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| <b>Case Number:</b>   | CM15-0015554 |                              |            |
| <b>Date Assigned:</b> | 02/03/2015   | <b>Date of Injury:</b>       | 06/30/2013 |
| <b>Decision Date:</b> | 03/30/2015   | <b>UR Denial Date:</b>       | 01/16/2015 |
| <b>Priority:</b>      | Standard     | <b>Application Received:</b> | 01/27/2015 |

### HOW THE IMR FINAL DETERMINATION WAS MADE

MAXIMUS Federal Services sent the complete case file to an expert reviewer. He/she has no affiliation with the employer, employee, providers or the claims administrator. 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 expert 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/Service. He/she is familiar with governing laws and regulations, including the strength of evidence hierarchy that applies to Independent Medical Review determinations.

The Expert Reviewer has the following credentials:  
 State(s) of Licensure: Ohio, North Carolina, Virginia  
 Certification(s)/Specialty: Family Practice

### 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 injured worker is a 61-year-old male, with a reported date of injury of 08/30/2013. The diagnoses include hepatitis C and right knee severe tri-compartmental osteoarthritis. Treatments have included oral medications, physical therapy, a cane, and a knee sleeve. The initial comprehensive orthopedic consultation dated 12/16/2014 indicates that the injured worker complained of moderate-to-severe right knee pain with any movement. He had been told that he needed a knee replacement. The treating physician indicated that due to the fact the injured worker had hepatitis C and because of his age, the injured worker needed to have preoperative clearance by an internist. The injured worker would need to have basic blood work, as well as a liver panel. On 01/16/2015, Utilization Review (UR) denied the request for Anti-HCV antibody, Hepatitis C virus (HCV) RNA assay, HCV genotyping, hepatitis B, HIV, liver function tests, brain natriuretic peptide (BNP), and C-reactive protein (CRP) test; total iron-binding capacity (TIBC), Hemoglobin A1C (HgbA1c), iron, Ferritin, erythrocyte sedimentation rate (ESR), magnesium, phosphorus (PO4), vitamin B12, folate, and vitamin D; thyroid-stimulating hormone (TSH), free T4, free T3, thyroid peroxidase (TPO) antibody test; complete metabolic panel (CMP), lipid profile, complete blood count (CBC) with differential, urinalysis (U/A), and microalbumin with creatinine; prothrombin time/partial thromboplastin time/international normalized ratio (PT/PTT/INR); chest x-ray; and full pulmonary function testing. The UR physician noted that despite documentation of a plan for surgical clearance for an upcoming knee surgery, there was no documentation of a surgery that has been certified. The non-MTUS Official Disability Guidelines were cited.

## IMR ISSUES, DECISIONS AND RATIONALES

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

**Anti-HCV Antibody, HCV RNA assay, HCV genotyping, Hepatitis B, HIV, Liver Function tests, BNP and CRP:** Overturned

**Claims Administrator guideline:** The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation Official Disability Guidelines- Low Back Chapter

**MAXIMUS guideline:** The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Up To Date, Circulation, Aliment Pharmacol Ther. 2013;37(6):647-652

**Decision rationale:** People who have hepatitis C are at risk for infection with HIV and hepatitis B, in part because these infections can be transmitted in the same way as hepatitis C. They are also more vulnerable to any infection that targets the liver. As a result, after diagnosing hepatitis C, healthcare providers often do followup tests for HIV, and hepatitis A and B. People whose tests show they are not immune to hepatitis A and B should get vaccinated against these infections. B-type natriuretic peptide (BNP) is a neurohormone secreted mainly in the cardiac ventricles in response to volume expansion and pressure overload.<sup>1, 2</sup> Activation of BNP in patients with left ventricular (LV) dysfunction has generated considerable interest in both its diagnostic and prognostic properties. Although data have shown that BNP levels correlate with the severity and prognosis of heart failure,<sup>3,4</sup> it was not until the development of a rapid, inexpensive assay that BNP could be used in the active clinical setting. Chronic hepatitis C virus infection is independently associated with presence of metabolic conditions (insulin resistance, type 2 diabetes mellitus and hypertension) and congestive heart failure. In this instance, the injured worker had a diagnosis of hepatitis C that may have an industrial causation and hence the Anti-HCV Antibody, HCV RNA assay, HCV genotyping, Hepatitis B, HIV, Liver Function tests are medically reasonable. The request for a BNP is reasonable because of the association of hepatitis C with heart failure. A CRP (C-reactive protein) is an inflammatory marker and a surrogate of disease activity.

**TIBC, HgbA1c, Iron, Ferritin, ESR, MG, PO4, Vitamin B12, Folate, and Vitamin D:** Overturned

**Claims Administrator guideline:** The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation Official Disability Guidelines- Low Back Chapter

**MAXIMUS guideline:** The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Medicinenet.com, Mayo Clin. Proc. Aug 85(8), William B. Lott, 4916-4921, doi: 10.1073/pnas, Type 2 Diabetes Mellitus and the Risk of Hepatitis C Virus Infection: A systematic review

**Decision rationale:** Severe liver disease can lead to Vitamin D deficiency and thus a Vitamin D level for someone with hepatitis C is medically reasonable. B12 deficiency can worsen hepatitis C so a baseline B12 level is medically reasonable. There is a known link between hepatitis C worsening and iron overload states and hence iron, ferritin, and TIBC testing is medically reasonable. An ESR or sedimentation rate allows for analysis of degree of inflammation present from hepatitis C. The development of HCV infection is a multi-factorial process associated with a variety of risk factors, as observed with all other infectious diseases. The major risk factors associated with the development of infection include virus-related factors (e.g., viral load or genotype) and host-related factors, such as age, gender, alcohol consumption, blood transfusion status, obesity, immune status, and co-infections. One important cofactor is T2DM. T2DM has been shown to modify the course of hepatitis C, even at the insulin resistance (IR) stage, which precedes the development of overt diabetes. And it is now widely recognized that chronic hepatitis C is a metabolic disease that is strongly associated with type 2 diabetes and insulin resistance. Hemoglobin A1C is a diabetes marker and therefore medically reasonable.

**TSH, free T4, free T3, Thyroid Peroxidase (TPO) antibody test:** Overturned

**Claims Administrator guideline:** The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation Official Disability Guidelines- Low Back Chapter

**MAXIMUS guideline:** The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Luis Jesuno de Oliveira Andrade<sup>1</sup>, Ajax Mercs Atta<sup>2</sup>, Argemiro D'Almeida Junior<sup>3</sup> and Raymundo Paran. <sup>1</sup>Post-graduate Course in Medicine and Health, Medicine School; <sup>2</sup>Department of Clinical and Toxicological Analysis, Pharmacy School; <sup>3</sup>Department of Medicine and Health, Medicine School; Federal University of Bahia; Salvador, BA, Brazil

**Decision rationale:** Hepatitis C (HCV) is now the main cause of chronic hepatic disease, cirrhosis and hepatocellular carcinoma. Several extrahepatic diseases have been associated with chronic HCV infection, and in most cases appear to be directly related to the viral infection. Thyroid disorders are common in patients with chronic HCV. Some patients with chronic hepatitis C experience thyroid problems, and thyroid dysfunction may also be a side effect of interferon-based treatment. The principal risk factor for developing thyroid disease in the course of antiviral therapy is the previous positivity for anti-thyroid antibodies (anti-thyroid peroxidase) especially in older women. Screening for autoantibodies and serum thyroid-stimulating hormone is recommended before, during and after interferon-alpha treatment, and patients should be informed of the risk of thyroid dysfunction.

**CMP, Lipid profile, CBC with differential, U/A and Microalbumin with Creatinine:** Overturned

**Claims Administrator guideline:** The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation Official Disability Guidelines- Low Back Chapter

**MAXIMUS guideline:** The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Associations between serum lipids and hepatitis C antiviral treatment efficacy. Type 2 Diabetes Mellitus and the Risk of Hepatitis C Virus Infection: A systematic review, Iron overload in patients with chronic hepatitis C virus infection: clinical and histological study

**Decision rationale:** Serum lipids are associated with sustained viral response, although these parameters did not explain the racial difference in treatment response. The results of this study are compatible with proposed biological mechanisms of HCV entry, replication, and secretion, and may underscore new potential therapeutic targets for HCV eradication. Type 2 diabetes has been shown to modify the course of hepatitis C, even at the insulin resistance (IR) stage, which precedes the development of overt diabetes. And it is now widely recognized that chronic hepatitis C is a metabolic disease that is strongly associated with type 2 diabetes and insulin resistance. Urine analysis with microalbumin is a marker for diabetes. A CBC is medically reasonable as it may be an indicator of iron overload, a factor known to worsen hepatitis C. Recently it has been found that iron is an important element in the natural history of hepatitis C. Serum markers of iron stores are frequently increased in chronic hepatitis C virus (HCV)-infected carriers but the real impact of the hepatic iron overload is poorly understood.

**PT/PTT/INR:** Overturned

**Claims Administrator guideline:** The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation Official Disability Guidelines- Low Back Chapter

**MAXIMUS guideline:** The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Operating on a patient with hepatitis C

**Decision rationale:** The Model for End-Stage Liver disease gives an operative risk of death for patients with hepatitis C and may determine if elective surgery is warranted. Labs that reflect the clotting ability of the blood such as PT/PTT/INR are a portion of the model and therefore medically necessary. The injured worker is thought to need knee surgery in the future. The status of his hepatitis C must be known pre-operatively. This certainly includes his risk of intra-operative bleeding as a consequence of the hepatitis C. PT/PTT/INR determinations will allow the clinicians to gauge such a risk.

**Chest x-ray:** Overturned

**Claims Administrator guideline:** The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation Official Disability Guidelines- Low Back Chapter

**MAXIMUS guideline:** The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation ODG Low Back

**Decision rationale:** Chest radiography is reasonable for patients at risk of postoperative pulmonary complications if the results would change perioperative management. In this case, the injured worker has a 40 pack year history of smoking. Perioperative management could be altered if the injured worker were known to have chronic obstructive pulmonary disease.

**Full pulmonary function testing:** Upheld

**Claims Administrator guideline:** The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation Official Disability Guidelines- Low Back Chapter

**MAXIMUS guideline:** The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Accelerated decline in lung function and impaired reversibility with salbutamol in asthmatic patients with chronic hepatitis C virus infection: a 6-year follow-up study.

**Decision rationale:** Chronic hepatitis C virus (HCV) infection may have adverse effects on pulmonary function in patients with chronic obstructive pulmonary disease. Chronic HCV infection is associated with an accelerated decline in lung function and impaired reversibility with salbutamol among asthmatic patients who do not respond to interferon therapy. In this instance, the injured worker is not known to have asthma nor does he utilize medication for asthma. There is no physical examination of the lungs documented indicating a concern for asthma. Therefore, full pulmonary function testing is not medically reasonable.