



Clinical Validation and Documentation Integrity for Coding

Supporting ICD-10-CM and -PCS code
assignments with clinical documentation

SAMPLE

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Diagnoses

Acidosis

E87.20	Acidosis, unspecified	CC
E87.21	Acute metabolic acidosis	CC
E87.22	Chronic metabolic acidosis	CC
E87.29	Other acidosis	CC

Diagnosis: lactic acidosis; metabolic acidosis; respiratory acidosis NOS

Discussion

Acidosis is the metabolic process that results in an increased acidity of blood plasma and other tissue or alkali loss when the kidneys/lungs cannot maintain the balance. Acidemia is a component of acidosis where the arterial pH level is less than 7.35 and is not compensated by the respiratory system. Severe acidemia is a pH < 7.20. The normal pH level varies between 7.35 and 7.45. Chronic acidemia causes rickets, osteomalacia, osteoporosis, and osteopenia.

When compensated, acidosis is mild with few signs/symptoms but when uncompensated, it can be severe and the signs/symptoms are multisystem. Subcategory E87.2 primarily represents lactic and metabolic acidosis, either of which can be acute or chronic.

Documentation Tip

Code assignment cannot be based on ancillary test results, therapies, or clinical criteria alone. A diagnosis and its clinical significance must be supported by physician or other qualified healthcare professional documentation. When it is unclear or there is contradictory information, query the physician or other qualified healthcare professional for clarification.

Lactic acidosis is a form of metabolic acidosis characterized by excess lactic acid, either from overproduction of lactate or decreased metabolism of lactate, or both. Along with acidemia, it includes a lactate level > 5 mEq/L. There are two types:

- Type A: due to tissue hypoperfusion and hypoxia (including localized skeletal muscle):
 - acute pulmonary edema
 - carbon monoxide poisoning
 - cardiopulmonary arrest
 - hypothermic shivering
 - massive rhabdomyolysis
 - sepsis
 - severe anemia
 - severe seizure
 - severe strenuous muscle activity
 - shock
- Type B: due to other condition not involving hypoperfusion and hypoxia:
 - diabetes mellitus
 - hypoglycemia
 - uremia

- liver disease
- infections
- malignancy
- total parenteral nutritional (TPN) therapy
- inborn errors of metabolism
- drugs/alcohol ingestion or poisoning
- toxins
- D-lactic acidosis from short bowel syndrome with colonic overgrowth of Lactobacilli

Metabolic acidosis is due to increased acid production, acid ingestion, decreased acid excretion by the kidneys or GI/Renal bicarbonate loss ($\text{HCO}_3^- < 24 \text{ mEq/L}$). There are several types:

- Diabetic acidosis or diabetic ketoacidosis (DKA): this is excluded from subcategory E87.2- and found in category E08–E11, E13 with ketoacidosis
- Ketoacidosis: alcoholism, starvation
- Hyperchloremic acidosis is from excessive loss of sodium bicarbonate
 - severe diarrhea
 - colostomy or ileostomy or high stomal output due to short small bowel remnant
- Lactic acidosis: see previous entry above
- Kidney disease with impaired renal tubular function, as seen in distal or proximal renal tubular acidosis (N25.89) or underlying disease (i.e., hypoaldosteronism)
- Maintenance dialysis: result of both chronic renal failure (CRF) and dialysis
- Severe dehydration

Documentation Tip

Complications of care: The condition must be more than a routinely expected condition or event. The documentation must support that the condition is clinically significant with an indication that it is a complication by demonstrating:

- A cause-and-effect relationship between the care or procedure and the condition
- That the condition resulted in altering the course of a procedure or surgery

The term “complication” does not have to be explicitly documented.

Respiratory acidosis is due to a decrease in alveolar ventilation (hypoventilation) or a decrease in respiratory rate, or both. It results in increased blood carbon dioxide concentration (hypercapnia) and acidosis and usually hypoxia when hypoventilation is present.

Coding Tip

Respiratory acidosis described as acute or chronic has been reclassified to the respiratory chapter under code J96.02 Acute respiratory failure with hypercapnia, or J96.12 Chronic respiratory failure with hypercapnia, respectively. If the respiratory acidosis is not further specified in the documentation, code E87.29 Other acidosis, may be assigned when the condition is not considered integral to the disease process. See the section titled “Respiratory Failure” in this manual for further information on coding and documentation requirements for respiratory failure.

Excluded

Metabolic acidosis with/complicated by respiratory acidosis, see E87.4.

Respiratory acidosis with/complicated by metabolic alkalosis/acidosis, see E87.4.

Newborn acidosis, see P84; late metabolic acidosis of newborn, see P74.0; metabolic acidemia in newborn, see category P19.

Diabetic acidosis or ketoacidosis, see category E08–E11, E13 with ketoacidosis.

Treatment is directed toward the underlying disease and correction of acidemia and associated metabolic or electrolyte imbalances.

Acidosis is reported in addition to the code for the underlying disease or condition. The exception to this is when acidosis is integral to the disease process, and then it is not assigned (i.e., sepsis, shock, respiratory failure, COPD, emphysema, asthma).

Coding Tip

Adverse effect: Nature of adverse drug effect: code for (adverse condition) followed by the code from T36–T50 with fifth or sixth character 5 to identify the drug.

Poisoning: Identify drug/chemical by the code from T36–T50 with fifth or sixth character of intent followed by a code for nature of adverse drug effect (manifestation).

Coding/Reporting Criteria	Clinical Criteria
<p>1. Physical Evaluation <i>(routine/expected in italics)</i></p>	<ul style="list-style-type: none"> • Symptoms depend on underlying disease or condition • Some symptoms can be seen in all types • Metabolic: <ul style="list-style-type: none"> – rapid, deep breathing (Kussmaul respirations) – hyperventilation – dyspnea – palpitations – chest pain – headache – nausea and/or vomiting – abdominal pain – diarrhea – muscle weakness – bone pain – tinnitus – visual disturbances – congestive heart failure – confusion – lethargy – cranial nerve palsy – retinal edema – shock (severe) – death (severe) • Respiratory <ul style="list-style-type: none"> – shortness of breath – anxiety – tremor – myoclonic jerks – asterixis – sleepiness – lethargy – stupor (CO₂ narcosis) – confusion – easy fatigue – papilledema • Severe acidemia (pH < 7.20) <ul style="list-style-type: none"> – Kussmaul respirations – lethargy – stupor – coma – seizures – ventricular tachycardia – decreased response to epinephrine – hypotension
<p>2. Clinical Evaluation <i>(routine/expected in italics)</i></p>	<ul style="list-style-type: none"> • Testing for underlying condition can determine which tests are performed • Arterial blood gas (ABG) analysis • Serum electrolytes (basic metabolic panel) • Anion gap calculated • Delta gap calculated (HCO₃ equivalent) • Winter’s formula for calculating compensatory changes • Urine pH • Ketone level • Serum lactate level • Salicylate levels • Iron levels • Respiratory acidosis • Lactate acidosis: <ul style="list-style-type: none"> – pH < 7.36 – lactate level > 4-5 mEq/L
<p>3. Diagnostic Px <i>(routine/expected in italics)</i></p>	<ul style="list-style-type: none"> • Chest x-ray • Imaging (kidneys, ureter, bladder) • Pulmonary function test • Electrocardiology • Continuous pulse oximetry
<p>4. Therapeutic Tx <i>(routine/expected in italics)</i></p>	<ul style="list-style-type: none"> • Correction of primary, underlying condition • Hemodynamic and/or respiratory support • Use of sodium bicarbonate: small amounts are supported for very severe acidemia to maintain pH >7.20 • Alkalinizing agent

Coding/Reporting Criteria	Clinical Criteria
5. Increased Nursing Care and/or Monitoring	<ul style="list-style-type: none"> iatrogenic cause of underlying condition occurs postprocedure Underlying cause/condition occurs during admission D-Lactate acidosis: IV fluids, oral antibiotics, restriction of carbohydrates <ul style="list-style-type: none"> Thiamine therapy for total parenteral nutrition (TPN) induced lactic acidosis Dialysis Bronchodilator drugs Oxygen Noninvasive positive-pressure ventilation
6. Extends LOS	<ul style="list-style-type: none"> iatrogenic cause of underlying condition postprocedure <ul style="list-style-type: none"> Underlying cause/condition occurs during admission and delays discharge

Acidosis-Related Lab Value	Normal Arterial Range	Normal Venous Range
pH	7.35-7.45	7.31-7.41
pCO ₂	35-45 mmHg	41-51 mmHg
pO ₂	75-100 mmHg	30-40 mmHg
HCO ₃	22-26 mmol/L	23-29 mmol/L
O ₂ saturation	95-100%	60-80% (mixed venous)
Normal blood lactate	<2 mmol/L	<2mmol/L

Condition	Coding Guideline	Documentation Example	ICD-10-CM Corresponding Codes
Routine/Expected/Integral/Inherent/Incidental (italics only)	OCG: I.B.5	1. IP Progress Note: COPD with compensated respiratory acidosis.	1. Do not assign E87.29 when stated as "compensated respiratory acidosis" with COPD.
Principal Diagnosis	OCG: II, III	1. IP Admit Note: ESRD patient admitted due to acute metabolic acidosis with maintenance dialysis.	1. Report E87.21 Acute metabolic acidosis, followed by N18.6 End-stage renal disease, and Z99.2 Dependence on renal dialysis.
Comorbidity	OCG: II, III; I.C.19.e-5.d AHA CC: 4Q, 2022, p. 13	1. IP Discharge Summary: Acute renal failure with acute metabolic acidosis, dehydration, and urinary tract infection; acute renal failure and dehydration treated with IV hydration; urinary tract infection treated with IV antibiotics; metabolic acidosis monitored and corrected with treatment and resolution of the acute renal failure.	1. Report N17.9 Acute kidney failure, unspecified, followed by E86.0 Dehydration; N39.0 Urinary tract infection, site not specified; and E87.21 Acute metabolic acidosis.
Complication of Care	OCG: II, III	1. IP Progress Note: Patient developed hyperchloremic acidosis due to rapid isotonic saline infusion.	1. Report E87.20 Acidosis, unspecified; T80.89XA Other complications following infusion, transfusion and therapeutic injection, initial encounter.
Poisoning or Adverse Effect of Medication/Chemical	OCG: II, III; I.C.19.e-5.a; I.C.19.e.5.d	1. IP Progress Note: Acute lactic acidosis due to TPN. 2. IP Admit Note: Admitted with coma and Kussmaul respirations due to ethylene glycol poisoning suicide attempt, level 20 mg/dL by ED labs with metabolic acidosis 7.1; intubated for airway protection; IV crystalloids 250 mL/h started and Antizol IV loading dose given in ED.	1. Report E87.21 Acute metabolic acidosis, followed by T50.3X5A Adverse effect of electrolyte, caloric and water-balance agents, initial encounter. 2. Report T52.3X2A Toxic effect of glycols, intentional self-harm, initial encounter followed by R40.20 Unspecified coma and E87.20 Acidosis, unspecified.