Colonoscopy in the 21st Century

“For now we see through a glass, darkly…”1Corinth. 12;13.

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THE BRANDY
ISLE

Colonoscopy in the 21st Century

Agenda: Where we may be going

"Not your father's colonoscopy: a high-tech future for screening and surveillance of colorectal cancer."[1]

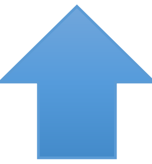
1. **Technology**
2. **Accessability/Capacity**
3. **Performance/Value**
4. **The future**

[1]Krier MJ, Pasricha PJ Gastrointest Endosc Clin N Am. 2008

1. Technology: where are we now?

High definition, 170° field of view, variable stiffness, slim build, irrigation jet, NBI, scope guide, CO_2 insufflation

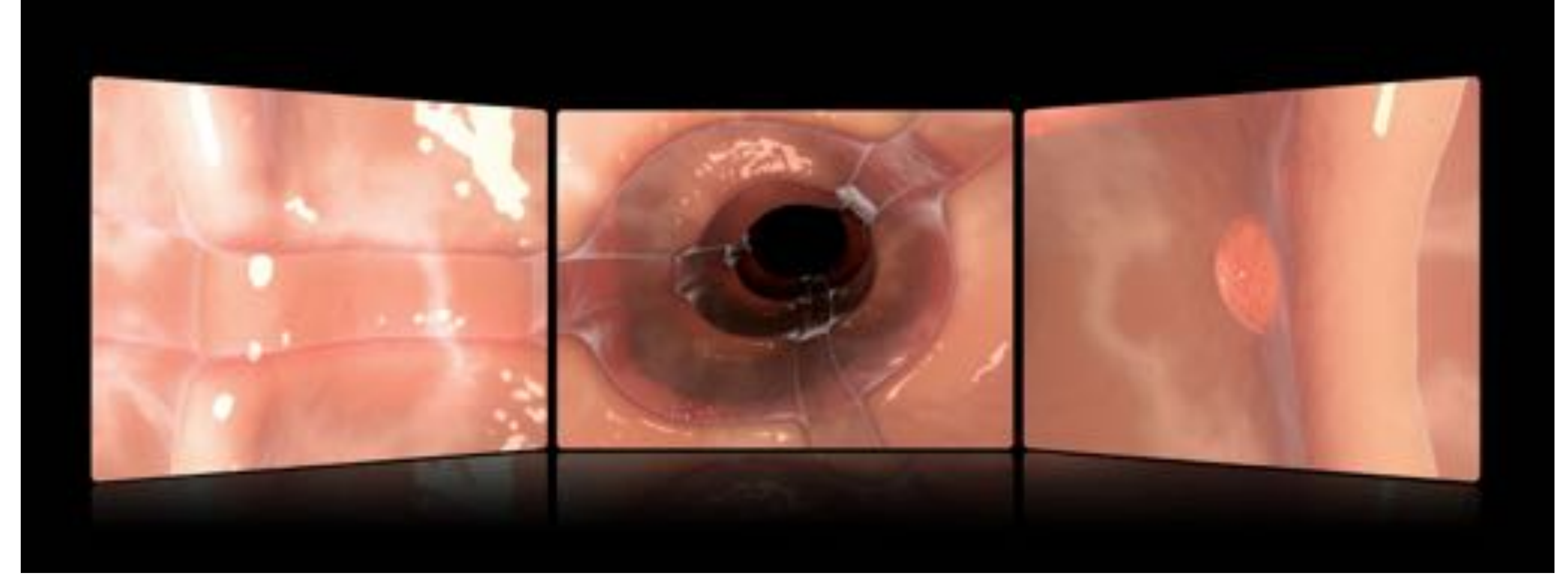
Technology: Motivation?



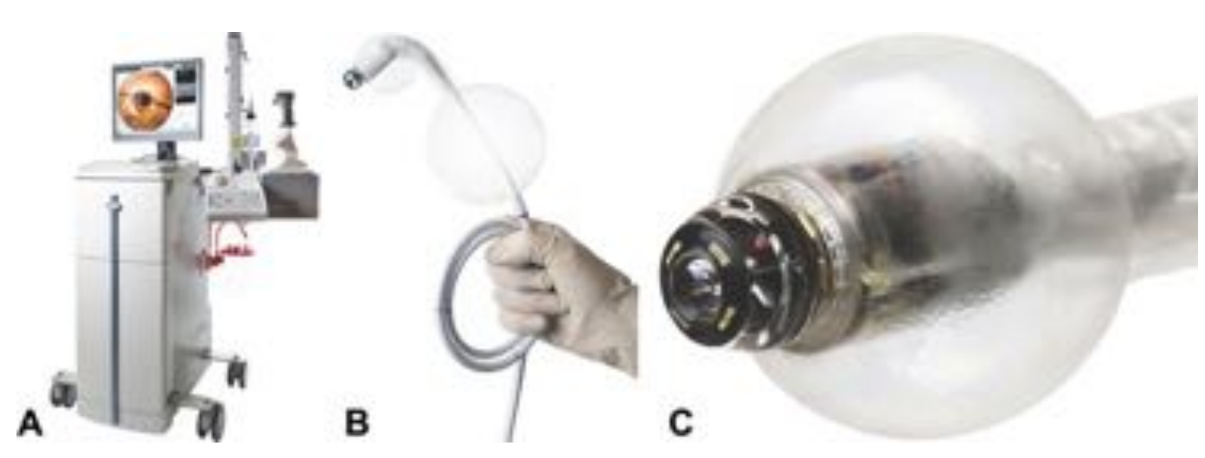
The Horror Show

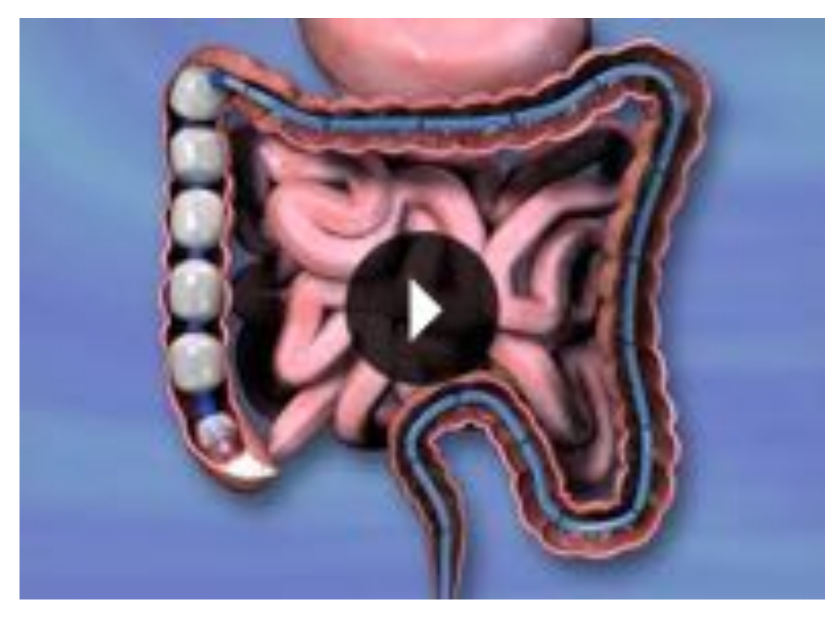
Obsession

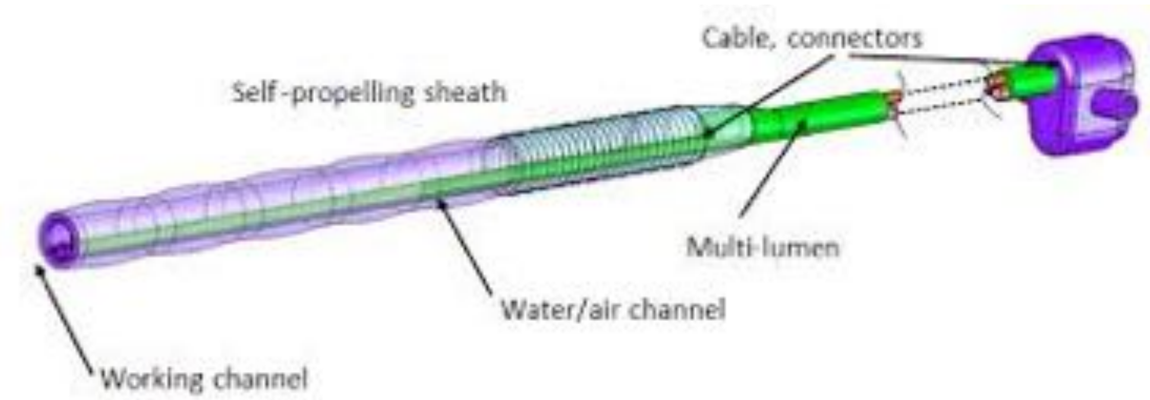
x



Self Propelling/Disposable Colonoscopes







Technology: Science Fiction? Fantasy?

2. Accessibility/Capacity

Now	**Then**
Too few endoscopists	**More appropriate indications**
Not enough money	**Better value**
Not enough time	**More efficient**

The Problem

Surveillance
Screening
Diagnosis
Treatment

Open Access

Fraud

Ignorance

Capacity

One Solution

Surveillance
Screening
Diagnosis
Treatment

Monitor Indications

Better Triage

Quality Indicator

Capacity

Main indications for colonoscopy according to European panel appropriateness of gastrointestinal endoscopy II

Iron deficiency anemia
Hematochezia
Discomfort or pain in the lower abdomen persisting ≥ 3 mo
Uncomplicated chronic diarrhea
Assessment of ulcerative colitis
Assessment of Crohn disease
Colorectal cancer screening
Colorectal cancer screening in patients with inflammatory bowel disease
Surveillance colonoscopy after polypectomy
Surveillance colonoscopy after colorectal cancer resection
Miscellaneous

Clinical criteria for prompt colonoscopy referral (2 wk) according to the National Institute for Health and Clinical Excellence in the United Kingdom

Patients ≥ 40 yr with rectal bleeding and change of bowel habit persisting ≥ 6 wk
Patients ≥ 60 yr with rectal bleeding persisting ≥ 6 wk without a change in bowel habit and without anal symptoms
Patients ≥ 60 yr with a change of bowel habit persisting ≥ 6 wk without rectal bleeding
Patients with right lower abdominal mass
Patients with palpable rectal mass
Patients with unexplained iron deficiency anemia (≤ 11 g/100 mL in men and ≤ 10 g/100 mL in women)

Scottish Intercollegiate Guidelines network referral criteria

1 Persistent rectal bleeding without anal symptoms
2 Persistent change in bowel habit (> 6 wk)
3 Significant family history
4 Right-side abdominal mass
5 Palpable rectal mass
6 Unexplained iron deficiency anemia
7 Persistent diarrhea

USA

FOLLOW THE GUIDELINES!!!!!!

Another Solution

Surveillance
Screening
Diagnosis
Treatment

More Training

Better Training

Nurse Endoscopy

Capacity

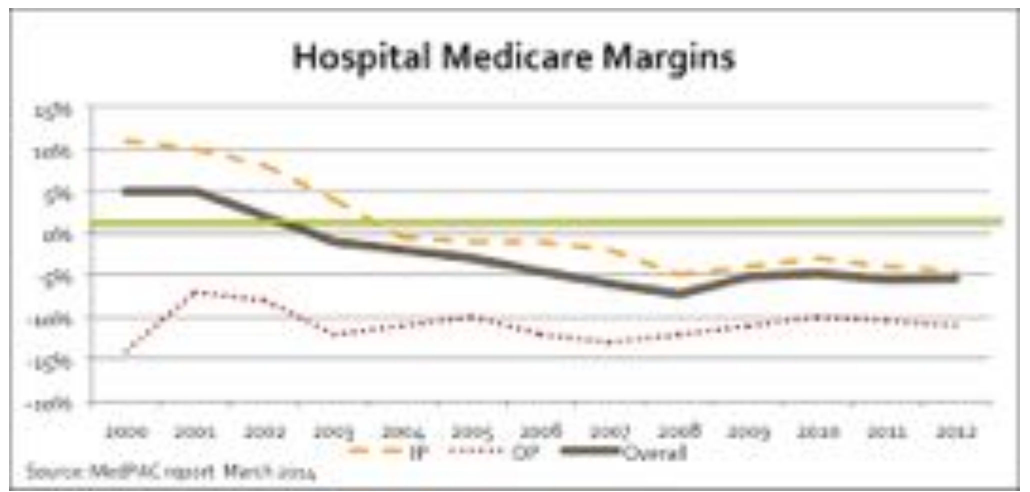
Train More (Better) Colonoscopists

Coaching

4. Colonoscopy Reimbursement/Performance

Now	Then
Quality	Value
The individual colonoscopist	Health care system
Performance standards	May determine viability of the practice
Marginally related to health outcomes	

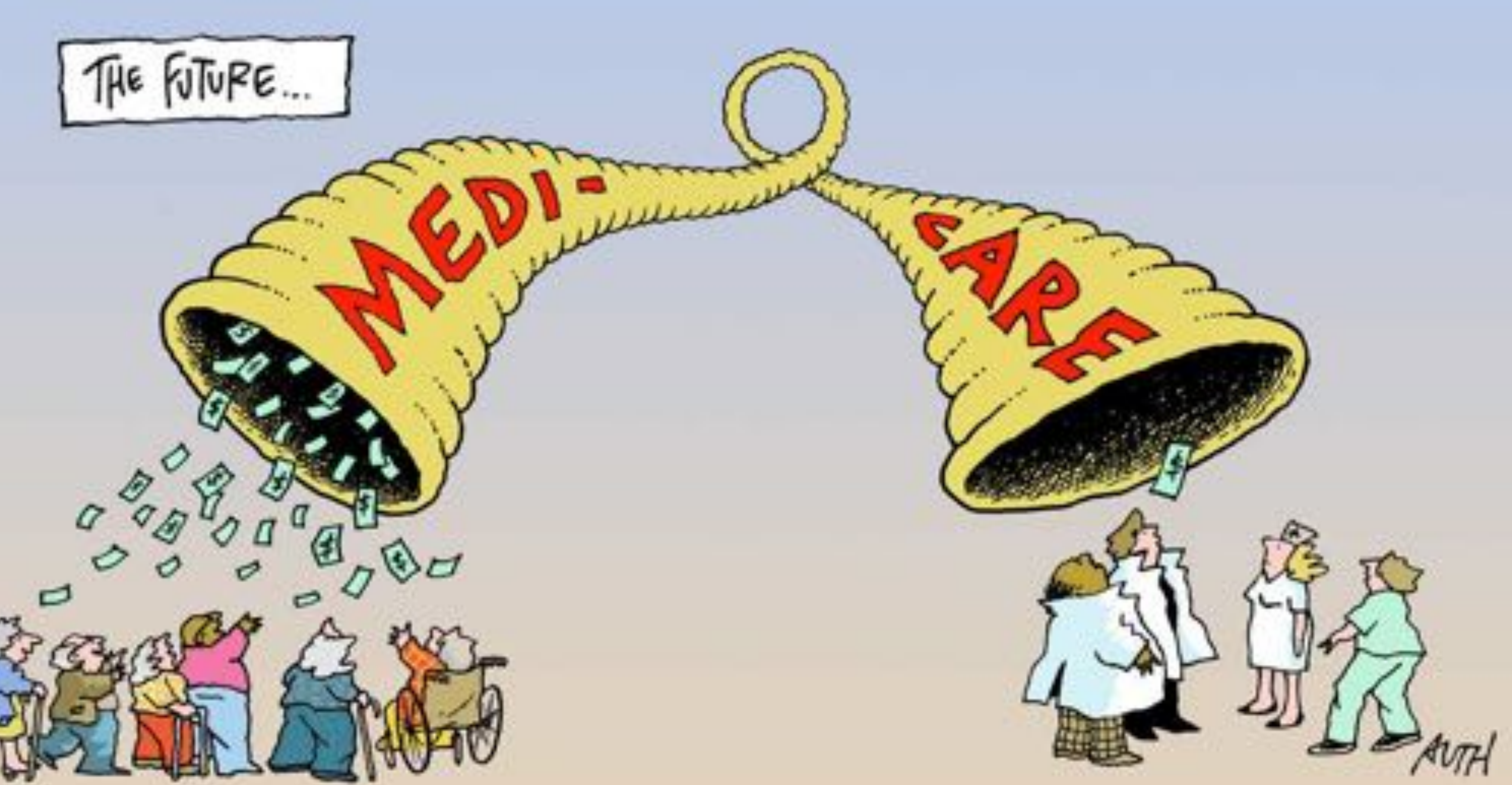
Our (USA) New Reality

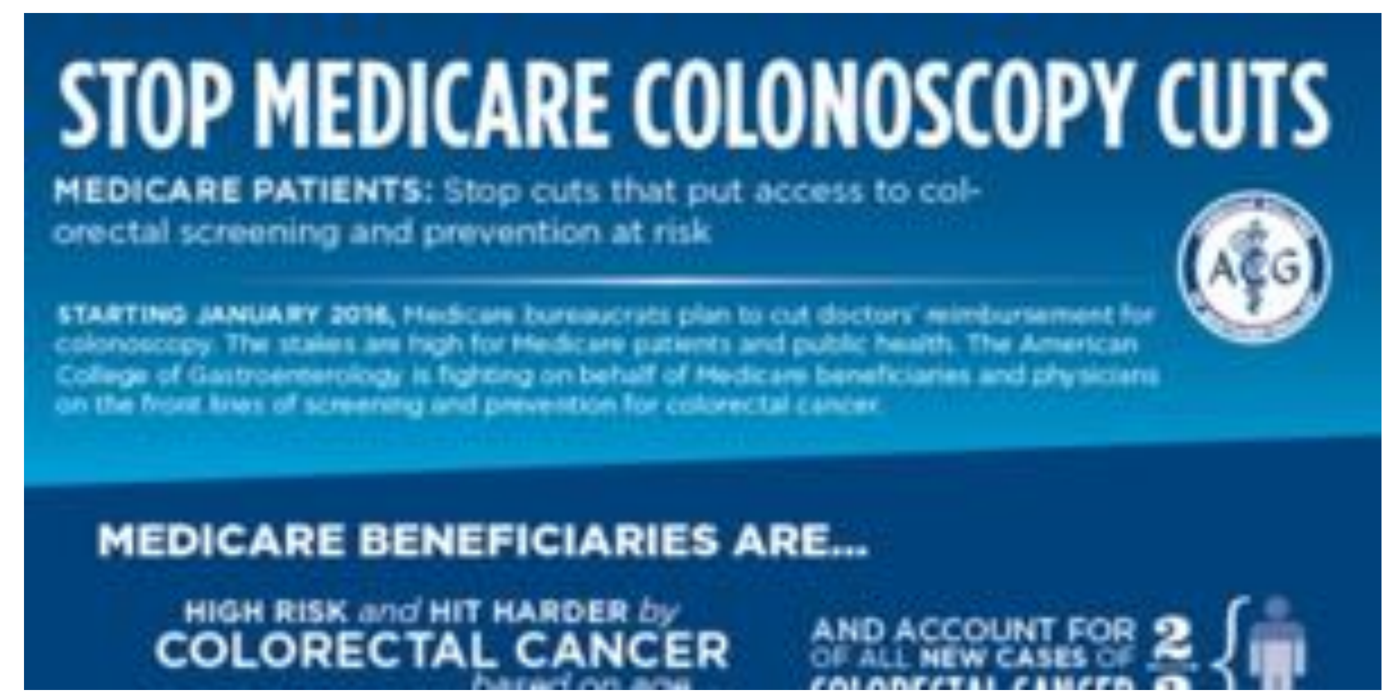


Decreasing Reimbursement

Patient Shopping/Bundled Payments

Value Based Reimbursement


THE FUTURE...
MEDI-
CARE
AUTH



Colonscopy with snare polypectomy (CPT code 45385): -12 percent
Colonoscopy (CPT code 45373): -9 percent
Colorectal cancer screen, high risk (CPT code G0105): 0 percent
Colorectal cancer screen, low risk (CPT code G0121): 0 percent
Colonoscopy with hot biopsy (CPT code 45384): -11 percent
Colonoscopy with submucosal injection (CPT code 45381): -13 percent
Colonoscopy with control of bleeding (CPT code 45382): -16 percent

Colonoscopy Quality

Measures in a Qualified Clinical Data Registry as part of the infrastructure for quality reimbursement

Endoscopy/polyp surveillance: Appropriate interval to the next colonoscopy for patients with adenomas

Endoscopy/polyp surveillance: Appropriate interval after normal colonoscopy in average risk patients

Adenoma detection rate in screening colonoscopy

Colonoscopy assessment: Assessment of bowel preparation

Colonoscopy assessment: Cecum reached (depth of intubation)

Unnecessary screening colonoscopy in older patients

Colonoscopy Value

Value = Quality/Cost

Colonoscopy "Bundle": Grouping all the services related to colonoscopy under one competitive charge

Preoperative Services	Day of Procedure	Post Procedure services
Volume and accuracy of scheduling Triage, access, no show/cancellations, telephone interactions,	Precare, anesthesia, the examination, recovery room, the report	Complications surveillance guidelines, revenue costs, interval cancers

Clinical Metrics: Preoperative Services

Referrals per week, calls/week, patient connections/week, scheduled exams/ week, procedures performed

Access: (business days to 3rd available appointment)

Frequency of accepted indication

Frequency of H & P performed and documented

Frequency of risk assessment performed and documented

Frequency with which management of antithrombotic medications is documented
Credentials of site of service and physician (annual volume and complication rate)

Cancellation and no show rate

Clinical Metrics: Day of procedure

Same day cancellations

Frequency of complete risk management protocol

Frequency with which informed consent is obtained and documented

to include specific discussions of risk and potential for interval cancer

Frequency of following post procedure surveillance guidelines

Rate of cecal intubation with photographic documentation

Adenoma detection rate per provider

Frequency with which bowel preparation is documented and adequate to complete the exam

Frequency with which withdrawal time is >6 minutes

Frequency with which polyps >2cm are removed by endoscopy

Clinical Metrics: Post-operative Services

Incidence of perforation and post polypectomy bleeding

Compliance with post-polypectomy surveillance guidelines

Frequency and timing of patient and referring provider notification of results and surveillance recommendations

Revenue and actual cost of the colonoscopy episode

Frequency with which interval cancers occur after a negative colonoscopy

Screening Colonoscopy: Important Measures at a Health System Level

Percent of eligible population screened

Access to colonoscopy services

Complication Rates

Patient Experience Scores

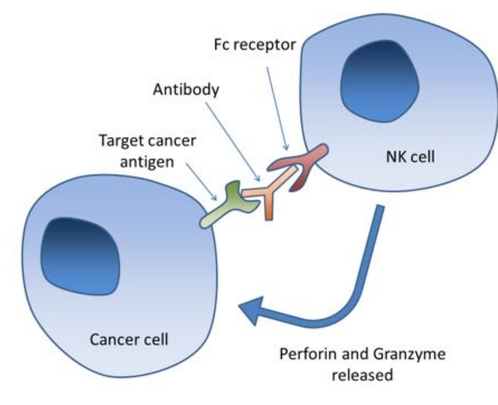
Bundle cost

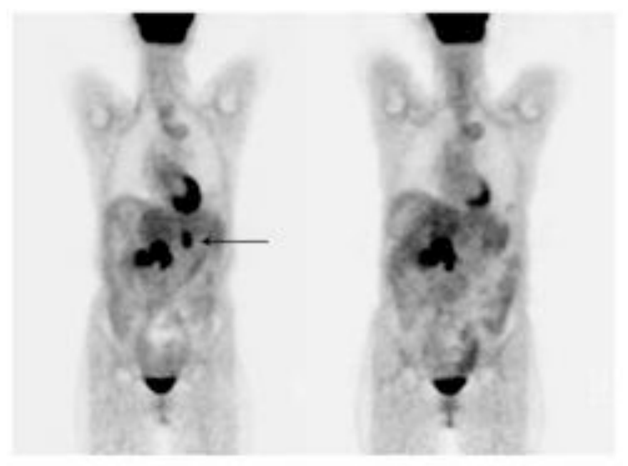
Frequency of Interval Cancers (3 year interval)

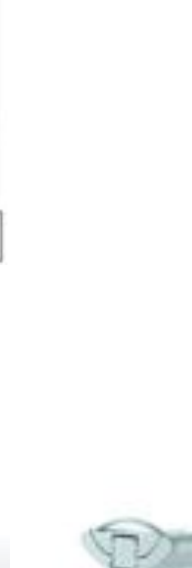
The Future:

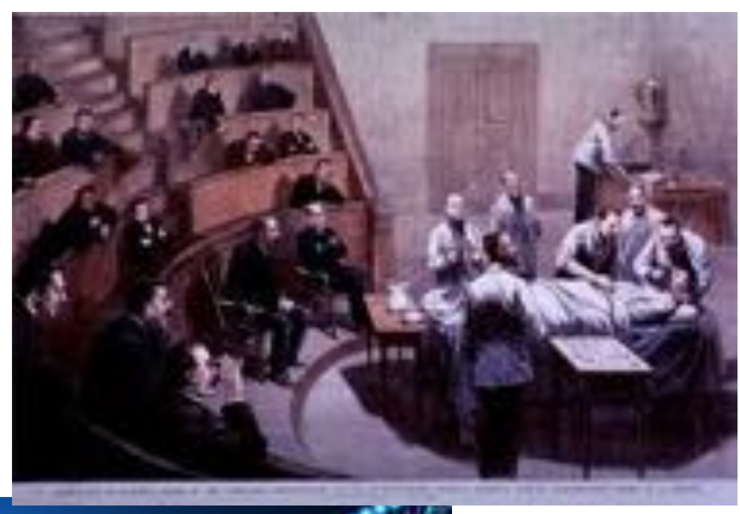
4. Colonoscopy in the 21st Century: the effects of progress

2015-2099









Molecular Biology

Q-POC

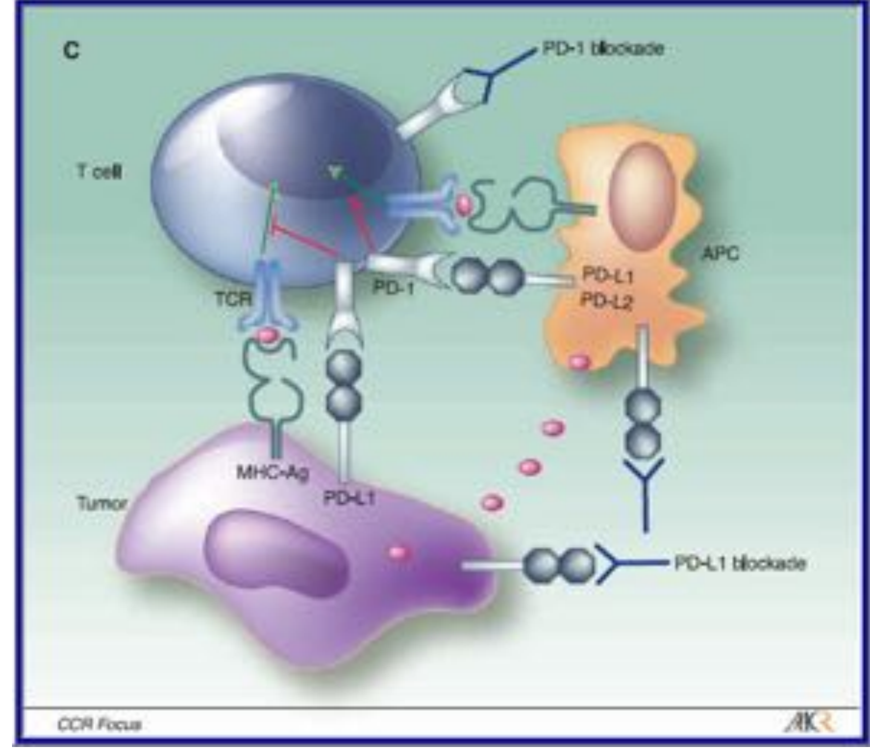
Hand-held point of care diagnostics

'Honey I shrunk the lab'

Presentation to The Royal Society of Medicine

18 February 2012

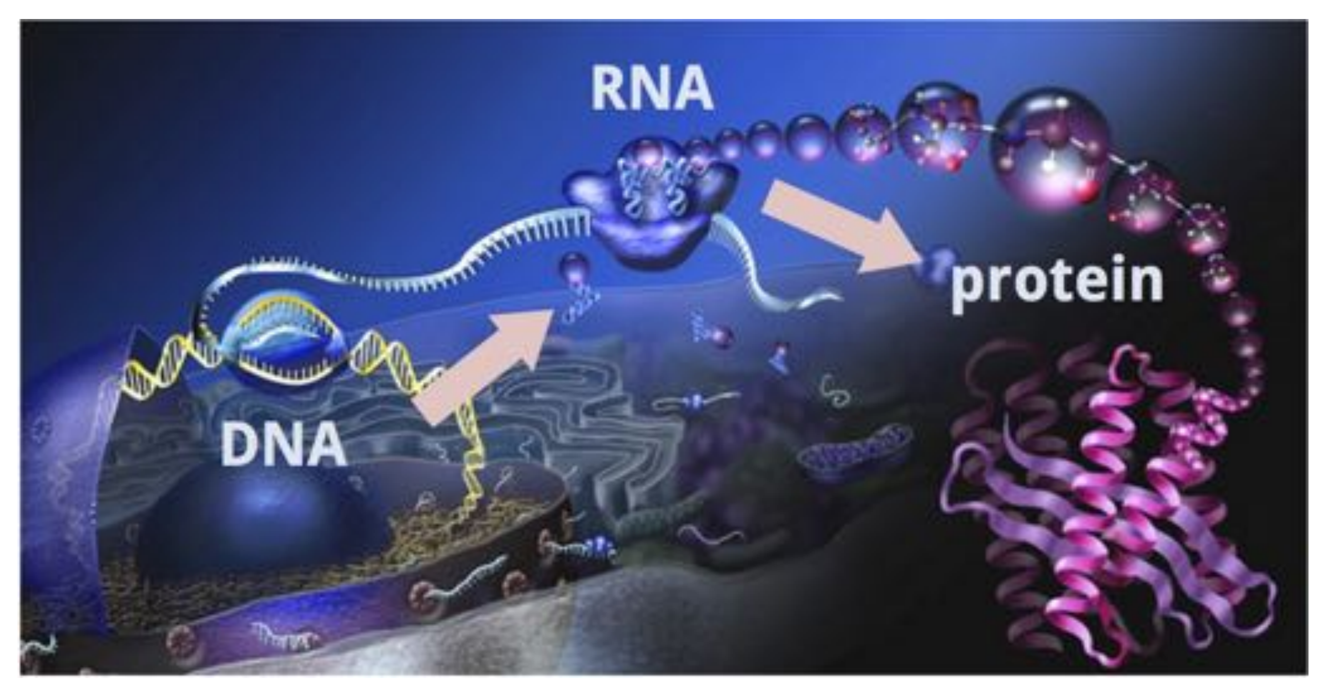
Elaine Warburton, CEO and Jonathan O'Halloran, CSO



Molecular Biology of Colorectal Cancer in the 21st Century

Accurate characterization of risk for colorectal neoplasia

Early identification of hereditary syndromes



Diagnosis of advanced preneoplastic lesions and cancers

Chemoprevention of advanced lesions

Targeted treatment of established lesions

Colon cancer vaccines

Summary 1: Colonoscopy in 2050

Technology looks much the same

Gastroenterologists and Surgeons are still doing it

Primary screening and surveillance is done genetically

Colonoscopy is done primarily for symptoms and to remove advanced adenomas and SSA/P

Training is restricted because there are few "normal" examinations. Advanced simulators and magnetic scope tracking are routine. Coaching is standard.

Summary 2: Colonoscopy in 2050

There are well developed indications, monitored and reimbursed

Choice of colonoscopist is based on readily available quality indicators

Price of the exam is competitively set and mostly covered

Patients elect to pay a premium for quality

Making the appointment is easy and convenient

There is plenty of capacity

The prep works and it tastes good too

Sedation is given according to predictors of difficulty

Few examinations are normal

The Alternate Future

Dr McCoy and his Body scanner