

MEMO

To: Doctors Lab Nursing Home Staff: Resident Physicians, DONs and Personal Nurses
From: Doctors Lab Technical Support Staff
Date: April 15, 2023
Re: **Update: UTI-ID by PCR In-house Implementation**

Executive Summary

Reasons and Advantages for Developing and Implementing our LTC tailored UTI-ID by PCR

- **Superior Turnaround Times (TATs).** Traditional microbiology typically takes 3-5 days TAT whereas PCR turnaround time is usually same day results, once the specimen is received (except weekends). This can be a significant advantage for the provider and resident to begin a targeted antibiotic treatment much sooner.
- **Superior Pathogen Detection** especially on complex multi-organism samples. We have found PCR to be much more sensitive and specific at detecting pathogens than traditional cultured micro especially with multi-organism samples. With PCR if there is a small amount of DNA, we can clearly “see” and ID the pathogen or pathogens whereas traditional micro may “miss” a slow growing obscured pathogen.
- **Improved Validations.** We validated our PCR method and results against the “gold-standard” traditional microbiology lab which is different than most PCR laboratories that typically validate their methods and results against other PCR assays. Validating against the “gold-standard” allowed us to discover analytical issues that typically would not show up in a PCR-PCR Validation. We believe that this has improved the accuracy of our LTC tailored UTI-ID assay.
- **Superior Antibiotic Stewardship Compliance.**
 - Faster Results make it possible to more quickly and appropriately treat your residents providing the opportunity for an improved outcome by:
 - **Deprescribing initial broad-spectrum antibiotic treatments sooner**
 - **Prescribing targeted antibiotics sooner**

MEMO

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- **Superior Result Interpretation and Reporting.** At Victoria Healthcare PCR we approach result interpretation and reporting differently than most PCR labs which tend to report whatever they find, which can make it difficult for the provider to decide what to do with 4,5 or 6 organisms (poly-microbial). Consistent with traditional microbiology, our policy is to only report a maximum of (3) potential pathogens, as anything over (3) is considered a “contaminated specimen” that should be recollected. If a specimen is collected properly, there should be very few recollects. All UTI by PCR reports are reviewed, interpreted and reported by our licensed Microbiologists and not just analytical PCR techs.
 - **Personalized Result Support.** By doing the UTI-ID by PCR in-house we are able to give the caregivers more detailed information from our testing especially on confusing and problematic samples when needed. We have a consultant Microbiologist with 30 years’ experience that is available for any consultations and a Molecular PhD available to explain any PCR questions that you may have.

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Background: Process and Development of our LTC Tailored UTI-ID by PCR

Doctors Lab has historically utilized the traditional microbiology model of culture, ID, and sensitivity for the diagnosis and treatment of suspected UTI cases. However, the drawback of this “gold-standard” model was and is the 48-72 hr turn-around times (TATs).

With the troubling increase of multi-resistant organisms and the impending implementation of the Antibiotic Stewardship program in the LTCF arena, Doctors Lab began exploring newer technologies to better address these needs and requirements. We looked for a technology with a better TAT that identified potential pathogens and provided suitable treatment options. We reviewed several technologies in this area to meet our requirements. While no technology is “perfect”, we determined after a lengthy review that UTI-ID by PCR came the closest to achieving our goals for meeting the expressed needs of the LTC community

We decided in 2020, just before Covid, to begin sending our UTI samples out for analysis by PCR. Ours and our clients responses were positive especially with the superior turn-around times even with the extra shipping day.

However, over time, we began to have realize that UTI-ID by PCR in general did not necessarily meet the needs of the LTC resident population. After much review and discussions we decided to put together a team to develop a UTI-ID by PCR better tailored to meet the needs of the LTC community.

Our goal was to develop a “hybrid” UTI by PCR analysis by combing the superior PCR technology for identification and quick TAT with the traditional microbiology interpretations for review and reporting. Again, knowing that no “test” is perfect, We believe that we have taken significant and necessary steps towards a UTI-ID by PCR better suited for the LTC needs.

On October 6, 2022, after a long and successful development and validation process Doctors Lab began doing the LTC tailored UTI-ID by PCR in-house. By doing it in-house we were able to adjust and improve the end product as well as improve the TATs by eliminating the previous “extra shipping day”. While our “tailored” UTI-ID by PCR has gone live, we remain in a “responsive mode” as we listen to and welcome your feedback.

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UTI-ID by PCR Molecular Development and Analytical Team

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