Computer Assisted Navigation

Last Updated: 11/9/2026 **Last Reviewed:** 11/19/2026 **Originally Effective:** 4/22/2014
Last update includes payment policy changes, subject to 28 TAC §3.3703(a)(20)(D)? No
If yes, Texas Last Update Effective Date: n/a
Policy #: RPM038

Scope

Companies: Moda Partners, Inc. and its subsidiaries & affiliates (All)
Claim Forms: CMS1500 & CMS1450 (paper and electronic versions)
Provider Contract Status: Any
Claim Dates: All

Reimbursement Guidelines

A. General

1. No additional reimbursement is provided for the instruments, technique or approach used in a procedure. These choices are at the surgeon's discretion. No additional professional or technical (facility) reimbursement is provided for procedures performed using any computer assisted navigation (CAN) system, whether the make or model is named in this policy.

2. 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.
   a. Separate reimbursement is not allowed for the CAN surgical technique, whether reported under listed codes, an unlisted procedure code, or another code.
      Note: Do not list add-on code 0055T or another CAN code as the primary surgical procedure code with majority of the billed surgical charges. The primary billed surgery code must identify the definitive surgical procedure.
   b. If the surgical procedure itself is reported with an unlisted code due to the use of a CAN, the unlisted code will be denied.
   c. Additional reimbursement will not be approved for use of modifier 22.
   d. Separate reimbursement is not allowed for the CAN device as a "surgical assistant" or an "assistant surgeon" with modifier -80, -81, -82, or –AS.
   e. When facility surgical charges are excessive compared with equivalent non-CAN surgeries, a 25% reduction is applied to the time-based anesthesia and operative charges.
3. 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.

4. Do not use Modifier 22 solely to report and bill for the use of computer assisted navigation. Modifier 22 may be used to report unusual complications or complexities during the surgery that are unrelated the navigation assistance system.

5. Do not report a computer assisted navigation system as a "surgical assistant" or an "assistant surgeon" with modifier -80, -81, -82, or –AS.

Definitions

Acronyms/Abbreviations

Acronym	Definition
AMA	American Medical Association
ASC	Ambulatory Surgery Center
CAN	Computer-assisted navigation
CMS	Centers for Medicare and Medicaid Services
CPT	Current Procedural Terminology
CT	Computed tomography
FDA	Food and Drug Administration (or USFDA)
HCPCS	Healthcare Common Procedure Coding System (acronym often pronounced as “hick picks”)
MPA	Maximum plan allowance
MRI	Magnetic resonance imaging
RPM	Reimbursement Policy Manual (e.g., in context of “RPM052” policy number, etc.)
TAC	Texas Administrative Code
THA	Total hip arthroplasty
TKA	Total knee arthroplasty

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)

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

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
8E0WXBF	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

ICD-10-PCS Codes	Description
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
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

Related Policies

A. "Moda Health Reimbursement Policy Overview." Moda Health Reimbursement Policy Manual, RPM001.
B. "Modifier 22 – Increased Procedural Services." Moda Health Reimbursement Policy Manual, RPM007.
C. "Modifiers 80, 81, 82, and AS – Assistant At Surgery." Moda Health Reimbursement Policy Manual, RPM013.

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° 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,[7] 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.

Policy History

Reminder: 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 current information by going to: https://www.modahealth.com/medical/policies_reimburse.shtml

Date	Summary of Update
11/19/2026	Minor rewording. No policy changes.
7/14/2025	Acronyms & Related Policies updated. Coding Guidelines & Sources section retired; see Resources for information. Formatting updates. No policy changes.
7/10/2024	Formatting updates No policy changes.
7/12/2023	Clarified billing and coding requirements. Formatting updates. no policy changes.
7/13/2022	Policy History section added; entries prior to 2022 omitted (in archive storage). Formatting updates. No policy changes.
10/9/2014	Policy document 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.