



## Antibiotic Stewardship

By Rhonda Burgard, Client Services Supervisor

Early detection and treatment of serious bacterial infections is critical to patient survival. However, overuse of antibiotic therapy can result in multi-antibiotic resistant organisms which contribute to over 23,000 deaths annually. It is estimated that 20-30% of antibiotic days by hospitalized patients are unnecessary.<sup>1</sup>

Joint Commission has developed five requirements related to the decrease in misuse of antibiotics by:

- 1) Identifying an antimicrobial stewardship leader
- 2) Establishing an annual antimicrobial stewardship goal
- 3) Implementing evidence based practice guidelines related to the antimicrobial stewardship goal
- 4) Providing clinical staff with education related to antimicrobial stewardship
- 5) Collecting, analyzing and reporting data related to antimicrobial stewardship goals.<sup>2</sup>

The Centers for Disease Control recommends development of a hospital-wide program with a multidisciplinary team including providers, nurses, pharmacists, laboratory personnel and hospital administration. This team is tasked with implementing the four goals of antimicrobial stewardship:

- 1) Improved patient outcomes as indicated by cure rate, reduction in

surgical infections and reduction in mortality and morbidity.

- 2) Improve patient safety as evidenced by a reduction in the use of antibiotic therapy and reduction of *C difficile* infections.
- 3) Reduce antibiotic resistance as evidenced by a reduction in infection rates with antibiotic resistant organisms.
- 4) Reduce healthcare costs as evidenced by a reduction in antibiotic costs.

Diagnostic stewardship refers to the appropriate use of laboratory testing to guide patient management, including treatment, to optimize clinical outcomes and limit the spread of antimicrobial resistance.<sup>3</sup> The laboratory's role in antibiotic stewardship programs is multi focused.

- 1) Microbiology departments can provide antibiograms which identify the most frequently identified organisms and drug sensitivity or resistance information.
- 2) In conjunction with pharmacy, microbiology staff can be involved in provider education.
- 3) Diagnostic tests like CBC, lactate, Procalcitonin, and CRP can help differentiate between viral and bacterial infections and monitor the severity of the infection.

Reduction in the misuse of antibiotics improves both patient care and decreases costs. Additional information is available from:

- <https://antimicrobialresistancefighters.org/podcasts> Superbugs and You Podcast.
  - <https://wellcome.org> Search antibiotic stewardship for a listing of documents pertaining to antibiotic stewardship.
  - <https://www.cdc.gov/antibiotic-use/healthcare/pdfs/hospital-core-elements> Core Elements of hospital antibiotic stewardship programs.
1. MLO, Sept 2019, Procalcitonin testing as an aid to antibiotic stewardship. How testing and teamwork are helping diagnose sepsis faster.
  2. MLO, Aug 2019 Antimicrobial resistance and The cornerstone of effective stewardship is in the microbiology lab.
  3. MLO, May 2021 Needs and interventions for drug resistant infections

## **Precertification for Genetic and Molecular Testing**

**By: Patti Schmidt, CPC, Billing Supervisor**

Precertification is required for most molecular and genetic testing. A precertification request needs to be submitted to the insurance company for prior authorization before testing can be ordered. A copy of the approval should be included with the sample when sent to Northern Plains Laboratory. This includes CPT code range 81105-81479. The more common tests that this includes are:

- PTNUC 20210 MUTATION (PTNUC) 81240
- FACTOR V LEIDEN PCR (F5L) 81241
- HEMOCHROMATOSIS HFE GENE (HMCR) 81256

## **Supply and Reagent Shortages**

By Rhonda Burgard, Client Services Supervisor

Northern Plains Laboratory continues to experience multiple supply and reagent shortages due to the COVID 19 pandemic. Based on supply availability, the amount of supplies provided may be reduced from the original amount ordered or an alternate supply item may be substituted. Clients will be notified via an HVR memo when supply shortages and backorders occur.

If sending specimens to Northern Plains Laboratory for correlation studies, please call first to ensure there is adequate reagent to complete the required testing.

If sending urine cups to Northern Plains Laboratory, please do not place the patient label on top of the paper label on the cup. Because of biohazard container backorders we are not discarding urine containers into hard sided biohazard containers and need to be able to peel off patient identification labels before discarding the cup.

Per federal regulations, Northern Plains Laboratory (NPL) may only provide testing and shipping supplies for specimens sent to NPL for testing. We may not provide supplies including specimen collection tubes for testing done in-house at client locations or sent to other reference laboratories.

If you have any questions or concerns please contact Northern Plains Laboratory client services at 701-530-5700.

## ***Francisella tularensis* and Tick Bites!**

By Robert Arndt, Microbiology supervisor

Infections from tick bites are very important to the Microbiology laboratory as they may potentially be caused by *Francisella tularensis*. *Francisella tularensis* is a slow growing tiny gram-negative coccobacilli that generally may cause infections in rabbits, hares, and rodents which can then be transmitted to humans. Infections with *F.*

*tularensis* happen in a number of ways:

- Tick and deer fly bites (transient host for the bacteria and the most common source for human infection)
- Skin contact with infected animals
- Drinking contaminated water
- Inhaling contaminated aerosols or agricultural and landscaping dust
- Laboratory exposure
- Exposed as an result of bioterrorism

As you can see above, tick bites are a primary vector for this disease and if you look towards the bottom of the list, laboratory exposure is also a primary mode of infection. Laboratory technologists may need prophylactic antibiotic treatment if they have had potential exposure to *Francisella* in the laboratory. This can occur when the microbiology lab does not have sufficient information (such as knowing the site was a Tick Bite) to work up this suspected organism. Please remember to provide information, such as Site: Lt Shoulder Wound from Tick Bite. Or, use the microbiology test code "MC" with a source of "tick bite" (source code TICK". It is critically important for the collecting/ordering entities of wound culture samples to provide the microbiology lab with the most accurate source/site descriptions possible so that

the Microbiology laboratory can accurately isolate and report out infectious isolates in a timely, efficient and safe manner.

Please share this information with your providers so they can be aware of this needed information.

## **CK MB Test to be Discontinued**

By Michelle Steiner, Core Lab Supervisor

Troponin is the preferred biomarker in diagnosing acute myocardial infarctions (AMI). The 2014 American Heart Association/American College of Cardiology guidelines conclude that CKMB provides no additional value for diagnosing AMI (class III, level of evidence A). Cardiac troponin has been the biomarker of choice owing to its nearly absolute myocardial tissue specificity and high clinical sensitivity for myocardial injury. In addition to high sensitivity and specificity, troponin provides stronger prognostic information. Concomitant use of CK-MB and troponin can also negatively affect patient care if results conflict. CK-MB provides no incremental value over troponin in the diagnosis of acute coronary syndrome in patients with chronic renal disease. The most recent guidelines of the American Heart Association, the American College of Cardiology and the European Society of Cardiology support the use of troponin over CK-MB for diagnosing reinfarction. Based on these recommendations, NPL has decided to discontinue CK-MB testing on 7/1/2021.

## Test Utilization- *Choosing Wisely*- Microbiology Recommendations

By Rhonda Burgard, Client Services Supervisor

*Choosing Wisely* is an initiative of the ABIM Foundation that asks medical specialists to identify tests or procedures commonly used in their profession whose necessity should be questioned and discussed.

Some of the microbiology test practices identified are:

- Avoid ordering follow-up urine cultures after treatment for an uncomplicated urinary tract infection (UTI) in patients that show evidence of clinical resolution of infection. (American Academy of Pediatrics- Section on Nephrology and the American Society of Pediatric Nephrology)
- Don't perform cultures or test for *C. difficile* unless patients have signs or symptoms of infection. Tests can be falsely positive, leading to over diagnosis and overtreatment. (Society for Healthcare Epidemiology of America)
- Do not order a comprehensive stool ova and parasite (O &P) microscopic exam on patients presenting with diarrhea less than seven days duration who have no immunodeficiency or no history of living in or traveling to endemic areas where gastrointestinal parasitic infections are prevalent. If symptoms of infectious diarrhea persist for seven days or longer start with molecular (check on insurance coverage to see if testing will be reimbursed) or antigen testing before considering full O & P microscopic exams. (American Society for Clinical Laboratory Science)

- Do not routinely test for community gastrointestinal stool pathogens in hospitalized patients who develop diarrhea after day 3 of hospitalization. (American Society for Clinical Pathology)
- Do not routinely test >1 stool specimen per week for *Clostridioides difficile* by NAAT. (American Society for Microbiology)
- Don't screen for genital herpes simplex virus infection (HSV) in asymptomatic adults, including pregnant women. (American Academy of Family Physicians)
- Don't routinely use microbiologic testing in the evaluation and management of acne (American Academy of Dermatology)
- Don't initiate empiric antibiotic therapy in the patient with suspected invasive bacterial infection without first confirming that blood, urine or other appropriate cultures have been obtained, excluding exceptional cases. (American Academy of Pediatrics- Committee on Infectious Diseases and the Pediatric Infectious Diseases Society)

**Reference:** [www.choosingwisely.org](http://www.choosingwisely.org)

## Parathyroid Hormone, Intact

By Rhonda Burgard, Client Services Supervisor

The calcium result no longer has to be submitted with the Parathyroid Hormone, Intact (PRHCS) test order.

If you have any questions, please contact Northern Plains Laboratory Client Services at 701-530-5700.

## **CMS Certificates of Compliance and Accreditation**

By Rhonda Burgard, Client Services Supervisor

CLIA extended the expiration dates on Certificates of Compliance and Accreditation to June 30<sup>th</sup> 2021 for laboratories with certificates expiring before that date.

CMS, COLA and Joint Commission have resumed some on-site inspections.

The 2021 Northern Plains Laboratory CLIA Certificate is enclosed in this mailing.

**Reference:** Shelly Heilman, ND CLIA Surveyor, ND Department of Health

## **Testosterone Test Orders**

By Rhonda Burgard, Client Services Supervisor

Order codes for testosterone testing are gender specific.

For Females and children the following options are available:

- TBSHV Testosterone, Bioavailable and SHGB, Female
- FTTSF Testosterone, Free and Total (Female/child)
- FTSTF Testosterone Free (Female/child)

For males the following options are available:

- FTST Testosterone Free, Adult Male
- TBIOM Testosterone, Bioavailable and SHBG, Adult male
- FTTST Testosterone, Free & Total Adult Male
- FTTMS Testosterone, Free, Adult Males by ED/LC

Ordering the appropriate gender based test code will prevent delays in testing. For additional information see the NPL Test catalog at [www.northernplainslab.com](http://www.northernplainslab.com).

## **Frozen Specimen Transport**

By Rhonda Burgard, Client Services Supervisor

The blue ice packs currently in use by Northern Plains Laboratory are in the process of being replaced by ice packs that hold frozen temperatures more reliably. With the upcoming warmer spring and summer temperatures, until the blue ice packs are replaced, please do the following:

- 1) Freeze the blue ice packs at least -20C for at least 48 hours.
- 2) Freeze frozen specimens at least -20C in a **non**-self-defrosting freezer for several hours until solidly frozen.
- 3) Sandwich the frozen specimen between two frozen blue ice packs and rubber band into place.
- 4) Add an additional two frozen blue ice packs to your cooler and push the foam wedge down firmly over the frozen packs.

If possible, before freezing the specimen save an aliquot, freeze and retain in your laboratory. This will provide a back-up specimen in case the shipped specimen thaws during transit.

Northern Plains Laboratory will be gradually replacing the blue ice packs with alternate freezer packs as they become available.

**Northern Plains Laboratory is an Equal Employment Opportunity/Affirmative Action/Minorities/females/Veterans/individual with disabilities/sexual orientation/gender identity/Indian Preference Employer**