

Case Number:	CM13-0041568		
Date Assigned:	12/20/2013	Date of Injury:	08/08/2013
Decision Date:	02/20/2014	UR Denial Date:	10/04/2013
Priority:	Standard	Application Received:	10/15/2013

HOW THE IMR FINAL DETERMINATION WAS MADE

MAXIMUS Federal Services sent the complete case file to a physician reviewer. He/she has no affiliation with the employer, employee, providers or the claims administrator. The physician reviewer is Board Certified in Internal Medicine and is licensed to practice in California. He/she has been in active clinical practice for more than five years and is currently working at least 24 hours a week in active practice. The physician reviewer was selected based on his/her clinical experience, education, background, and expertise in the same or similar specialties that evaluate and/or treat the medical condition and disputed items/services. He/she is familiar with governing laws and regulations, including the strength of evidence hierarchy that applies to Independent Medical Review determinations.

CLINICAL CASE SUMMARY

The expert reviewer developed the following clinical case summary based on a review of the case file, including all medical records:

The patient is a 31-year-old male who was employed at UCLA as a general worker during the time of his injury. His job duties included being involved in construction and demolition projects, he removed asbestos, demolish walls and ceilings. On 8/8/2013 the patient states that he was working in an enclosed space using a concrete cutting machine that was powered by propane gas. Over a period of several hours he was exposed to carbon monoxide and developed carbon monoxide poisoning. He was taken to the hospital where he stayed for two days and was treated in hyperbaric chambers. During the treatment the patient reported that he was exposed to excessive pressure which he states damaged his left ear. The patient says there was a sensation in his left ear and bleeding. He was referred to an ENT specialist who examined him and found nothing wrong with his ears. The patient states that afterwards he developed hearing deterioration in his left ear. The patient complains of some problems with headaches, ear pain, chest pain and fatigue.

IMR ISSUES, DECISIONS AND RATIONALES

The Final Determination was based on decisions for the disputed items/services set forth below:

Referral to Neurology: Overturned

Claims Administrator guideline: The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation ODG-TWC Pain Procedure Summary

MAXIMUS guideline: The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation CA MTUS, ACOEM Guidelines Chapter 7, regarding independent medical examination and consultation.

Decision rationale: CA-MTUS (Effective July 18, 2009) ACOEM Guidelines, 3rd Edition, 2011 chapter 7, regarding independent medical examination and consultation, "If a diagnosis is uncertain or complex, if psychosocial factors are present or if the plan or course of care may benefit from additional expertise, the occupational health physician may refer a patient to other specialists for an independent medical assessment. There are two types of these examination referrals- the consultation and the independent medical examination (IME). A consultation is intended to aid in assessing the diagnosis, prognosis, therapeutic management, determination of medical stability, and permanent residual loss and/or examinee's fitness for return to work. A consultant is usually requested to act in an advisory capacity, however, may sometimes take full responsibility for investigating and/or treating a patient within the doctor-patient relationship. With respect to the claimant, he apparently suffered Carbon Monoxide poisoning, with residual headaches and dizziness. Although the physical examination reported a normal neurological findings, the request for Neurology Consultation is appropriate. According to "Practice Recommendations in the Diagnosis, Management and Prevention of Carbon Monoxide Poisoning" published in Medscape. It was stated: "The late effects of neurologic damage are a particular concern and can occur with relatively mild CO poisoning and in children as well as adults. Follow-up care should consider the possibility of adverse sequelae months or years later, including memory disturbance, mood changes, and vestibular and motor problems. Survivors have been reported to be more likely to experience problems such as falls, motor vehicle accidents, and increased mortality" Therefore the request for neurological evaluation is medically necessary in this claimant

ECG: Overturned

Claims Administrator guideline: The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation ODG-TWC Pain Procedure Summary

MAXIMUS guideline: The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Medical Treatment Guidelines or Medical Evidence: Cardiovascular Manifestations of Moderate to Severe Carbon Monoxide Poisoning published in the Journal of American College of Cardiology (Authors: Daniel Satran, MD; Christopher R. Henry, BS ; Cheryl Adkinson, M

Decision rationale: CA-MTUS (Effective July 18, 2009) is mute on this topic. According to recent abstract titled: Cardiovascular Manifestations of Moderate to Severe Carbon Monoxide Poisoning published in the Journal of American College of Cardiology the authors stated that carbon monoxide poisoning is a common cause of toxicologic morbidity and mortality. Although the neurologic sequelae of CO poisoning have been well described, the cardiovascular consequences are limited to isolated case reports. They reviewed the cardiovascular manifestations of 230 consecutive patients treated for moderate to severe CO poisoning in the hyperbaric oxygen chamber at Hennepin County Medical Center (HCMC), a regional center for treatment of CO poisoning. The result showed that the mean age was 47.2 years with 72% men.

Ischemic electrocardiogram (ECG) changes were present in 30% of patients, whereas only 16% had a normal ECG. Cardiac biomarkers (creatinine kinase-MB fraction or troponin I) were elevated in 35% of patients. In-hospital mortality was 5%. The authors concluded that Cardiovascular sequelae of CO poisoning are frequent, with myocardial injury assessed by biomarkers or ECG in 37% of patients. Patients admitted to the hospital with CO poisoning should have a baseline ECG and serial cardiac biomarkers. Therefore the request for 12 lead ECG is medically necessary.

Urine dipstick: Overturned

Claims Administrator guideline: The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation ODG-TWC Diabetes Procedure Summary.

MAXIMUS guideline: The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Official Disability Guidelines (ODG), Pain Procedure Summary and Other Medical Treatment Guidelines or Medical Evidence: Carbon Monoxide Toxicity Workup Author: Guy N Shochat, MD; Chief Editor: Asim Tarabar, MD
<http://emedicine.medscape.com/article/819987-work>

Decision rationale: This claimant had a history of Carbon Monoxide poisoning. According to Medscape the following are recommended Carbon Monoxide Toxicity Workup: HbCO analysis requires direct spectrophotometric measurement in specific blood gas analyzers. Bedside pulse CO-oximetry is now available but requires a special unit and is not a component of routine pulse oximetry. A 2012 study shows that non-invasive pulse CO-oximetry correlates with more rapid diagnosis and initiation of hyperbaric oxygen therapy than laboratory CO-oximetry. However, the impact on clinical outcome is still not proven.[10] Elevated levels are significant; however, low levels do not rule out exposure, especially if the patient already has received 100% oxygen or if significant time has elapsed since exposure. Individuals who chronically smoke may have mildly elevated CO levels as high as 10%. Presence of fetal hemoglobin, as high as 30% at 3 months, may be read as an elevation of HbCO level to 7%. Arterial blood gas: PaO₂ levels should remain normal. Oxygen saturation is accurate only if directly measured but not if calculated from PaO₂, which is common in many blood gas analyzers. As with pulse oximetry, estimate PCO₂ levels by subtracting the carboxyhemoglobin (HbCO) level from the calculated saturation. PCO₂ level may be normal or slightly decreased. Metabolic acidosis occurs secondary to lactic acidosis from ischemia. Troponin, creatinine kinase-MB fraction, myoglobin. Myocardial ischemia is frequently associated with patients hospitalized for moderate-to-severe CO exposure and is a predictor of mortality.[11] Patients with preexisting disease can experience increased exertional angina with HbCO levels of just 5-10%. At high HbCO levels, even young healthy patients develop myocardial depression. Creatinine kinase, urine myoglobin: Nontraumatic rhabdomyolysis can result from severe CO toxicity and can lead to acute renal failure. Complete blood count Look for mild leukocytosis. Disseminated intravascular coagulation (DIC) and thrombotic thrombocytopenic purpura (TTP) require further hematologic studies. Electrolytes and glucose level - Lactic acidosis, hypokalemia, and hyperglycemia with severe intoxication BUN and creatinine levels - Acute renal failure secondary to myoglobinuria Liver function tests - Mild elevation in fulminant hepatic failure Urinalysis - Positive for albumin and glucose in chronic intoxication Methemoglobin level - Included in the differential diagnosis

of cyanosis with low oxygen saturation but normal PaO₂ Toxicology screen - For instances of suicide attempt Ethanol level - A confounding factor of intentional and unintentional poisonings Cyanide level - If cyanide toxicity also is suspected (eg, industrial fire); cyanide exposure suggested by an unexplained metabolic acidosis; rapid determinations rarely are available. Smoke inhalation is the most common cause of acute cyanide poisoning. Based on the above guidelines, the request for urine dip

Glucose reagent strip: Overturned

Claims Administrator guideline: The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation ODG-TWC Diabetes Procedure Summary.

MAXIMUS guideline: The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Official Disability Guidelines (ODG), Pain Procedure Summary last updated 6/7/13 and Other Medical Treatment Guideline of Medical Evidence: Medscape: Carbon Monoxide Toxicity Workup Author: Guy N Shochat, MD; Chief Editor: Asim Tarabar, MD <http://emedicine.med>

Decision rationale: This claimant had a history of Carbon Monoxide poisoning. According to Medscape the following are recommended Carbon Monoxide Toxicity Workup: HbCO analysis requires direct spectrophotometric measurement in specific blood gas analyzers. Bedside pulse CO-oximetry is now available but requires a special unit and is not a component of routine pulse oximetry. A 2012 study shows that non-invasive pulse CO-oximetry correlates with more rapid diagnosis and initiation of hyperbaric oxygen therapy than laboratory CO-oximetry. However, the impact on clinical outcome is still not proven.[10] Elevated levels are significant; however, low levels do not rule out exposure, especially if the patient already has received 100% oxygen or if significant time has elapsed since exposure. Individuals who chronically smoke may have mildly elevated CO levels as high as 10%. Presence of fetal hemoglobin, as high as 30% at 3 months, may be read as an elevation of HbCO level to 7%. Arterial blood gas:

CBC: Overturned

Claims Administrator guideline: The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation Lab tests Online, last updated 1/28/12.

MAXIMUS guideline: The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Official Disability Guidelines (ODG), Pain Procedure Summary last updated 6/7/13 and Other Medical Treatment Guideline of Medical Evidence: Medscape: Carbon Monoxide Toxicity Workup Author: Guy N Shochat, MD; Chief Editor: Asim Tarabar, MD <http://emedicine.med>

Decision rationale: Based on the above guidelines, the request for Complete blood count (looking for mild leukocytosis, Disseminated intravascular coagulation (DIC) and thrombotic thrombocytopenic purpura (TTP) require further hematologic studies) is medically necessary in managing a patient with Carbon Monoxide intoxication.

Thyroid panel: Overturned

Claims Administrator guideline: The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation Lab tests Online, last updated 1/28/12.

MAXIMUS guideline: The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Official Disability Guidelines (ODG), Pain Procedure Summary last updated 6/7/13 and Other Medical Treatment Guideline of Medical Evidence: Medscape: Carbon Monoxide Toxicity Workup Author: Guy N Shochat, MD; Chief Editor: Asim Tarabar, MD <http://emedicine.med>

Decision rationale: Although not specifically mentioned in the above guideline, thyroid function test is appropriate in someone with Carbon Monoxide poisoning because of multi-organ damage that could result from low level of oxygen due to carbon monoxide poisoning. Therefore the request for thyroid function test is medically necessary should be based upon a review of the patient concerns, signs and symptoms, clinical stability, and reasonable physician judgment.

Venipuncture: Overturned

Claims Administrator guideline: The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation on Lab tests Online, last updated 1/28/12.

MAXIMUS guideline: The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Official Disability Guidelines (ODG), Pain Procedure Summary last updated 6/7/13 and Other Medical Treatment Guideline of Medical Evidence: Medscape: Carbon Monoxide Toxicity Workup Author: Guy N Shochat, MD; Chief Editor: Asim Tarabar, MD <http://emedicine.med>

Decision rationale: Venipuncture: DFR date 9/24/13 is medically necessary to help the treating physician obtain necessary blood samples for various diagnostic test, consistent with the spirit of the ODG guidelines.