advice given during consultation.
- The patient demonstrates an understanding of how to manage subsequent problems.

9. References

- British National Formulary and BNFC, both via www.new.medicinescomplete.com
- NICE. 2018. NG91: Otitis media (acute): antimicrobial prescribing
- NICE Clinical Knowledge Summaries: Otitis externa. Last revised Feb 2018
- NICE Clinical Knowledge Summaries: Otitis media (acute). Last revised July 2018
- NICE Clinical Knowledge Summaries: Management of Tinnitus. Last revised October 2017
- NICE Clinical Knowledge Summaries: Earwax. Last revised July 2016
- NICE Clinical Knowledge Summaries: Boils, Carbuncles and Staphylococcal Carriage. Last revised January 2017
- Consent Policy V5.2(2019) NDHCT
- Medicines Policy V2.0(2018)NDHCT
- North and East Devon Formulary and Referral (via trust intranet)
- Patient Group Direction Policy v4.0 (2016)
- Public Health England and NICE (2019). Management and Treatment of Common Infections: Summary of antimicrobial prescribing guidance – managing common infections. https://www.nice.org.uk/Media/Default/About/what-we-do/NICE-guidance/antimicrobial%20guidance/summary-antimicrobial-prescribing-guidance.pdf

APPENDIX A – Essential Documentation for All Patients Attending Unit or Centre

Adults Consent
Gain consent to be seen by a nurse practitioner
Gain consent for treatment and sharing information and document.

Clinical Presentation
If unwell assess for:

- Airway
- Breathing
- Circulation
- Disability
- Exposure

Document a full set of observations including neurological observations including Glasgow coma score if applicable.

Record EWS: if 7 or above arrange immediate transfer to secondary care.

Document pain score using numeric rating scale. For cognitively impaired patients document any signs of pain (e.g. grimaces or distress).

Safeguarding

- Assess for mental capacity and if person is a vulnerable adult.
- Assess for learning disability and whether patient has a hospital passport in place.
- Assess for risk of domestic abuse.
- Assess falls risk. Complete falls referral if applicable.
- Document names of persons accompanying patient.

APPENDIX B – Essential Documentation for All Patients Attending Unit or Centre

Child and Young Persons under 18 Years Old Consent

Gain consent to be seen by a nurse practitioner
Gain consent for treatment and sharing information
Assess and document Gillick competency according to Fraser guideline if applicable.
Document name of person's accompanying patient

Clinical Presentation

If unwell assess for:

- Airway
- Breathing
- Circulation
- Disability
- Exposure

Record PEWS: if any one parameter is triggered transfer to secondary care or seek advice from medical practitioner.

Use guideline Traffic Light System (NICE) 2013 if applicable.
Use guideline Feverish Illness (NICE) 2013 if applicable.
Document pain score using FLACC, Wong Baker Faces or numeric rating scale.

Safeguarding

- Assess safeguarding
- Assess for domestic abuse in the home
- Assess for learning disability

DOCUMENT ALL FINDINGS IN THE CLINICAL TREATMENT RECORD AND ACT ON THEM FOLLOWING NDHCT GUIDELINES.

APPENDIX C – Training Competency Form

Protocol for Ear Pain (over 2 years of age)

Protocol operational from July 2019 and expires end of June 2022

The registered health professional named below, being employees of Northern Devon Healthcare Trust based at ……. have received training and are competent to operate under this protocol

NAME *(please print)*	PROFESSIONAL TITLE	SIGNATURE	AUTHORISING MANAGER *(please print)*	MANAGER'S SIGNATURE	DATE

Keep original with the authorising manager and send a copy to: Karen Watts, Emergency Department, Northern Devon Healthcare Trust NHS, Raleigh Park, Barnstaple, Devon, EX31 4JB

APPENDIX D – QUICK GUIDE EAR PAIN PROTOCOL FLOWCHART