

Origination Date: 6/07	Revision Date(s): 7/07, 7/08, 12/09, 3/11
Developed By: Medical Criteria Committee	

*Neal Mills MD, MBA*

**Approved:** Neal Mills MD, MBA      **Date:** 03/15/11

**Description:**

Computer aided detection (CAD) has been used as a tool to assist radiologists in the interpretation of mammograms and MRIs of the breast as well as other diagnostic studies such as chest radiographs for lung cancer screening. Detection programs analyze digitized images and identify suspicious areas for review by the radiologist. The basic concept of CAD is to assist and improve the radiologist's interpretation. Although CAD is used most often in mammography, many types of CAD technology and devices are being developed for detection of various lesions in medical imaging.

**Criteria:**

- I. ODS considers CAD a medically necessary adjunct for both screening and diagnostic mammography when used as an adjunct to radiologist's interpretation. ODS considers the use of computer aided detection experimental and investigational for use with the following imaging studies because its clinical value has not been established:
  - a. MRI of the breast
  - b. Chest radiographs for lung cancer screening

**Information to be Submitted with Pre-Authorization Request:**

None. ODS considers computer aided detection experimental and investigational when used with imaging techniques other than mammogram.

**Applicable CPT/HCPC Codes:**

**Note: list may not be all inclusive**

77051	Computer-aided detection (computer algorithm analysis of digital image data for lesion detection) with further physician review for interpretation, with or without digitization of film radiographic images; diagnostic mammography (list separately in addition to code for primary procedure)
77052	Computer-aided detection (computer algorithm analysis of digital image data for lesion detection) with further physician review for interpretation, with or without digitization of film radiographic images; screening mammography (list separately in addition to code for primary procedure)

**Not Covered:**

0159T	Computer-aided detection, including computer algorithm analysis of MRI image data for lesion detection/characterization, pharmacokinetic analysis, with further physician review for interpretation, breast MRI
0174T	Computer-aided detection (computer algorithm analysis of digital image data for lesion detection) with further physician review for interpretation and report, with or without digitization of film radiographic images, chest radiograph(s), performed concurrent with primary interpretation (list separately in addition to codes for primary procedure)
0175T	Computer-aided detection (computer algorithm analysis of digital image data for lesion detection) with further physician review for interpretation and report, with or without digitization of film radiographic images, chest radiograph(s), performed remote from primary interpretation

Origination Date: 6/07	Revision Date(s): 7/07, 7/08, 12/09, 3/11
Developed By: Medical Criteria Committee	

**References:**

- Buhmann S, Herzog P, Liang J, et al. Clinical evaluation of a computer-aided diagnosis (CAD) prototype for the detection of pulmonary embolism. *Acad Radiol.* 2007 Jun;14(6):651-8.
- Cupples TE, Cunningham JE, Reynolds JC. Impact of computer-aided detection in a regional screening mammography program. *AJR Am J Roentgenol.* 2005 Oct;185(4):944-50.
- Elmore JG, Armstrong K, Lehman CD, Fletcher SW. Screening for breast cancer. *JAMA.* 2005 Mar;293(10):1245-56.
- Fenton J, Taplin S, Carney P, et al. Influence of computer-aided detection on performance of screening mammography. *N Engl J Med.* 2007 April;356(14):1399-1409.
- Freer TW, Ulissey MJ. Screening mammography with computer-aided detection: prospective study of 12,860 patients in a community breast center. *Radiology.* 2001 Sep;220(3):781-6.
- Georgian-Smith D, Moore RH, Halpern E, Yeh ED, Rafferty EA, D'Alessandro HA, et al. Blinded comparison of computer-aided detection with human second reading in screening mammography. *AJR Am J Roentgenol.* 2007 Nov;189(5):1135-41.
- Gilbert FJ, Astley SM, Gillan MG, Agbaje OF, Wallis MG, CADET II Group, et al. Single reading with computer-aided detection for screening mammography. *N Engl J Med.* 2008 Oct 16;359(16):1675-84. Epub 2008 Oct 1.
- Gromet M. Comparison of computer-aided detection to double reading of screening mammograms: review of 231,221 mammograms. *AJR Am J Roentgenol.* 2008 Apr;190(4):854-9.
- Hall F. Breast imaging and computer-aided detection. Editorial. *N Engl J Med.* 2007 April;356(14).
- Irwig L, Houssami N, van Vliet C. New technologies in screening for breast cancer: a systematic review of their accuracy. *Br J Cancer.* 2004 Jun;90(11):2118-22.
- Ko JM, Nicholas MJ, Mendel JB, Slanetz PJ. Prospective assessment of computer-aided detection in interpretation of screening mammography. *AJR Am J Roentgenol.* 2006 Dec;187(6):1483-91.
- Noble M, Bruening W, Uhl S, Schoelles K. Computer-aided detection mammography for breast cancer screening: system
- Taylor P, Champness J, Given-Wilson R, et al. Impact of computer-aided detection prompts on the sensitivity and specificity of screening mammography. *Health Technol Assess.* 2005 Feb;9(6):iii,1-58.
- Ulissey M, Roehrig J. Mammography – computer-aided detection. Accessed on February 22, 2011 at: [www.emedicine.com/radio/topic879.htm](http://www.emedicine.com/radio/topic879.htm).
- Physician Advisors