

	Reimbursement Policy Manual		Policy #:	RPM038
Policy Title:	Computer Assisted Navigation			
Section:	Surgery	Subsection:	None	
Scope: This policy applies to the following Medical (including Pharmacy/Vision) plans:				
Companies:				
<input checked="" type="checkbox"/> All Companies: Moda Partners, Inc. and its subsidiaries & affiliates <input type="checkbox"/> Moda Health Plan <input type="checkbox"/> Moda Assurance Company <input type="checkbox"/> Summit Health Plan <input type="checkbox"/> Eastern Oregon Coordinated Care Organization (EOCCO) <input type="checkbox"/> OHSU Health IDS				
Types of Business:				
<input checked="" type="checkbox"/> All Types <input type="checkbox"/> Commercial Group <input type="checkbox"/> Commercial Individual <input type="checkbox"/> Commercial Marketplace/Exchange <input type="checkbox"/> Commercial Self-funded <input type="checkbox"/> Medicaid <input type="checkbox"/> Medicare Advantage <input type="checkbox"/> Short Term <input type="checkbox"/> Other: _____				
States:				
<input checked="" type="checkbox"/> All States <input type="checkbox"/> Alaska <input type="checkbox"/> Idaho <input type="checkbox"/> Oregon <input type="checkbox"/> Texas <input type="checkbox"/> Washington				
Claim forms:				
<input checked="" type="checkbox"/> CMS1500 <input checked="" type="checkbox"/> CMS1450/UB (or the electronic equivalent or successor forms)				
Date:				
<input checked="" type="checkbox"/> All dates <input type="checkbox"/> Specific date(s): _____ <input type="checkbox"/> Date of Service; For Facilities: <input type="checkbox"/> n/a <input type="checkbox"/> Facility admission <input type="checkbox"/> Facility discharge <input type="checkbox"/> Date of processing				
Provider Contract Status:				
<input checked="" type="checkbox"/> Contracted directly, any/all networks <input checked="" type="checkbox"/> Contracted with a secondary network <input checked="" type="checkbox"/> Out of Network				
Originally Effective:	4/22/2014	Initially Published:	10/9/2014	
Last Updated:	7/10/2024	Last Reviewed:	7/10/2024	
Last update includes payment policy changes, subject to 28 TAC §3.3703(a)(20)(D)? No				
Last Update Effective Date for Texas:		7/10/2024		

Reimbursement Guidelines

No additional reimbursement will be made based upon the type of instruments, technique or approach used in a procedure. Such matters are left to the discretion of the surgeon. No additional professional or technical (facility) reimbursement will be made when a surgical procedure is performed using any type of computer assisted navigation (CAN) system (whether or not the make or model is specifically named in this policy).

Reimbursement for procedures in which a CAN is used will be based on the contracted rate or maximum plan allowance (MPA) for the base procedure.

- Separate reimbursement is not allowed for the CAN surgical technique, whether reported under listed codes, an unlisted procedure code, or another code.
 - Note:** Add-on code 0055T or another code to describe the CAN should not be listed as the primary surgical procedure code with majority of the billed charges for the surgical services. The primary billed surgery code is to be the definitive surgical procedure.
- If the surgical procedure itself is reported with an unlisted code due to the use of a CAN, the unlisted code will be denied.
- Additional reimbursement will not be approved for use of modifier 22.

- Separate reimbursement is not allowed for the CAN device as a “surgical assistant” or an “assistant surgeon” with modifier -80, -81, -82, or –AS.
- When facility surgical charges are identified as excessive as compared with charges for the equivalent non-CAN surgeries, Moda Health applies a 25% reduction in the time-based anesthesia and operative charges.

We do not provide additional reimbursement to hospitals, surgery centers and facilities for the use of a computer-assisted navigation device or other specialized operating room equipment. These items are a capital equipment expense for the facility and are not separately billable to the insurance carrier. Reimbursement for the use of such equipment is included in the Operating Room charges under revenue code 0360 or the facility fee for the base surgical procedure for the facility claim (outpatient hospital, ASC, etc.). Supplies related to the use of the robot are also disallowed.

Use of Modifier 22 is not appropriate if the sole use of the modifier is to report and bill for the use of computer assisted navigation. Modifier 22 may be used to report unusual complications or complexities which occurred during the surgical procedure that are unrelated to the use of the navigation assistance system.

It is not appropriate to report the use of a computer assisted navigation system as a “surgical assistant” or an “assistant surgeon” with modifier -80, -81, -82, or –AS.

Codes, Terms, and Definitions

Acronyms & Abbreviations Defined

Acronym or Abbreviation	Definition
ACL	Anterior cruciate ligament
AMA	American Medical Association
ASC	Ambulatory Surgery Center
CAN	Computer-assisted navigation
CCI	Correct Coding Initiative (see “NCCI”)
CMS	Centers for Medicare and Medicaid Services
CPT	Current Procedural Terminology
CT	Computed tomography
DRG	Diagnosis Related Group (also known as/see also MS DRG)
FDA	Food and Drug Administration (or USFDA)
HCPCS	Healthcare Common Procedure Coding System (acronym often pronounced as “hick picks”)
HIPAA	Health Insurance Portability and Accountability Act
MPA	Maximum plan allowance
MRI	Magnetic resonance imaging
MS DRG	Medicare Severity Diagnosis Related Group (also known as/see also DRG)
NCCI	National Correct Coding Initiative (aka “CCI”)
RPM	Reimbursement Policy Manual (e.g., in context of “RPM052” policy number, etc.)
THA	Total hip arthroplasty
TKA	Total knee arthroplasty

Acronym or Abbreviation	Definition
UB	Uniform Bill

Definition of Terms

Term	Definition
Computer-assisted navigation (CAN)	The application of computer tracking systems to assist with alignment in a variety of surgical procedures.

Procedure codes (CPT, HCPCS, & PCS):

This list may not be all inclusive. Any presence or absence of procedure, service, supply, or device codes in the policy document does not alter the determination of coverage as defined in the policy.

Code	Code Description
20985	Computer-assisted surgical navigation procedure for musculoskeletal procedures, image-less
20986	Deleted code for computer-assisted surgical navigation
20987	Deleted code for computer-assisted surgical navigation
0054T	Computer-assisted musculoskeletal surgical navigation orthopedic procedure, with image-guidance based on fluoroscopic images
0055T	Computer-assisted musculoskeletal surgical navigation orthopedic procedure with image-guidance based on CT/MRI images

<i>For use on claims with dates of service 10/1/2015 and after</i>	
ICD-10-PCS Codes	Description
8E09XBF	Computer Assisted Procedure of Head and Neck Region, With Fluoroscopy
8E09XBG	Computer Assisted Procedure of Head and Neck Region, With Computerized Tomography
8E09XBH	Computer Assisted Procedure of Head and Neck Region, With Magnetic Resonance Imaging
8E09XBZ	Computer Assisted Procedure of Head and Neck Region
8E09XBZ	Computer Assisted Procedure of Head and Neck Region
8E09XBZ	Computer Assisted Procedure of Head and Neck Region
8E0WXB	Computer Assisted Procedure of Trunk Region, With Fluoroscopy
8E0WXBG	Computer Assisted Procedure of Trunk Region, With Computerized Tomography
8E0WXBH	Computer Assisted Procedure of Trunk Region, With Magnetic Resonance Imaging
8E0WXBZ	Computer Assisted Procedure of Trunk Region
8E0WXBZ	Computer Assisted Procedure of Trunk Region
8E0WXBZ	Computer Assisted Procedure of Trunk Region
8E0XXBF	Computer Assisted Procedure of Upper Extremity, With Fluoroscopy
8E0XXBG	Computer Assisted Procedure of Upper Extremity, With Computerized Tomography
8E0XXBH	Computer Assisted Procedure of Upper Extremity, With Magnetic Resonance Imaging
8E0XXBZ	Computer Assisted Procedure of Upper Extremity

<i>For use on claims with dates of service 10/1/2015 and after</i>	
ICD-10-PCS Codes	Description
8E0XXBZ	Computer Assisted Procedure of Upper Extremity
8E0XXBZ	Computer Assisted Procedure of Upper Extremity
8E0YXBF	Computer Assisted Procedure of Lower Extremity, With Fluoroscopy
8E0YXBG	Computer Assisted Procedure of Lower Extremity, With Computerized Tomography
8E0YXBH	Computer Assisted Procedure of Lower Extremity, With Magnetic Resonance Imaging
8E0YXBZ	Computer Assisted Procedure of Lower Extremity
8E0YXBZ	Computer Assisted Procedure of Lower Extremity
8E0YXBZ	Computer Assisted Procedure of Lower Extremity

Coding Guidelines & Sources – (Key quotes, not all-inclusive)

“(Do not report 20985 in conjunction with 61781 – 61783)” (AMA⁶)
 (61781 – 61783 = Stereotactic computer-assisted (navigational) procedures)

“(When CT and MRI are both performed, report 0055T only once.)” (AMA⁷)

Cross References

- A. [“Modifier 22 – Increased Procedural Services.”](#) Moda Health Reimbursement Policy Manual, RPM007.
- B. [“Modifiers 80, 81, 82, and AS – Assistant At Surgery.”](#) Moda Health Reimbursement Policy Manual, RPM013.

References & Resources

1. Zorman D, et al. Computer-assisted total knee arthroplasty: Comparative results in a preliminary series of 72 cases. *Acta Orthopedic Belgium*, December 2005; 71(6): 696-702.

Zorman, et al (2005), reported on the axis alignment of 72 TKAs performed with navigation assistance to a historical cohort of 62 TKAs performed with conventional instrumentation. The results showed there was a highly significant improvement in the alignment along the mechanical axis in the navigated group. All patients in the navigated group showed neutral alignment, while 47% of patients in the conventional group showed a deviation of the mechanical axis of more than two degrees from neutral alignment. The operation time was lengthened on average by 30 minutes in the navigation group. The authors concluded that long-term studies are necessary to show whether better accuracy in ligament balancing and higher precision in restoration of mechanical axes will improve the functional results and the survival rate of knee arthroplasty

2. Manzotti A, Cerveri P, De Momi E et al. “Does Computer-Assisted Surgery Benefit Leg Length Restoration In Total Hip Replacement? Navigation Versus Conventional Freehand.” *International Orthopaedics*; 35 (1) January 2011: 19-24.

A 2011 study by Manzotti et al compared leg length restoration in a matched-pair study. Forty-eight patients undergoing THA with CAN were compared with patients who were matched for

age, sex, arthritis level, preoperative diagnosis, and preoperative leg length discrepancy and underwent conventional freehand THA using the same implant in the same period. The mean preoperative leg length discrepancy was 12.17 mm in the THA-CAN group and 11.94 in the standard THA group. Surgical time was increased by 16 minutes (89 vs. 73 min, respectively). There was a significant decrease in both the mean postoperative leg length discrepancy (5.06 vs. 7.65 mm) and in the number of cases with a leg length discrepancy of equal to or greater than 10 mm (5 vs. 13 patients – all respectively). Outcomes at 40 month follow-up (range, 7 to 77 months) were not significantly different for the Harris Hip Score (88.87 vs. 89.73) or the 100-point normalized Western Ontario and McMaster Universities (WOMAC) Arthritis Index (9.33 vs. 13.21 – all respectively; $p=0.0503$). Longer follow-up with a larger number of subjects is needed to determine whether THA-CAN influences clinical outcomes.

3. Blakeney WG, Khan RJ, Wall SJ. “Computer-Assisted Techniques Versus Conventional Guides For Component Alignment In Total Knee Arthroplasty: A Randomized Controlled Trial.” *The Journal of Bone & Joint Surgery Am.* 2011 Aug 3; 93 (15):1377-84.

Blakeney et al (2011) sought to determine the most accurate technique for component alignment in total knee arthroplasty by comparing computer-assisted surgery with two conventional techniques involving use of an intramedullary guide for the femur and either an intramedullary or an extramedullary guide for the tibia. One hundred and seven patients were randomized prior to surgery to one of three arms: computer-assisted surgery for both the femur and the tibia (the computer-assisted surgery group), intramedullary guides for both the femur and the tibia (the intramedullary guide group), and an intramedullary guide for the femur and an extramedullary guide for the tibia (the extramedullary guide group). Measurements of alignment on hip-to-ankle radiographs and computed tomography (CT) scans made three months after surgery were evaluated. The operative times and complications were compared among the three groups. The coronal tibiofemoral angle demonstrated, on average, less malalignment in the computer-assisted surgery group (1.91°) than in the extramedullary (3.22°) and intramedullary (2.59°) groups ($p = 0.007$). The coronal tibiofemoral angle was $>3^\circ$ of varus or valgus deviation in 19% (seven) of the thirty-six patients treated with computer-assisted surgery compared with 38% (thirteen) of the thirty-four in the extramedullary guide group and 36% (thirteen) of the thirty-six in the intramedullary guide group ($p = 0.022$). The increase in accuracy with computer-assisted surgery came at a cost of increased operative time. The operative time for the computer-assisted surgery group averaged 107 minutes compared with eighty-three and eighty minutes, respectively, for the surgery with the extramedullary and intramedullary guides ($p < 0.0001$). There was no significant difference in any of the outcomes between the intramedullary and extramedullary guide groups. The investigators concluded that the implant alignment with computer-assisted total knee arthroplasty, as measured with radiography and computed tomography, is significantly improved compared with that associated with conventional surgery with intramedullary or extramedullary guides.

4. Andreas F. Mavrogenis, MD; Olga D. Savvidou, MD; George Mimidis, MD; John Papanastasiou, MD; Dimitrios Koulalis, MD; Nikolaos Demertzis, MD; Panayiotis J. Papagelopoulos, MD, DSC. “Computer Assisted Navigation in Orthopedic Surgery.” *Orthopedics* 36 (8) August 2013: 631-642.

Potential disadvantages of computer-assisted navigation include an increase of operative time that may be up to 20 minutes (for TKAs), risk of fractures, and superficial infection at the sites of probes insertion, need for a learning curve, delayed recovery of the quadriceps muscle,² and increased cost compared with standard techniques. The risk of fractures at the sites of probe

insertion has been almost alleviated with the use of novel navigation probes that use 3.2-mm instead of 4- or 5-mm pins. The increase in the rate of soft tissue infections has not been statistically significant.

5. Melkerson, Mark N. "K082267." *Accessdata.fda.gov*. (October 29, 2008, FDA). July 28, 2014 <http://www.accessdata.fda.gov/cdrh_docs/pdf8/K082267.pdf>.
6. American Medical Association. Parenthetical guidelines for 20985. *Current Procedural Terminology (CPT) 2015, Professional Edition*. Chicago: AMA Press, p. 105.
7. American Medical Association. Parenthetical guidelines for 0055T. *Current Procedural Terminology (CPT) 2015, Professional Edition*. Chicago: AMA Press, p. 660.

Background Information

Computer-assisted navigation (CAN) is the application of computer tracking systems to assist with alignment in a variety of surgical procedures, such as orthopedic procedures (i.e., total hip arthroplasty, total knee arthroplasty). The goal of CAN is to increase surgical accuracy and reduce the chance of malposition of an implant.

Computer-assisted navigation involves 3 steps; data acquisition, registration, and tracking. The data can be acquired from fluoroscopy, computed tomography (CT) scans or magnetic resonance imaging (MRI) scans, or imageless systems. The data is then used for registration and tracking. Registration is relating the images to the anatomical position of the surgical area using "fiducial markers". Tracking is the feedback from the measurement devices regarding the orientation and relative position of tools to bone anatomy.

Currently, there is insufficient peer-reviewed scientific literature to support the long-term efficacy and safety as well as minimal data regarding surgical outcomes of computer-assisted navigation cases compared to more conventional techniques. More studies are needed to determine OR time, radiation exposure, and improved long-term functional outcomes with computer-assisted navigation. It is considered an adjunct procedure to standard musculoskeletal procedure and is not separately billable.

Computer-assisted navigation is also being investigated for operations with limited visibility such as placement of the acetabular cup in total hip arthroplasty (THA) and for minimally invasive orthopedic procedures. Other potential uses of CAN for surgical procedures of the appendicular skeleton include screw placement for fixation of femoral neck fractures and tunnel alignment during reconstruction of the anterior cruciate ligament (ACL).

Several navigation systems have received FDA clearance specifically for TKA (e.g., PiGalileo™ Computer-Assisted Orthopedic Surgery System, PLUS Orthopedics; OrthoPilot® Navigation System, Braun; Navitrack® Navigation System, ORTHOsoft). FDA-cleared indications for the PiGalileo system are representative. This system "is intended to be used in computer-assisted orthopedic surgery to aid the surgeon with bone cuts and implant positioning during joint replacement. It provides information to the surgeon that is used to place surgical instruments during surgery using anatomical landmarks and other data specifically obtained intra-operatively (e.g., ligament tension, limb alignment.) Examples of some surgical procedures include but are not limited to:

- Total knee replacement supporting both bone referencing and ligament balancing techniques
- Minimally invasive total knee replacement" (FDA⁵)

IMPORTANT STATEMENT

The purpose of this Reimbursement Policy is to document our payment guidelines for those services covered by a member's medical benefit plan. Healthcare providers (facilities, physicians, and other professionals) are expected to exercise independent medical judgment in providing care to members. Our Reimbursement Policy is not intended to impact care decisions or medical practice.

Providers are responsible for submission of accurate claims using valid codes from HIPAA-approved code sets and for accurately, completely, and legibly documenting the services performed. Billed codes shall be fully supported in the medical record and/or office notes. Claims are to be coded appropriately according to industry standard coding guidelines (including but not limited to UB Editor, AMA, CPT, CPT Assistant, HCPCS, DRG guidelines, CMS' National Correct Coding Initiative [CCI] Policy Manual, CCI table edits and other CMS guidelines).

Benefit determinations will be based on the member's medical benefit plan. Should there be any conflicts between our Reimbursement Policy and the member's medical benefit plan, the member's medical benefit plan will prevail. Fee determinations will be based on the applicable provider fee schedule, whether out of network or participating provider's agreement, and our Reimbursement Policy.

Policies may not be implemented identically on every claim due to variations in routing requirements, dates of processing, or other constraints; we strive to minimize these variations.

***** The most current version of our reimbursement policies can be found on our provider website. If you are using a printed or saved electronic version of this policy, please verify the information by going to https://www.modahealth.com/medical/policies_reimburse.shtml *****

Policy History

Date	Summary of Update
7/10/2024	Formatting Update: No content changes.
7/12/2023	Clarified billing and coding requirements. Formatting updates, no content changes.
7/13/2022	Formatting updates, no content changes.
10/9/2014	Policy initially approved by the Reimbursement Administrative Policy Review Committee & initial publication.
4/22/2014	Original Effective Date (with or without formal documentation). Policy based on Administrative decision after review of clinical effectiveness of CAN, impact on time and costs, and other carrier policies.