02-20000-30

Original Effective Date: 07/15/04

Reviewed: 06/25/26

Revised: 07/15/26

Subject: Computer-Assisted Navigation for Orthopedic Procedures

THIS MEDICAL COVERAGE GUIDELINE IS NOT AN AUTHORIZATION, CERTIFICATION, EXPLANATION OF BENEFITS, OR A GUARANTEE OF PAYMENT, NOR DOES IT SUBSTITUTE FOR OR CONSTITUTE MEDICAL ADVICE. ALL MEDICAL DECISIONS ARE SOLELY THE RESPONSIBILITY OF THE PATIENT AND PHYSICIAN. BENEFITS ARE DETERMINED BY THE GROUP CONTRACT, MEMBER BENEFIT BOOKLET, AND/OR INDIVIDUAL SUBSCRIBER CERTIFICATE IN EFFECT AT THE TIME SERVICES WERE RENDERED. THIS MEDICAL COVERAGE GUIDELINE APPLIES TO ALL LINES OF BUSINESS UNLESS OTHERWISE NOTED IN THE PROGRAM EXCEPTIONS SECTION.

Position Statement	Billing/Coding	Reimbursement	Program Exceptions	Definitions	Related Guidelines
Other	References	Updates			

DESCRIPTION:

Computer-assisted navigation (CAN) in orthopedic procedures describes the use of computer-enabled tracking systems to facilitate alignment in a variety of surgical procedures, including fixation of fractures, ligament reconstruction, osteotomy, tumor resection, preparation of the bone for joint arthroplasty, and verification of the intended implant placement. CAN devices may be image-based or non-image based. Image-based devices use preoperative computed tomography (CT) scans and operative fluoroscopy to direct implant positioning. Newer non-image based devices use information obtained in the operating room, typically with infrared probes. For total knee arthroplasty, specific anatomic reference points are made by fixing signaling transducers with pins into the femur and tibia. Signal emitting cameras (e.g., infrared) detect the reflected signals and transmit the data to a dedicated computer. During the surgery, multiple surface points are taken from the distal femoral surfaces, tibial plateaus, and medial and lateral epicondyles. The femoral head center is typically calculated by kinematic methods that involve movement of the thigh through a series of circular arcs, with the computer producing a 3-dimensional model that includes the mechanical, transepicondylar and tibial rotational axes. CAN systems direct the positioning of the cutting blocks and placement of the prosthetic implants based on the digitized surface points and model of the bones in space. The accuracy of each step of the operation (cutting block placement, saw cut accuracy, seating of the implants) can be verified, thereby allowing adjustments to be made during surgery.

Summary and Analysis of Evidence: The American Academy of Orthopaedic Surgeons Surgical Management of Osteoarthritis of the Knee evidence-based clinical practice guideline (2022) states, “There is no difference in outcomes, function, or pain between navigation and conventional techniques. Future Research: Since there are multiple studies showing no difference in patient outcomes, the desired benefit would be to show if better alignment reduces loosening and improves survivorship long term with large, randomized studies.” Total knee arthroplasty (TKA) using computer-assisted navigation includes randomized controlled trials (RCTs), systematic reviews of RCTs, and comparative studies. The main difference found between TKA with and without the use of computer-assisted navigation is increased surgical time with computer-assisted navigation. Few differences in clinical and functional outcomes were seen at up to 12 years postprocedure. The evidence is insufficient to determine the effects of the procedure on health outcomes.Orthopedic surgery for trauma or fracture using computer-assisted navigation, the evidence includes 2 retrospective studies, reviews, and in vitro studies. Functional

outcomes were not included in the first clinical trial, although it did note fewer complications with computer-assisted navigation versus conventional methods. The second trial found no differences between groups in rates of fracture reduction or screw positions. The evidence is insufficient to determine the effects of the procedure on health outcomes. Ligament reconstruction with computer-assisted navigation includes a systematic review of 5 RCTs of computer-assisted navigation versus conventional surgery for anterior and posterior cruciate ligament. Trial results showed no consistent improvement of tunnel placement with computer-assisted navigation, and no trials looked at functional outcomes or need for revision surgery with computer-assisted navigation. The evidence is insufficient to determine the effects of the procedure on health outcomes. Hip arthroplasty and periacetabular osteotomy with computer-assisted navigation, there are systematic reviews of older RCTs and comparison studies. Evidence on the relative benefits of computer-assisted navigation with conventional or minimally invasive total hip arthroplasty is inconsistent, and more recent RCTs are lacking. The evidence is insufficient to determine the effects of the procedure on health outcomes.

POSITION STATEMENT:

Note: This policy does not address cranial or spinal procedures.

Computer-assisted surgical navigation for orthopedic procedures is considered **experimental or investigational**. The evidence is insufficient to determine the effects of the procedure on health outcomes.

BILLING/CODING INFORMATION:

CPT Coding

20985	Computer-assisted surgical navigational procedure for musculoskeletal procedures; image-less (List separately in addition to code for primary procedure) (**Investigational**)

HCPCS Coding

0054T	Computer-assisted musculoskeletal surgical navigational orthopedic procedure, with image-guidance based on fluoroscopic images (List separately in addition to code for primary procedure) (**Investigational**)
0055T	Computer-assisted musculoskeletal surgical navigational orthopedic procedure, with image-guidance based on CT/MRI images (List separately in addition to code for primary procedure) (**Investigational**)

REIMBURSEMENT INFORMATION:

Refer to section entitled **POSITION STATEMENT**.

PROGRAM EXCEPTIONS:

Federal Employee Program (FEP): Follow FEP guidelines.

State Account Organization (SAO): Follow SAO guidelines.

Medicare Advantage products: No National Coverage Determination (NCD) and/or Local Coverage Determination (LCD) was found at the time of the last guideline reviewed date.

If this Medical Coverage Guideline contains a step therapy requirement, in compliance with Florida law 627.42393, members or providers may request a step therapy protocol exemption to this requirement if based on medical necessity. The process for requesting a protocol exemption can be found at Coverage Protocol Exemption Request.

DEFINITIONS:

No guideline specific definitions apply.

RELATED GUIDELINES:

Computer Assisted Surgical Navigation, 02-99221-14

OTHER:

None Applicable.

REFERENCES:

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COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy and Coverage Committee on 06/25/26.

GUIDELINE UPDATE INFORMATION:

07/15/04	New Medical Coverage Guideline.
01/01/05	HCPCS update; 0055T revision.
07/15/05	Annual review; no change.
06/15/06	Annual review; no change in investigational status.
06/15/07	Annual review; investigational status maintained; reformatted guideline; references updated.
01/01/08	2008 HCPCS update: deleted 0054T, 0055T, and 0056T; Added 20985, 20986, 20987.
07/15/08	Annual review: position statement maintained, Description section and references updated.
01/01/09	Annual HCPCS coding update: added codes 0054T & 0055T; deleted codes 20986 and 20987.
06/15/09	Annual review: position statement maintained and references updated.
11/15/10	Annual review: position statement maintained and references updated.
09/15/11	Scheduled review; position statement maintained and references updated.
10/15/12	Annual review; position statement maintained and references updated.
09/15/13	Annual review; position statement maintained and references updated.
09/15/14	Annual review; position statement maintained, description section and references updated.
10/15/15	Annual review; position statement maintained, references updated.
04/15/17	Revision; Investigational position statement maintained, description section and references updated.
07/15/18	Review; position statement maintained; description and references updated.
08/15/19	Review; position statement maintained and references updated.
06/15/20	Review; Investigational position maintained and references updated.
07/15/21	Review; Position statement, coding, and references updated.
10/15/22	Revision: coding section updated.
07/15/23	Review: Position statement maintained; references updated.
07/15/24	Review: Position statement maintained; description and references updated.
07/15/25	Review: Position statement maintained and references updated.
07/15/26	Annual review: Position statement maintained; references updated.