

\*Selected, quality filtered, not subject to external review

**Issue:** Practitioners within the VA Office of Patient Care Services are discussing the use of mid-level providers (MLPs), such as physician assistants and nurse practitioners, to perform screening colonoscopy as a means of increasing colorectal cancer screening rates and complying with recommendations for follow up by complete diagnostic evaluation. To assist in the discussion, the Acting Chief Officer of Patient Care Services requested VATAP to provide a non-annotated bibliography of recent studies and reviews comparing patient outcomes using GI specialists versus trained mid-level practitioners for screening colonoscopy.

**Background:** According to the Centers for Disease Control<sup>1</sup>, colorectal cancer is the second leading cause of cancer deaths in the United States. Prevention and early detection through timely screening as well as follow up of all positive screening tests by complete diagnostic evaluation are important in reducing the mortality rate associated with this disease. VA National Center for Health Promotion and Disease Prevention recommends four tests for colorectal cancer screening: fecal occult blood test (FOBT); flexible sigmoidoscopy; double contrast barium enema; and colonoscopy<sup>2</sup>. Colonoscopies and barium enemas are also used as follow-up diagnostic tools when the results of the other screening tests are positive.

Despite the availability of effective screening tests for colorectal cancer, they remain underused in the general population. The current rate of colorectal cancer screening in VA averages about 70% nationally with significant variations in screening rates noted across Veteran Integrated Service Networks (VISN), highlighting a significant gap between best and current colorectal cancer screening practices (VA Office of Quality and Performance, 2004).

The role of mid-level providers (MLPs) in healthcare has expanded over the years to include endoscopic procedures for screening as a means of increasing access to effective screening tests and improving patient outcomes. With respect to lower gastrointestinal screening endoscopy, evidence-based standards and guidelines<sup>3,4</sup> and CMS Medicare reimbursement coverage<sup>5</sup> exist for flexible sigmoidoscopies performed by adequately trained and supervised MLPs.

Use of MLPs to perform screening colonoscopy has also been reported, but the extent to which they are used is unclear<sup>6</sup>. A recent survey conducted by VISN Chief Medical Officers of colorectal cancer screening and follow-up practices showed that six of 125 facilities reported using physician assistants but not nurse practitioners to perform colonoscopy, although 17 reported using nurse practitioners to perform flexible sigmoidoscopies (personal communication: L. Kochevar, QUERI-CRC). Training and skills needed for colonoscopy are more demanding than for flexible sigmoidoscopy, and there is some debate as to whether patient needs and demand for colonoscopies warrant additional personnel to carry out the procedure<sup>7</sup>.

<sup>1</sup> <http://www.cdc.gov/cancer/colorct/colorct.htm> accessed June 28, 2004.

<sup>2</sup> <http://www.nchpdp.med.va.gov/ptcpatientcolorectal.asp> accessed June 28, 2004.

<sup>3</sup> <http://www.asge.org/nspages/practice/management/nonphysicians.cfm> accessed June 30, 2004.

<sup>4</sup> <http://www.sgna.org/resources/FlexSigdoc.html>, accessed June 30, 2004.

<sup>5</sup> [http://www.cms.hhs.gov/manuals/pm\\_trans/R1735B3.pdf](http://www.cms.hhs.gov/manuals/pm_trans/R1735B3.pdf), accessed July 1, 2004.

<sup>6</sup> Cash, BD, Schoenfeld, PS, Ransohoff, DF. Licensure, use, and training of paramedical personnel to perform screening flexible sigmoidoscopy. *Gastrointestinal endoscopy* 1999;49(2):163-9.

<sup>7</sup> <http://www.asge.org/nspages/practice/management/nonphysicians.cfm> accessed June 30, 2004.

The VA Health Services Research and Development Service Colorectal Cancer Quality Enhancement Research Initiative (QUERI-CRC)<sup>8</sup> was created to “*promote the translation of research discoveries and innovations into patient care and systems improvements in order to reduce the incidence, late detection, suffering, and mortality from colorectal cancers among veterans.*” The QUERI-CRC reports that facility failure rates to perform timely diagnostic follow up colonoscopy by gastroenterologists within six months of a positive FOBT range from 30% to 50%. Although the reasons for this require further study, QUERI research<sup>9,10,11</sup> indicates failure to refer patients for follow-up and appointment non-completion (due to cancellations, no-shows and poor preps) are major barriers. It is not known whether competing demand for screening colonoscopies is an issue. Currently, the QUERI-CRC is in the process of developing and implementing projects to measure the impact of promoting best colorectal cancer screening and colonoscopic follow-up practices in VA.

**Methods:** In June 2004, VATAP queried the International Network of Agencies for Health Technology Assessment (INAHTA) through their electronic listserv for relevant completed, ongoing or planned health technology assessments (HTA). In addition, VATAP searched the HTA database ([www.inahta.org](http://www.inahta.org)) using search terms for colonoscopy, endoscopy, and screening in HTA reports (completed) and HTA projects (ongoing).

These queries resulted in one ongoing HTA in the United Kingdom (UK) funded by the NHS Research and Development Health Technology Assessment Programme entitled “What is the cost-effectiveness of endoscopy undertaken by nurses? - a multi-institution nurse endoscopy trial (MINUET)”<sup>12</sup>. However, this randomized control trial is comparing the acceptability, effectiveness, outcome and cost of upper GI endoscopy and flexible sigmoidoscopy undertaken by nurses or physicians, not colonoscopy.

VATAP supplemented these queries with searches of primary studies comparing patient outcomes using MLPs versus physicians for screening colonoscopy on a number of databases. Beginning with the Cochrane Library Databases (Issue 2, 2004), VATAP searched for relevant studies in the peer reviewed, published literature, as well as protocols or assessments of colonoscopy or endoscopy performed by mid-level non-physician practitioners. PubMed<sup>®</sup> (1966-2004), MEDLINE<sup>®</sup> (1990-2004), EMBASE<sup>®</sup> (1993-2004), and Current Contents<sup>®</sup> (1990-2004) were searched using terms for terms for colonoscopy/ies, endoscopy/ies, mass screening, colorectal cancer/diagnosis or screening. Search strategies combined all colonoscopy terms with terms for physician assistants, nurse practitioners, mid-level practitioners, or nurse endoscopists, as well terms for utilization, attitudes, manpower, and economics of these groups in colonoscopy screening. Editorials and meeting abstracts were

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<sup>8</sup> <http://www.hsrd.minneapolis.med.va.gov/CRC/CRCHome.asp> accessed June 28, 2004.

<sup>9</sup> Etzioni D, Steven M. Asch M, MPH, Lisa V. Rubenstein M, MSPH, et al. Colorectal Cancer Screening and Follow-Up in the Veterans Health Administration. Under review. (also presented at VA HSR&D Meeting, Washington DC, 2004.)

<sup>10</sup> Fisher D, Jeffreys A, Coffman C. Evaluation of a Positive Screening Fecal Occult Blood Test, VA HSR&D Meeting, Washington DC, 2004.

<sup>11</sup> Kochevar, L.K. Endoscopic Throughput Optimization Variants: Implications for Improvement, VA QUERI Meeting, Washington DC, 2003

<sup>12</sup> <http://www.controlled-trials.com/mrct/trial/ENDOSCOPY%7CNURSE/1024/1233.html> accessed June 25, 2004.

excluded. The searches uncovered a total of 199 references. However, none compared the performance of MLPs to physicians for screening colonoscopy.

The VA QUERI-CRC identified one preliminary study by Vance and colleagues<sup>13</sup> at the Wolfson Unit for Endoscopy, St Mark's Hospital, London, UK, which appeared in the literature as a poster abstract, and therefore was not included in VATAP's searches. Based on the first 160 procedures performed by a single trained nurse endoscopist, investigators found that a nurse endoscopist with an experienced background in flexible sigmoidoscopy can, with specialized training, safely progress to perform colonoscopy for diagnostic referrals. However, minimal data on safety and efficacy were reported: the overall caecal intubation rate was 94% with assistance given in 8% of cases due to looping/fixed sigmoid, and a nurse endoscopist performed polypectomy in 21 (14%) cases with no complications.

The NHS Centre for Reviews and Dissemination, University of York, UK recently released a bulletin that summarizes the research evidence, including competence in endoscopy, to inform guidance on improving outcomes in colorectal cancers in the UK<sup>14</sup>. The authors identified one preliminary study that showed comparable outcomes in a prospective comparison of doctor and nurse performed colonoscopy at a single hospital in the UK. As this was a poster abstract, this study was not included in VATAP's searches.

VATAP searched the international guidelines literature using the following sources: National Guideline Clearinghouse™<sup>15</sup>; Guidelines International Network<sup>16</sup>; Guidelines at the National Institute for Clinical Excellence<sup>17</sup>; and the New Zealand Guidelines Group<sup>18</sup>. A number of guidelines for colorectal cancer screening with colonoscopy exist, however none mentioned using mid-level practitioners.

VATAP conducted on-line searches of the Current Controlled Trials Register<sup>19</sup> and the US National Institutes of Health National Cancer Institute PDQ® Database<sup>20</sup> but found no ongoing trials relevant to the subject.

**Results:** VATAP uncovered no completed studies in the published, peer-reviewed literature or ongoing trials comparing the use of physicians to mid-level practitioners for screening colonoscopy, nor did VATAP uncover any available practice guidelines on the subject by the major professional societies in the United States. Currently, CMS Medicare reimbursement for screening colonoscopy is limited to procedures performed by a doctor of medicine or osteopathy<sup>21</sup>.

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<sup>13</sup> Gut 2002;50:a96-a107. Poster #360. [http://gut.bmjournals.com/cgi/content/full/50/suppl\\_2/a96](http://gut.bmjournals.com/cgi/content/full/50/suppl_2/a96)

<sup>14</sup> <http://www.york.ac.uk/inst/crd/ehc83.pdf> accessed August 5, 2004.

<sup>15</sup> <http://www.guideline.gov/>, accessed July 1, 2004.

<sup>16</sup> <http://www.g-i-n.net/>, accessed July 1, 2004.

<sup>17</sup> <http://www.nice.org.uk/cat.asp?c=34454>, accessed July 1, 2004.

<sup>18</sup> <http://www.nzgg.org.nz/index.cfm?screenize=800&ScreenResSet=yes>, accessed July 1, 2004.

<sup>19</sup> <http://www.controlled-trials.com/>, accessed July 2, 2004.

<sup>20</sup> <http://www.cancer.gov>, accessed June 30, 2004.

<sup>21</sup> [http://www.cms.hhs.gov/manuals/pm\\_trans/R1735B3.pdf](http://www.cms.hhs.gov/manuals/pm_trans/R1735B3.pdf) accessed July 1, 2004.

## Bibliography\*: Screening Colonoscopy by Mid-level Practitioners

A survey<sup>22</sup> of experienced advanced practice registered nurses (APRNs) provides some insight into the professional interest in this topic. It found a willingness among many APRNs to perform colonoscopy for either diagnostic and possibly therapeutic procedures, but lack of education, limited training opportunities, lack of physician support, and lack of policies were common barriers to their performing colonoscopy. The author advocated developing policies and establishing acceptable training guidelines and competency rates in performing GI endoscopic procedures.

**Conclusions:** Given the lack of conclusive evidence comparing mid-level practitioners to physician specialists for screening colonoscopy, well-designed clinical trials with outcomes monitoring are warranted to ensure quality and cost-effective patient care. This is a rapidly evolving area. The QUERI-CRC projects, such as developing a data system for informing, monitoring and assessing outcomes of screening-promotion projects, should help inform decisions about the best approaches to improving colorectal cancer screening and follow up in VA.

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<sup>22</sup> Froerer, R. **The nurse endoscopist : reality or fiction?** *Gastroenterology nursing - the official journal of the Society of Gastroenterology Nurses and Associates* **1998**;21(1):15-20.

## **Bibliography\*: Screening Colonoscopy by Mid-level Practitioners**

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