

Computer Assisted Navigation for Musculoskeletal Procedures

Date of Origin: 06/2012

Last Review Date: 08/22/2018

Effective Date: 08/22/2018

Dates Reviewed: 04/2013, 03/2014, 04/2015, 06/2015, 06/2016, 06/2017, 08/2018

Developed By: Medical Necessity Criteria Committee

I. Description

Computer-assisted navigation (CAN) is the application of computer tracking systems to assist with alignment in a variety of 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.

II. Criteria: CWQI HCS-0024

A. Moda Health considers computer-assisted navigation for musculoskeletal procedures experimental and investigational. It is a non-covered surgical service and if used is included under the existing code for the actual procedure performed.

III. Information Submitted with the Prior Authorization Request:

1. The physician’s chart notes and procedure will be submitted for the medical necessity review of the proposed primary procedure. The computer-assisted navigation portion of the procedure is considered investigational and not covered.

IV. CPT or HCPC NOTcodes covered:

Codes	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

V. Annual Review History

Review Date	Revisions	Effective Date
04/2013	Annual Review: Added table with review date, revisions, and effective date.	04/24/2013
03/2014	Annual Review: No changes	04/03/2014
04/2015	Annual Review:	06/24/2015
06/2016	Annual Review: No changes	06/29/2016
06/2017	Annual Review: No change; updated to new template	06/28/2017
8/2018	Annual Review: Minor wording changes	08/22/2018

VI. References

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2. Seon JK, Song EK, Yoon TR, et al. Comparison of functional results with navigation-assisted minimally invasive and conventional techniques in bilateral total knee arthroplasty. *Comput Aided Surgery.* 2007 May;12(3):189-93.
3. Quack VM, Kathrein S, Rath B, Tingart M, Lüring C. Computer-assisted navigation in total knee arthroplasty: a review of literature. *Biomed Tech (Berl).* 2012 May 30;0(0):1-7. doi: 10.1515/bmt-2011-0096.
4. Reininga IH, Wagenmakers R, van den Akker-Scheek I, et al. Effectiveness of computer-navigated minimally invasive total hip surgery compared to conventional total hip arthroplasty: design of a randomized controlled trial. *BMC Musculoskelet Disord.* 2007 Jan 11;8:4.
5. Hoffart HE, Langenstein E, Vasak N. A prospective study comparing the functional outcome of computer-assisted and conventional total knee replacement. *J Bone Joint Surg Br.* 2012 Feb;94(2):194-9
6. Huang TW, Hsu WH, Peng KT, Hsu RW, Weng YJ, Shen WJ. Total knee arthroplasty with use of computer-assisted navigation compared with conventional guiding systems in the same patient: radiographic results in Asian patients. *J Bone Joint Surg Am.* 2011 Jul 6;93(13):1197-202

7. Bauwens K, Matthes G, Wich M, et al. Navigated total knee replacement. A meta-analysis. J Bone Joint Surg Am. 2007 Feb;89(2):261-9.
8. American Association of Hip and Knee Surgeons Position Statement on Computer Assisted Orthopedic Surgery (CAOS) for Total Hip and Knee Replacement: What Patient Should Consider. Accessed on June 25, 2012 at: <http://www.aahks.org/patients/resources/CAOSpositionstatement.pdf>
9. Dutton AQ et al. Computer-assisted minimally invasive total knee arthroplasty compared with standard total knee arthroplasty. A prospective, randomized study. J Bone Joint Surg Am. 91 Suppl 2 Pt 1:116-30, 2009 Mar 1.
10. Physician Advisors

Appendix 1 – Centers for Medicare and Medicaid Services (CMS)

Medicare coverage for outpatient (Part B) drugs is outlined in the Medicare Benefit Policy Manual (Pub. 100-2), Chapter 15, §50 Drugs and Biologicals. In addition, National Coverage Determination (NCD) and Local Coverage Determinations (LCDs) may exist and compliance with these policies is required where applicable. They can be found at: <http://www.cms.gov/medicare-coverage-database/search/advanced-search.aspx>. Additional indications may be covered at the discretion of the health plan.

Medicare Part B Covered Diagnosis Codes (applicable to existing NCD/LCD):

Jurisdiction(s): 5, 8	NCD/LCD Document (s):

NCD/LCD Document (s):

Medicare Part B Administrative Contractor (MAC) Jurisdictions		
Jurisdiction	Applicable State/US Territory	Contractor
F (2 & 3)	AK, WA, OR, ID, ND, SD, MT, WY, UT, AZ	Noridian Healthcare Solutions, LLC