I. Description

The advent of multi-slice imaging and enhanced imaging techniques has allowed for the generation of three-dimensional images called 3D reconstruction or 3D rendering. This process can be applied to computed tomography (CT), magnetic resonance imaging (MRI) or ultrasound (US). CPT codes 76376 and 76377 address complex renderings, i.e., shaded surface rendering, volumetric rendering, maximum intensity projections (MIPs), fusion imaging, and quantitative analysis (segmental volumes and surgical planning).

3D reconstruction for diagnosis and surgical planning allows the interpreting physician to first get a summary view of the entire anatomy and then refer back to the original 2D data for comparison and confirmation. Applications of this technology include visualization of central nervous system vasculature, coronary artery imaging, enhanced imaging of the thorax to include embolic disease, inflammatory and neoplastic lesions, imaging of facial malformations, complex facial fractures/trauma, aortic aneurysms and multiple others.

EOS is a 3D X-ray imaging system manufactured by EOS Imaging (formerly Biospace Med, Paris, France). It uses slot-scanning technology to produce a high-quality image with less irradiation than standard imaging techniques.

II. Criteria/Guidelines

A. 3D reconstruction is covered (subject to Limitations and Administrative Guidelines) when requested by or in consultation with the referring physician in the following situations:

1. When used in conjunction with a CT/MRI:
   a. For complicated multi-fragmented pelvic fractures (e.g., comminuted) or congenital skeletal deformities when ordered by the surgeon to plan a surgical approach or to determine the need for requisite hardware
b. Renal/ureteral masses, strictures, or congenital anomalies when ordered by the urologist/general surgeon to evaluate the need for or the approach to surgery, or in the evaluation and work-up of hematuria (including CTIVP)
c. Complex oncology cases when ordered by the surgeon to assess for resectability and/or reconstruction

2. When used in conjunction with US to evaluate intrauterine fetal anomalies and plan appropriate prenatal or perinatal interventions
3. Echocardiography for evaluation of cardiac masses and congenital abnormalities when ordered by a cardiologist or cardiac surgeon for surgical planning
4. 3D imaging using the EOS system is covered for the evaluation and monitoring of scoliosis.

B. There must be medical necessity justification for the use of 3D rendering in the radiology report in order to make a separate-charge under 76376 or 76377. The referring physician is required to provide a written request indicating the clinical need for 3D imaging and the interpreting physician is required to maintain a copy of the request and address the specific clinical findings

C. 3D reconstruction is reserved for situations where additional imaging is necessary for surgical or treatment planning

III. Limitations

A. 3D reconstruction is not covered when performed in conjunction with any of the following procedures:
   1. CT angiography of the head, neck, chest, pelvis, upper and lower extremity, abdomen, and abdominal aorta and bilateral iliofemoral lower extremity vessels (70496-70498, 71275, 72191, 73206, 73706, 74175, 75635)
   2. Magnetic resonance angiography of the head, neck, chest, spinal canal, pelvis, upper and lower extremity, and abdomen (70544-70549, 71555, 72159, 72198, 73225, 73725, 74185)
   3. Computed colonography (74261-74263)
   4. Nuclear medicine (78000-78999)
   5. Cardiac MRI (75557-75564)
   6. CT KUB
   7. Quantitative CT bone mineral density study
   8. Mammography

B. 3D reconstruction is not covered in the following situations:
   1. When conventional imaging study results are normal, non-complex or non-surgical, or have incidental findings
   2. When 2D reformatting is able to resolve the clinical question(s)
   3. When only 2D multiplanar reconstruction is done

C. When contiguous body parts are imaged, the technical component for 3D reconstruction will be paid only once (i.e., abdomen and pelvis)
D. 3D reconstruction is not covered if equivalent information obtained from the test has already been provided by another procedure (MRI, US, angiography, etc.) or could be provided by a standard CT scan (two-dimensional) without reconstruction.

E. 3D reconstruction is not to be utilized to report coronal, sagittal, multiplanar or oblique reformats constructed from axial images.

F. 3D reformatting should not be standard protocol for MRI and CT exams.

IV. Administrative Guidelines

A. Precertification is not required. Documentation supporting the medical necessity should be legible and maintained in the patient's medical record and made available to HMSA upon request. HMSA reserves the right to perform retrospective reviews using the above criteria to validate if services rendered met payment determination criteria.

B. Documentation with the referring physician’s written request must be maintained by the radiologist. If the study is done on an urgent basis without a referral, the 3D report should document the time, the specific need for the study and the summary of the findings that were transmitted to the referring physician.

C. Applicable codes:

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<thead>
<tr>
<th>CPT code</th>
<th>Description</th>
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<tr>
<td>76376</td>
<td>3D rendering; not requiring image postprocessing on an independent workstation</td>
</tr>
<tr>
<td>76377</td>
<td>3D rendering requiring image postprocessing on an independent workstation</td>
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V. Important Reminder

The purpose of this Medical Policy is to provide a guide to coverage. This Medical Policy is not intended to dictate to providers how to practice medicine. Nothing in this Medical Policy is intended to discourage or prohibit providing other medical advice or treatment deemed appropriate by the treating physician.

Benefit determinations are subject to applicable member contract language. To the extent there are any conflicts between these guidelines and the contract language, the contract language will control.

This Medical Policy has been developed through consideration of the medical necessity criteria under Hawaii’s Patients’ Bill of Rights and Responsibilities Act (Hawaii Revised Statutes §432E-1.4), generally accepted standards of medical practice and review of medical literature and government approval status. HMSA has determined that services not covered under this Medical Policy will not be medically necessary under Hawaii law in most cases. If a treating physician disagrees with HMSA’s determination as to medical necessity in a given case, the physician may request that
HMSA reconsider the application of the medical necessity criteria to the case at issue in light of any supporting documentation.

VI. References