BlueCross BlueShield of New Mexico

If a conflict arises between a Clinical Payment and Coding Policy and any plan document under which a member is entitled to Covered Services, the plan document will govern. If a conflict arises between a CPCP and any provider contract pursuant to which a provider participates in and/or provides Covered Services to eligible member(s) and/or plans, the provider contract will govern. "Plan documents" include, but are not limited to, Certificates of Health Care Benefits, benefit booklets, Summary Plan Descriptions, and other coverage documents. Blue Cross and Blue Shield of New Mexico may use reasonable discretion interpreting and applying this policy to services being delivered in a particular case. BCBSNM has full and final discretionary authority for their interpretation and application to the extent provided under any applicable plan documents.

Providers are responsible for submission of accurate documentation of services performed. Providers are expected to submit claims for services rendered using valid code combinations from Health Insurance Portability and Accountability Act approved code sets. Claims should be coded appropriately according to industry standard coding guidelines including, but not limited to: Uniform Billing Editor, American Medical Association, Current Procedural Terminology, CPT® Assistant, Healthcare Common Procedure Coding System, ICD-10 CM and PCS, National Drug Codes, Diagnosis Related Group guidelines, Centers for Medicare and Medicaid Services National Correct Coding Initiative Policy Manual, CCI table edits and other CMS guidelines.

Claims are subject to the code edit protocols for services/procedures billed. Claim submissions are subject to claim review including but not limited to, any terms of benefit coverage, provider contract language, medical policies, clinical payment and coding policies as well as coding software logic. Upon request, the provider is urged to submit any additional documentation.

Pancreatic Enzyme Testing for Acute Pancreatitis

Policy Number: CPCPLAB047

Version 1.0

Approval Date: October 30, 2024

Plan Effective Date: January 15, 2025

Description

BCBSNM has implemented certain lab management reimbursement criteria. Not all requirements apply to each product. Providers are urged to review Plan documents for eligible coverage for services rendered.

Reimbursement Information

1. For individuals presenting with signs and symptoms of acute pancreatitis (see **NOTE 1**), measurement of either serum lipase (preferred) **or** amylase concentration **may be reimbursable.**

2. Measurement of serum lipase and/or amylase concentration **is not reimbursable** in **any** of the following situations:
    a. For individuals with an established diagnosis of acute **or** chronic pancreatitis;
    b. More than once per visit;
    c. For asymptomatic nonpregnant individuals during a general exam without abnormal findings

3. For the diagnosis, assessment, prognosis, and/or determination of severity of acute pancreatitis, measurement of serum and urine trypsin/trypsinogen/TAP (trypsinogen activation peptide) **is not reimbursable**.

4. For the diagnosis, assessment, prognosis, and/or determination of severity of acute pancreatitis, measurement of the following biomarkers **is not reimbursable**:
    a. C-Reactive Protein (CRP)
    b. Interleukin-6 (IL-6)
    c. Interleukin-8 (IL-8)
    d. Procalcitonin

5. For individuals presenting with signs and symptoms of acute pancreatitis (see **NOTE 1**), measurement of urinary amylase concentration for the initial diagnosis of acute pancreatitis **is not reimbursable.**

6. For all other situations or conditions not described above, measurement of serum lipase and/or amylase **is not reimbursable.**

Note 1: Signs and Symptoms of Acute Pancreatitis (Gapp et al., 2023; NIDDK, 2017):

- Mild to severe epigastric pain that begins slowly or suddenly (may spread to the back in some patients)
- Nausea
- Vomiting
- Tender to palpitation of epigastrium
- Abdominal distention
- Hypoactive bowel sounds
- Fever
- Rapid pulse
- Tachypnea
- Hypoxemia
- Hypotension
- Anorexia
- Diarrhea
- Cullen sign
- Grey Turner sign

Procedure Codes

The following is not an all-encompassing code list. The inclusion of a code does not guarantee it is a covered service or eligible for reimbursement.

Codes
82150, 83519, 83520, 83529, 83690, 84145, 86140

References

AACC. (2023). AACC's Guide to Lab Test Utilization https://www.aacc.org/advocacy-and-outreach/optimal-testing-guide-to-lab-test-utilization/a-f/amylase

AED. (2021). EATING DISORDERS A GUIDE TO MEDICAL CARE. *Academy for Eating Disorders*, 1-26. https://higherlogicdownload.s3.amazonaws.com/AEDWEB/27a3b69a-8aae-45b2-a04c-2a078d02145d/UploadedImages/Publications_Slider/2120_AED_Medical_Care_4th_Ed_FINAL.pdf

APA. (2023). The American Psychiatric Association Practice Guideline for the Treatment of Patients With Eating Disorders. *The American Psychiatric Association* https://doi.org/10.1176/appi.books.9780890424865

ASCP. (2020). *Thirty Things Physicians and Patients Should Question*. https://www.ascp.org/content/docs/default-source/get-involved-pdfs/istp_choosingwisely/2019_ascp-30-things-list.pdf

Baillie, J. (2007). AGA Institute Medical Position Statement on Acute Pancreatitis. *Gastroenterology*, *132*(5), 2019-2021. https://doi.org/10.1053/j.gastro.2007.03.066

Banks, P., & Freeman, M. (2006). Practice Guidelines in Acute Pancreatitis [Practice Guideline]. *The American Journal Of Gastroenterology*, *101*, 2379. https://doi.org/10.1111/j.1572-0241.2006.00856.x

Banks, P. A., Bollen, T. L., Dervenis, C., Gooszen, H. G., Johnson, C. D., Sarr, M. G., Tsiotos, G. G., & Vege, S. S. (2013). Classification of acute pancreatitis—2012: revision of the Atlanta classification and definitions by international consensus. *Gut*, *62*, 102-111. https://doi.org/10.1136/gutjnl-2012-302779

Barry, K. (2018). Chronic Pancreatitis: Diagnosis and Treatment. *American Academy of Family Physician*, *Volume 97*. https://www.aafp.org/pubs/afp/issues/2018/0315/p385.html#:~:text=If%20chronic%20pancreatitis%20is%20suspected,best%20imaging%20modality%20for%20diagnosis.

Basnayake, C., & Ratnam, D. (2015). Blood tests for acute pancreatitis. *Australian Prescriber*, *38*(4), 128-130. https://doi.org/10.18773/austprescr.2015.043

Bollen, T. L., Hazewinkel, M., & Smithuis, R. (2015, 05/01/2015). *Acute Pancreatitis 2012 Revised Atlanta Classification of Acute Pancreatitis*. Radiology Society of the Netherlands. Retrieved 05/22/2018 from https://radiologyassistant.nl/abdomen/pancreas/acute-pancreatitis

Borowitz, D., Grant, R., & Durie, P. (1995, 2016). *Pancreatic Enzymes Clinical Care Guidelines*. Cystic Fibrosis Foundation. Retrieved 5/17/2018 from https://www.cff.org/Care/Clinical-Care-Guidelines/Nutrition-and-GI-Clinical-Care-Guidelines/Pancreatic-Enzymes-Clinical-Care-Guidelines/

Bradley, E. (1993). A clinically based classification system for acute pancreatitis: Summary of the international symposium on acute pancreatitis, atlanta, ga, september 11 through 13, 1992. *Archives of Surgery*, *128*(5), 586-590. https://doi.org/10.1001/archsurg.1993.01420170122019

Burkart, J., Haigler, S., Caruana, R., & Hylander, B. (1991). Usefulness of peritoneal fluid amylase levels in the differential diagnosis of peritonitis in peritoneal dialysis patients. *J Am Soc Nephrol*, *1*(10), 1186-1190. https://doi.org/10.1681/asn.v1101186

CADTH. (2024). In *Advisory Panel Guidance on Minimum Retesting Intervals for Lab Tests: Appropriate Use Recommendation*. https://www.ncbi.nlm.nih.gov/pubmed/39088670

Ceylan, M. E., Evrensel, A., & Önen Ünsalver, B. (2016). Hyperamylasemia Related to Sertraline. *Korean Journal of Family Medicine*, *37*(4), 259-259. https://doi.org/10.4082/kjfm.2016.37.4.259

Clavien, P. A., Robert, J., Meyer, P., Borst, F., Hauser, H., Herrmann, F., Dunand, V., & Rohner, A. (1989). Acute pancreatitis and normoamylasemia. Not an uncommon combination. *Ann Surg*, *210*(5), 614-620. https://doi.org/10.1097/00000658-198911000-00008

Coffey, M. J., Nightingale, S., & Ooi, C. Y. (2013). Serum Lipase as an Early Predictor of Severity in Pediatric Acute Pancreatitis. *Journal of Pediatric Gastroenterology and Nutrition*, *56*(6), 602-608. https://doi.org/10.1097/mpg.0b013e31828b36d8

Crockett, S. D., Wani, S., Gardner, T. B., Falck-Ytter, Y., & Barkun, A. N. (2018). American Gastroenterological Association Institute Guideline on Initial

Management of Acute Pancreatitis. *Gastroenterology*, *154*(4), 1096-1101. https://doi.org/10.1053/j.gastro.2018.01.032

Eastler, J. (2023, 08/14/2017). *Urine Trypsinogen 2 Dipstick for the Early Detection of Post-ERCP Pancreatitis*. National Library of Medicine-National Institutes of Health. Retrieved 05/17/2018 from https://clinicaltrials.gov/ct2/show/record/NCT03098082?view=record

El Halabi, M., Bou Daher, H., Rustom, L. B. O., Marrache, M., Ichkhanian, Y., Kahil, K., El Sayed, M., & Sharara, A. I. (2019). Clinical utility and economic burden of routine serum lipase determination in the Emergency Department. *International Journal of Clinical Practice*, *73*(12), e13409. https://doi.org/10.1111/ijcp.13409

Freedman, S. D., & Forsmark, C. E. (2024). *Clinical manifestations and diagnosis of chronic pancreatitis in adults*. Wolters Kluwer. Retrieved 05/29/2018 from https://www.uptodate.com/contents/clinical-manifestations-and-diagnosis-of-chronic-pancreatitis-in-adults

Furey, C., Buxbaum, J., & Chambliss, A. B. (2020). A review of biomarker utilization in the diagnosis and management of acute pancreatitis reveals amylase ordering is favored in patients requiring laparoscopic cholecystectomy. *Clin Biochem*, *77*, 54-56. https://doi.org/10.1016/j.clinbiochem.2019.12.014

Gapp, J., Tariq, A., & Chandra, S. (2023). *Acute Pancreatitis*. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK482468/

Gumaste, V. V., Dave, P. B., Weissman, D., & Messer, J. (1991). Lipase/amylase ratio. A new index that distinguishes acute episodes of alcoholic from nonalcoholic acute pancreatitis. *Gastroenterology*, *101*(5), 1361-1366. https://doi.org/10.1016/0016-5085(91)90089-4

Hagjer, S., & Kumar, N. (2018). Evaluation of the BISAP scoring system in prognostication of acute pancreatitis - A prospective observational study. *Int J Surg*, *54*(Pt A), 76-81. https://doi.org/10.1016/j.ijsu.2018.04.026

Herrmann-Storck, C., Saint Louis, M., Foucand, T., Lamaury, I., Deloumeaux, J., Baranton, G., Simonetti, M., Sertour, N., Nicolas, M., Salin, J., & Cornet, M. (2010). Severe Leptospirosis in Hospitalized Patients, Guadeloupe. *Emerging Infectious Diseases*, *16*(2), 331-334. https://doi.org/10.3201/eid1602.090139

IAP/APA Working Group. (2013). IAP/APA evidence-based guidelines for the management of acute pancreatitis. *Pancreatology*, *13*(4), e1-e15. https://doi.org/10.1016/j.pan.2013.07.063

informedhealth.org. (2021, 05/25/2021). *Acute pancreatitis: Learn More – How is acute pancreatitis treated?* https://www.informedhealth.org/acute-pancreatitis.html

Ismail, O. Z., & Bhayana, V. (2017). Lipase or amylase for the diagnosis of acute pancreatitis? *Clin Biochem*, *50*(18), 1275-1280. https://doi.org/10.1016/j.clinbiochem.2017.07.003

Jakkampudi, A., Jangala, R., Reddy, R., Mitnala, S., Rao, G. V., Pradeep, R., Reddy, D. N., & Talukdar, R. (2017). Acinar injury and early cytokine response in human acute biliary pancreatitis. *Sci Rep*, *7*(1), 15276. https://doi.org/10.1038/s41598-017-15479-2

Judal, H., Ganatra, V., & Choudhary, P. R. (2022). Urinary amylase levels in the diagnosis of acute pancreatitis: a prospective case control study. *International Surgery Journal*, *9*(2), 432-437. https://doi.org/10.18203/2349-2902.isj20220337

Kemppainen, E. A., Hedstrom, J. I., Puolakkainen, P. A., Sainio, V. S., Haapiainen, R. K., Perhoniemi, V., Osman, S., Kivilaakso, E. O., & Stenman, U. H. (1997). Rapid measurement of urinary trypsinogen-2 as a screening test for acute pancreatitis. *N Engl J Med*, *336*(25), 1788-1793. https://doi.org/10.1056/nejm199706193362504

Khanna, A. K., Meher, S., Prakash, S., Tiwary, S. K., Singh, U., Srivastava, A., & Dixit, V. K. (2013). Comparison of Ranson, Glasgow, MOSS, SIRS, BISAP, APACHE-II, CTSI Scores, IL-6, CRP, and Procalcitonin in Predicting Severity, Organ Failure, Pancreatic Necrosis, and Mortality in Acute Pancreatitis. *HPB Surgery*, *2013*, 367581. https://doi.org/10.1155%2F2013%2F367581

Klochkov, A. K., Pujuitha, Lim, Y., & Sun, Y. (2023). *Alcoholic Pancreatitis*. https://www.ncbi.nlm.nih.gov/books/NBK537191/#:~:text=Chronic%20alcohol%20consumption%20is%20the,developing%20pancreatic%20cancer%20%5B5%5D.

Kumar, P., Ghosh, A., Tandon, V., & Sahoo, R. (2016). Gullo's Syndrome: A Case Report. *Journal of Clinical and Diagnostic Research : JCDR*, *10*(2), OD21-OD22. https://doi.org/10.7860/jcdr/2016/17038.7285

Lempinen, M., Kylänpää-Bäck, M.-L., Stenman, U.-H., Puolakkainen, P., Haapiainen, R., Finne, P., Korvuo, A., & Kemppainen, E. (2001). Predicting the Severity of Acute Pancreatitis by Rapid Measurement of Trypsinogen-2 in Urine. *Clinical Chemistry*, *47*(12), 2103. https://doi.org/10.1093/clinchem/47.12.2103

Levy, P., Boruchowicz, A., Hastier, P., Pariente, A., Thevenot, T., Frossard, J. L., Buscail, L., Mauvais, F., Duchmann, J. C., Courrier, A., Bulois, P., Gineston, J. L., Barthet, M., Licht, H., O'Toole, D., & Ruszniewski, P. (2005). Diagnostic criteria in predicting a biliary origin of acute pancreatitis in the era of endoscopic ultrasound: multicentre prospective evaluation of 213 patients. *Pancreatology*, *5*(4-5), 450-456. https://doi.org/10.1159/000086547

Li, N., Wang, B. M., Cai, S., & Liu, P. L. (2018). The Role of Serum High Mobility Group Box 1 and Interleukin-6 Levels in Acute Pancreatitis: A Meta-Analysis. *J Cell Biochem*, *119*(1), 616-624. https://doi.org/10.1002/jcb.26222

Lippi, G., Valentino, M., & Cervellin, G. (2012). Laboratory diagnosis of acute pancreatitis: in search of the Holy Grail. *Critical Reviews in Clinical Laboratory Sciences*, *49*(1), 18-31. https://doi.org/10.3109/10408363.2012.658354

Liu, P., Xiao, Z., Yan, H., Lu, X., Zhang, X., Luo, L., Long, C., & Zhu, Y. (2021). Serum Amylase and Lipase for the Prediction of Pancreatic Injury in Critically Ill Children Admitted to the PICU. *Pediatric Critical Care Medicine*, *22*(1), e10-e18. https://doi.org/10.1097/pcc.0000000000002525

Liu, S., Wang, Q., Zhou, R., Li, C., Hu, D., Xue, W., Wu, T., Mohan, C., & Peng, A. (2016). Hyperamylasemia as an Early Predictor of Mortality in Patients with Acute Paraquat Poisoning. *Medical Science Monitor : International Medical Journal of Experimental and Clinical Research*, *22*, 1342-1348. https://doi.org/10.12659/msm.897930

NASPGHAN. (2018). *Management of Acute Pancreatitis in the Pediatric Population: A Clinical Report From the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition Pancreas Committee*. https://www.naspghan.org/files/Management_of_Acute_Pancreatitis_in_the_Pediatric.33.pdf

Neoptolemos, J. P., Kemppainen, E. A., Mayer, J. M., Fitzpatrick, J. M., Raraty, M. G., Slavin, J., Beger, H. G., Hietaranta, A. J., & Puolakkainen, P. A. (2000). Early prediction of severity in acute pancreatitis by urinary trypsinogen activation peptide: a multicentre study. *Lancet*, *355*(9219), 1955-1960. https://doi.org/10.1016/S0140-6736(00)02327-8

NIDDK. (2017, 11/2017). *Symptoms & Causes of Pancreatitis*. https://www.niddk.nih.gov/health-information/digestive-diseases/pancreatitis/symptoms-causes

Pacheco, R. C., & Oliveira, L. C. (2007). [Lipase/amylase ratio in biliary acute pancreatitis and alcoholic acute/acutized chronic pancreatitis]. *Arq Gastroenterol*, *44*(1), 35-38. https://doi.org/10.1590/s0004-28032007000100008 (Relacao lipase/amilase nas pancreatites agudas de causa biliar e nas pancreatites agudas/cronicas agudizadas de causa alcoolica.)

Patel, J., Madan, A., Gammon, A., Sossenheimer, M., Samadder, N. J. (2017). Rare hereditary cause of chronic pancreatitis in a young male: SPINK1 mutation. *The Pan African medical journal*, *28*, 110. https://doi.org/10.11604/pamj.2017.28.110.13854

Pezzilli, R., Venturi, M., Morselli-Labate, A. M., Ceciliato, R., Lamparelli, M. G., Rossi, A., Moneta, D., Piscitelli, L., & Corinaldesi, R. (2004). Serum Trypsinogen Activation Peptide in the Assessment of the Diagnosis and Severity of Acute Pancreatic Damage: A Pilot Study Using a New Determination Technique. *Pancreas*, *29*(4), 298-305. https://doi.org/10.1097/00006676-200411000-00009

Quinlan, J. D. (2014). Acute pancreatitis. *Am Fam Physician*, *90*(9), 632-639. https://www.aafp.org/pubs/afp/issues/2014/1101/p632.html

Rau, B. M., Kemppainen, E. A., Gumbs, A. A., Buchler, M. W., Wegscheider, K., Bassi, C., Puolakkainen, P. A., & Beger, H. G. (2007). Early assessment of pancreatic infections and overall prognosis in severe acute pancreatitis by procalcitonin (PCT): a prospective international multicenter study. *Ann Surg*, *245*(5), 745-754. https://doi.org/10.1097/01.sla.0000252443.22360.46

Ritter. J, Ghirimoldi. F, Manuel. L, Moffett. E, Novicki. T, McClay. J, Shireman. P, & B, B. (2019). Cost of Unnecessary Amylase and Lipase Testing at Multiple Academic Health Systems. https://doi.org/10.1093/ajcp/aqz170

Rompianesi, G., Hann, A., Komolafe, O., Pereira, S. P., Davidson, B. R., & Gurusamy, K. S. (2017). Serum amylase and lipase and urinary trypsinogen and amylase for diagnosis of acute pancreatitis. *Cochrane Database of Systematic Reviews*(4). https://doi.org/10.1002/14651858.cd012010.pub2

Ryholt, V., Soder, J., Enderle, J., & Rajendran, R. (2024). Assessment of appropriate use of amylase and lipase testing in the diagnosis of acute pancreatitis at an academic teaching hospital. *Lab Med*. https://doi.org/10.1093/labmed/lmae008

Sendler, M., & Lerch, M. M. (2020). The Complex Role of Trypsin in Pancreatitis. *Gastroenterology*, *158*(4), 822-826. https://doi.org/10.1053/j.gastro.2019.12.025

Simha, A., Saroch, A., Pannu, A. K., Dhibar, D. P., Sharma, N., Singh, H., & Sharma, V. (2021). Utility of point-of-care urine trypsinogen dipstick test for diagnosing acute pancreatitis in an emergency unit. *Biomarkers in Medicine*, *15*(14), 1271-1276. https://doi.org/10.2217/bmm-2021-0067

Simsek, O., Kocael, A., Kocael, P., Orhan, A., Cengiz, M., Balci, H., Ulualp, K., & Uzun, H. (2018). Inflammatory mediators in the diagnosis and treatment of acute pancreatitis: pentraxin-3, procalcitonin and myeloperoxidase. *Arch Med Sci*, *14*(2), 288-296. https://doi.org/10.5114/aoms.2016.57886

Stevens, T., & Conwell, D. L. (2024, 10/05/2016). *Exocrine pancreatic insufficiency*. Retrieved 05/18/2018 from https://www.uptodate.com/contents/exocrine-pancreatic-insufficiency

Tenner, S., Baillie, J., DeWitt, J., & Vege, S. S. (2013). American College of Gastroenterology guideline: management of acute pancreatitis. *Am J Gastroenterol*, *108*(9), 1400-1415; 1416. https://doi.org/10.1038/ajg.2013.218

Tenner, S. M., & Steinberg, W. (1992). The admission serum lipase:amylase ratio differentiates alcoholic from nonalcoholic acute pancreatitis. *Am J Gastroenterol*, *87*(12), 1755-1758. https://europepmc.org/article/MED/1280405

Terui, K., Hishiki, T., Saito, T., Mitsunaga, T., Nakata, M., & Yoshida, H. (2013). Urinary amylase / urinary creatinine ratio (uAm/uCr) - a less-invasive parameter for management of hyperamylasemia. *BMC Pediatrics*, *13*, 205-205. https://doi.org/10.1186/1471-2431-13-205

Tian, F., Li, H., Wang, L., Li, B., Aibibula, M., Zhao, H., Feng, N., Lv, J., Zhang, G., & Ma, X. (2020). The diagnostic value of serum C-reactive protein, procalcitonin, interleukin-6 and lactate dehydrogenase in patients with severe acute pancreatitis. *Clinica Chimica Acta*, *510*, 665-670. https://doi.org/10.1016/j.cca.2020.08.029

Toouli, J., Brooke-Smith, M., Bassi, C., Carr-Locke, D., Telford, J., Freeny, P., Imrie, C., & Tandon, R. (2002). Guidelines for the management of acute pancreatitis. *J Gastroenterol Hepatol*, *17 Suppl*, S15-39. https://doi.org/10.1046/j.1440-1746.17.s1.2.x

Vege, S. S. (2024a, 05/21/2018). *Approach to the patient with elevated serum amylase or lipase*. Wolters Kluwer. Retrieved 05/23/2018 from https://www.uptodate.com/contents/approach-to-the-patient-with-elevated-serum-amylase-or-lipase

Vege, S. S. (2024b). *Clinical manifestations and diagnosis of acute pancreatitis*. Wolters Kluwer. Retrieved 05/23/2018 from https://www.uptodate.com/contents/clinical-manifestations-and-diagnosis-of-acute-pancreatitis

Vege, S. S. (2024c, 02/24/2017). *Pathogenesis of acute pancreatitis*. Wolters Kluwer. Retrieved 05/23/2018 from https://www.uptodate.com/contents/pathogenesis-of-acute-pancreatitis

Ventrucci, M., Pezzilli, R., Naldoni, P., Plate, L., Baldoni, F., Gullo, L., & Barbara, L. (1987). Serum pancreatic enzyme behavior during the course of acute pancreatitis. *Pancreas*, *2*(5), 506-509. https://doi.org/10.1097/00006676-198709000-00003

Wei, M., Xie, X., Yu, X., Lu, Y., Ke, L., Ye, B., Zhou, J., Li, G., Li, B., Tong, Z., Lu, G., Li, W., & Li, J. (2022). Predictive value of serum cholinesterase in the mortality of acute pancreatitis: A retrospective cohort study. *European Journal of Clinical Investigation*, *n/a*(n/a), e13741. https://doi.org/10.1111/eci.13741

Whitcomb, D. C., Buchner, A. M., & Forsmark, C. E. (2023). AGA Clinical Practice Update on the Epidemiology, Evaluation, and Management of Exocrine

Pancreatic Insufficiency: Expert Review. *Gastroenterology*, *165*(5), 1292-1301. https://doi.org/10.1053/j.gastro.2023.07.007
Witt, H., Apte, M. V., Keim, V., & Wilson, J. S. (2007). Chronic pancreatitis: challenges and advances in pathogenesis, genetics, diagnosis, and therapy. *Gastroenterology*, *132*(4), 1557-1573. https://doi.org/10.1053/j.gastro.2007.03.001
Wolfe, B. E., Jimerson, D. C., Smith, A., & Keel, P. K. (2011). Serum Amylase in Bulimia Nervosa and Purging Disorder: Differentiating the Association with Binge Eating versus Purging Behavior. *Physiology & behavior*, *104*(5), 684-686. https://doi.org/10.1016/j.physbeh.2011.06.025
Yadav, D., Agarwal, N., & Pitchumoni, C. S. (2002). A critical evaluation of laboratory tests in acute pancreatitis. *Am J Gastroenterol*, *97*(6), 1309-1318. https://doi.org/10.1111/j.1572-0241.2002.05766.x
Yang, H., Wang, H., Chavan, S. S., & Andersson, U. (2015). High Mobility Group Box Protein 1 (HMGB1): The Prototypical Endogenous Danger Molecule. *Mol Med*, *21 Suppl 1*, S6-s12. https://doi.org/10.2119%2Fmolmed.2015.00087
Yasuda, H., Kataoka, K., Takeyama, Y., Takeda, K., Ito, T., Mayumi, T., Isaji, S., Mine, T., Kitagawa, M., Kiriyama, S., Sakagami, J., Masamune, A., Inui, K., Hirano, K., Akashi, R., Yokoe, M., Sogame, Y., Okazaki, K., Morioka, C., . . . Shimosegawa, T. (2019). Usefulness of urinary trypsinogen-2 and trypsinogen activation peptide in acute pancreatitis: A multicenter study in Japan. *World J Gastroenterol*, *25*(1), 107-117. https://doi.org/10.3748/wjg.v25.i1.107
Zhan, X., Wan, J., Zhang, G., Song, L., Gui, F., Zhang, Y., Li, Y., Guo, J., Dawra, R. K., Saluja, A. K., Haddock, A. N., Zhang, L., Bi, Y., & Ji, B. (2019). Elevated intracellular trypsin exacerbates acute pancreatitis and chronic pancreatitis in mice. *Am J Physiol GastrointestLiver Physiol*, *316*(6), G816-g825. https://doi.org/10.1152/ajpgi.00004.2019

Policy Update History

Approval Date	Effective Date; Summary of Changes
10/30/2024	01/15/2025: Document updated with literature review. The following changes were made to Reimbursement Information: Edited #2 for clarity on the non-reimbursement of serum lipase or amylase for individuals who have already been diagnosed with acute pancreatitis or for those who have been diagnosed with chronic pancreatitis. Added #6 For all other situations or conditions not described above, measurement of serum lipase and/or amylase is not reimbursable. References revised; some added, others updated.
11/01/2023	Document updated with literature review. The following changes were made to Reimbursement Information: Added: 5. For individuals presenting with signs and symptoms of acute

	pancreatitis (see NOTE 1), measurement of urinary amylase concentration for the initial diagnosis of acute pancreatitis is not reimbursable. Other changes made for clarity. References revised.
11/1/2022	New policy