

## Corporate Medical Policy

### Capsule Endoscopy, Wireless

**File Name:** capsule\_endoscopy\_wireless  
**Origination:** 5/2002  
**Last CAP Review:** 5/2019  
**Next CAP Review:** 5/2020  
**Last Review:** 11/2019

#### Description of Procedure or Service

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Wireless capsule endoscopy (CE) is performed using the PillCam Given Diagnostic Imaging System (previously called M2A), which is a disposable imaging capsule manufactured by Given Imaging. The capsule measures 11 by 30 mm and contains video imaging, self-illumination, and image transmission modules, as well as a battery supply that lasts up to 8 hours. The indwelling camera takes images at a rate of two frames per second as peristalsis carries the capsule through the gastrointestinal (GI) tract. The average transit time from ingestion to evacuation is 24 hours. The device uses wireless radio transmission to send the images to a receiving recorder device that the patient wears around the waist. This receiving device also contains some localizing antennae sensors that can roughly gauge where the image was taken over the abdomen. Images are then downloaded onto a workstation for viewing and processing.

CE has been proposed as a method for identifying Crohn's disease. There is no single criterion standard diagnostic test for Crohn's disease; rather, diagnosis is based on a constellation of findings. Thus it is difficult to determine the diagnostic characteristics of various tests used to diagnose the condition and difficult to determine a single comparator diagnostic test in CE.

In the esophagus, the capsule camera has been proposed as a screening technique for Barrett's esophagus associated with gastroesophageal reflux disease (GERD). Evaluation of the esophagus requires limited transit time, and it is estimated that the test takes 20 minutes to perform. Alternative techniques include upper endoscopy.

#### Regulatory Status

In 2001, the PillCam™ Given® Diagnostic Imaging System (Given Imaging) was cleared for marketing by the U.S. Food and Drug Administration (FDA), through the 510(k) process. The FDA clearance provides for the capsule's use "along with – not as a replacement for – other endoscopic and radiologic evaluations of the small bowel." The FDA clarified that the "capsule was not studied in the large intestine." In 2003, a supplemental 510(k) pre-market notification was cleared, and the labeled indications were modified by removing the "adjunctive" use qualification: "the Given® Diagnostic System is intended for visualization of the small bowel mucosa. It may be used as a tool in the detection of abnormalities of the small bowel."

In 2004, the device received FDA clearance for the following labeled indication: "The Given® Diagnostic System with the PillCam™ ESO Capsule is intended for the visualization of esophageal mucosa." A new model (PillCam™ ES02 Capsule) was cleared by the FDA in June 2007.

In 2007, the FDA cleared the Olympus Capsule Endoscope System through the 510(k) process for "visualization of the small intestine mucosa." More recent versions of both these systems also incorporate a blood indicator feature to assist with rapid screening of intestinal lesions with bleeding potential.

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In 2006, the Given AGILE™ patency system was cleared by the FDA through the 510(K) process. This system is an accessory to the PillCam™ video capsule and, according to FDA, is intended to verify adequate patency of the GI tract prior to administration of the PillCam™ in patients with known or suspected strictures. This capsule is of similar size to the endoscopy capsule, but is made of lactose and barium and dissolves within 30–100 hours of entering the GI tract. It carries a tracer material that can be detected by a scanning device. Excretion of the intact capsule without symptoms (abdominal pain or obstruction) is reported to predict the uncomplicated passage of the wireless capsule.

In 2014, PillCam™ COLON was granted a de novo classification by FDA. The new classification applies to devices with low to moderate risk that have no predicate on the market. PillCam™ COLON is intended to visualize the colon in patients who have had an incomplete colonoscopy due to a technical impossibility and not incomplete evacuation.

In 2016, the PillCam™ COLON 2 Capsule Endoscopy System received clearance by FDA through the 510(k) premarket process for the detection of colon polyps in patients after an incomplete colonoscopy with adequate preparation, and a complete evaluation of the colon was not technically possible, and for detection of colon polyps in patients with evidence of gastrointestinal bleeding of lower GI origin in patients with major risks for colonoscopy or moderate sedation, but who could tolerate a colonoscopy and moderate sedation in the event that a clinically significant colon abnormality was identified on capsule endoscopy.

**\*\*\*Note: This Medical Policy is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.**

## Policy

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**BCBSNC will provide coverage for Wireless Capsule Endoscopy when it is determined to be medically necessary because the medical criteria and guidelines shown below are met.**

## Benefits Application

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This medical policy relates only to the services or supplies described herein. Please refer to the Member's Benefit Booklet for availability of benefits. Member's benefits may vary according to benefit design; therefore member benefit language should be reviewed before applying the terms of this medical policy.

This procedure may require prior review.

## When wireless capsule endoscopy is covered

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Wireless capsule endoscopy of the small bowel may be eligible for coverage for the following indications:

- Initial diagnosis in patients with suspected Crohn's disease without evidence of disease on conventional diagnostic tests such as small-bowel follow-through (SBFT) OR upper and lower endoscopy.
- In patients with an established diagnosis of Crohn's Disease, when there are unexpected change(s) in the course of disease or response to treatment, suggesting the initial diagnosis may be incorrect and re-examination may be indicated.
- Suspected small bowel bleeding, as evidenced by prior inconclusive upper and lower gastrointestinal endoscopic studies performed during the current episode of illness.
- For surveillance of the small bowel in patients with hereditary GI polyposis syndromes, including familial adenomatous polyposis and Peutz-Jeghers syndrome.

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## When wireless capsule endoscopy is not covered

- 1.) Capsule endoscopy for undiagnosed obscure GI bleeding or for diagnosis of suspected Crohn's disease is considered to be not medically necessary when all the criteria under Patient Selection Criteria below are not met.
- 2.) Capsule endoscopy for any indication other than undiagnosed obscure GI bleeding, diagnosis of suspected Crohn's disease, or surveillance of the small bowel in patients with hereditary GI polyposis syndromes is considered investigational including but not limited to the following indications:
  - a) When the test is performed for screening.
  - b) When the wireless capsule endoscopy is used to view the esophagus.
  - c) When used as a technique to evaluate other gastrointestinal diseases not presenting with gastrointestinal bleeding, including, but not limited to celiac sprue, irritable bowel syndrome, Lynch syndrome (risk for hereditary nonpolyposis colorectal cancer), portal hypertensive enteropathy, small bowel neoplasm, and unexplained chronic abdominal pain.
  - d) When used for the evaluation of the extent of involvement of known Crohn's disease or ulcerative colitis.
  - e) When used for the evaluation of the colon including, but not limited to, the detection of colonic polyps or colon cancer.
  - f) Initial evaluation of patients with acute upper GI bleeding.
- 3.) The patency capsule is considered investigational, including use to evaluate patency of the gastrointestinal tract before wireless capsule endoscopy.

## Policy Guidelines

### **Patient Selection Criteria:**

Patients with suspected Crohn's disease must include the following signs and symptoms:

- 1) Persistent abdominal pain of greater than 4 weeks; **and**
- 2) Persistent diarrhea; **and**
- 3) Unintentional weight loss; **and**
- 4) Negative stool cultures.

Suspected small bowel bleeding must be significant, as demonstrated by one of the following:

- a) an acute drop in hemoglobin/hematocrit; **or**
- b) unexplained recurrent or persistent iron deficiency anemia; **or**
- c) persistently positive fecal occult blood test; **or**
- d) visible bleeding with no bleeding source found at original upper or lower endoscopy

### **Summary**

The evidence for patients with suspected small bowel bleeding (previously referred to as obscure GI bleeding) who receive wireless capsule endoscopy, includes numerous case series that evaluate patients with a nondiagnostic standard workup. Relevant outcomes are test validity, other test performance measures, symptoms, and change in disease status. The evidence demonstrates that capsule endoscopy can identify a bleeding source in a substantial number of patients who are unable to be diagnosed by other methods, with a low incidence of adverse events. Since there are few other options for diagnosing obscure small bowel bleeding in patients who have negative upper and lower endoscopy, this technique will likely improve health outcomes by directing specific treatment when a bleeding source is identified. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

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The evidence for patients who have acute upper GI tract bleeding who receive wireless capsule endoscopy, includes 1 RCT and several cohort studies. Relevant outcomes are test validity, and other test performance measures, symptoms, hospitalizations, and resource utilization. The use of capsule endoscopy in the emergency department setting for suspected upper GI bleeding is based on efficiency (avoiding hospitalization, avoiding immediate endoscopy). Further controlled studies are needed to further assess the impact of capsule endoscopy on health outcomes compared with standard management. The evidence is insufficient to determine the effects of the technology on health outcomes.

The evidence for patients with suspected small bowel Crohn's disease or patients with an established diagnosis of Crohn's disease who remain symptomatic or develop new, unexpected symptoms includes case series. Relevant outcomes are test validity, other test performance measures, symptoms, and change in disease status. Although the performance characteristics and diagnostic yield of the capsule for this indication is uncertain, there are still no other good diagnostic options, and as a result it is likely to improve health outcomes by identifying some cases of this disorder and directing specific treatment. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

The evidence for patients who have ulcerative colitis, suspected celiac disease, esophageal conditions, hereditary polyposis syndromes, colon cancer screening, portal hypertensive enteropathy, unexplained abdominal pain, or are scheduled to undergo capsule endoscopy with known or suspected small bowel stricture who receive wireless capsule endoscopy, the evidence includes case series and some diagnostic accuracy studies. Relevant outcomes are test validity, other test performance measures, symptoms, and change in disease status. For some of these conditions, e.g., esophageal conditions and colon cancer screening, other modalities are available that are superior to capsule endoscopy. For other conditions, e.g., determining the extent of Crohn's disease, the accuracy of the device needs to be established prior to determining whether outcomes are improved. The evidence is insufficient to determine the effects of the technology on health outcomes.

For patients who are scheduled to undergo capsule endoscopy with known or suspected small bowel stricture who receive a patency capsule, the evidence consists of case series. Relevant outcomes are test validity, symptoms, change in disease status, and treatment-related morbidity. Available studies report that capsule endoscopy following a successful patency capsule test results in high rates of success with low rates of adverse events. Because of the lack of comparative data to other diagnostic strategies, it is not possible to determine whether use of the patency capsule improves the rate of successful capsule endoscopy or reduces the rate of adverse events. The evidence is insufficient to determine the effects of the technology on health outcomes.

## Billing/Coding/Physician Documentation Information

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This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at [www.bcbsnc.com](http://www.bcbsnc.com). They are listed in the Category Search on the Medical Policy search page.

*Applicable service codes: 0355T*

BCBSNC may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all specific information needed to make a medical necessity determination is included.

## Scientific Background and Reference Sources

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BCBSA Medical Policy Reference Manual, 2/15/2002; 6.01.33

ECRI, Target Report #819, *Capsule Endoscopy*. March 29, 2002

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BCBSA TEC Assessment, Volume 16, No. 18, April 2002  
BCBSA TEC Assessment, MAP meeting, Page 34-37; October 10, 2002  
Specialty Matched Consultant Advisory Panel, 6/2002  
BCBSA Medical Policy Reference Manual, 12/18/2002; 6.01.33  
Specialty Matched Consultant Advisory Panel, 3/2003  
BCBSA Medical Policy Reference Manual [Electronic Version]. 6.01.33, 11/9/2004  
Specialty Matched Consultant Advisory Panel, 2/2005.  
BCBSA Medical Policy Reference Manual [Electronic Version]. 6.01.33, 4/1/2005  
BCBSA Medical Policy Reference Manual [Electronic Version]. 6.01.33, 4/25/2006  
Specialty Matched Consultant Advisory Panel, 1/2007.  
BCBSA Medical Policy Reference Manual [Electronic Version]. 6.01.33, 7/10/2008  
Specialty Matched Consultant Advisory Panel, 1/2009.  
BCBSA Medical Policy Reference Manual [Electronic Version]. 6.01.33, 8/13/09  
BCBSA Medical Policy Reference Manual [Electronic Version]. 6.01.33, 5/12/11  
Specialty Matched Consultant Advisory Panel, 4/18/12.  
BCBSA Medical Policy Reference Manual [Electronic Version]. 6.01.33, 8/9/12  
Specialty Matched Consultant Advisory Panel, 4/2013  
BCBSA Medical Policy Reference Manual [Electronic Version]. 6.01.33, 8/8/13  
Specialty Matched Consultant Advisory Panel, 4/2014  
BCBSA Medical Policy Reference Manual [Electronic Version]. 6.01.33, 9/11/14  
Specialty Matched Consultant Advisory Panel, 5/2015  
Medical Director review, 5/2015  
BCBSA Medical Policy Reference Manual [Electronic Version]. 6.01.33, 9/10/15  
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BCBSA Medical Policy Reference Manual [Electronic Version]. 6.01.33, 11/2019

## **Policy Implementation/Update Information**

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- 5/2002 Original policy issued.
- 6/2002 Specialty Matched Consultant Advisory Panel.
- 3/2003 Specialty Matched Consultant Advisory Panel review 3/2003. Policy revised. No longer considered investigational for specific criteria. Deleted code 58999 and added codes 91299 and G0262 to Billing/Coding section. Added terms to the Medical Term Definitions. Added colonoscopy to the Policy Key Words section. System coding changes.
- 1/04 Benefits Application and Billing/Coding sections updated for consistency.
- 5/04 Added code 91110 to the Billing/Coding section.
- 03/17/05 Specialty Matched Consultant Advisory Panel review 2/24/2005. Added device name "PillCam™Given® Diagnostic Imaging System" to Description of Procedure or Service. Deleted "G0262" from Coding/Billing section. Added "RAD5023" to Key Words section. References added.
- 8/18/05 Revised "Description of Procedure or Service" section to include additional information related to FDA approval and the wireless capsule endoscopy's use in the esophagus. Added additional signs of significant GI bleeding under "When covered" section. Added second bullet under "When not covered" section to indicate this test would not be covered; "When the Wireless capsule endoscopy is used to view the esophagus. It is considered investigational" and the third bullet, "When used as a technique to evaluate other gastrointestinal diseases not presenting with gastrointestinal bleeding, including, but not limited to celiac sprue, irritable bowel syndrome, small bowel neoplasm, or intestinal polyposis syndrome." Rationale added to "Policy Guidelines" section. "ESO and Esophageal" added to "Policy Key Words" section. Notification given 8/18/2005. Policy effective 10/20/ 2005.
- 1/3/07 Added the following 2007 new CPT code to the "Billing/Coding" section, 91111.
- 2/26/07 Added new indication to the "When Covered" section, "C. For surveillance of the small bowel in patients with hereditary GI polyposis syndromes, including familial adenomatous polyposis and Peutz-Jeghers syndrome." Under the section "When Not Covered" first bullet "All other indications are considered investigational including but not limited to the following examples." and the last bullet, "When used for the evaluation of the extent of involvement of known Crohn's disease". Rationale updated in "Policy Guidelines" section. Removed CPT code 91299 from "Billing/Coding" section now that specific codes exist. References added.
- 3/2/09 Specialty Matched Consultant Advisory Panel review 1/28/2009. Policy reformatted. Added information regarding other similar devices to the "Description" section. In the "When Covered" section removed the statement; "hematocrit less than 34" and changed wording in A.1.b. "unexplained recurrent or persistent iron deficiency anemia ***demonstrated by low serum iron studies or low serum ferritin level***". B. "For suspected Crohn's Disease ***when diagnosis has not been established by upper and lower endoscopy studies...***" B.3. added "***unintentional*** weight loss". Reformatted information under the "When Not Covered" section for clarification. References added. (btw)
- 12/7/09 Updated "Description" section. Added "2.e. When used for the evaluation of the colon including, but not limited to, the detection of colonic polyps or colon cancer." to the "When Not Covered" section for clarification, no change to policy intent. Updated "Policy Guidelines" section. Senior Medical Director review 11/9/09. References added. (btw)
- 6/22/10 Policy Number(s) removed (amw)
- 12/7/10 Added the statement to Benefits Application section: "This procedure may require prior review." Medical Director review 9/8/10. (adn)

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- 5/10/11 Specialty Matched Consultant Advisory Panel review 4/27/11. No change in medical criteria for coverage. Rationale in the Policy Guidelines section updated. (adn)
- 5/1/12 Patient Selection Criteria added to Policy Guidelines. Policy statement revised. No change to policy intent. Specialty Matched Consultant Advisory Panel review 4/18/12. (sk)
- 11/13/12 Reference added. Summary statement added. No change to policy intent. Medical director review. (sk)
- 4/30/13 Specialty Matched Consultant Advisory Panel review 4/17/13. (sk)
- 10/29/13 Reference added. Ulcerative colitis, acute GI bleeding and Lynch syndrome added to investigational policy statement. Medical Director review. Notification given 10/29/13 for policy effective date 12/31/13. (sk)
- 5/13/14 Specialty Matched Consultant Advisory Panel review 4/29/13. No change to Policy statement. (sk)
- 11/11/14 References updated. Description section updated. When Covered section updated. Billing section updated to include CPT code: 0355T effective as of July 2014. (td)
- 7/1/15 References updated. Specialty Matched Consultant Advisory Panel review 5/27/2015. Medical Director review 5/2015. Policy Statements remain unchanged. (td)
- 10/30/15 Description section extensively revised. Policy Guidelines section extensively revised. References updated. Policy Statement unchanged. (td)
- 7/1/16 Specialty Matched Consultant Advisory Panel review 5/25/16. Portal hypertensive enteropathy and unexplained chronic abdominal pain added to Non-covered section. (jd)
- 12/30/16 Regulatory Status updated and revisions to Policy Guidelines. When Covered section updated with minor changes to wording, no change to intent of policy. References updated. Medical Director review. (jd)
- 6/30/17 Specialty Matched Consultant Advisory Panel, 5/2017. Medical Director review, 5/2017. (jd)
- 6/8/18 References updated. Specialty Matched Consultant Advisory Panel, 5/2018. Medical Director review, 5/2018. (jd)
- 12/14/18 Minor updates to Description section, When Not Covered section and Policy Guidelines. No change to policy intent. (jd)
- 5/28/19 Specialty Matched Consultant Advisory Panel, 5/2019. Medical Director review 5/2019. (jd)
- 7/30/19 Revised wording to 1<sup>st</sup> bullet under the When Covered section, replaced the term “and” with “OR” for clarity. No change in policy intent. Medical Director review 7/2019. (jd)
- 12/10/19 The following codes were removed from Billing/Coding section effective 10/1/19: 91110, 91111; references updated. (jd)

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Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.