Queensland Health

Candida auris (C. auris) Infection Prevention and Control

Queensland Health Guideline – Version 3.2

Key Messages

- *Candida auris (C. auris)* is an emerging fungus (yeast) that poses a serious global threat.
- Clinical spectrum ranges from asymptomatic colonisation to bloodstream, bone, CSF, and Intra-abdominal infections. Additionally, it has been isolated from wounds, ear and respiratory specimens, urine, and jejunal biopsies.
- *C. auris* is more likely in patients who have been overseas and admitted to a healthcare facility (of any type) overseas in the last 12 months. **At-risk patients must be screened and isolated on admission into a single room with an unshared ensuite under standard and contact transmission-based precautions.**
- Early identification of cases and engagement of local infection prevention and control teams is essential to preventing outbreaks.[1–5]

Purpose

To provide guidance on the infection prevention and control (IPC) management of patients who are suspected or confirmed cases of *Candida auris (C. auris)* in healthcare settings.

Scope

This guideline provides IPC advice for all Queensland Health Hospital and Health Service (HHS) employees (permanent, temporary, and casual) and all organisations and individuals acting as its agents (including Visiting Medical Officers and other partners, contractors, consultants, students, and volunteers). This includes acute care, aged care, offender health, dental health and disability services that are managed by Queensland Health. Queensland licensed private health facilities may choose to use this guideline. This guideline does not include clinical treatment advice, which is guided by treating doctor or Infectious Diseases specialist.

Related documents

This guideline should be read in conjunction with the following guidelines:

- Australian Guidelines for the Prevention and Control of Infection in Healthcare
- Management of multi-resistant organisms
- Health Facilities Communicable Disease Outbreak Preparedness, Readiness, Response and Recovery
- Intra-vascular device management

Candida auris (C. auris) - Queensland Health Guideline – Version 3.2

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An electronic version of this document is available at
https://www.health.qld.gov.au/__data/assets/pdf_file/0028/722827/Candida-auris-guideline.pdf

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1 Quick reference guide for clinicians

Appendix 1: *Candida auris* - Quick reference guide provides a summary of the key IPC guidance for use by healthcare workers at the point of care.

2 Prepare

In accordance with the Health facilities communicable disease outbreak preparedness, readiness, response and recovery guideline, it is recommended that health facilities ensure that an approved outbreak control plan provides adequate guidance in the event of a C. *auris* outbreak which includes the convening of a management team, and activation of the facility outbreak control plan.

3 Readiness

3.1 Early detection and risk assessment

Early detection and assessment of *C. auris* is crucial to prevent transmission and clinical impacts of an outbreak.

The following strategies are strongly recommended:

- **assess all persons presenting** for admission (including preadmission clinics, day only services such as dialysis, Emergency Departments (ED) or via ambulance) **for overseas travel in the last 12 months.** If the patient has been identified to have travelled overseas, **query if they have received care in a healthcare facility whilst overseas in the last 12 months**. This includes any type of day visit to dialysis or cancer services, short stay admissions for surgical procedures (such as dental/surgical implants or cosmetic surgery) and any overnight stay in an overseas healthcare facility
- assess if the person is a known contact of a previous case of *C. auris* in a local healthcare facility and determine whether screening was actioned or if the person had recent admission to a facility with a known outbreak of *C. auris*.

Testing for *C. auris* is required for any patient who meets the following criteria:

- interhospital transfers from overseas hospitals
- admitted to, or received treatment at, any overseas healthcare or cosmetic surgery facility in the last 12 months
- interhospital transfers from hospitals that have detected *C. auris* (until the outbreak is declared over)
- contacts of confirmed cases where screening has not been attended
- see Table 1 for further information.

Patient management pending screening results:

- isolate patients who meet criteria for screening in a single room with an unshared ensuite under standard and contact precautions until screening results are available
- perform a rapid risk assessment soon after identifying any patient who has a history of overseas travel and day or overnight admission to overseas facility to determine if there are any likely contact tracing requirements for other patients in the event of a positive result[6]
- review patient records to determine any prior healthcare exposures, mainly day or overnight stays in healthcare facilities which have experienced known outbreaks in the last 12 months prior to current hospital presentation.[3–5]

Please refer to Health Facilities Communicable Disease Outbreak Preparedness, Readiness, Response and Recovery Guideline *Tool 2: Risk Assessment Tool* and Management of multi-resistant organisms guideline *-Appendix 1: MRO risk assessment approach* and *Appendix 2: Recommended minimum screening program.*

3.2 Notification

C. auris is not currently a notifiable disease. **A confirmed case of *C. auris* in a patient with or without a history of overseas travel in the last 12 months should be investigated as for an outbreak.**

- It is requested that the Queensland Infection Prevention Control Unit (QIPCU) of the Department of Health is notified of any isolate of *C. auris*. Notifications, without patient identifying details, can be emailed to QIPCU@health.qld.gov.au.

3.3 Identification

***C. auris* infections are usually identified from clinical isolates (blood or other body fluids). From non-sterile sites, *C. auris* may be considered part of commensal flora and not be worked up unless the laboratory is made aware that identification of yeasts to species level is required for infection control purposes.**

If *C. auris* carriage or infection is suspected on epidemiological grounds (for example a known contact of a case or transferred from another centre/overseas country suspected or known to have cases), clinicians should notify the lab, by supplying clinical information on the pathology test request form (ideally also by phone call) to facilitate the application of correct methods to diagnostic samples. Testing frequency is outlined as per Table 1.

Screening frequency

Frequency	*Screening criteria*
1 set of swabs on admission (bilateral axilla and groin)	International healthcare contact (including residential aged care facilities and day therapy units) within the last 12 months.
3 sets of swabs collected a minimum of 24 hours apart (bilateral axilla and groin)	Contacts of confirmed cases (healthcare or community), having shared the same room ≥ 24 hours.
Point prevalence surveillance (bilateral axilla and groin)	Where novel detection of *C. auris* has occurred in a clinical setting.

Table 1: Screening frequency

The laboratory must be informed that the patient is being screened for *C. auris* and that any re-test intervals should be overridden to ensure that second and third screening swabs are not rejected for testing. This information should be written clearly in the "Clinical Notes" section of the pathology request (within ieMR). Please refer to Appendix 2: *Candida auris* screening and collection instructions for detailed information.

Invasive yeast isolates would typically undergo antifungal susceptibility testing. *C. auris* should be suspected if fluconazole resistance is detected in a species which is not intrinsically fluconazole resistant. Such isolates should be referred promptly to the central laboratory for further testing. **Accurate identification of *C. auris* species remains troublesome, as species are mistaken for other genetically similar related *Candida* species, such as *Candida haemulonii complex (Candida haemulonii* and *Candida duobushaemulonii)* and, *Candida pseudohaemulonii*. These organisms are also considered emerging threats and management should be the same as for *C. auris* unless otherwise stipulated by an infectious diseases clinician.**[2,7–9]

Whole genome sequencing is available for all confirmed *C. auris* isolates and should be attended in consultation with Queensland Infection Prevention and Control Unit. Isolation of *C. auris* is to be communicated to the infectious disease clinician and IPC team for appropriate management and treatment.

For detailed information on recommended minimum screening, please see the Queensland Health guideline: Management of multi-resistant organisms.

4 Response

4.1 Care of patients with *C. auris* colonisation or infection

It is recommended that facilities employ strict strategies to reduce spread in inpatients and outpatients who have previously, or who recently, tested positive with confirmed *C. auris* as per Health Facilities Communicable Disease Outbreak Preparedness, Readiness, Response and Recovery guideline including:

Care of patients with *C. auris* colonisation or infection

	Inpatients	*Outpatients*
Notify	Infection prevention and control and patient flow units	
Personal protective equipment	Apply standard and contact precautions PPE required: Apron/gown and gloves	
Patient accommodation	Single room with own ensuite. Ensure appropriate signage and PPE is available outside of the room.	Own isolated area/room Ensure appropriate signage and PPE is available outside of the room.
Visitors	All visitors must see nursing staff. Visitors of patients under contact precautions are not required to wear PPE providing they are not visiting any other patients. Strict adherence to hand hygiene on entry and exit of the room. Visitors who are seeing multiple patients should be encouraged to visit other patients before visiting patient with *C. auris*.	
Patient equipment	Dedicated patient equipment. Single use items are encouraged. Any shared patient care equipment is to be cleaned and disinfected prior to use on another patient.	
Cleaning	At a minimum, daily cleaning of the patient environment with suitable detergent and disinfectant (e.g., 1000 ppm sodium hypochlorite). The disinfectant should be included in the Australian Register for Therapeutic Goods (ARTG). Detergent and disinfectant clean on discharge.	
Hand hygiene	Follow hand hygiene practices as per the 5 moments for hand hygiene. Alcohol based hand rub may also be used when hands are not visibly soiled. **Gloves are not a substitute for hand hygiene.**	
Alerts	Alerts will be placed in the ieMR and HBCIS. Please ensure receiving areas are notified of confirmed *Candida auris* status. IeMR alert: Other alert: *Candida auris* date identified and pathology source. HBCIS alert: *Candida auris* date identified and pathology source.	

	Inpatients	*Outpatients*
Waste and linen	Hospital and Health Services should follow their current waste and linen management policies as for any other multi-resistant organism. Linen should be placed into a skip at point of use, and not carried against the uniform.	
Treatment	To be discussed with infectious diseases physician or treating doctor.	
Other	Adherence to intravascular device guidelines and bundles, urinary catheter care bundles and care of the tracheostomy site procedures. Prompt removal of all unused venous access devices. Strict adherence to aseptic technique when undertaking wound care. Restrict broad-spectrum antimicrobial use in keeping with local antimicrobial stewardship (AMS) recommendations. Contact tracing and screening as per Appendix 2 Candida auris – Screening and collection instructions. Identify and screen contacts of newly identified cases to determine if they are colonised/infected with *C. auris*.	

Table 2: Care of patients with C. auris colonisation or infection

These additional measures should continue indefinitely, there is currently insufficient evidence to exclude lifelong colonisation.[10]

4.2 Patient education

Communication with patients throughout this process is important. Effective infection prevention requires involving patients and significant others in their care. A process of education and feedback with patients and visitors is essential throughout their admission.[8]

4.3 Environmental cleaning

C. auris can persist on surfaces in the environment. Cleaning and disinfection of rooms and patient care equipment of suspected and confirmed *C. auris* should be undertaken daily at a minimum, and on discharge using one of the following processes:

- a physical clean using an ARTG listed combined detergent and disinfectant product that makes specific claims for use against *C. auris* (2-in-1 clean),
  or
- a physical clean using detergent followed by a an ARTG listed chemical disinfectant that makes specific claims for use against *C. auris* (2-step clean).

Thorough cleaning and disinfection of the environment according to local cleaning procedures, should occur in between procedures, treatments, or care that occurs in any single or shared space (for example radiology or clinic spaces) to reduce risk of *C. auris* transmission to other patients and the environment.[5,11,12]

All patient/resident surrounds and frequently touched surfaces (such as, bedrails, trolleys, bedside commodes, doorknobs, light switches, tap handles and ensuite facilities) should be cleaned and disinfected daily at a minimum. After the floor of the room has been mopped, the mop head should be changed, and bucket cleaned before use in any other area. Cleaning equipment should not be used for any other patient.

Due to the capacity for *C. auris* to rapidly form surface biofilms, frequency of cleaning regimes should be increased whilst the colonised/infected person is an inpatient.[1,5,12]

It is important to follow all manufacturers' directions for use, including applying the product for the correct contact time and dilution concentration. The compatibility of cleaning chemicals should be checked to ensure efficacy against *C. auris*, and manufacturer Material Safety Data Sheets should be consulted.

4.3.1 Discharge cleaning

Thorough cleaning and disinfection of the entire patient care environment upon discharge is required as per Queensland Health guideline: Management of multi-resistant organisms with a focus on:

- bathrooms/ensuites
- high-touch surfaces
- all patient care equipment.

Disposable privacy curtains should be changed, and reusable privacy curtains changed and laundered after the patient is discharged. Refer to manufacturer's instructions if antimicrobial curtains are used and change as per advice for novel pathogens such as *C. auris*. Dispose stocks of single-use items in the immediate patient environment that are difficult to clean or disinfect. If blinds are in place clean as per manufacturer's instructions.

Staff performing the cleaning should be aware of the recommended cleaning and disinfection process, and ensure they change gloves and aprons and perform hand hygiene after cleaning each *C. auris* area.[1,5,12,13,15]

Refer to manufacturer's validation reports regarding efficacy against *C. auris*.[1,4] Cleaning should be monitored and audited on a regular basis to ensure standards are maintained.

4.4 Linen and waste

Hospital and Health Services should follow their current waste and linen management policies as for any other multi-resistant organism, with a particular emphasis on:

- appropriate bagging and isolation of used linen and waste so that the environment is not contaminated
- appropriate disposal of used nappies or items which are heavily soiled or contaminated with blood and body fluids as clinical waste
- contaminated material and waste should never be discarded or washed in clinical hand wash basins.

4.5 Special considerations for residential care facilities

Non-acute or community care settings providing care for persons colonised or infected with *C. auris* should follow the below recommended additional measures.

- Residents should be accommodated in a single room with unshared ensuite/bathroom facilities. If a single room is not available, the individual should not share a room or bay with an immunocompromised individual (for example solid organ transplant, HIV, pregnancy, haematology/oncology, cystic fibrosis).
- Staff should use contact precautions when providing care to residents known to be colonised with *C. auris* whilst in their rooms.
- Residents with *C. auris* can continue to participate in communal activities and leave their rooms if secretions and bodily fluids can be contained (e.g., apply dressings to wounds) and the resident can perform hand hygiene prior to leaving their room. It is important the facility maintain standard precautions and effective environmental hygiene practices. Close supervision may be required for some residents.
- All healthcare staff providing direct care to residents (including allied health professionals and diversional therapists) should maintain contact precautions for the duration of the therapy/care episode.
- Shared equipment should be thoroughly cleaned and disinfected after use. See Environmental cleaning, Discharge cleaning and Linen and waste.[1,4–6,10,12,13]

4.6 Contact screening

Contact screening is recommended for the following patients:

- patients who shared a room for longer than 24 hours with a colonised or infected *C. auris* patient in the 28 days prior to confirmation of *C. auris*. This includes residential aged care residents.

Consider contact screening for the following patients:

- patients requiring higher levels of care (e.g., mechanical ventilation) and whose stay overlapped on the ward or unit for 3 or more days (but not sharing same room) with the index patient prior to *C. auris* identification. These patients are also at substantial risk for colonisation. Where applicable, consider screening contacts who meet this criterion for the period 28 days prior to isolation of *C. auris.*
- where novel detection in a hospital has occurred (for example, it is unusual to detect a case of *C. auris*), one-off point prevalence screening survey of entire ward/unit should be considered. Further screening may need to be considered based on risk assessment.

All identified contacts should be screened for *C. auris* colonisation and provided with consumer information. In the event that a patient is unwell, the treating doctor may order additional tests (blood cultures, urine, wound) depending on clinical presentation to test for infection.

There is insufficient evidence to recommend routine screening of healthcare workers. This may be considered in an outbreak situation, if epidemiological investigations suggest a healthcare worker as a source.[14,15]

4.7 Screening process

A robust swabbing process is required to ensure the best yield possible. See Appendix 2 Candida auris – Screening and collection instructions

- obtained informed consent from the patient prior to the collection of swabs as per guidelines
- two swabs are required - sterile transtube (red top) with gel *
- one swab is used for the right and left axilla and the second swab is used for the right and left groin
- using the first swab, sample the axilla: Firmly rotate swab back and forth 3–5 times in each axilla
- using the second swab, sample each side of the groin (inguinal region): Firmly rotate the swab back and forth 3–5 times, along the crease in the skin where the leg meets the pelvic region
- place correctly labelled specimens in a biohazard bag

* three separate sets of axilla and groin swabs collected a minimum of 24 hours apart are required for contact screening.[14]

Also consider screening the following sites (if clinically indicated):

- urine (especially if there is a urinary catheter in-situ)
- throat swab
- perineal swab
- rectal swab or stool sample
- low vaginal swab
- sputum / endotracheal secretions
- drain fluid (abdominal/pelvic/mediastinal)
- cannula entry sites
- wounds[1,5]

The identified contacts will be considered cleared for *C. auris* if the following screening results are negative:

- screening samples collected on three consecutive days at least 24 hours apart.[16]
- screening should not be performed whilst the patient is on antifungal medication or had been treated with any antifungal medication within the preceding 7 days or had been exposed to topical antiseptic washes in the preceding 48 hours. Any screening undertaken must be repeated when such factors no longer apply before a negative result can be considered valid.[17]
- Screening results should be monitored, this will facilitate the prompt removal of cleared patients from contact precautions and single rooms.

The laboratory **must** be informed that *C. auris* is under investigation. **Whole genome sequencing should be arranged for all confirmed *C. auris* isolates.**

A risk assessment should be undertaken with ICP and treating doctor and/or infectious diseases team for patients who meet the criteria for *C. auris* screening and do not consent. Local facilities should implement additional measures identified in the risk assessment as appropriate.

4.8 Management of contact pending screening results

Where practicable, facilities should care for *C. auris* contacts awaiting screening results in a single room with an unshared ensuite and use contact precautions. Single room placement should be prioritised for contacts who shared a room for >24 hours with a colonised or infected *C. auris* patient in the 28 days prior to isolation of *C. auris*.

When single rooms are not available, facilities may choose to cohort *C. auris* contacts awaiting screening results together in the same room under contact precautions.

All healthcare facilities should have an alert system for identifying contacts that have not been screened on re-admission or outpatient attendance. A local risk assessment should be undertaken to inform the need for weekly screening of inpatients (or more frequent if highly vulnerable population).

4.9 Special considerations for cohorting and screening of the healthcare environment

Cohorting of patients infected or colonised with *C. auris* is not recommended. International evidence suggests this increases the recurrence of colonisation. Cohorting of patients infected or colonised with *C. auris* should only be considered following a local risk assessment.[1]

Screening of the clinical environment where *C. auris* colonised patients have been managed will be based on expert advice from ICP, infectious diseases specialist and laboratory expertise.

For more information refer to Queensland Health – Health Facilities Communicable Disease Outbreak Preparedness, Readiness, Response and Recovery guideline[1,4,5,15,16]

4.10 Decolonisation of patients with *C. auris*

There is insufficient current evidence to support decolonisation strategies - decolonisation is not recommended.[1,5] Continue to manage patient under standard precautions and contact precautions for all future healthcare admissions and appointments.

Recolonisation from the environment may be related to persistence of colonisation in those affected.[3] Consideration of skin decontamination with chlorhexidine wipes or washes in critically ill or other high-risk patients, particularly where there is ongoing transmission despite other infection prevention measures and interventions may be considered.[18] Periodic re-screening for *C. auris* of those known to be colonised is also not recommended.

5 Recovery

5.1 Screening of contact that are discharged

Where practicable, identify and screen contacts, including those that have been discharged from the facility. All healthcare facilities should have an alert system for identifying contacts that have not been screened on re-admission or outpatient attendance.

Details of screening required at time of discharge should be included on discharge summary, and as part of clinical handover to receiving wards, facilities, or nursing homes.

5.2 Debrief and evaluation

Evaluation of effectiveness of management of cases and outbreaks provides important opportunities to improve practices. Please refer to Health Facilities Communicable Disease Outbreak Preparedness, Readiness, Response and Recovery Guideline for information pertaining to outbreak evaluation.

6 Background

C. auris is an emerging fungus (yeast) that presents a serious global threat. It was first identified in 2009 in Japan but has since been identified across 6 continents and over 40 countries including Australia. The clinical spectrum associated with *C. auris* ranges from asymptomatic colonisation to invasive candidiasis, most commonly as healthcare–associated candidemia.[1]

Laboratory misidentification as other Candida species is well recognised and as a result the real prevalence may be underestimated. A recent study found that isolates in South Korea from 1996 were *C. auris* but were misidentified at the time.[2,3] Accurate identification of *C. auris* species is complex, as conventional panels used in routine microbiology laboratories frequently misidentify them. These species are often mistaken for other genetically similar *Candida* species, such as *Candida haemulonii complex (Candida haemulonii* and *Candida duobushaemulonii)* and closely related species, *Candida pseudohaemulonii*.[2]

These organisms are also considered emerging threats and management should be the same as for *C. auris* unless otherwise stipulated by and infectious diseases physician.[2,7–9]

Guidance on how to best treat and manage patients who are infected or colonised might change as new information becomes available. This organism is of significant concern because:

- colonisation results in invasive infections in nearly 10% of individuals, most notably blood stream infections (candidaemia) with significant mortality, especially in those with co-morbidities[1,5]
- it is commonly associated with bloodstream, bone, CSF, and intra-abdominal infections, as well as, from wounds, ear and respiratory specimens, urine, bile, and jejunal biopsies[1,5]
- *C. auris* appears to be easily transmitted between patients, and the clinical environment, including via multi-use equipment, highlighting the importance of prompt, effective, and sustained IPC practices. *C. auris* can grow at higher temperatures than other fungi and is able to tolerate high salt concentrations. These are important characteristics in its ability to persist in the environment and survive for prolonged periods of time[1,3,4]
- acquisition can be rapid (as little as 4 hours from initial exposure to colonisation in affected units), and colonisation can be prolonged (weeks or months from acquisition)[5]
- there are currently no established routine protocols for decolonisation of patients with *C. auris,* as colonisation often persists despite a range of strategies to eradicate, and recolonisation from the environment is common[5]

- environmental contamination is extensive, and survival times of 7 days have been recorded on general surfaces, increasing to 14 days for some plastic devices[1,5]
- there are limited treatment options as *C. auris* is commonly multi-resistant to antifungal agents (resistant to at least 2 classes of antifungal agents) with some strains resistant to all three classes of antifungal agents (azoles e.g. fluconazole, polyenes e.g. amphotericin formulations and echinocandins e.g. caspofungin)[2,6]
- it represents a significant burden of disease in certain countries. Healthcare facility outbreaks have been reported in many countries including the UK, South Africa, India, Kuwait, Spain, the US, Columbia, Kenya, Oman, Pakistan, Venezuela, Brazil, Qatar, and Turkey.[1,5]

To date, 5 genetically distant clades of *C. auris* have been discovered, including:

- Clade I – the South Asian clade, first detected in India and Pakistan
- Clade II – the East Asian clade, first detected in Japan
- Clade III – the South African clade, first detected in South Africa
- Clade IV – the South American clade, first detected in Venezuela
- Clade V – further clade recently detected in Iran

Each clade is associated with certain clinical presentations, resistance patterns, and differences in virulence.[1,5]

Older phenotypic identification systems may misidentify *C. auris* as other *Candida* species; however, this issue has been rectified in updated mass spectrometry databases currently used in most diagnostic laboratories. Queensland laboratories are aware of these limitations and diagnostic algorithms are designed to avoid misidentification. **Despite advancements in testing, Accurate identification of *C. auris* species remains troublesome, as species are mistaken for other genetically similar related *Candida* species, such as *Candida haemulonii complex (Candida haemulonii* and *Candida duobushaemulonii)* and*, Candida pseudohaemulonii*. These organisms are also considered emerging threats and management should be the same as for *C. auris* unless otherwise stipulated by an Infectious Diseases clinician.[2,7–9]**

Colonisation and superficial infection may occur without causing infection, or colonisation may precede invasive infection. *C. auris* has been isolated from a range of body sites, including skin (very common), urogenital tract (common), and the respiratory tract (occasional). In addition to candidaemia, other invasive infections have been described, including pericarditis, urinary tract infections and pneumonia. *C. auris* is known to affect both paediatric and adult populations and has predominantly been identified in critically unwell patients in high dependency settings e.g., intensive care units (ICU). Risk factors for infection include central venous access, mechanical ventilation, and the use of broad-spectrum antimicrobials.[3–5]

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8 Guideline development and review process

This guideline was developed and reviewed using current peer reviewed journal articles and published literature. Recommendations and updates in this guideline are the combination of expert consensus of the following international published guidelines:

- European Centre for Disease Prevention and Control.
- Centers for Disease Control and Prevention: *Candida auris.*
- UK Health Security Agency: *Candida auris.*

Appendix 1 – *Candida auris* Quick reference guide

Term	Details
***C. auris* background**	*Candida auris* (*C. auris*) is a multidrug resistant opportunistic yeast (sometimes called fungus) that can cause serious infections including bloodstream, urinary tract and other invasive infections. In most cases, patients are colonised and carry the yeast somewhere on their body without causing any symptoms. People who are colonised with *C. auris* may be unaware and can pass the organism to others. *C. auris* is much less common than other types of *Candida* such as *Candida albicans* (a common cause of yeast infections known as thrush). Internationally, colonisation or infections have more commonly occurred in hospitalised patients, residents of long-term care facilities and those with significant medical co-morbidities.
Risk groups	In Australia, most cases of *C. auris* have either had overseas travel history, been admitted to an overseas hospital and received treatment or have been healthcare associated contacts of *C. auris* cases. People who are at high risk of acquiring *Candida* infections may also be at risk of acquiring *C. auris* including those who have had broad-spectrum antimicrobials, surgical procedures, invasive medical devices, are immunosuppressed, have diabetes or other chronic diseases.
***C. auris* transmission**	*C. auris* is commonly found on the skin and may spread person-to-person through direct contact with someone who is infected or colonised. It may also be transmitted via equipment that has been shared between patients and has not been adequately cleaned and disinfected between uses. *C. auris* can also survive on surfaces for lengthy periods so inadequate cleaning and disinfection of the environment is another way the organism can be spread. Patients who are colonised with *C. auris*, and have an invasive device are at increased risk of severe bloodstream infections known as candidaemia, if strict infection prevention and control practices are not adhered to.
***C. auris* treatment**	*C. auris* infection may be treated with a group of antifungal drugs called echinocandins, although some *C. auris* infections have been resistant to all three main classes of antifungal medications, making them more difficult to treat or untreatable. Decolonisation is not recommended for healthy people who carry the organism on their skin.
***C. auris* screening**	Provide information to patients requiring screening and obtain informed consent from patient prior to screening. Collection of bilateral groin and axilla swabs using a bacterial swab, is recommended to screen for *C. auris* colonisation. Clinical specimens, such as blood cultures or tissue samples, are used to detect an infection. If *C. auris* is suspected or being screened for, the laboratory must be informed to ensure appropriate testing is performed. Whole genome sequencing should be arranged for any positive isolates.

Term	Details
***C. auris* management**	PREPARE • Have an outbreak control plan in place for your facility. • Convene outbreak control team in an outbreak (one or more case).
	READINESS • Proactive patient screening – collection of axilla and groin swab for people who have been inpatients of an overseas hospital within the last 12 months, admitted from facility with a known outbreak, when patient is an identified contact of a known case, and for all inpatients in the ward whilst the positive *C. auris* patient is in the unit.
	RESPONSE • isolation of cases in single room with an unshared ensuite under standard and contact transmission-based precautions with strict adherence to the 5 moments of hand hygiene • dedicated patient equipment or clean and disinfect equipment and environment between each patient use or encounter • enhanced environmental cleaning and disinfection (daily and on discharge from any clinical zone) • use ARTG listed combined detergent and disinfectant products (2-in-1 clean), or ARTG listed chemical disinfectant that makes specific claims for use against *C. auris* (as part of a 2-step clean) • limit patient movement outside of room. If patient requires movement to another area, patient must clean hands on exit and standard and contact transmission-based precautions applied • waste should be discarded as per local procedures • strict adherence to intravascular device guidelines and bundles with prompt removal of all venous access devices if there is any sign of infection or when no longer needed • restrict broad-spectrum antimicrobial use in keeping with local antimicrobial stewardship recommendations • identify and screen contacts of newly identified cases to determine if they are colonised with *C. auris* • provide information to patients requiring screening • visitors do not need to wear gown and gloves but must perform hand hygiene. Visitors should not visit anyone else in the facility immediately after visiting someone with *C. auris*. • manage disposable curtains, blinds, as per manufacturer's instructions, or replace as necessary.
	RECOVERY • establish process to screen discharged contacts • undertake thorough discharge cleaning and disinfection • debrief and evaluate effectiveness of measures.

Appendix 2 *Candida auris* – Screening and collection instructions

Background

Candida auris (C. auris) is an emerging fungal pathogen that can be transmitted between patients in healthcare settings through contaminated equipment, environmental surfaces, or hands of healthcare workers. Early identification and management of patients colonised or infected with *C. auris* is key in containing spread.

Placement

C. auris is more likely to occur in patients who have presented to an overseas healthcare facility (of any type, including residential aged care facilities and day therapy units) in the last 12 months. At-risk patients must be identified, screened, and isolated on admission into a single room with an unshared ensuite under standard and contact precautions.

Screening Criteria

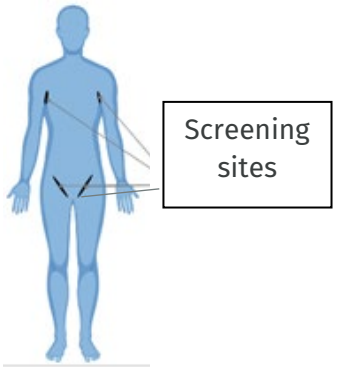
Testing for *C. auris* is required for any patient who meets the following criteria:

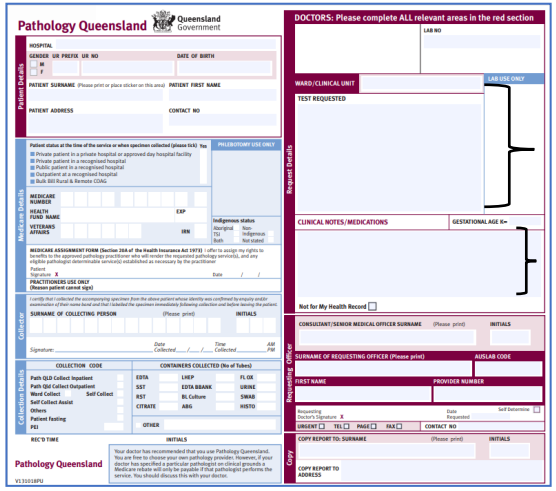
- direct and indirect interhospital transfers from overseas hospitals and/or presented to any overseas healthcare facility in the last 12 months
- domestic interhospital transfers from healthcare facilities that have detected *C. auris* (until the outbreak is declared over)
- contacts of confirmed cases (healthcare or community) where screening has not been attended
- where novel detection of *C. auris* has occurred.

Screening frequency

Frequency	*Screening criteria*
1 set of swabs on admission (bilateral axilla and groin)	International healthcare contact (including residential aged care facilities and day therapy units) within the last 12 months.
3 sets of swabs collected a minimum of 24 hours apart (bilateral axilla and groin)	Contacts of confirmed cases (healthcare or community), having shared the same room ≥ 24 hours.
Point prevalence surveillance (bilateral axilla and groin)	Where novel detection of *C. auris* has occurred in a clinical setting.

Specimen Collection

<table>
<tr>
<td>Collection Sites & Instructions</td>
<td> 
</td>
<td colspan="2">Two swabs – one swab for the right and left axilla & oneswab for the right and left groin:
• Prior to swabbing patients, obtain informed consent as per guidelines.
• With the first swab, firmly rub all sides of the swab tip over the skin of the left and right axilla, targeting the crease in the skin where the arm meets the body (i.e., swab both armpits, swiping back and forth 5 times per armpit).
• With the second swab, sample each groin (inguinal region), ŹŒ ˜ G(all sides of the swab tip over the skin where the leg meets the pelvic region.
• Place correctly labelled specimens in a biohazard bag.</td>
</tr>
<tr>
<td>Testing items</td>
<td>  </td>
<td colspan="2">• Swab - sterile transtube (red top) with gel
• Catalogue number – 10019135</td>
</tr>
<tr>
<td>Pathology request form – hard copy</td>
<td>Candida auris screen
• Right & left axilla swab, followed by
• Right & left groin
(2 swabs per collection)

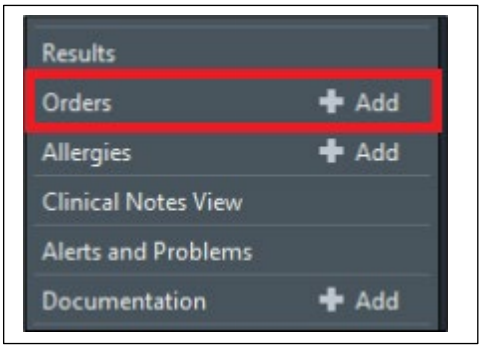
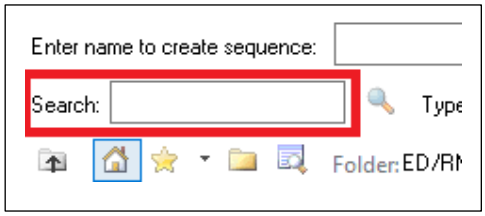
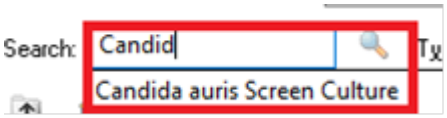
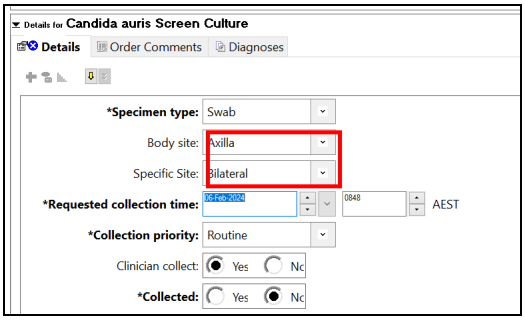
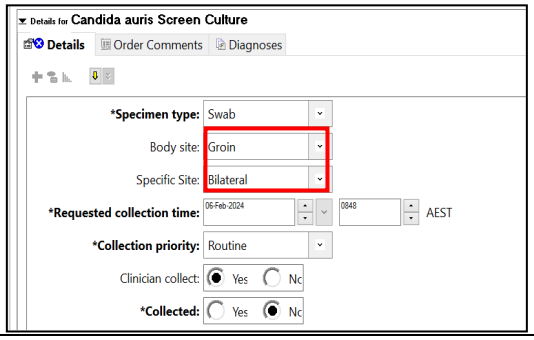
Swabs and request forms must have 3 points of identification i.e., MRN, name, DOB.</td>
<td> 
Pathology Queensland
Queensland Government
DOCTORS: Please complete ALL relevant areas in the red section
Patient Details
PATIENT SURNAME
PATIENT FIRST NAME
PATIENT ADDRESS
CONTACT NO
Medicare Details
MEDICARE NUMBER
HEALTH FUND NAME
VETERANS AFFAIRS
Collector
SURNAME OF COLLECTING PERSON
Collection Details
COLLECTION CODE
CONTAINERS COLLECTED (No of Tubes)
Requested Details
WARD/CLINICAL UNIT
TEST REQUESTED
CLINICAL NOTES/MEDICATIONS
GESTATIONAL AGE if<
Not for My Health Record
Interpreting Officer
CONSULTANT/SENIOR MEDICAL OFFICER SURNAME
SURNAME OF REQUESTING OFFICER (Please print)
PROVIDER NUMBER
Copy
COPY REPORT TO: SURNAME
COPY REPORT TO ADDRESS
Pathology Queensland</td>
<td>Test Request
Candida auris screen
☐ Bilateral Axilla with 1st swab
☐ Bilateral Groin with 2nd swab
(2 swabs in total/screen)

Clinical Notes - include
Multi-Resistant Organism Screen
• International Healthcare in last 12 months

Where 3 sets of screening swabs are required, indicate day 1, 2 or 3</td>
</tr>
</table>

Pathology request form

Pathology request form - ieMR

1. In the menu bar, go to *Orders* and click *Add*	
2. Enter the details in the *Search* box 3. Select your order. Please note all orders must be done separately. When selected, it is bold, highlighted in blue and added to the profile.	
4. Test codes - search for: ***Two*** separate swabs ***with two*** separate orders, must be completed for *Candida auris* screening.	  
5. Order Comments • Multi-Resistant Organism Screen • International Healthcare in last 12 months • Where 3 sets of screening swabs are required, indicate day 1, 2 or 3	

Document approval details

Document custodian

Queensland Infection Prevention and Control Unit (QIPCU), Communicable Diseases Branch, Queensland Public Health and Scientific Services.

Approval officer

Belinda Henderson, Chief Infection Control Nurse QIPCU

Version control

Version	Date	Prepared by	Comments / Reason for update
1.0	09/08/2018	CDIM	New document
2.0	09/09/208	CDIM	Minor changes following feedback
3.0	Jan 2019	CDIM	Changes to decontamination and screening recommendations
3.1	Oct 2019	CDB-eLearning	Updated to new template
3.2	June 2024	QIPCU	Major review of evidence base and restructure of guidelines, key changes include: - NEW: Key messages section - NEW: Quick reference guide for clinicians - Restructured according to Outbreak Preparedness, Readiness, Response and Recovery model - Whole genome sequencing and laboratory requirements sections updated