**Supplemental file 1. Summary of COS items derived from patients and systematic literature review, included in the Delphi survey**

Abbreviations: CRP, C reactive protein; ESR, erythrocyte sedimentation rate; HbA1c, glycated haemoglobin; NOE, necrotising otitis externa; WCC, white blood cell count

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| **Literature review outcome item(s)** | **Patient suggested outcome item(s)** |
| • Death due to NOE• Death due to non NOE• On patient survival (6 months, 1 year, 2 years, 5 years)• On improvement in discharge from ear/otorrhoea• On improvements in external auditory canal inflammation• On external auditory canal swelling/ oedema• On improvements in reactive over healing in ear canal (granulations)• On improvements in hearing impairment• On cranial nerve dysfunction• On intracerebral abscess diagnosed since commencing treatment• On intracerebral thrombus diagnosed since commencing treatment• On meningitis diagnosed since commencing treatment• On sepsis diagnosed since commencing treatment• On the need for analgesia• On improvement in ear pain (otalgia) based on patient self reported pain• On improvement in nocturnal otalgia based on self reporting• On improvement in headache based on self reported pain• On impact on quality of life (eg patients said sleep, symptoms impacting life, impact on family and loved ones) as being an important theme for patients in encrotiting otitis externa management• On compliance with treatment• On compliance with follow up• On ability to tolerate imaging• On the need for antibiotic treatment escalation from roal to IV,or de escalation from IV to oral• On th reason for choice of antibiotic therapy• On the choice of antimicrobial• On the reasons for medication changes• On the need for surgery• On the delivery of alternate therapes eg hyperbaric oxygen therapy• On duration of total treatment• On duration of IV antibiotic treatment• On duration of pre admission Op treatment• On duration of IP stay• On duration of treatment post discharge• On criteria for cessation of treatment• On the post antibiotic treatment termination imaging result• On imaging at 1 year follow up result• On pre admission treatment delays• On treatment delays in secondary care• On number f people lost to follow up• On number of people experiencing necrotising otitis external relapse i.e recurrence of ipsilateral necrotising otitis externa in any timescale following cessation of treatment• On the number of people requiring hospital re admission for necrotising otitis externa post discharge• On side effects of treatment• On stabilisation of CRP post treatment • On stabilisation of ESR post treatment• On stabilisation of WCC post treatment• On stabilisation of HbA1c post treatment• On whether patients were managed by a Multidisciplinary Team eg otologist, microbiologist, radiologist | • On the need for analgesia• On improvement in ear pain (otalgia) based on patient self reported pain• On improvement in nocturnal otalgia based on self reporting• On improvement in headache based on self reported pain• On improvement in jaw/ tmj pain based on self reported pain (patient reported only)• On improvement in pain on eating based on patient self reported pain (patient reported only)• On improvement in pai elsewhere I the body based on self reported pain (patient reported only)• On impact on quality of life (eg patients said sleep, symptoms impacting life, impact on family and loved ones) as being an important theme for patients in necrotising otitis externa management• On impact on mental health (patients highlighted mental health eg depression, low mood, wanting to die, anxiety about potential relapse) as being important theme for NOE management• On pre admission treatment delays• On treatment delays in secondary care |

**Supplemental file 2: Summary of definition and diagnosis items derived from the systematic literature review, included in the Delphi survey**

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| **Outcome category** | **Literature review item(s)** |
| **Definition**  | * Malignant vs necrotising
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| **Diagnosis** | * EAC swelling/oedema
* Discharge (otorrhoea)
* Reactive over healing (granulations)
* Ear canal erythema
* Micro abscess when operated
* Hearing impairment
* Ear pain (otalgia)
* Nocturnal otalgia
* Pain behind ear/ mastoid pain
* Jaw TMJ pain or jaw locking/trismus
* Headache
* Facial pain
* Fever
* Adenopathy
* Positive EAC microbiology
* EAC granulation biopsy for histo and micro
* Deep tissue biopsy
* Positive CT scan
* Positive MRI scan
* Additional imaging (pls specify)
* Facial nerve palsy or lower cranial nerve palsy
* Raised crp
* Raised esr
* Raised wcc
* Poor glycaemic control (hba1c)
* Persistent symptoms despite treatment for at least 2 weeks (local or systemic)
* At least one local risk factor listed below:

-Water exposure to external auditory canal-Humid, warm climate-External auditory canal trauma-Ear syringing -Previous surgery-Previous radiotherapy-External auditory canal cholesteatoma* At least one risk factor for immunosuppression listed below

-Diabetes mellitus-Old age (immunosenescence)-Immunosuppression or immunodeficiency -Frailty-Malnutrition* At least one medical comorbidity (heart/lung/liver/kidney disease)
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Abbreviations: CT, computerised tomography; CRP, C reactive protein; ESR, erythrocyte sedimentation rate; HbA1c, glycated haemoglobin; MRI, magnetic resonance imaging; WCC, white blood cell count