Colorectal Cancer Professional Development Webinar Series:
Evaluating Progress and Sharing Best Practices

June 28, 2016
12:00pm-1:30pm

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COLORECTAL CANCER 101
2.0 CME Credits

PATIENT ENGAGEMENT
1.5 CME Credits

EHR BEST PRACTICES
1.5 CME Credits

For more information contact exec@dcafp.org; www.dcafp.org
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- Please continue to submit your text questions and comments using the Questions Panel

For more information, please contact Finie Richardson, MPH via email at [exec@dcafp.org]

Note: Today’s presentation is being recorded and will be archived at dcafp.org.
Evaluating Progress and Sharing Best Practices

AUDREY WHETSELL, MA, CPHIT, NCQA PCMH

CO-FOUNDER
RESOURCE PARTNERS, LLC
MEDICAL HOME DEVELOPMENT GROUP, LLC
Poll Questions: Clinical Quality Measures

1. What are common screening options for detecting colorectal cancer?
2. What is the age requirement for annual colorectal screening?
Colorectal Screening
Quality Reporting
Equals
Quality Care

Audrey J. Whetsell, MA, CPHIT, PCMH CCE
Medical Home Development Group
A Division of Resource Partners, LLC
Colorectal Screenings

• Colorectal cancer (CRC) is a leading cause of cancer mortality worldwide.

• Colorectal cancer mortality has declined slightly in the last 10 years, and the decrease appears to be accelerating.

• This decline is due in large part to screening and early detection.
Screening Options

• Fecal occult blood testing (FOBT) remains a mainstay of average-risk screening despite limitations in sensitivity and specificity.

• Colonoscopy - cost of colonoscopy is coming down, cost-benefit models suggest that the yield from colonoscopy may be significantly greater than the difference in cost among the various surveillance methods.

• Colonoscopy is increasingly recommended more strongly as a screening alternative.
Breakdown of Screening Data
**Income**

- 40%<br>- 51%<br>- 53%<br>- 60%<br>- 66%

- <200%<br>- 200%-300%<br>- 300%-<400%<br>- 400%-<500%<br>- >500%
Preventive Services Resource

DEPARTMENT OF HEALTH AND HUMAN SERVICES • Centers for Medicare & Medicaid Services

PREVENTIVE SERVICES

SELECT A SERVICE FOR CODES AND BILLING INFORMATION

Some of the services listed include codes you may provide via telehealth – this symbol designates these services.

This educational tool provides the following information on Medicare preventive services: Healthcare Common Procedure Coding System (HCPCS)/Current Procedural Terminology (CPT) codes; International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10) diagnosis codes; coverage requirements; frequency requirements; and beneficiary liability for each Medicare preventive service.

Please note: The information in this publication applies only to the Medicare Fee-For-Service Program (also known as Original Medicare). For additional guidance on the use of diagnosis codes, go to the Claims Processing Manual, Publication 100-04, Chapter 10 on the Centers for Medicare & Medicaid Services (CMS) website.

NOTE: We return preventive services next eligible dates for many of these services when you request Medicare eligibility. If you do not currently get this data, contact your eligibility service provider to determine availability. Refer to the frequently asked questions section of this document for information on how to request the next eligible date.

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# Interactive Resource Guide

## PREVENTIVE SERVICES

**SELECT A SERVICE FOR CODES AND BILLING INFORMATION**

<table>
<thead>
<tr>
<th>Service</th>
<th>Code/Description</th>
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<tbody>
<tr>
<td>Alcohol Misuse Screening &amp; Counseling</td>
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<td>Annual Wellness Visit</td>
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<td>Bone Mass Measurements</td>
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<td>Cardiovascular Disease Screening Tests</td>
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<td>Colorectal Cancer Screening</td>
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<td>Counseling to Prevent Tobacco Use</td>
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<td>Depression Screening</td>
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<td>Diabetes Screening</td>
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<td>Diabetes Self-Management Training</td>
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<td>Glaucoma Screening</td>
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<td>HBV Vaccine &amp; Administration</td>
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<td>Hepatitis C Virus Screening</td>
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<td>HIV Screening</td>
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<tr>
<td>Influenza Virus Vaccine &amp; Administration</td>
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<tr>
<td>Initial Preventive Physical Examination</td>
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<td>BRt for Cardiovascular Disease</td>
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<td>BRt for Obesity</td>
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<tr>
<td>Lung Cancer Screening</td>
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<td>Medical Nutrition Therapy</td>
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<td>Pneumococcal Vaccine &amp; Administration</td>
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<td>Prostate Cancer Screening</td>
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<td>Screening for Cervical Cancer</td>
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<td>Screening for STIs and HBC to Prevent STIs</td>
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<td>Screening Mammography</td>
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<td>Screening Pap Tests</td>
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<td>Screening Pelvic Examinations</td>
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<td>Ultrasound Screening for AAA</td>
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<tr>
<td><strong>Frequently Asked Questions</strong></td>
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<td><strong>Resources</strong></td>
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<tr>
<td><strong>Disclaimers</strong></td>
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</table>

**Colorectal Cancer Screening**

Effective January 1, 2016, use CPT code 81528 when billing for the Cologuard™ test (note that your MAC will accept HCPCS code G0464 for claims with dates of service on or before December 31, 2015).

Only laboratories authorized by the manufacturer to perform the Cologuard test may bill for this test.

**HCPCS/CPT Codes**

- **G0010** - Anesthesia for lower intestinal endoscopic procedures, endoscope introduced distal to duodenum
- **81528** - Oncology (colorectal) screening, quantitative real-time target and signal amplification of 10 DNA markers (KRAS mutations, promoter methylation of NDRG4 and BMP3) and fecal hemoglobin, utilizing stool, algorithm reported as a positive or negative result
- **82270** - Blood, occult, peroxidase activity (eg, guaiac), qualitative: feces, consecutive collected specimens with single determination, for colorectal neoplasm screening (ie, patient was provided 3 cards or single triple card for consecutive collection)
- **G0104** - Flexible Sigmoidoscopy
- **G0105** - Colonoscopy (high risk)
- **G0106** - Baranum Enema (alternative to G0104)
- **G0120** - Baranum Enema (alternative to G0105)
- **G0121** - Colonoscopy (not high risk)
- **G0328** - Fecal Occult Blood Test (FOBT), immunoassay, 1-3 simultaneous
- **G0464** - Colorectal cancer screening; stool-based DNA and fecal occult hemoglobin (e.g., KRAS, NDRG4 and BMP3)

**ICD-10-CM Codes**

See the CMS [ICD-10](#) webpage for individual CRs and coding translations for ICD-10 and contact your MAC for guidance.

For Cologuard Multitarget Stool DNA (sDNA) Test, use Z12.11 and Z12.12

**Who Is Covered**

For colorectal cancer screening using Cologuard — a Multitarget Stool DNA (sDNA) Test:

All Medicare beneficiaries:
- Aged 50 to 85 years;
- Asymptomatic; and
- At average risk of developing colorectal cancer

For screening colonoscopies, FOBTs, flexible sigmoidoscopies, and barium enemas:

All Medicare beneficiaries:
- Aged 50 and older who are at normal risk of developing colorectal cancer;
- At high risk of developing colorectal cancer
Colorectal Cancer Quality Measure

Measure #113 (NQF 0034): Colorectal Cancer Screening – National Quality Strategy Domain: Effective Clinical Care

2016 PQRS OPTIONS FOR INDIVIDUAL MEASURES:
CLAIMS, REGISTRY

DESCRIPTION:
Percentage of patients 50-75 years of age who had appropriate screening for colorectal cancer

INSTRUCTIONS:
This measure is to be reported a minimum of once per reporting period for patients seen during the reporting period. There is no diagnosis associated with this measure. Performance for this measure is not limited to the reporting period. This measure may be reported by clinicians who perform the quality actions described in the measure based on services provided and the measure-specific denominator coding.
Quality Reporting
Sample Calculations

**Reporting Rate =**

Performance Met (a=3 patients) + Performance Exclusion (b=2 patients) + Performance Not Met (c=2 patients) = 7 patients / 8 eligible patients = **87.50%**

**Performance Rate =**

Performance Met (a=3 patients) / Reporting Numerator = 7 Patients – Performance Exclusion (b=2 patients) = 3 patients / 5 patients = **60%**
Pathways to Quality Reporting

*Thinking outside of the box:*
Chronic Care Management

• Patient with 2 or more chronic conditions placing patients at risk of serious complications or death
• Non face to face encounters
• NP/PA/Midlevels/RN/LPN can call once a month 20 minutes
• Proactive approach to reduce rep
• Monthly revenue impact could be $42
Chronic Care Management

• Works very well with MIPS pathways as patient with multiple comorbidities are identified
• Reflects complexities of care with likelihood of increasing benchmark expenditures
• Annual revenue impact could be close to $210,000 for 500 patients
Advance Care Planning

• Every Medicare patients should be given opportunity of understanding ACP thru MDs
• Now billable and reimbursed
• Revenue impact could be close to $140 depending geographical location and variables
• May need to be done more than once if patient’s condition or social circumstances change
Transitional care management

• For any patient discharged from hospitalization, need to be seen within a week or contact to be made via phone.

• Needs to be seen multiple times to prevent risk of rehospitalization.

• On 30th day 99495 or 99496
Smoking cessation

• Identifying tobacco smoking is one of the PQRS measures

• For those known to be nicotine users, smoking cessation counseling is one of the PQRS intervention needed to be reported

• Multiple encounters may be needed, reimbursable depending on duration of encounter
Chronic Care Management and Payment Reforms

• CCM is organizing framework to address health at individual level and population health.

• Covers non face-to-face services.

• Multiple chronic conditions (at least 2 or more)

• Chronic conditions placing patient at risk of death

• Comprehensive care services plan established, revised or modified as needed

• The higher the number of conditions, the higher the cost of care
Labwork

Impression

- Chronic ischemic heart disease
- Cancer of Lung - Reviewed all available workup.
- Cancer.

Plan

- CAD (ischemic heart disease): Care plan formulated and disease-relevant materials shared. Monthly reassessment, chest pain/dyspnea symptoms, clinical status, physician/ER visits, and medication compliance, to be performed. Care coordination, including symptom management, in conjunction with primary physician and cardiologist.
- All active and current medical problems, medication list, allergies, smoking status and vital signs, were reviewed and taken into account for the formulation of the comprehensive care plan.
- CCM program details were shared with the patient.
- Improved access, medication, and disease management through the CCM program was discussed with the patient.
- Lifestyle modification for primary, and secondary, disease prevention was carried out in detail.
- Medication reconciliation was performed.
- Patient agrees for the plan of action.
- Patient agrees to participate in the CCM program and is enthusiastic about the collaborative nature of the program.
- Performance status was reviewed.
- Smoking cessation counseling and life style modification for primary and secondary disease prevention was carried out in detail.
- Age appropriate cancer screening and prevention measures were discussed.
- Cancer: Care plan formulated with patient. Disease-related materials shared on prior visit during therapy plan formulation. Monthly reassessment to be done for clinical status and medical compliance. Care coordination to be performed with primary physician as needed.
Chronic care management (CCM) and payment reforms: Nothing to lose; all to gain

<table>
<thead>
<tr>
<th>Process</th>
<th>Cross cutting into Payment reforms</th>
<th>APM</th>
<th>MIPPS-VBC</th>
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<tbody>
<tr>
<td>Cross sectional care across providers</td>
<td>Reduced ER visit/hospitalization</td>
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<tr>
<td>Comprehensive care plans</td>
<td>IOM Care plan (APM, OCM)</td>
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<tr>
<td>Structured data recording</td>
<td>EHR-MUII</td>
<td></td>
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<tr>
<td>Expanded access to care</td>
<td>OCM requirement; reduces cost</td>
<td></td>
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<tr>
<td>Multiple chronic conditions</td>
<td>Appropriates for additional cost of care (from $2000 to $36,000)</td>
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<tr>
<td>Direct patient contact</td>
<td>Improves satisfaction</td>
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</table>
Organizing CCM

- Comprehensive care plans
- Consent
- Capture all eligible patients weekly
- Make list of all enrolled patients
- Divide call list between clinical care team
- Maintain call logs
Current Pilots with Actual Practice

• **BCBS Pilot:**
  PMPM care coordination fees, 29 patients since October 2015. Additional cognitive service codes reimbursements (Advance care planning, patient education, genetic counseling, weekend extra rates, nutrition services)

• **CCM:**
  Over 600 patient enrolled, with seamless coordination of care; monthly revenue stream (over $20K; reduced ER visits and registering higher severity of case leading to increased allowance for spend

• **In talks with two other major payers**
Non E/M cognitive services can be additive

• Meets PQRS reporting requirement (Tobacco cessation, depression and alcohol use screening)
• Reflects true complexities of care
• Increases possible benchmark expenditure allowance
• Reduced re-hospitalization
• Revenue impact could be between $700-1000 annually
Rewards of Whole Person Care
Non E/M Services

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Description</th>
<th>Reimbursement</th>
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<tbody>
<tr>
<td>99490</td>
<td>Chronic Care Management</td>
<td>$42</td>
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<tr>
<td>99495 – 96</td>
<td>Transitional Care Management</td>
<td>$168 - $238</td>
</tr>
<tr>
<td>99497 – 98</td>
<td>Advance Care Planning</td>
<td>$140</td>
</tr>
<tr>
<td>99406 – 07</td>
<td>Smoking Cessation Counseling</td>
<td>$14 - $33</td>
</tr>
<tr>
<td>G0442 – G0444</td>
<td>Depression and Alcohol Use Screening (Counseling)</td>
<td>$17 - $25</td>
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</tbody>
</table>
Thank You

Q & A
Evaluating Progress and Sharing Best Practices

JUSTIN CROSS, MD

MEDICAL INFORMATICS FELLOW
OFFICE OF THE NATIONAL COORDINATOR FOR HEALTH IT
Poll Questions: Clinical Documentation

1. Documentation in the electronic health record (EHR)...

2. How long should a clinician’s progress note be able to be left “open” prior to “signing”?
Disclosures

- The views expressed herein do not necessarily represent the views of the Department of Health & Human Services or the United States Government (5 CFR §2635.807)
- No other disclosures
Agenda

• Introduction to HHS delivery system reform and ONC

• Importance of Documentation
  » Patient Safety
  » EHR Safety and documentation
  » Program Integrity
  » Value based care & Reimbursement

• Questions
Improving the way providers are incentivized, the way care is delivered, and the way information is distributed will help provide better care at lower cost across the health care system.
A health system that provides better care, spends dollars more wisely, and has healthier people

Focus Areas

<table>
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<tr>
<th>INCENTIVES</th>
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| ▪ Promote value-based payment systems  
  – Test new alternative payment models  
  – Increase linkage of Medicaid, Medicare FFS, and other payments to value  
| ▪ Bring proven payment models to scale  
| ▪ Align quality measures |

<table>
<thead>
<tr>
<th>CARE DELIVERY</th>
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| ▪ Encourage the integration and coordination of clinical care services  
| ▪ Improve individual and population health  
| ▪ Support innovation including for access |

<table>
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<tr>
<th>INFORMATION</th>
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</table>
| ▪ Bring electronic health information to the point of care for meaningful use  
| ▪ Create transparency on cost and quality information  
| ▪ Support consumer and clinician decision making |

Source: Burwell SM. Setting Value-Based Payment Goals – HHS Efforts to Improve U.S. Health Care. NEJM 2015 Jan 26; published online first.
For ONC, it has been a productive journey where we have seen remarkable progress in the adoption of health IT since 2009, when we began the electronic health records incentive programs.

As of last year:

- 74% of physicians have adopted EHRs
- 96.9% of hospitals have adopted EHRs
- Nearly four in ten providers offered patients access to their electronic medical records, and of that, more than half (55%) accessed these records at least once.
ONC Focus

• ONC focus is on a person centered learning health IT system that enables open flow of health data across the care continuum.

• ONC actions:
  » The Federal Health IT Strategic Plan
  » The 2015 Edition Certified EHR Technology Final Rule
  » Connecting Health and Care for the Nation: A Shared Nationwide Interoperability Road Map
  » The 2016 Interoperability Standards Advisory

• To achieve open, connected care for our communities, our private sector partners must lead in the transformation.
Commitments and Call to Action

• **Consumers** easily and securely access their electronic health information, direct it to any desired location.

• Share individual's health information for care with other providers and their patients as much as permitted by law and refrain from **blocking** electronic health information.

• Implement **federally recognized, national interoperability standards**, policies, guidance, and practices for electronic health information and adopt best practices including those related to privacy and security.
Clinical Documentation

• "If you didn't document it, it didn't happen"

• Record of what happened
  » Establishes the legal record
  » Used for billing and reimbursement
  » Increasingly being opened up to patients - Open Notes initiative

• To improve your organization’s documentation:
  » Need buy-in of busy clinicians
  » What are benefits to them? To your patients?
    - Clinical Decision Support
  » To succeed, need all parties at the table - clinicians, coders, HIM department, billing
• Patient Safety – proper documentation and coding
  » Referrals - Specialists rely on PMD note
  » Tool for subsequent care and subsequent clinician review
  » Avoids duplication of tests/procedures
  » Prevents unnecessary treatments
  » Prevents clinicians from having to rely on memory
  » As care becomes more complex with more clinicians involved, more detailed documentation is needed
EHR Safety and Clinical Documentation

• EHRs are powerful tools but can introduce new opportunities for errors

• Several “hot topic” health IT safety issues to consider:
  » Copy and Paste
  » Patient Identification
  » Test reporting and follow up
  » Problem list maintenance
  » Clinical Decision Support
• Medicare and Medicaid
  » An accurate record is necessary for program integrity
  » Fraud - Up-coding, unbundling, billing unnecessary services, billing for services not rendered, billing for worthless services, duplicate billing, lack of documentation

• Must use correct code, not code that provides best reimbursement

• Proper documentation helps to avoid fraud/abuse problems

• EHR tips – practices to avoid:
  » Over documentation / auto populate
  » Cloning records / incorrect use of copy+paste
• Your EHR should include the following change management abilities:
  » Procedures for signing, time-stamp
  » Proper methods of amending records, while preserving original versions and original author's work
  » Certified EHR systems do not allow back-dating, and institutions should have policies to limit how long a record can be open prior to finalizing
In January 2015, the Department of Health and Human Services announced new goals for value-based payments and APMs in Medicare.

**Medicare Fee-for-Service**

**GOAL 1:**
Medicare payments are tied to quality or value through alternative payment models (categories 3-4) by the end of 2016, and 50% by the end of 2018.

**GOAL 2:**
Medicare fee-for-service payments are tied to quality or value (categories 2-4) by the end of 2016, and 90% by the end of 2018.

Source: Centers for Medicare and Medicaid Services
PROPOSED RULE: Quality Payment Program

- **Repeals** the Sustainable Growth Rate (SGR) Formula
- **Streamlines** multiple quality reporting programs into the new Merit-based Incentive Payment System (MIPS)
- **Provides incentive payments** for participation in Advanced Alternative Payment Models (APMs)

- First step to a fresh start
- We’re listening and help is available
- A better, smarter Medicare for healthier people
- Pay for what works to create a Medicare that is enduring
- Health information needs to be open, flexible, and user-centric

Source: Centers for Medicare and Medicaid Services
MIPS is a new program

- Streamlines 3 currently independent programs to work as one and to ease clinician burden.
- Adds a fourth component to promote ongoing improvement and innovation to clinical activities.

MIPS provides clinicians the flexibility to choose the activities and measures that are most meaningful to their practice to demonstrate performance.

Source: Centers for Medicare and Medicaid Services
APMs are **new approaches to paying** for medical care through Medicare that **incentivize quality and value**.

As defined by MACRA, **APMs include:**

- **CMS Innovation Center model** (under section 1115A, other than a Health Care Innovation Award)
- **MSSP** (Medicare Shared Savings Program)
- **Demonstration** under the Health Care Quality Demonstration Program
- **Demonstration** required by federal law

Source: Centers for Medicare and Medicaid Services
PROPOSED RULE: Who Will Participate in MIPS?

- Affected clinicians are called “MIPS eligible clinicians” and will participate in MIPS. The types of Medicare Part B eligible clinicians affected by MIPS may expand in future years.

**Years 1 and 2**
- Physicians (MD/DO and DMD/DDS), PAs, NPs, Clinical nurse specialists, Certified registered nurse anesthetists

**Years 3+**
- Secretary may broaden Eligible Clinicians group to include others such as Physical or occupational therapists, Speech-language pathologists, Audiologists, Nurse midwives, Clinical social workers, Clinical psychologists, Dietitians / Nutritional professionals

Source: Centers for Medicare and Medicaid Services
PROPOSED RULE: MIPS Performance Period

All MIPS performance categories are aligned to a performance period of one full calendar year. Goes into effect in first year (2017 performance period, 2019 payment year).

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</table>

Source: Centers for Medicare and Medicaid Services
References

• 2011 OIG HHS presentation on provider compliance training, importance of documentation
  » https://www.youtube.com/watch?v=44r5la-UQo8

• ONC SAFER guides for EHR safety
  » https://www.healthit.gov/safer/safer-guides

• CMS MACRA Information
Thank you

Justin Cross, MD
Medical Informatics Fellow, ONC
justin.cross@hhs.gov
Evaluating Progress and Sharing Best Practices

CARMEN GUERRA, MD

ASSOCIATE PROFESSOR OF MEDICINE
GENERAL INTERNAL MEDICINE
PERELMAN SCHOOL OF MEDICINE
Poll Questions: Patient Navigation Program

1. When was the first patient navigation program established?

2. Patient navigation programs can address barriers to colorectal screening such as inability to pay for prep and low literacy?
Building a Successful Patient Navigation Program for Colorectal Cancer Screening

Carmen E. Guerra, M.D., M.S.C.E.
Associate Professor of Medicine, Perelman School of Medicine
Associate Director and Associate Chief of Staff
Abramson Cancer Center
University of Pennsylvania
Overview

- Patient Navigation
  - Definition
  - Evidence
  - 12 key considerations when building a navigation program
  - An example from the Abramson Cancer Center of the University of Pennsylvania Health System
  - Lessons learned
What is a Patient Navigation Program?

- First established and described by Harold Freeman in 1990’s Harlem Hospital
- Navigation programs identify and eliminate barriers to accessing a life saving test or treatment such as:
  - Low awareness of the benefits/indications
  - Negative beliefs and attitudes
  - Scheduling
  - Low literacy
  - Inability to pay for prep
  - Lack of transportation
  - Lack of access to an escort
CRCS Navigation is an Evidence Based Strategy

- CRCS navigation programs are evidence-based strategies for increasing CRCS rates
  - At least 17 RCTs confirm efficacy
<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Design</th>
<th>Test</th>
<th>Location</th>
<th>Site type</th>
<th>N</th>
<th>Findings</th>
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<tbody>
<tr>
<td>Jandorf et al.</td>
<td>2005</td>
<td>RCT</td>
<td>FOBT</td>
<td>East Harlem, NY</td>
<td>PCC</td>
<td>78</td>
<td>N: 42.1%</td>
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<tr>
<td>Nash et al.</td>
<td>2006</td>
<td>Historical</td>
<td>Colonoscopy</td>
<td>Bronx, NY</td>
<td>Lincoln Medical</td>
<td>1767</td>
<td>75.7 per month to 119.0 per month</td>
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<tr>
<td>Christie et al.</td>
<td>2008</td>
<td>RCT</td>
<td>Colonoscopy</td>
<td>Boston, MA</td>
<td>CHC</td>
<td>21</td>
<td>N: 53.8%</td>
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<td>NN: 13% (p=0.085)</td>
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<td>Myers et al.</td>
<td>2008</td>
<td>Single group</td>
<td>FOBT &amp; Colonoscopy</td>
<td>Delaware</td>
<td>PCCs</td>
<td>154</td>
<td>41%</td>
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<tr>
<td>Chen et al.</td>
<td>2008</td>
<td>Cohort</td>
<td>Colonoscopy</td>
<td>NYC</td>
<td>Mt. Sinai Hospital</td>
<td>532</td>
<td>66%</td>
</tr>
<tr>
<td>Percac-Lima et al.</td>
<td>2009</td>
<td>RCT</td>
<td>FOBT, FS, BE, &amp;</td>
<td>Boston, MA</td>
<td>Mass General”s</td>
<td>1223</td>
<td>N: 27.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Colonoscopy</td>
<td></td>
<td>Chelsea HC</td>
<td></td>
<td>NN: 11.9 (p&lt;0.001)</td>
</tr>
<tr>
<td>Ma et al.</td>
<td>2009</td>
<td>2 group quasi</td>
<td>NA</td>
<td>NA</td>
<td>Korean Americans</td>
<td>167</td>
<td>N: 13.1% to 77.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>experimental</td>
<td></td>
<td></td>
<td>thru churches</td>
<td></td>
<td>NN: 9.6% to 10.8%</td>
</tr>
<tr>
<td>Lasser et al.</td>
<td>2009</td>
<td>Cohort</td>
<td>FOBT &amp; Colonoscopy</td>
<td>Somerville, MA</td>
<td>CHCs</td>
<td>145</td>
<td>N: 31%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NN: 9%</td>
</tr>
<tr>
<td>Lasser et al.</td>
<td>2011</td>
<td>RCT</td>
<td>FOBT &amp; Colonoscopy</td>
<td>Cambridge, Somerville, Everett, MA</td>
<td>4 HC/2 public hospital based clinics</td>
<td>465</td>
<td>N: 33.6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NN: 20% (p&lt;0.001)</td>
</tr>
<tr>
<td>Lebwohl et al.</td>
<td>2011</td>
<td>Historical</td>
<td>Colonoscopy</td>
<td>NYC</td>
<td>Columbia U</td>
<td>749</td>
<td>11% increase in colonoscopy volume</td>
</tr>
<tr>
<td>Paskett et al.</td>
<td>2012</td>
<td>RCT</td>
<td>Colonoscopy</td>
<td>Columbus, OH</td>
<td>8 PCC/4CHC</td>
<td>862</td>
<td>65% difference in arms, p=0.009</td>
</tr>
<tr>
<td>Wells et al.</td>
<td>2012</td>
<td>RCT</td>
<td>Colonoscopy</td>
<td>Tampa Bay, FL</td>
<td>PCCs</td>
<td>1267</td>
<td>Did not change timeliness to diagnostic resolution</td>
</tr>
<tr>
<td>Reisch et al.</td>
<td>2012</td>
<td>RCT</td>
<td>NA</td>
<td>Denver, CO</td>
<td>Denver Health (Safety net)</td>
<td>993</td>
<td>Shortened timeliness to diagnostic resolution</td>
</tr>
<tr>
<td>Myers et al.</td>
<td>2013</td>
<td>RCT</td>
<td>FOBT &amp; Colonoscopy</td>
<td>Delaware</td>
<td>Christian Health Care</td>
<td>945</td>
<td>N:38%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NN: 12% (p=0.001)</td>
</tr>
<tr>
<td>Myers et al.</td>
<td>2014</td>
<td>RCT</td>
<td>FOBT and/or</td>
<td>Philadelphia</td>
<td>Thomas Jefferson University and Albert Einstein Health Care</td>
<td>764</td>
<td>TN: 38.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Colonoscopy</td>
<td></td>
<td></td>
<td></td>
<td>SN: 23.7%</td>
</tr>
<tr>
<td>Enard et al.</td>
<td>2015</td>
<td>RCT</td>
<td>FOBT, Colonoscopy</td>
<td>Southwestern US</td>
<td>Latino Medicare Enrollees</td>
<td>303</td>
<td>N: 47.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>and FX</td>
<td></td>
<td></td>
<td></td>
<td>NN: 32.1% (p=0.04)</td>
</tr>
<tr>
<td>Braun, KL</td>
<td>2015</td>
<td>RCT</td>
<td>FS or Colonoscopy</td>
<td>Hawaii</td>
<td>Pacific Islander Medicare Enrollees</td>
<td>488</td>
<td>N: 43%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NN: 31% (p=0.04)</td>
</tr>
</tbody>
</table>
CRCS navigation is operationalized differently

- Low touch to high touch
- Delivered by different means – telephone, in person
- Across different settings – community, primary care, specialty (GI), hospital systems
- Vary from one time to multiple contacts
- Actual intervention varies from education to overcoming a specific system barrier(s)
- Goal is completion of an approved CRCS test(s)
CRCS Navigation is an Evidence Based Strategy

♦ CRCS navigation programs
  • Increase CRCS rates compared to controls
    – Seen for FOBT, FS and colonoscopy based programs
    – Seen across settings and populations
  • Increase colonoscopy volumes
  • +/- Decrease time to diagnostic resolution
  • Limited data on cost-effectiveness
13 Key Considerations in Designing a Successful Navigation Program

1. Set program goals and develop a theoretical framework
2. Specify the population and community characteristics and their unique barriers
3. Determine the setting in which navigation services are provided
4. Establish points of the beginning and end of navigation
5. Determine the background and qualifications of the navigator(s)
6. Determine the services should and should not be provided
7. Select methods of communication between patients and navigator(s)
8. Design the navigator training
9. Define oversight and supervision for navigator(s)
10. Promote the program
11. Evaluate the program
12. Design data systems to support patient tracking and collection of measures to evaluate the program
13. Establish cost-effectiveness

An example

The University of Pennsylvania Health System’s West Philadelphia CRCS Navigation Program
UPHS West Philadelphia CRCS Navigation Program

- Established at UPHS in Nov, 2011 with gift from anonymous donor and ACS and foundation funding

- Population: West Phila residents that were non-adherent to colonoscopy screening
  - Defined as having missed at least 1 colonoscopy appointment (range 1-13)

- Barriers to CRCS in West Philadelphia residents: Low awareness, low literacy, inability to afford prep, transportation

- Conduct research to determine program feasibility, acceptability, effectiveness, cost effectiveness
West Philadelphia CRCS Patient Navigation Program

- Hired an MA to serve as patient navigator
- Trained at the Harold Freeman Patient Navigation Institute, Bronx, NY
- Resources for program administration (cell phone and service, computer, printer, printing, stationary, software, etc.)
- Resources for patient care (lots of Miralax, crystal light, Dulcolax, Septa tokens)
- Created a low literacy prep instructions and video
## CRCS Patient Navigation Program Results as of 6/1/16

<table>
<thead>
<tr>
<th>Response to program</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No patients contact attempted</td>
<td>1939</td>
</tr>
<tr>
<td>Agreed to participate</td>
<td>705 (36.4)</td>
</tr>
<tr>
<td>Declined participation</td>
<td>513 (26.4)</td>
</tr>
<tr>
<td>Unable to contact after 3-6 calls</td>
<td>721 (37.2)</td>
</tr>
<tr>
<td>Demographics</td>
<td>N=690 (%)</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Age (mean, s.d.)</td>
<td>60.2, 8.3</td>
</tr>
<tr>
<td>Female</td>
<td>427 (61.9)</td>
</tr>
<tr>
<td>African American</td>
<td>621 (90)</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>320 (46.4)</td>
</tr>
<tr>
<td>Married</td>
<td>178 (25.8)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>&lt;High School</td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td></td>
</tr>
<tr>
<td>&lt;$10,000</td>
<td>240 (34.8)</td>
</tr>
<tr>
<td>10,000-29,999</td>
<td>242 (35.1)</td>
</tr>
</tbody>
</table>
## CRC Patient Navigation Program Outcomes

<table>
<thead>
<tr>
<th>Screening colonoscopy results</th>
<th>(n=477)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal/no pathology or hyperplastic polyp(s)</td>
<td>269 (56.4)</td>
</tr>
<tr>
<td>At least one adenomatous polyp</td>
<td>179 (37.6)</td>
</tr>
<tr>
<td>Adenocarcinoma</td>
<td>4 (0.8)</td>
</tr>
<tr>
<td>Repeat</td>
<td>11 (2.3)</td>
</tr>
<tr>
<td>Other</td>
<td>14 (2.9)</td>
</tr>
</tbody>
</table>
# Outcome: Diagnosed Colorectal Cancers

<table>
<thead>
<tr>
<th>Diagnosed Colorectal Cancer</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I</td>
<td>1</td>
</tr>
<tr>
<td>Stage III</td>
<td>2</td>
</tr>
<tr>
<td>Stage IV</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>
### Outcome: Patient Satisfaction

<table>
<thead>
<tr>
<th>Patient Satisfaction (n=180)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall, I am satisfied with the navigation services I received from the navigator</td>
<td></td>
</tr>
<tr>
<td>Strongly agree</td>
<td>168 (93.3)</td>
</tr>
<tr>
<td>Agree</td>
<td>11 (6.1)</td>
</tr>
<tr>
<td>Neither Agree or disagree</td>
<td>0</td>
</tr>
<tr>
<td>Disagree</td>
<td>1 (0.6)</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>0</td>
</tr>
</tbody>
</table>
Lessons Learned

- Recruitment rate: 3:1
  - Will navigation really end disparities?
- Once enrolled, almost ~ 67% of patients completed colonoscopy
- Navigation for this population is time and labor intensive
  - Average time spent by navigator per patient: 4 hrs 17 min
- Greater than expected adenoma detection rate – 37%
  - Higher than what is reported in the literature (10-20%)
  - Possible reasons are:
    - Racial differences in CRC incidence (90% of participants are AA)
    - Higher prevalence of comorbidity/risk factors for CRC (obesity, diabetes)
    - Differences in behaviors (delay of screening, ETOH and tobacco use)
- Establishes trust
Conclusions

- A patient navigation program for CRCS for UPHS patients who are residents of West Philadelphia and have not previously been able to complete screening colonoscopy is
  - Feasible
  - Acceptable
  - Effective
  - Associated with high patient satisfaction
  - Reduces colonoscopy no shows
  - Builds trust
...and the program was cost-effective

<table>
<thead>
<tr>
<th></th>
<th>HUP</th>
<th>PPMC</th>
<th>UPHS Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>80</td>
<td>40</td>
<td>120</td>
</tr>
<tr>
<td>Outpatient Net Revenue</td>
<td>$84,401</td>
<td>$59,557</td>
<td>$143,958</td>
</tr>
<tr>
<td>Direct Expenses</td>
<td>$91,955</td>
<td>$45,114</td>
<td>$137,089</td>
</tr>
<tr>
<td>Contribution Margin</td>
<td>($7,555)</td>
<td>$14,444</td>
<td>$6,869</td>
</tr>
<tr>
<td>Indirect expenses</td>
<td>$30,251</td>
<td>$11,653</td>
<td>$41,904</td>
</tr>
<tr>
<td>Net gain (loss)</td>
<td>($37,806)</td>
<td>$2,791</td>
<td>($35,015)</td>
</tr>
<tr>
<td>Downstream Contribution Margin</td>
<td>$115,004</td>
<td>($947)</td>
<td>$114,057</td>
</tr>
<tr>
<td>Total Gain/Loss including Downstream</td>
<td>$77,198</td>
<td>$1,843</td>
<td>$79,042</td>
</tr>
</tbody>
</table>
Sustainability of cancer screening programs

Cost-Effectiveness Analysis of the First Year of a Colorectal Cancer (CRC) Screening Patient Navigation Program at an Academic Medical Center

Ramos, Joshua N., BA\textsuperscript{1}; Mehta, Shivan J., MD, MBA\textsuperscript{1}; Lamanna, Alicia A., BA\textsuperscript{1}; Kochman, Michael L., MD\textsuperscript{1}; Guerra, Carmen E., MD, MSCE\textsuperscript{1}

1. Department of Medicine, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA, United States.

Abstract

Introduction: We evaluated the first year of the CRC Screening Patient Navigation Program at the University of Pennsylvania Health System (UPHS), analyzing the costs of the program and cost per patient who successfully completed a screening colonoscopy (SC).

Methods: This is a retrospective cost-effectiveness analysis of data gathered during the first year (2012) of the navigation program. For this analysis, the outcome of interest was SC completion within 3 months of program enrollment. To perform the cost-effectiveness analysis, the costs of the navigation program were recorded, and these costs were divided by the number of patients enrolled, scheduled, and screened (both adjusted and adjusting for an estimate of those who would have completed SC, without navigation).

Results: The cost per patient enrolled was $3,026, and the cost per patient screened was $3,630. However, after adjusting for completion without navigation, the cost was $2,493 per additional patient screened, lower than the cost per successfully screened patient.

Conclusions: Although the navigation program significantly increased the percentage of patients with CRC screening, compared with the pre-program environment and surveillance cohort, there is a significant cost to navigate patients, driving lower cost per patient.

Background

Patient navigation programs have been shown to be effective in increasing colonoscopy (CRC) screening rates, particularly in underserved populations. However, few programs fully account for the cost-effectiveness of such programs.

Figure 1: Navigation Program Process

1. Common barriers include poor awareness, negative attitudes, inability to afford the non-medical costs of the preparation for a colonoscopy.
2. Navigation offers includes helping patients obtain an appointment, planning transportation, and providing nutrition support.
3. Phone reminders, especially by colonoscopy staff, are a significant component of this program, aiming to maximize the likelihood of successful CRC screening in populations with historically low SC completion rates.

Figure 2: Cost-Effectiveness Analysis Decision Tree

Figure 3: Target Population – West Philadelphia

Table 1: Demographics

<table>
<thead>
<tr>
<th>Navigated Patients (n=138)</th>
<th>Non-patients (n=120)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>65%</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
</tr>
<tr>
<td>&lt;65</td>
<td>65.6</td>
</tr>
<tr>
<td>≥65</td>
<td>34.4</td>
</tr>
<tr>
<td>Race or Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>93%</td>
</tr>
<tr>
<td>African American</td>
<td>6%</td>
</tr>
<tr>
<td>Other/Latin</td>
<td>1%</td>
</tr>
<tr>
<td>Insurance</td>
<td></td>
</tr>
<tr>
<td>Insured</td>
<td>23%</td>
</tr>
<tr>
<td>Not Insured</td>
<td>77%</td>
</tr>
<tr>
<td>CPT</td>
<td></td>
</tr>
</tbody>
</table>
| Patients from UPHS (excluding Philadelphia residents) were targeted for the navigation intervention. The intervention had to be between 50 and 75 years old, live in West Philadelphia, have insurance, have a primary care provider (PCP) in a participating UPHS clinic, and have an SC order.

Table 2: Clinical Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Navigated Patients (n=138)</th>
<th>Non-patients (n=120)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sample, n</td>
<td>138</td>
<td>133</td>
<td></td>
</tr>
<tr>
<td>Average Number of Prior Appointments</td>
<td>1.68 (1-5)</td>
<td>1.00 (1-4)</td>
<td></td>
</tr>
<tr>
<td>Patients with completed SC (n)</td>
<td>81.7% (128)</td>
<td>41.7% (128)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Patients with canceled Appointments</td>
<td>33.9%</td>
<td>44.4%</td>
<td></td>
</tr>
<tr>
<td>Patients with missed Appointments</td>
<td>11.5%</td>
<td>42.2%</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Cost-Effectiveness Analysis

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Navigated Patients (n=138)</th>
<th>Non-patients (n=120)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Total Cost</td>
<td>$1,447.74</td>
<td>$1,381.41</td>
<td></td>
</tr>
<tr>
<td>Average Labor Cost</td>
<td>$555.70</td>
<td>$447.62</td>
<td></td>
</tr>
<tr>
<td>Per Patient Cost (n=138)</td>
<td>$772.64</td>
<td>$850.03</td>
<td></td>
</tr>
<tr>
<td>Per Patient Cost (n=120)</td>
<td>$594.50</td>
<td>$752.56</td>
<td></td>
</tr>
</tbody>
</table>

Conclusions

Although the navigation program significantly increased the percentage of completed CRCs for this previously non-informed and underserved cohort, it presents high costs to navigate patients, driving lower cost per patient.

Limitations

Since we were only able to recruit about 30% of the contacted patients for the program, our results may be subject to participation bias.

Acknowledgments

The authors thank the patients and families who participated in the navigation program, the UPHS Cancer Center, and the Department of Medicine for their support. We also acknowledge the contributions of the UPHS Health Economics team for their assistance with the cost-effectiveness analysis.
Acknowledgments

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- Dr. Michael Kochman, Co-Director
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- Multiple sponsors
  - American Cancer Society-Walmart Foundation
  - CCA Community Partnership Grant
  - Penn Presbyterian Medical Center Bach Fund
  - Get Your Rear in Gear
  - Haverford School Checking for Cancer
  - Penn CARES Foundation
Thank you

Questions?

Carmen.Guerra@uphs.upenn.edu
FOR MORE INFORMATION ABOUT THE NATIONAL COLORECTAL CANCER ROUNDTABLE AND RESOURCES:

- Scholarly Articles
- 80% by 2018 Webpage
- 80% by 2018 Communications Guidebook
- Hispanics/Latinos and Colorectal Cancer Companion Guide