PURPOSE: To provide a workflow and identification scheme for Yeasts from clinical specimens.

INTERPRETATION AND REPORTING RESULTS:

Perform wet prep on suspect colonies. If yeast cells are seen, proceed as follows:

1. **Sterile sites, blood cultures, body fluid cultures, biopsy specimens, invasively collected urines (straight catheter, suprapubic aspirate, cystoscopy specimen), corneal specimens, immunocompromised patients, neonates:**
   - Preliminary report as Yeast species.
   - Perform Vitek 2 YST identification card.
   - If yeast other than *Candida* spp. is identified, report as "Probable" and send to DynaLIFE for confirmation and susceptibility testing.
   - If *Candida* spp. is identified, report with quantification and refer to DynaLIFE for susceptibility testing.

2. **Respiratory isolates including sputa and specimens obtained by bronchoscopy:**
   NOTE: *Candida* organisms are not a cause of pneumonia and are most often contaminants of the procedure, except possibly in oncology or lung transplant patients or in neonates. Even in those cases, growth of *Candida* spp. in lower respiratory specimens, regardless of species, does not correlate with disease. Yeasts are normal inhabitants of the mouth.
   - Perform Vitek 2 YST identification card.
   - If *Cryptococcus* spp. is identified, report as "Probable" and refer to DynaLIFE for confirmation and susceptibility testing.
   - If *Cryptococcus* spp.is not identified, report as part of normal flora without specifically mentioning the presence of yeast (report as usual oropharyngeal flora) unless present in pure growth. Refer to MIC32300 – Respiratory Culture.

3. **Voided urines, superficial sites, wounds and drainage fluids:**
   - Perform Vitek 2 YST identification card.
   - If *Candida* spp. is identified, report identification if indicated in procedure for specimen site.
   - If *Candida* spp. is not identified, report as Yeast species if indicated in procedure for specimen site.

4. **Isolates from any other sites:**
   - Perform Vitek 2 YST identification card.
   - If *Candida albicans* is identified, report identification if indicated in procedure for specimen site.
   - If *Candida albicans* is not identified, report as Yeast, not *Candida albicans* if indicated in procedure for specimen site.

PROCEDURE NOTES:

- Vitek 2 YST identification card: If results are not satisfactory (<90% confidence), perform urease test to rule out *Cryptococcus* and refer isolate to DynaLIFE for identification if clinically significant.
- *Candida albicans:* budding yeast cells in smear and feet in <48 hours.
- *Candida dublinensis* is difficult to distinguish from *Candida albicans*. It is germ tube positive, but growth on Sabouraud agar at 42°C to 45°C at 48 hours is absent or poor, whereas *Candida albicans* grows at 42°C to 45°C in 48 hours. It is currently not recommended that laboratories routinely perform additional tests to differentiate these organisms. However, a history of clinical failure or persistence of *Candida albicans* despite therapy with fluconazole may alert the clinician that this may be *C. dublinensis*, as this organism can develop resistance to fluconazole during therapy.
- *Candida glabrata:* small yeasts in smear with no hyphae, better growth on Chocolate agar than Blood agar.
- Increasing resistance to fluconazole has been reported in *Candida* species.
- *Cryptococcus:* spherical pleomorphic budding yeast with no hyphae, typically mucoid due to presence of capsular material, becoming dryer and duller with age, urea positive. *Cryptococcus gattii is* difficult to distinguish from *C. neoformans*. *C. neoformans* affects mostly immunocompromised hosts (malignancy, HIV, etc.) but *Cryptococcus gattii* may cause disease in immunocompetent hosts.

REFERENCES:

- Clinical Microbiology Procedures Handbook, 4th edition, ASM Press, 2016
- Jorgensen J.H., Pfaller M.A., Carroll K.C., Funke G., Landry M.L., Richter S.S., Warnock D.W. 2015. Manual of Clinical Microbiology, 11th edition, ASM Press, Washington, D.C.
- Vitek 2 Systems product information
- CLSI. *Abbreviated Identification of Bacteria and Yeast; Approved Guideline—Second Edition.* CLSI document M35-A2. Wayne, PA: Clinical and Laboratory Standards Institute; 2008

REVISION HISTORY:

REVISION	DATE	Description of Change	REQUESTED BY
1.0		Initial Release	L. Steven