Clinical Policy: Gastrointestinal Pathogen Nucleic Acid Detection Panel Testing

Reference Number: LA.CP.MP.209 **Implications**
Coding
Date of Last Revision: 05/22 **Revision Log**

See Important Reminder at the end of this policy for important regulatory and legal information.

Description

Multiplex molecular panels allow for the qualitative detection of nucleic acid from multiple viral, parasitic, and bacterial pathogens in stool samples from those with symptoms of gastroenteritis or infectious colitis. The Food and Drug Administration (FDA) have cleared several panels for diagnosis of gastrointestinal infections. This policy addresses the medical necessity criteria for Gastrointestinal Pathogen Nucleic Acid Detection Panel Testing.

Policy/Criteria

I. **It is the policy of Louisiana Healthcare Connections that gastrointestinal pathogen panel testing of up to five targets are considered medically necessary for either of the following:**
   - A. **Diarrhea for more than seven days with fever and suspected bacteremia;**
   - B. **Suspected enteric fever (i.e., typhoid or paratyphoid) in an individual with a history of recent travel to an endemic region (e.g., South and Southeast Asia, Central and South America, Africa, Central and East Asia, and Oceania [Southeast Asia, and southern Africa]) or who has consumed foods prepared by people with recent endemic exposure.**

II. **It is the policy of Louisiana Healthcare Connections that gastrointestinal pathogen panel testing of up to 11 targets is considered medically necessary for either of the following:**
   - A. **Diarrhea for more than seven days with fever and suspected bacteremia, and the individual is at risk for Clostridium difficile (C. difficile) colitis;**
   - B. **Persistent diarrhea in immunocompromised individuals.**

III. **It is the policy of Louisiana Healthcare Connections that gastrointestinal pathogen panel testing of greater than 11 targets are considered medically necessary for persons who are critically ill or immunocompromised in a healthcare setting, such as emergency department or inpatient hospital, including those in observation status.**

Background

Infectious gastroenteritis is a significant global health concern characterized by diarrhea, vomiting, and other symptoms, and can lead to life-threatening dehydration in severe cases. Causes include infections with bacteria (e.g., Clostridium difficile, Escherichia coli, Shigella), viruses (e.g., norovirus, rotavirus), or parasites (e.g., Cryptosporidium, Giardia).[4]

Nucleic acid amplification testing (NAAT) uses a microorganism's DNA or RNA to directly identify specific bacteria, viruses, and/or protozoa rather than standard microorganism

detection techniques (e.g., bacterial culture, individual real-time PCR, immunoassays, and/or microscopy). Multiplex NAAT tests are included in the larger grouping of culture-independent diagnostic tests (CIDT). Multipathogen NAATs can simultaneously detect viral, parasitic, and bacterial agents, including some pathogens that previously could not be easily detected in the clinical setting such as norovirus, and enterotoxigenic E. coli (ETEC), enteropathogenic E. coli (EPEC), and enteroaggregative E. coli (EAEC), in less time than traditional methods.

Multipathogen NAAT is associated with high clinical validity for the majority of available pathogenic targets relative to conventional testing and has a more rapid turnaround time compared with most types of conventional testing.[4] Drawbacks of molecular technologies include the need to predefine the particular microbes sought, detection of microbes at non-pathogenic levels, and increased detection of mixed infections; the relative importance of each pathogen identified may be unclear.[1]

CIDT are touted as providing a more comprehensive assessment of disease etiology by increasing the diagnostic yield compared with conventional diagnostic tests, permitting earlier initiation of appropriate therapeutic agents targeted to the detected pathogen(s), if any, rather than empirical therapy until culture results are available. The short time to results could reduce inappropriate use of antimicrobial agents to treat infections that do not require antimicrobial therapy and could shorten the time to targeted management and isolation measures for certain infections (e.g., STEC O157.)[2]

Individuals who are immunocompromised are more likely to experience severe or prolonged illness. Diarrhea in immunocompromised patients may involve a broad spectrum of potential causes, including bacterial, viral, parasitic, and fungal pathogens depending on underlying immune status.[2]

Infectious Diseases Society of America

- **Culture-independent, including panel-based multiplex molecular diagnostics from stool and blood specimens, and, when indicated, culture-dependent diagnostic testing should**
  be performed when there is a clinical suspicion of enteric fever or diarrhea with bacteremia

- **A broad differential diagnosis is recommended in immunocompromised people with diarrhea, especially those with moderate and severe primary or secondary immune deficiencies, for evaluation of stool specimens by culture, viral studies, and examination for parasites (strong, moderate). People with acquired immune deficiency syndrome (AIDS) with persistent diarrhea should undergo additional testing for other organisms including, but not limited to, Cryptosporidium, Cyclospora, Cystoisospora, microsporidia, Mycobacterium avium complex, and cytomegalovirus.**

- **Clinical consideration should be a part of interpreting results of multiple-pathogen nucleic acid amplification tests because these assays are DNA based and detect both viable and nonviable organisms.**

American College of Gastroenterology

- **Stool diagnostic studies may be used if available in cases of dysentery, moderate-to-severe disease, and symptoms lasting >7 days to clarify the etiology of the patient's illness and enable specific directed therapy.**
- **Traditional methods of diagnosis (bacterial culture, microscopy with and without special stains and immunofluorescence, and antigen testing) fail to reveal the etiology of the majority of cases of acute diarrheal infection. If available, the use of Food and Drug Administration-approved culture-independent methods of diagnosis can be recommended at least as an adjunct to traditional methods.**

Coding Implications

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Table 1: CPT codes that support medical necessity in any place of service

CPT® Codes	Description
87505	Infectious agent detection by nucleic acid (DNA or RNA); gastrointestinal pathogen (eg, Clostridium difficile, E. coli, Salmonella, Shigella, norovirus, Giardia), includes multiplex reverse transcription, when performed, and multiplex amplified probe technique, multiple types or subtypes, 3-5 targets
87506	Infectious agent detection by nucleic acid (DNA or RNA); gastrointestinal pathogen (eg, Clostridium difficile, E. coli, Salmonella, Shigella, norovirus, Giardia), includes multiplex reverse transcription, when performed, and multiplex amplified probe technique, multiple types or subtypes, 6-11 targets

Table 2: CPT codes that support medical necessity when billed with place of service codes in Table 3

CPT® Codes	Description
87507	Infectious agent detection by nucleic acid (DNA or RNA); gastrointestinal pathogen (eg, Clostridium difficile, E. coli, Salmonella, Shigella, norovirus, Giardia), includes multiplex reverse transcription, when

CPT® Codes	Description
	performed, and multiplex amplified probe technique, multiple types or subtypes, 12-25 targets
0097U	Gastrointestinal pathogen, multiplex reverse transcription and multiplex amplified probe technique, multiple types or subtypes, 22 targets (Campylobacter [C. jejuni/C. coli/C. upsaliensis], Clostridium difficile [C. difficile] toxin A/B, Plesiomonas shigelloides, Salmonella, Vibrio [V. parahaemolyticus/V. vulnificus/V. cholerae], including specific identification of Vibrio cholerae, Yersinia enterocolitica, Enteroaggregative Escherichia coli [EAEC], Enteropathogenic Escherichia coli [EPEC], Enterotoxigenic Escherichia coli [ETEC] lt/st, Shiga-like toxin-producing Escherichia coli [STEC] stx1/stx2 [including specific identification of the E. coli O157 serogroup within STEC], Shigella/Enteroinvasive Escherichia coli [EIEC], Cryptosporidium, Cyclospora cayetanensis, Entamoeba histolytica, Giardia lamblia [also known as G. intestinalis and G. duodenalis], adenovirus F 40/41, astrovirus, norovirus GI/GII, rotavirus A, sapovirus [Genogroups I, II, IV, and V])

Table 3: Place of service codes supporting medical necessity for codes in Table 2

Place of Service Code	Place of Service Name	Place of Service Description
21	Inpatient Hospital	A facility other than psychiatric which primarily provides diagnostic, therapeutic (both surgical and nonsurgical), and rehabilitation services by, or under, the supervision of physicians to patients admitted for a variety of medical conditions.
22*	Outpatient Hospital (Observation)	A portion of a hospital which provides diagnostic, therapeutic (both surgical and nonsurgical), and rehabilitation services to sick or injured persons who do not require hospitalization or institutionalization.
23	Emergency Room – Hospital	A portion of a hospital where emergency diagnosis and treatment of illness or injury is provided.

**** NOTE: GI pathogen panel testing in an outpatient place of service is reimbursable only when performed as part of the diagnostic work-up for a patient admitted for Observation.***

Reviews, Revisions, and Approvals	Revision Date	Approval Date
Rebranded from corporate policy	5/22	

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Important Reminder

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. LHCC makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved.

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