

# ‘Voyage round the Colon’

## BowelScreen

The National Screening Programme  
for Colorectal Cancer

IEQAS

October 2021

# BowelScreen 2021



Padraic MacMathuna

Clinical Director

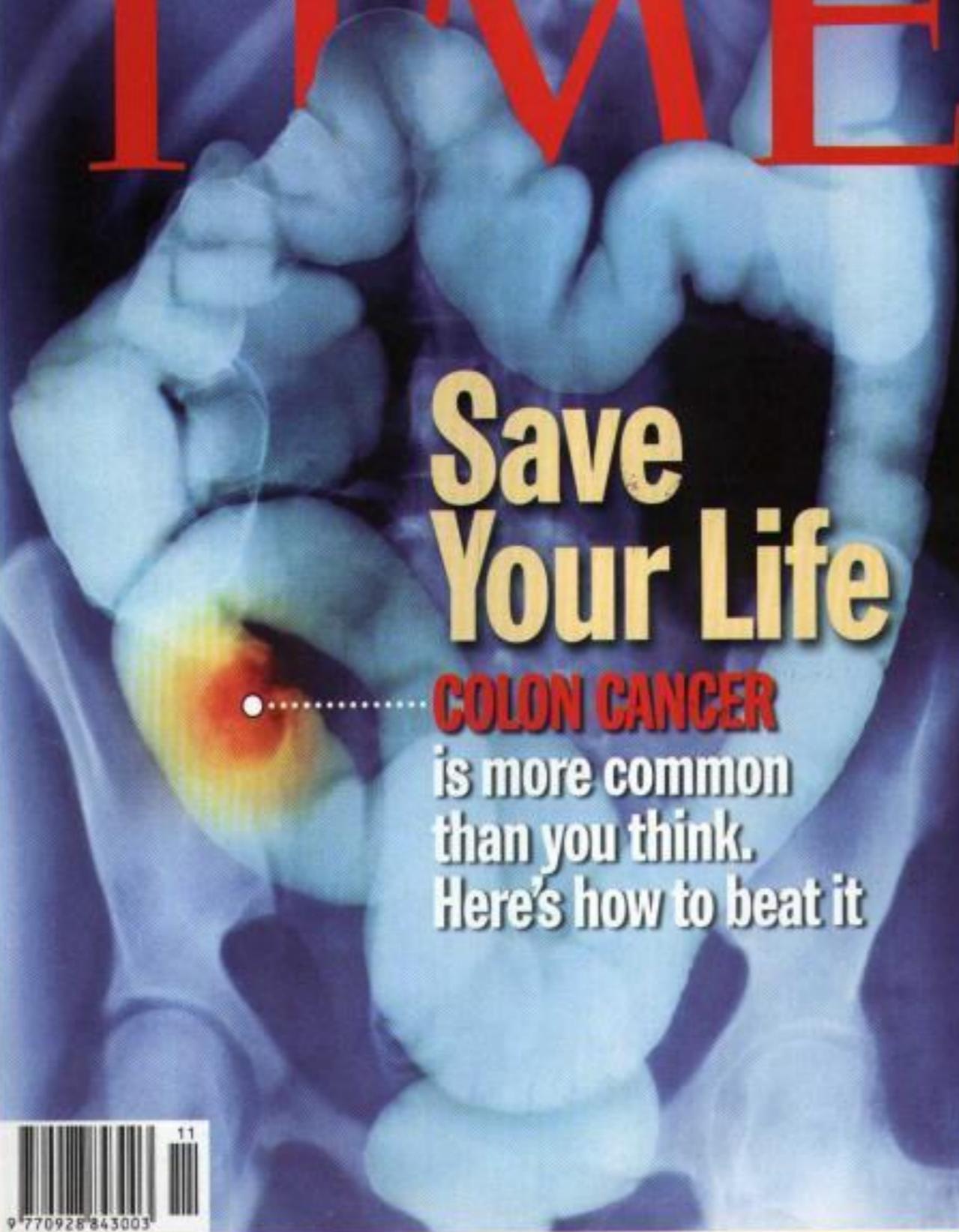
BowelScreen

Clinical Professor of  
Medicine

Mater Misericordiae University  
Hospital

ELECTION 2000 IT'S BUSH AND GORE

TIME



# Save Your Life

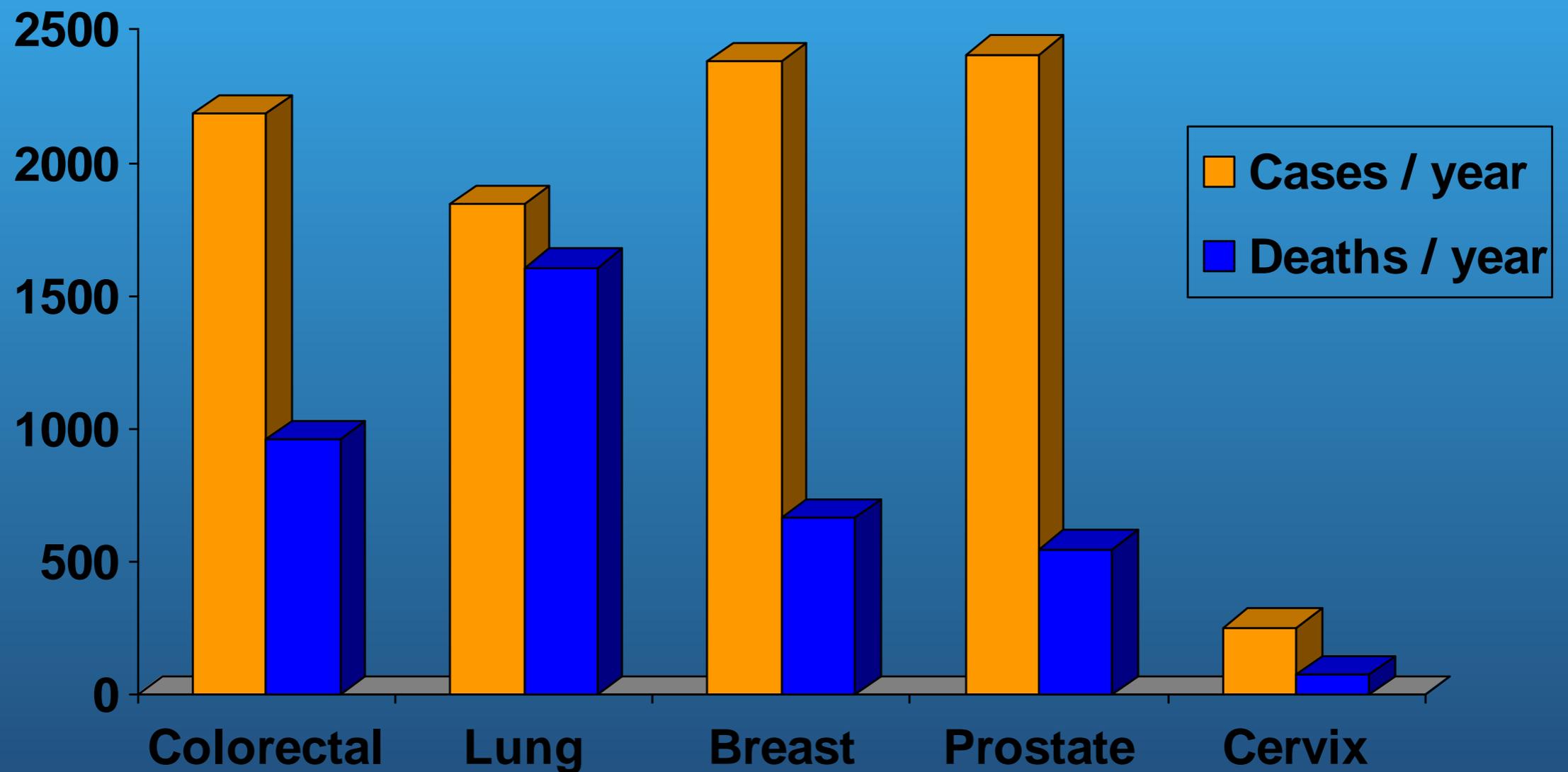
**COLON CANCER**  
is more common than you think. Here's how to beat it



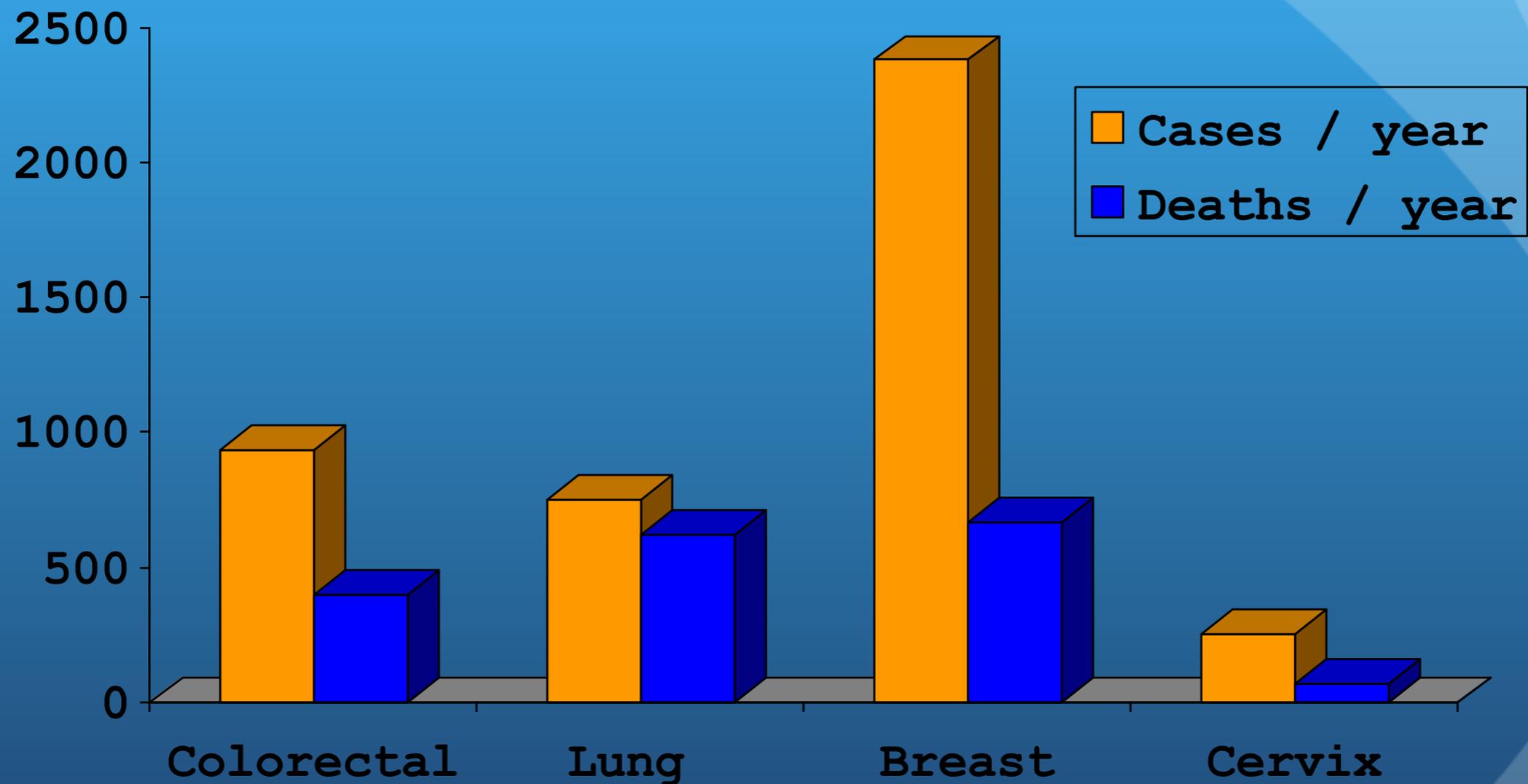
## CRC is a Major Health Concern

- > 1,000,000 new cases worldwide
- The second leading cause of cancer death (510,000)

# Cancer in Ireland



# Cancer – Irish Women



# Aetiology of Colorectal cancer



- Age
- Lifestyle
  - Obesity
  - Red meat?
  - Smoking?

# What about Lifestyle

‘All the things I really like are either immoral, illegal or fattening’.

*Alexander Woolcott*

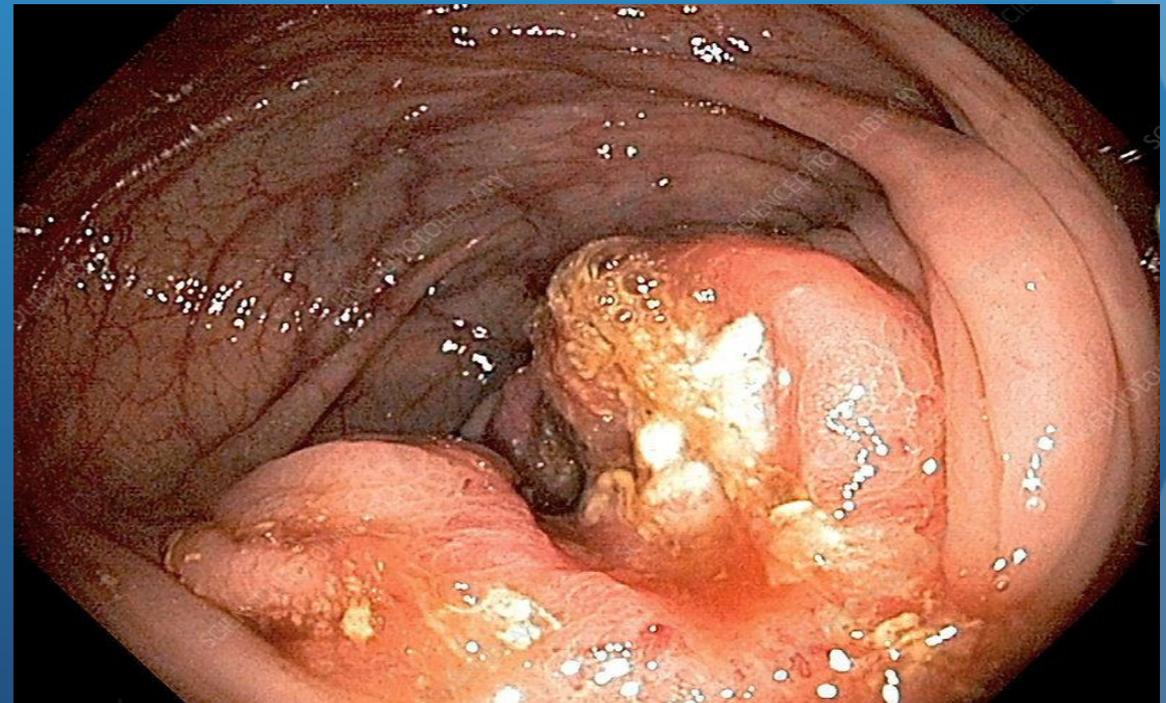
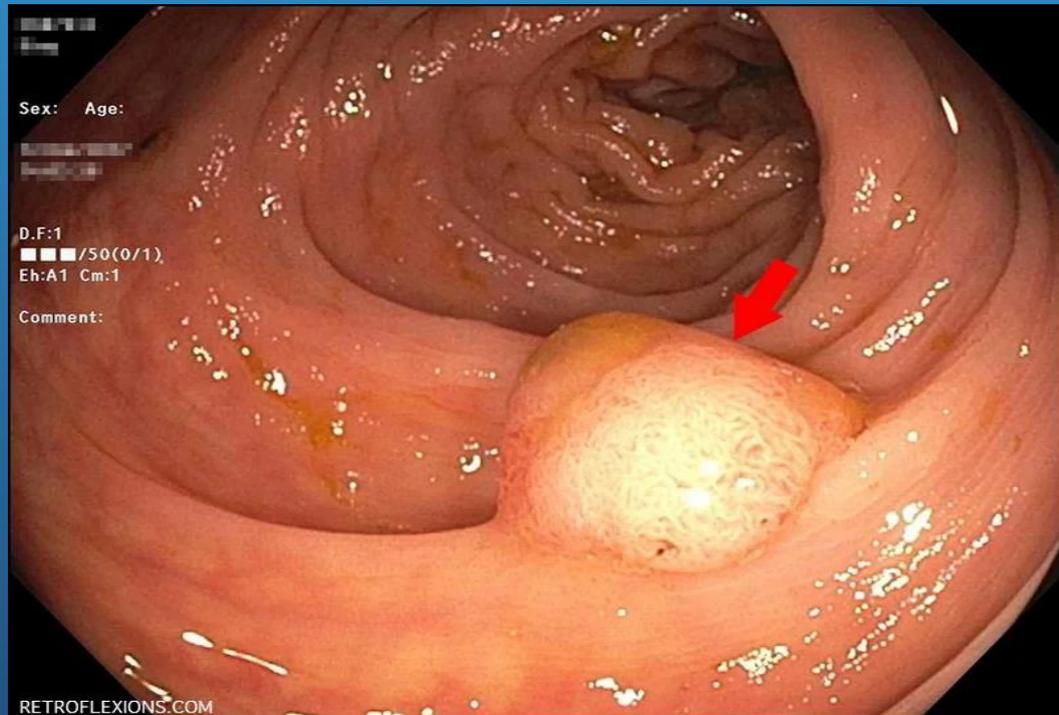


# Aetiology of Colorectal cancer



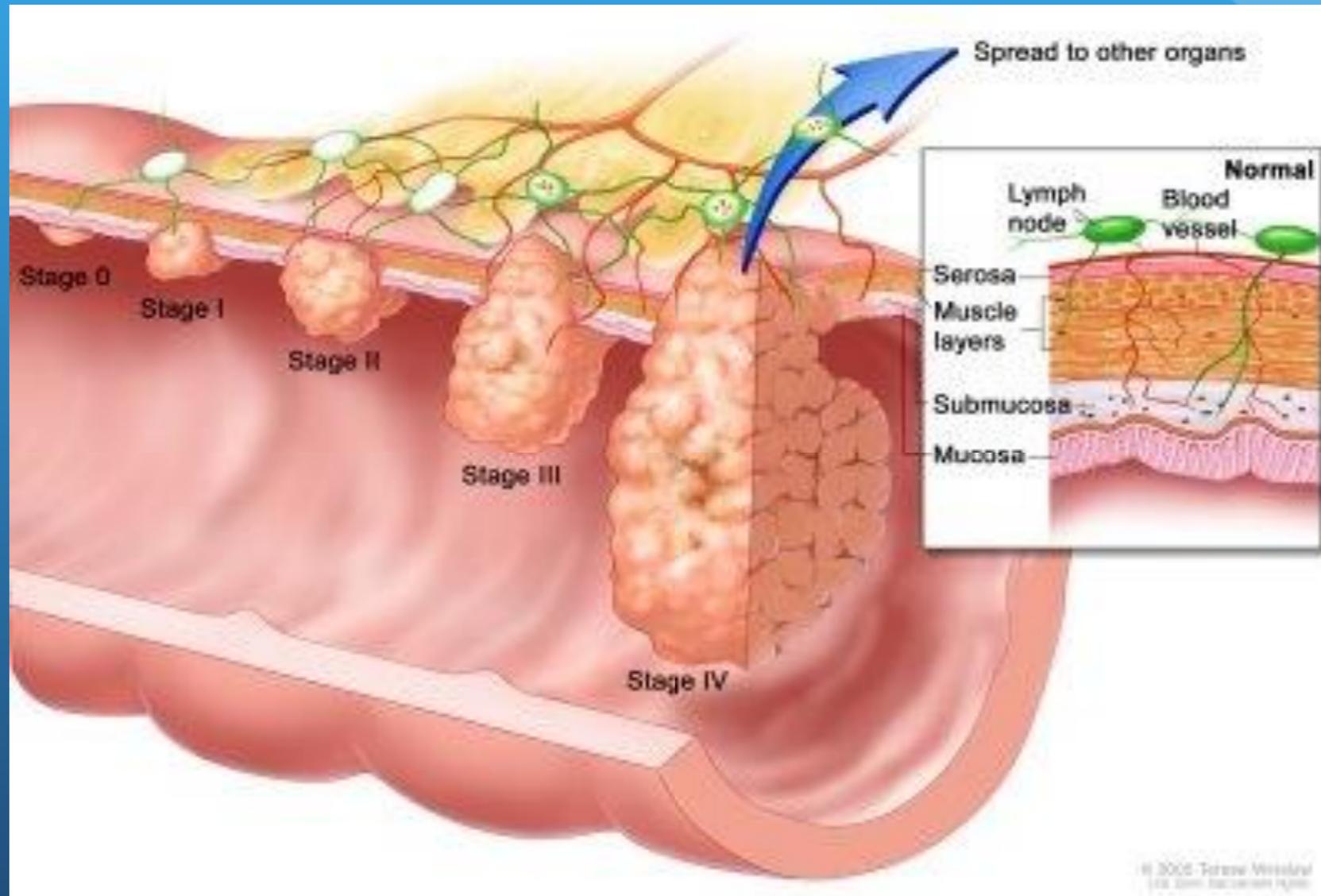
- Genetic
  - Lynch
  - FAP
- Microbiome

# Polyp - Cancer sequence 10 years



# Natural Hx of CRC

## Polyp - Cancer sequence



# Cancer Screening ‘Holy Grail’



- Common disease
- Known Natural hx
- Premalignant lesions
- Early detection curative
- Method is inexpensive
- Acceptable to population
- Cost benefit worthwhile
- Reduces mortality (hard endpoint)

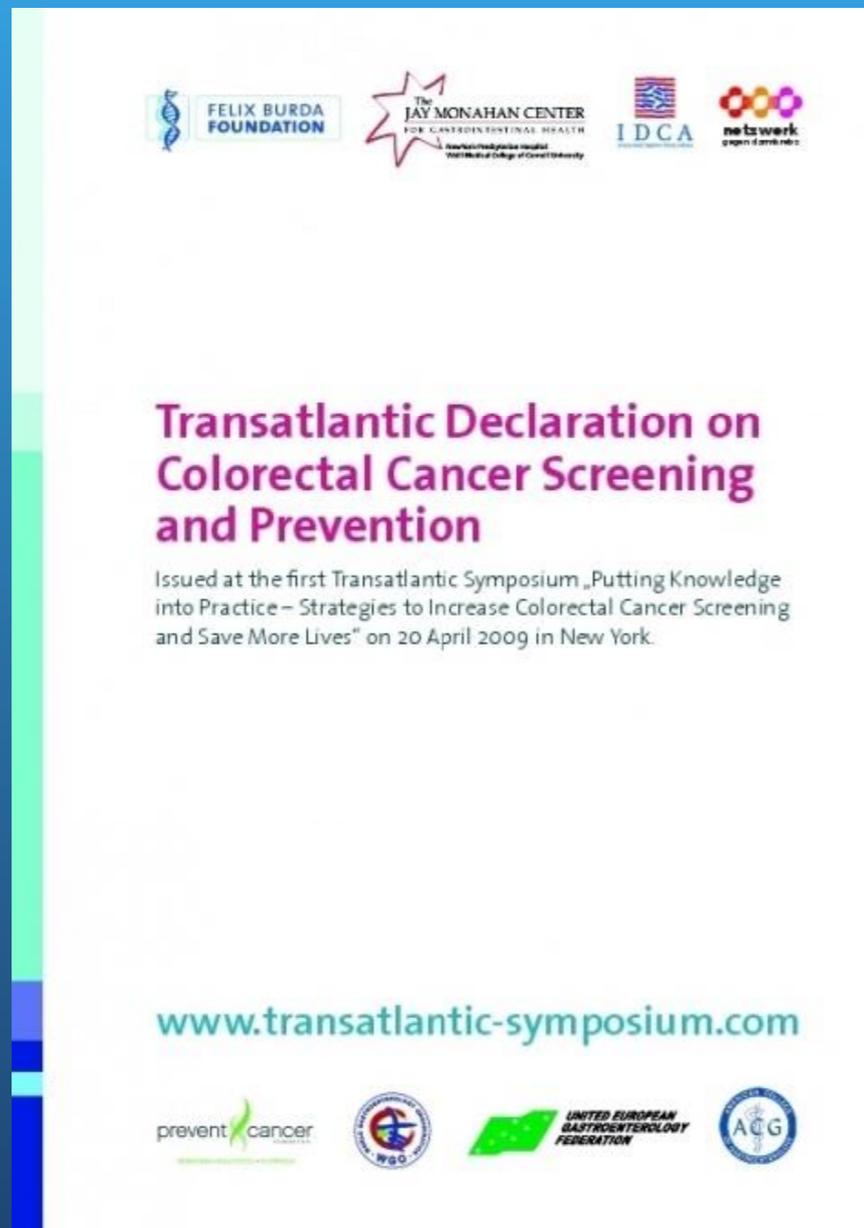
# Cancer Screening in Ireland



National  
Cancer  
Screening  
Service

- Breast
- Cervix
- Colon
- *Prostate?*
- *Lung?*

# Colorectal Cancer in Europe



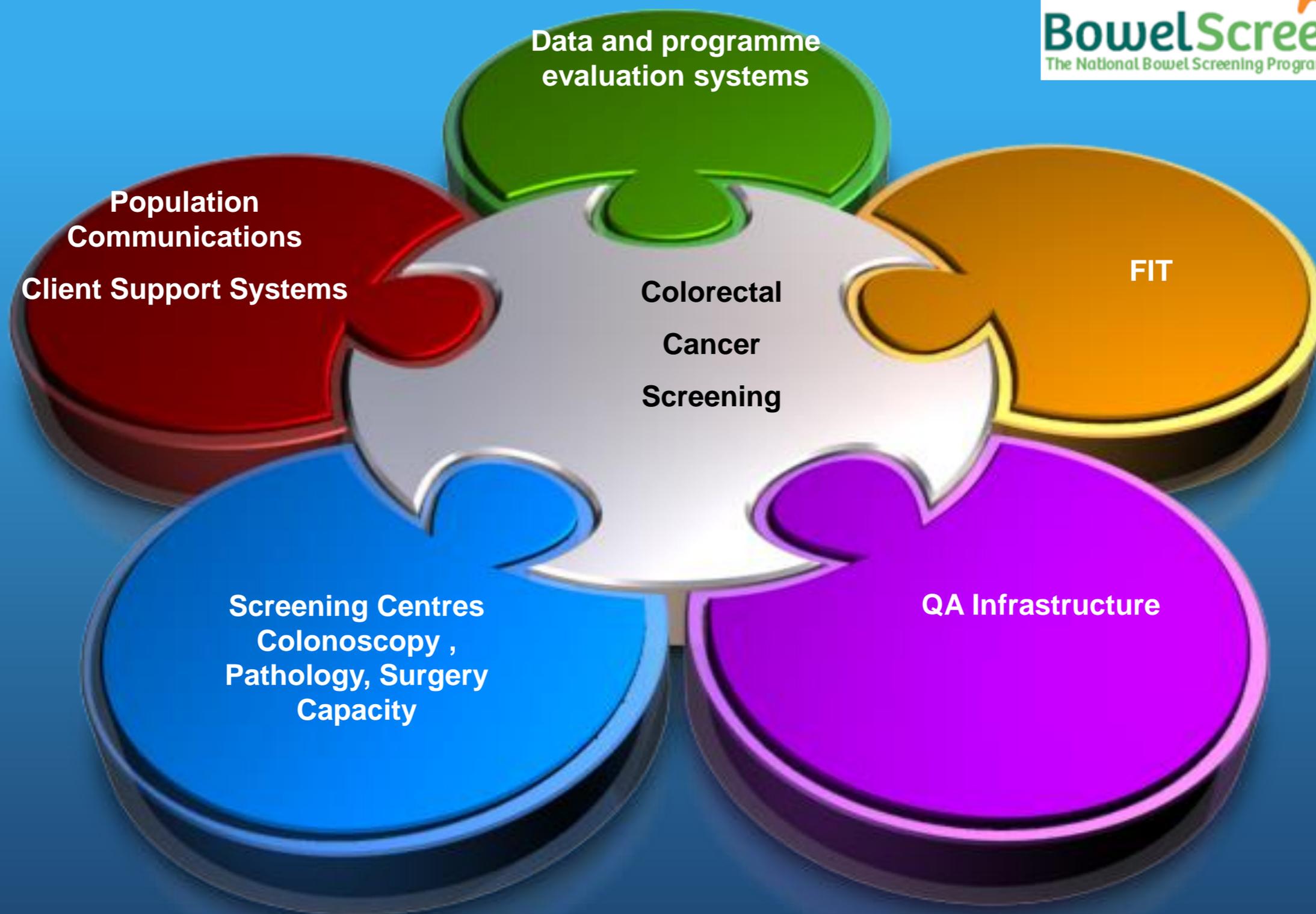
- UK
- France
- Germany
- Poland
- Spain

# Colorectal Cancer in Ireland



National  
Cancer  
Screening  
Service

- Advisory group
- Multidisciplinary
- Reported 2008
- HIQA 2009



# Multidisciplinary Team

- Gastroenterology
- Colorectal Surgery
- Pathology
- Radiology
- Medical Genetics
- Public health
- Data Management



National  
Cancer  
Screening  
Service

# Clinical / QA Management

- Clinical Director / QA Chair
- Programme manager
- Endoscopy Lead
- Surgery Lead
- Pathology Lead
- Radiology Lead
- Public Health
- Admin support
- Risk management

# KPIs

## International Benchmarks

- FIT
- Colonoscopy
- Pathology
- Surgery
- Radiology

# Objective

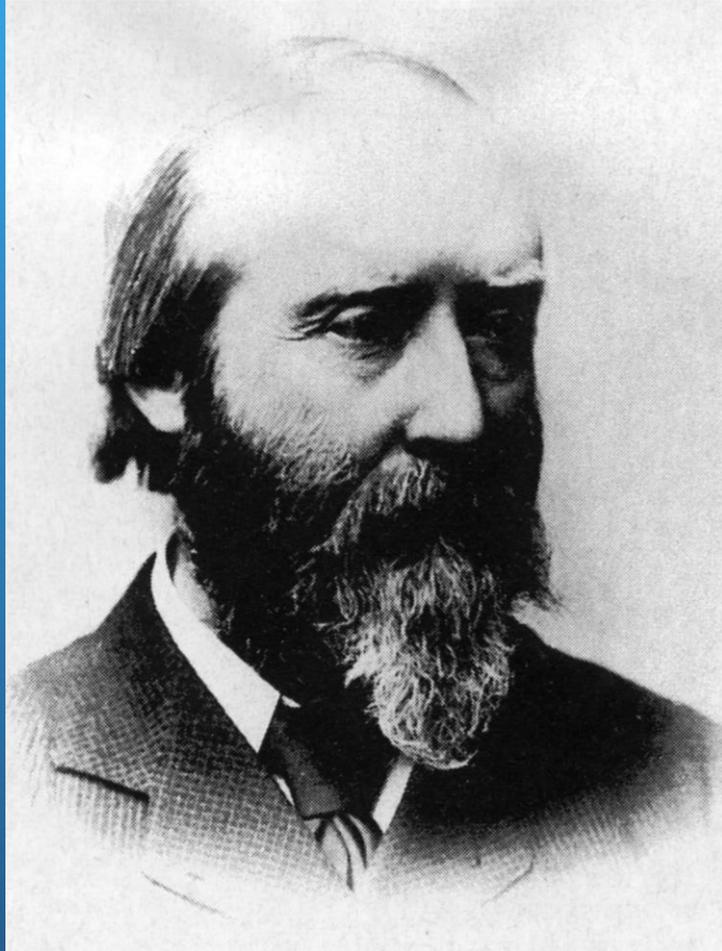
To reduce incidence of CRC by 14% and mortality by 25% over 10 years

*HIQA HTA 2009*

# Screening Methods

- FIT (Faecal immunochemical)
- Colonoscopy
- CT Colonography

# Mater 1865



April 8, 1865.]

ORIGINAL COMMUNICATIONS.

[British Medical Journal.]

## Original Communications.

### THE ENDOSCOPE AS AN AID TO THE DIAGNOSIS AND TREATMENT OF DISEASE.

By FRANCIS R. CRUISE, M.D. T.C.D., one of the Medical Officers to the Mater Misericordiarum Hospital, and Lecturer on Medicine in the Carmichael School, Dublin.

[Read before the Medical Society of the King and Queen's College of Physicians in Ireland, March 15, 1865.]

MR. PRESIDENT AND GENTLEMEN,—I shall not occupy the time of the Society very long by the communication that I am about to make, although I feel convinced that its importance justifies me in trespassing upon your patience and attention.

I believe it will be granted by all, that one of the most important characteristics and improvements of modern medicine, consists in the direct exploration of organs, for the elucidation of their physiology and pathology.

This tendency to rest our knowledge upon physical rather than on rational signs, is one of by no means recent date; although, of latter days, it has become more obvious and better appreciated. Undoubtedly, within the last fifty years, it has made gigantic progress.

Percussion, methodised by Avenbrugger and popularised by Corvisart, seems but to have paved the way for Laennec's discovery of the immeasurable practical value of auscultation. Again, other portions of the body, lending themselves even more freely to examination than the thoracic organs, in due course have come to be objects of research with special observers, who, from time to time, have devised means and instruments for their more satisfactory investigation and study. Without delaying upon this point at the expense of the valuable time of the Society, I may quote, in illustration, the revival by Recamier of the long forgotten speculum uteri; also, the speculum auris, originated, I believe, by Newburg; the ophthalmoscope of Helmholtz; the laryngoscope of Czermak; and, though last certainly not least, the endoscope of Desormeaux; which latter instrument I have, on the present occasion, the honour of publicly exhibiting for the first time, I believe, in Ireland.

Agreeably to the old adage, that "Nought is new under the sun", as each of these valuable additions to our means of diagnosis has been brought under the notice of the profession, claimants have sprung up to dispute the honour and credit of invention.

I fear it would be very unprofitable, were I at the present time to discuss at length the precise merits of the competitors in each case; I shall, therefore, pass by that question; merely observing, in order to justify the quotation of the above-mentioned names, that I have endeavoured to associate with each method and instrument the name of that individual who has done most to demonstrate and extend its practical utility.

With respect to the endoscope in particular, I may observe that Desormeaux, in the introductory chapter of his recent valuable memoir, candidly acknowledges that the idea of an instrument capable of throwing light into deep cavities, such as the bladder and urinary passages, was not original with him.

He accords to M. Segalas the merit of originating the thought; and alludes to his unsuccessful attempt, as well as to the fruitless labours in the same direction of the late Mr. Avery of London and Dr. Hacken of Riga. He is in error in giving the palm of ori-

ginality to M. Segalas; for in 1806 Burrini of Frankfurt invented an instrument for the purpose; and others shortly afterwards followed up the matter, including the celebrated Dr. Fisher of Boston, U.S. Withal, it must be acknowledged that to M. Desormeaux alone is due the credit of patiently working at endoscopy, working for more than thirteen years, until he has at last produced a mass of facts so important and interesting that it is impossible for the profession any longer to ignore the subject.

A *propos* to the slight shewn towards the endoscope, a long and amusing history might be written of the opposition which has greeted every improvement in the science and art of medicine from its earliest days. Such a history would, I conceive, be out of place here. Frivolous objections avail nothing at the time when they are advanced, and only afford material for merriment and ridicule in the future. The practical commentary upon all such opposition lies in the contrast between medicine as we now see it, and medicine as our fathers knew it little better than half a century ago.

I shall not trespass on the valuable time of the Society by recounting a detailed history of my own labours at endoscopy. Suffice it to say, that it has been a dream with me since I became a student, and a pursuit after which I continually hankered. Years ago I tried to work with Desormeaux's endoscope; but, finding the light insufficient, gave it up in despair; and it is only of late that I resumed the study. Quite recently, a modification of the illuminating portion of the instrument occurred to me. I carried it out; and believe I have thereby succeeded in obtaining as much light as is needed for practical purposes. Since then I have worked assiduously, and have lost no opportunity of extending my experience of the endoscope. For my own part, I am quite satisfied that it is a most useful instrument; and I now venture to bring it publicly forward to receive the criticism and judgment of others.

The endoscope is an instrument devised and constructed for the purpose of throwing light into certain regions of the human body entirely out of the range of natural vision. That it is a most unquestionable success, I am satisfied; and I feel justified in stating, that I am convinced its field of practical utility is almost illimitable. I would venture to hope that, in the course of time, it may work as complete a revolution in our knowledge of many obscure diseases, as the stethoscope has wrought in the diagnosis of affections of the lungs and heart.

I hope, at no distant period, to bring before the profession a *résumé* of the work which it has already accomplished in certain branches of pathology; and to point out the principal new facts which it has brought to light, and the facilities it affords in the treatment of many ailments.

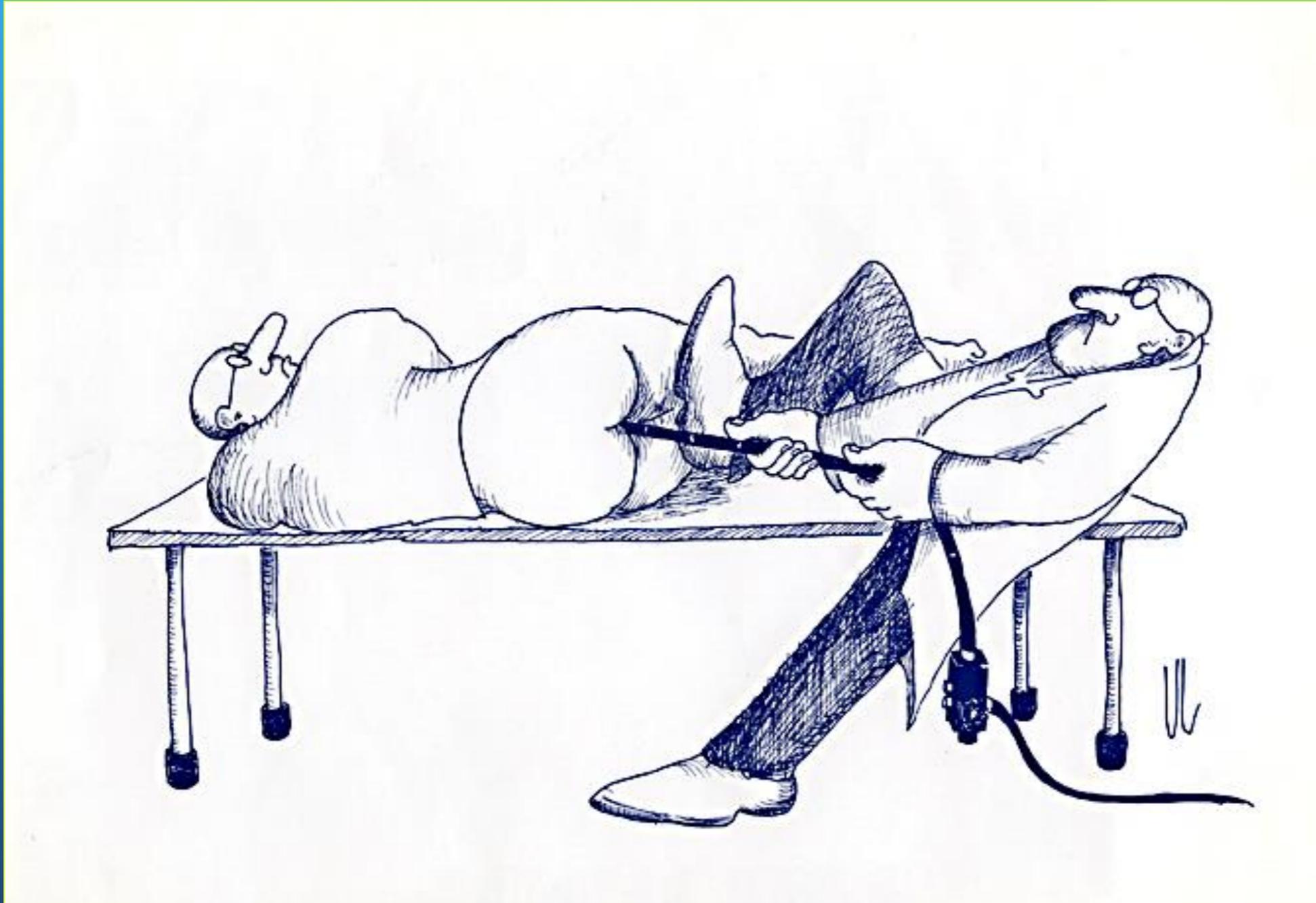
On the present occasion, I shall but briefly allude to its manifold capabilities.

The endoscope at its birth met with but little favour, and for many years was absolutely slighted and passed by. Desormeaux tells us how one of his teachers, unable to deny the reality of the instrument, merely asked him a question—"Of what use is it?" The answer to that query conveys its whole worth; namely, it enables us to see parts which, without its aid, are invisible.

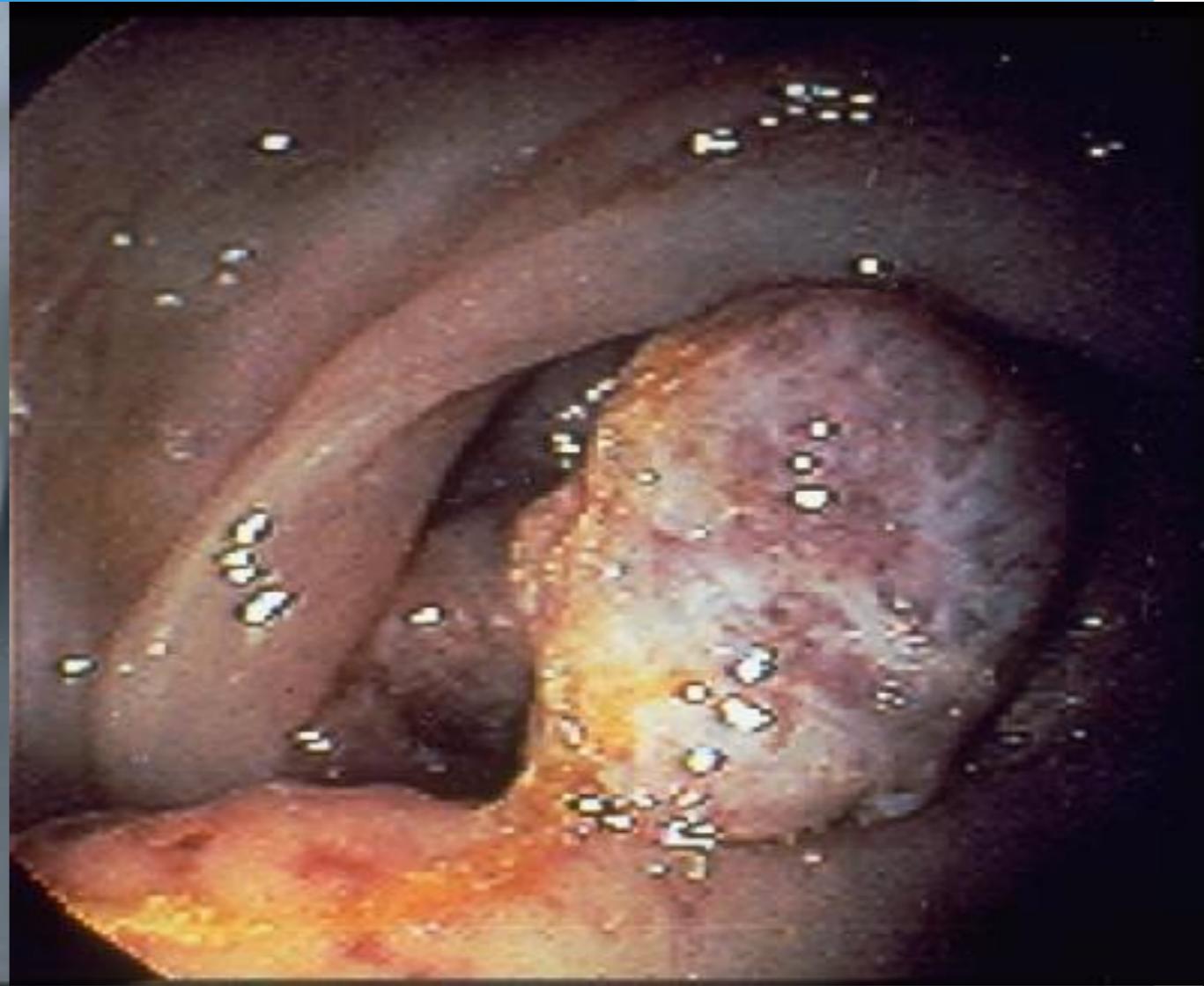
Let us for a moment contrast the predicament of the physician called upon to treat a malady which it is possible for him to see, and one hidden from his view. For example, let us take a case of diseased eye, and a case of diseased urethra.

He will not content himself by calling the former an ophthalmia, without ascertaining what structure is engaged and wherefore. He will examine the lids,

# Colonoscopy



# 3D Polypoid Tumour



# Mater Misericordiae Hospital

Eccles Street, Dublin 7, Ireland



## Dublin City University

Ollscoil Chathair Bhaile Atha Cliath



## Vision Systems Laboratory

School of Electronic Engineering



Helen Fenlon

Padraic Mac Mathuna

Paul F. Whelan

Robert Sadleir

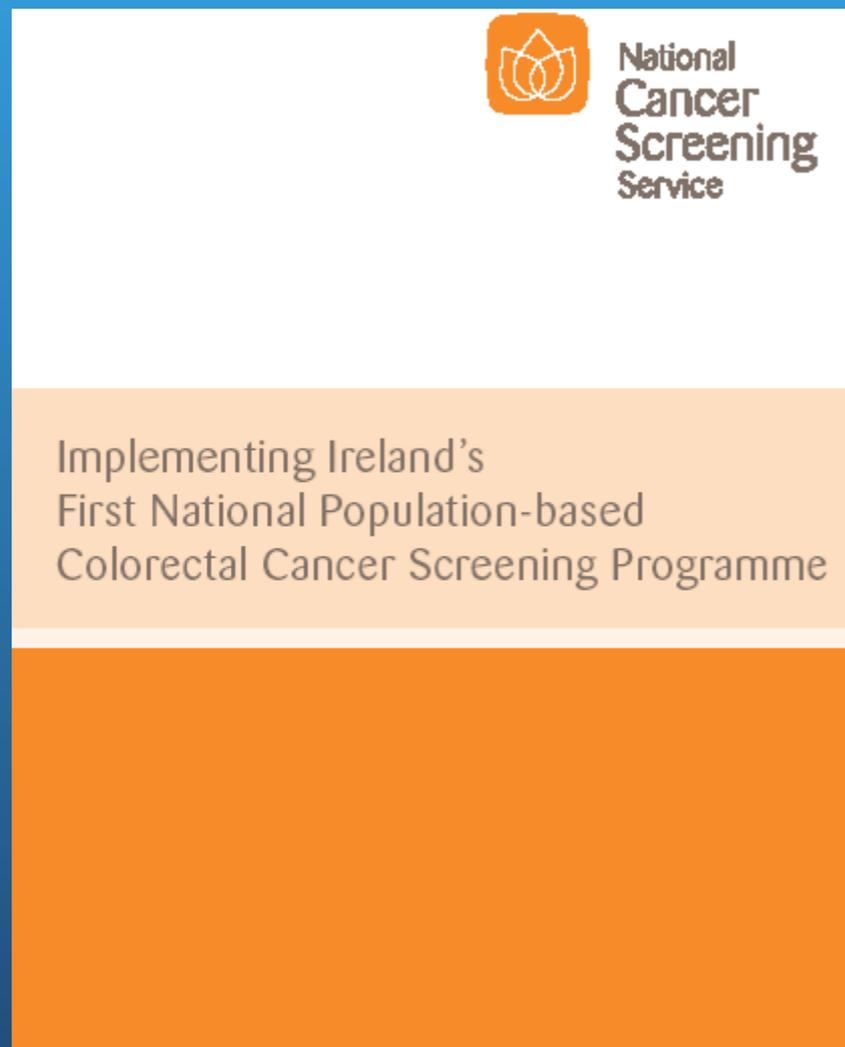
# IT Wizards



# 3D Colon Flythrough



# Population Screening

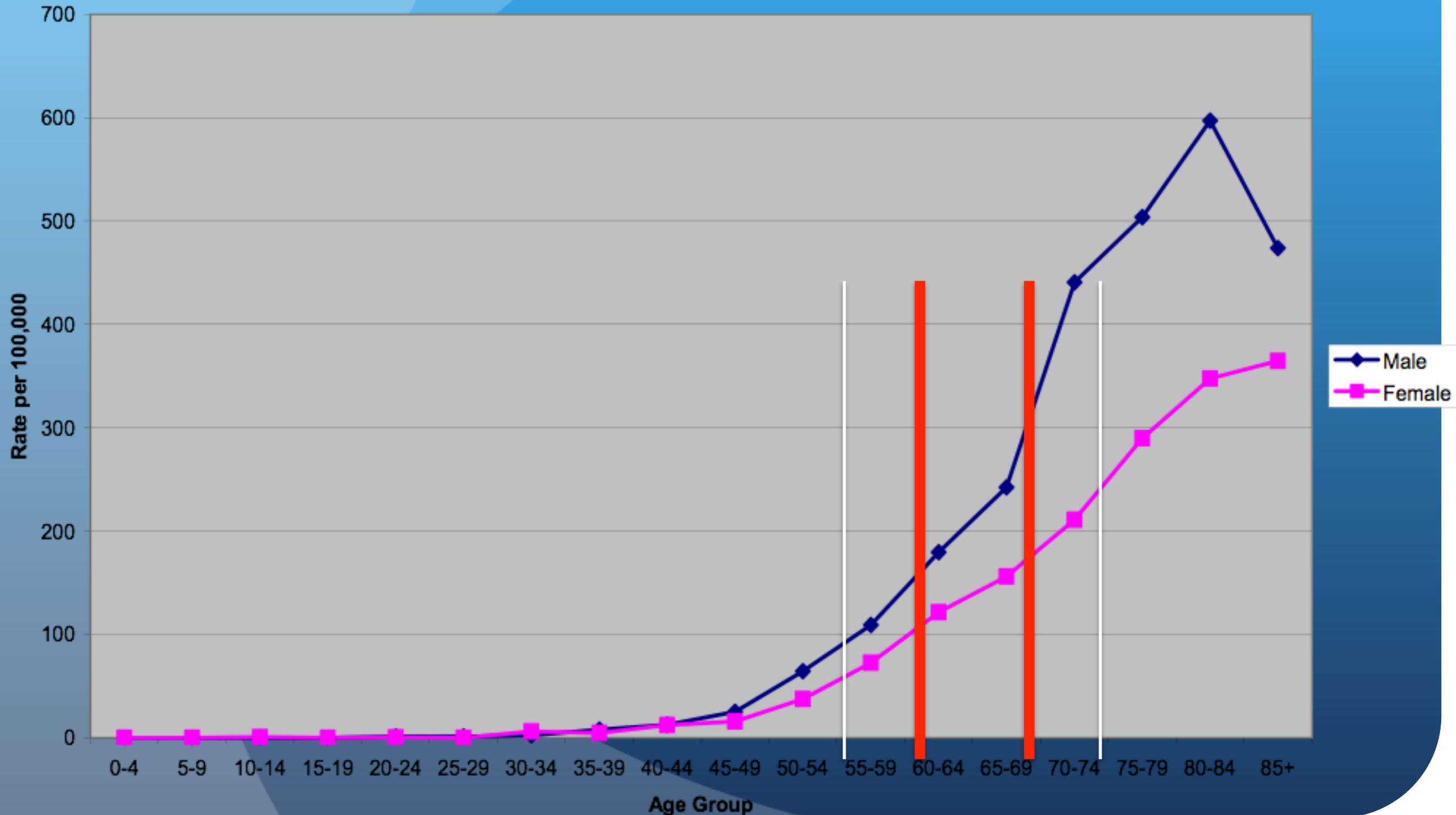


- 55-74, men & women
- FIT (immuno)
- Colonoscopy for FIT+ve
- National Geographical spread
- 14 centres
- Roll out 2012
- Entering Round 5

# Age Specific Incidence



Age Specific Incidence Rates 2005



A clean colon  
is the key to a  
successful  
colonoscopy



The National Bowel Screening Programme is now available to men and women aged 60-69.

**BowelScreen**  
The National Bowel Screening Programme

**Home Test Kit Instructions**

Freephone 1800 45 45 55  
[www.bowelscreen.ie](http://www.bowelscreen.ie)

BowelScreen is the National Bowel Screening Programme, a part of the National Cancer Screening Service.

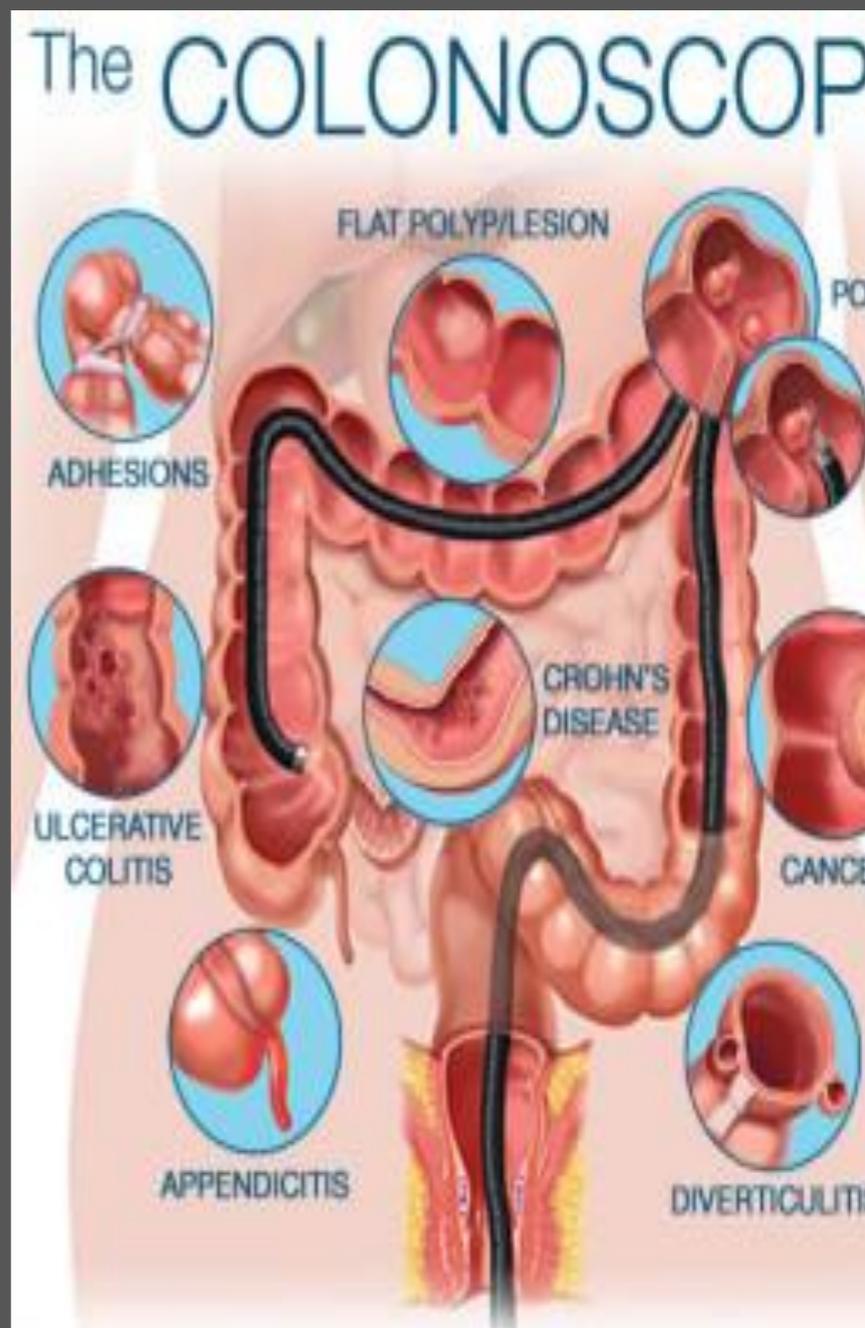
BowelScreen is a Government-funded programme that offers regular home bowel screening to people aged 60-69 living in Ireland every two years.

The programme is being introduced on a phased basis and it's expected that all those on the register will be invited for screening by the end of 2015.

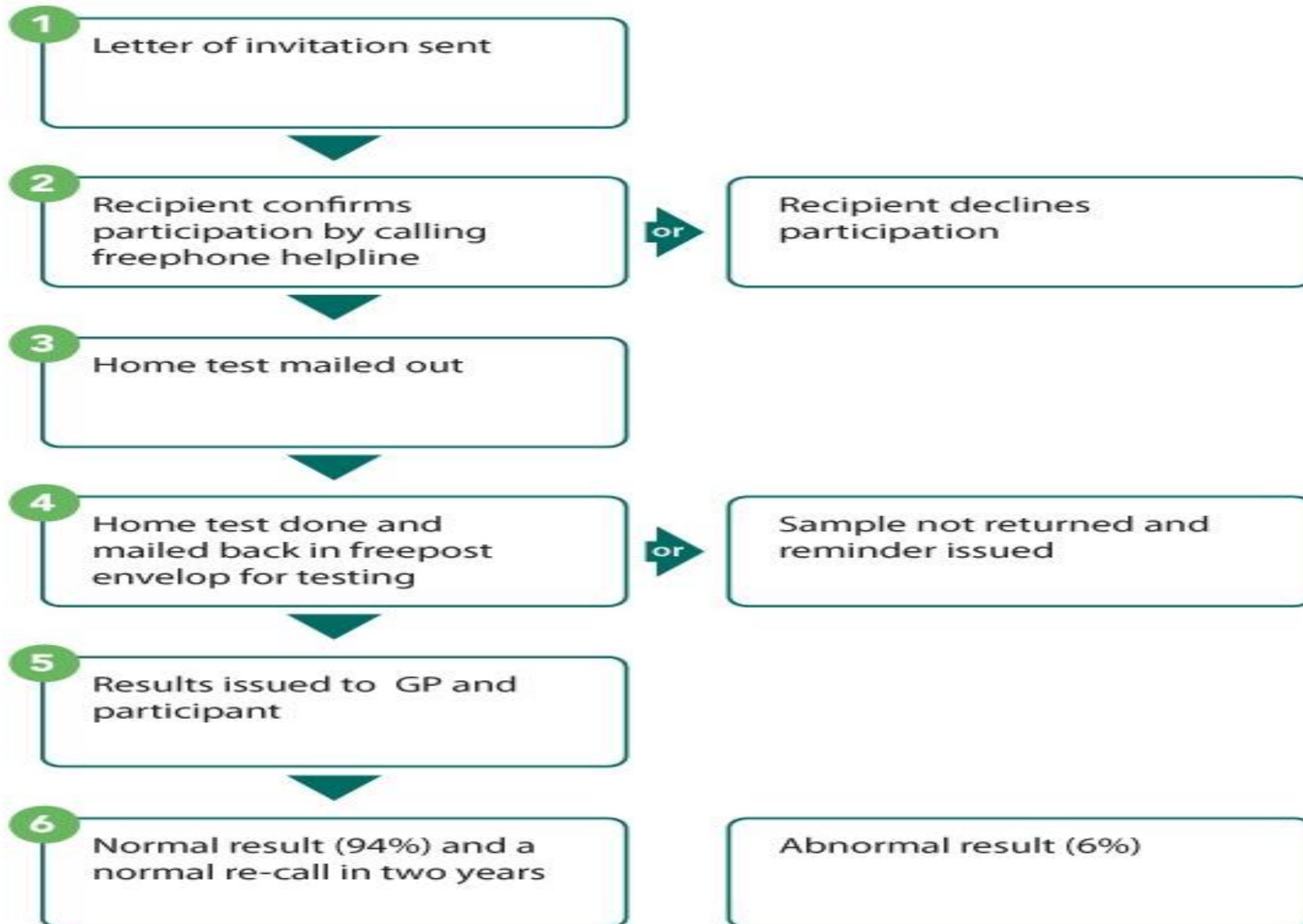
When it's your turn you will receive a letter inviting you to participate.

**It's free, easy and you can do it yourself at home.**  
visit [www.bowelscreen.ie](http://www.bowelscreen.ie) to find out more

**BowelScreen**  
The National Bowel Screening Programme  
BowelScreen is part of the Health Service Executive

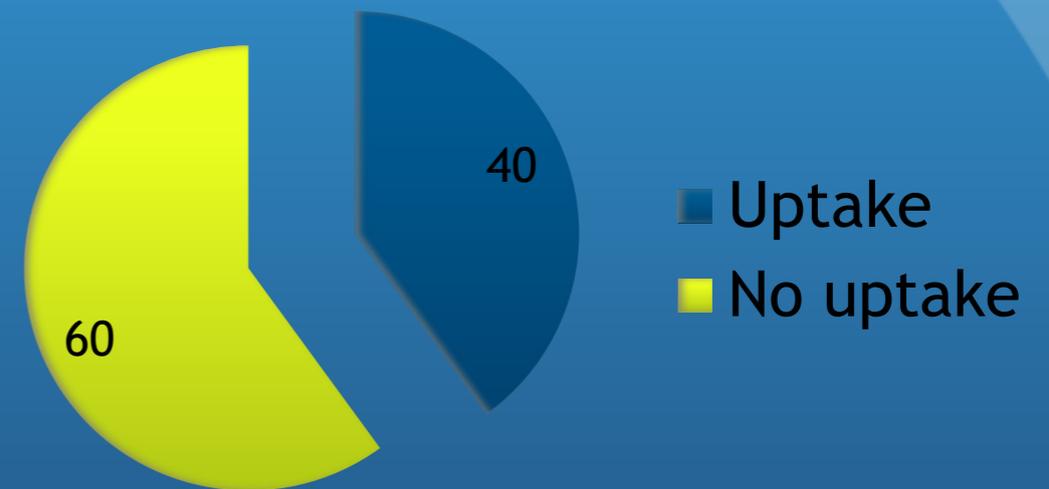
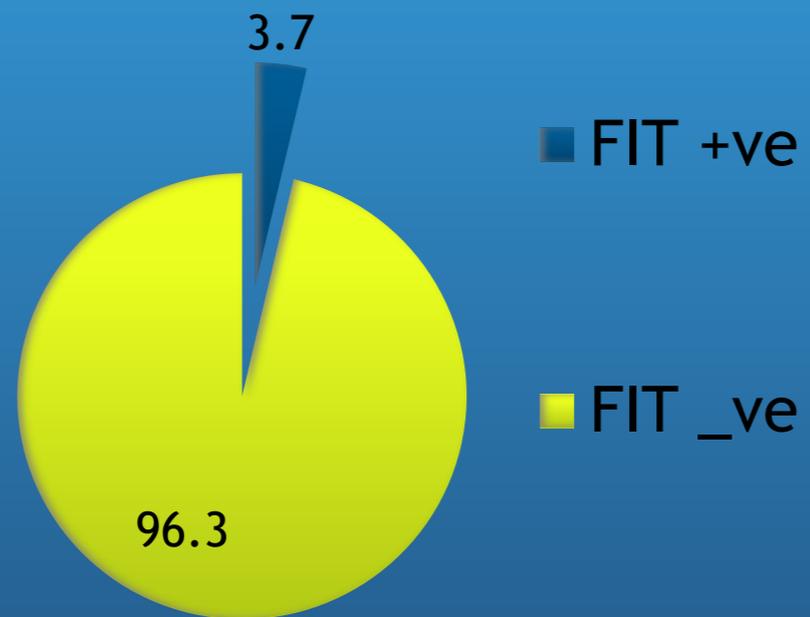


## BowelScreen – participants journey



# FIT

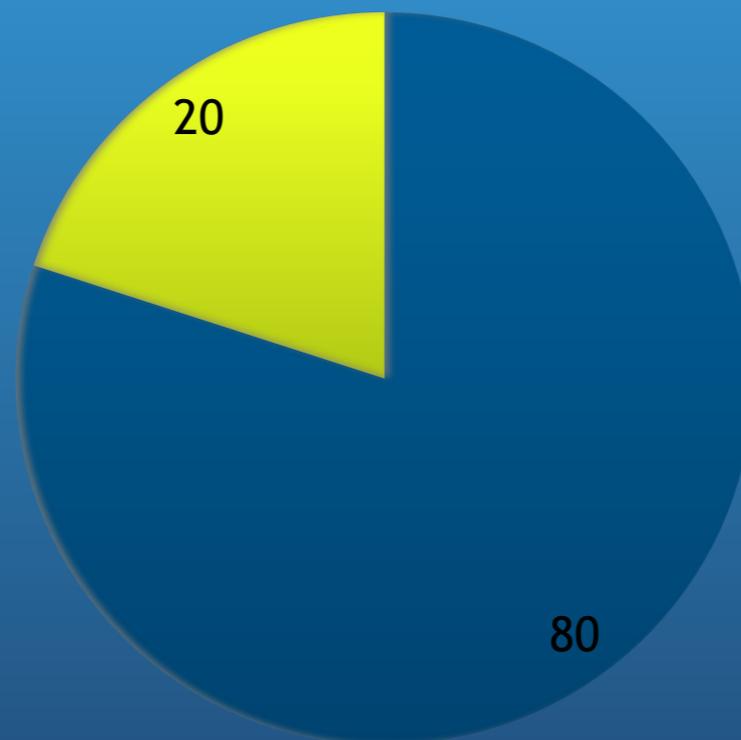
Total 111,500



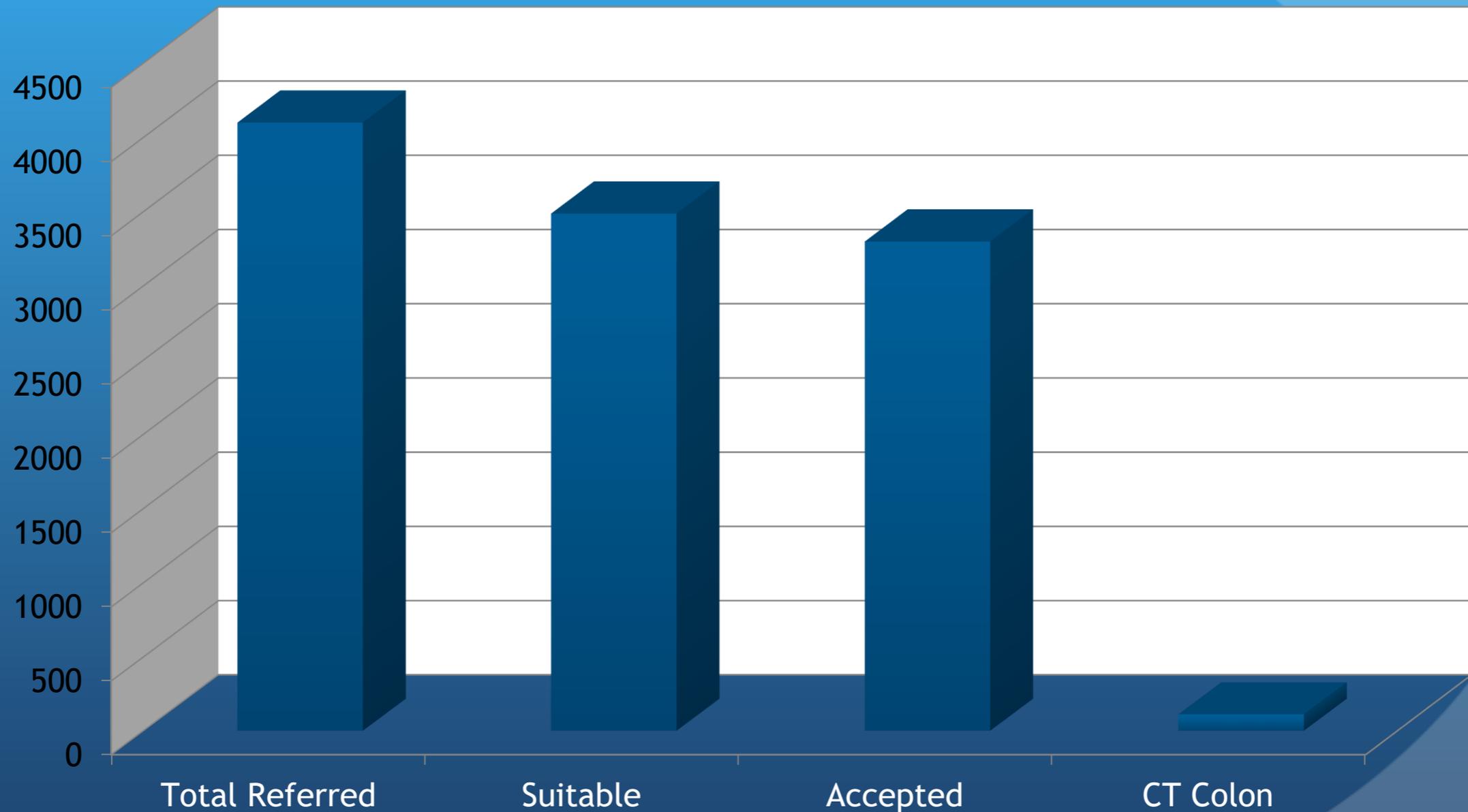
# Colonoscopy 4100

■ Acceptance

■ Refusal



# Colonoscopy Uptake (80%)



FIT offered 280,000

FIT - ve

FIT +ve

Repeat FIT 2 yrs

Offered Colonoscopy

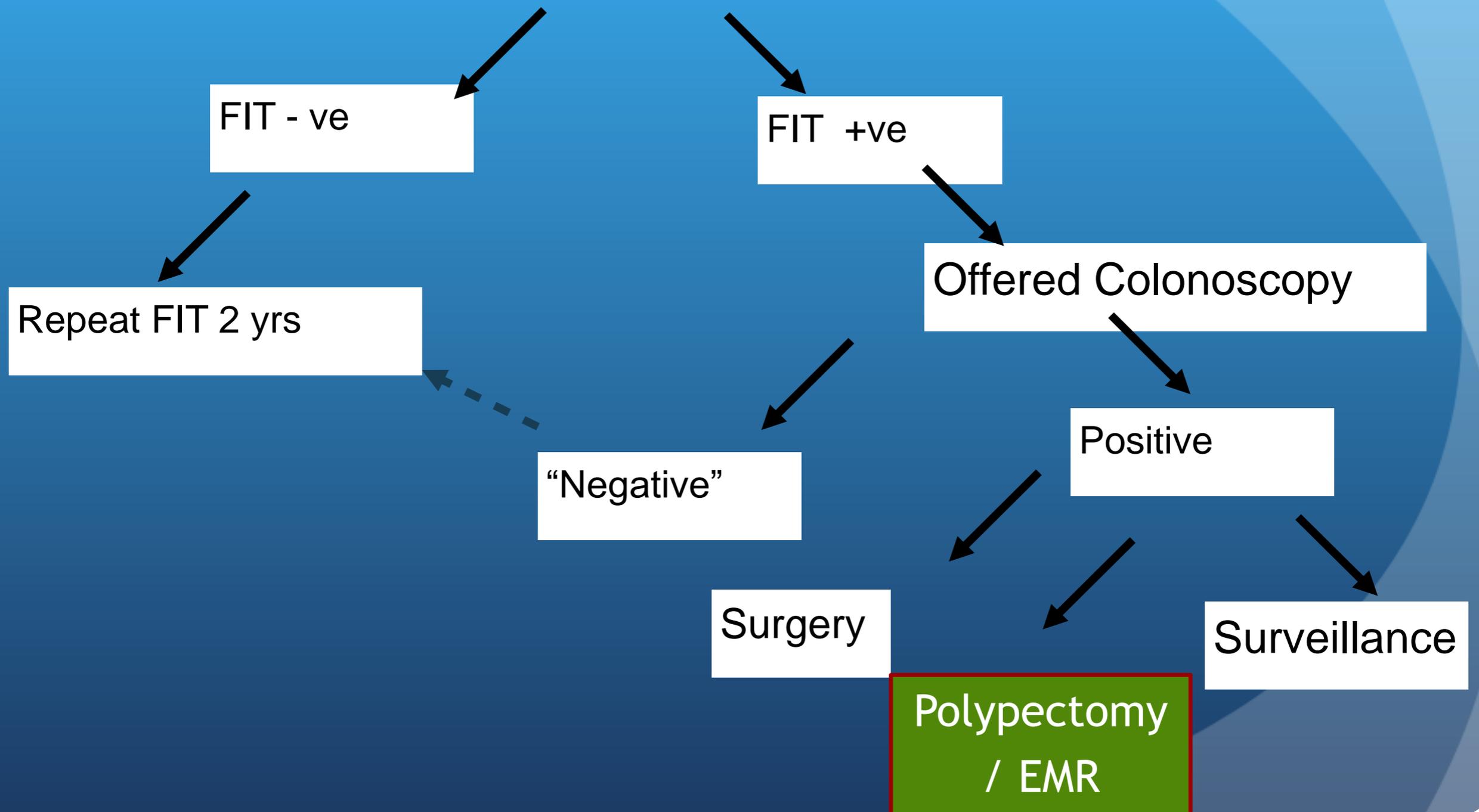
“Negative”

Positive

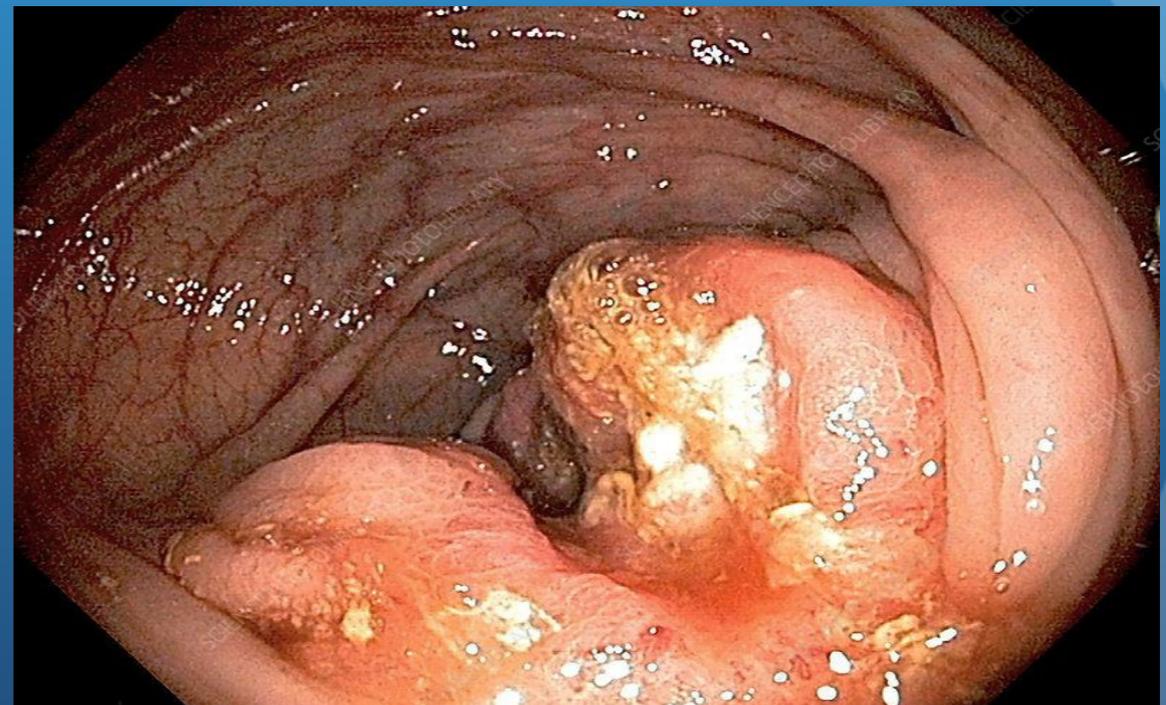
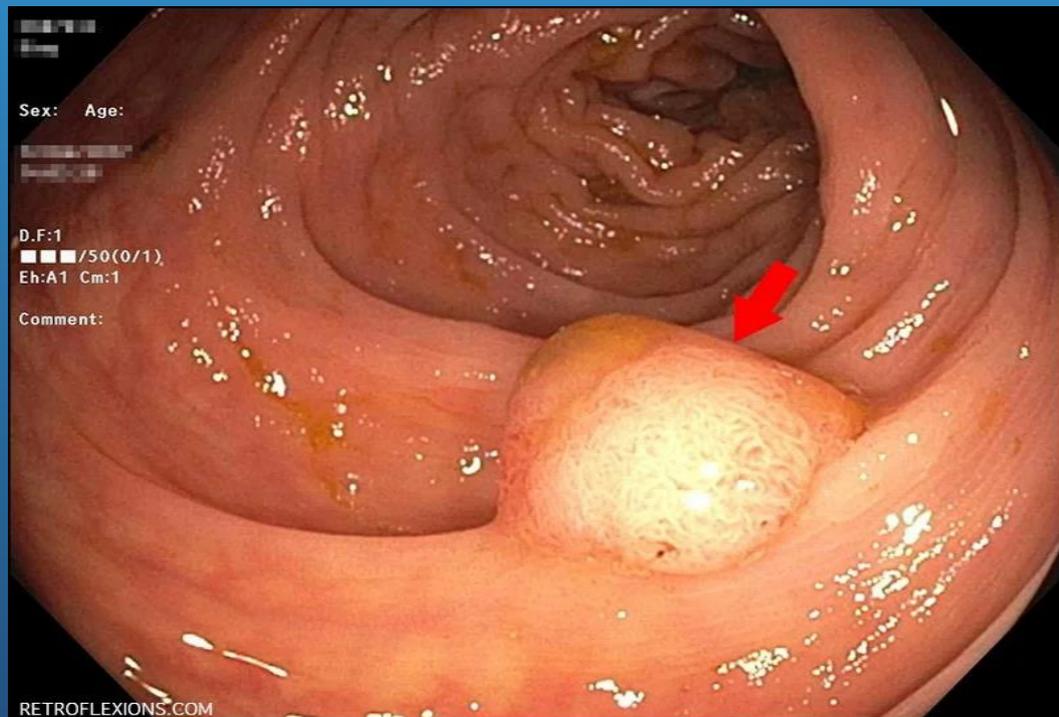
Surgery

Surveillance

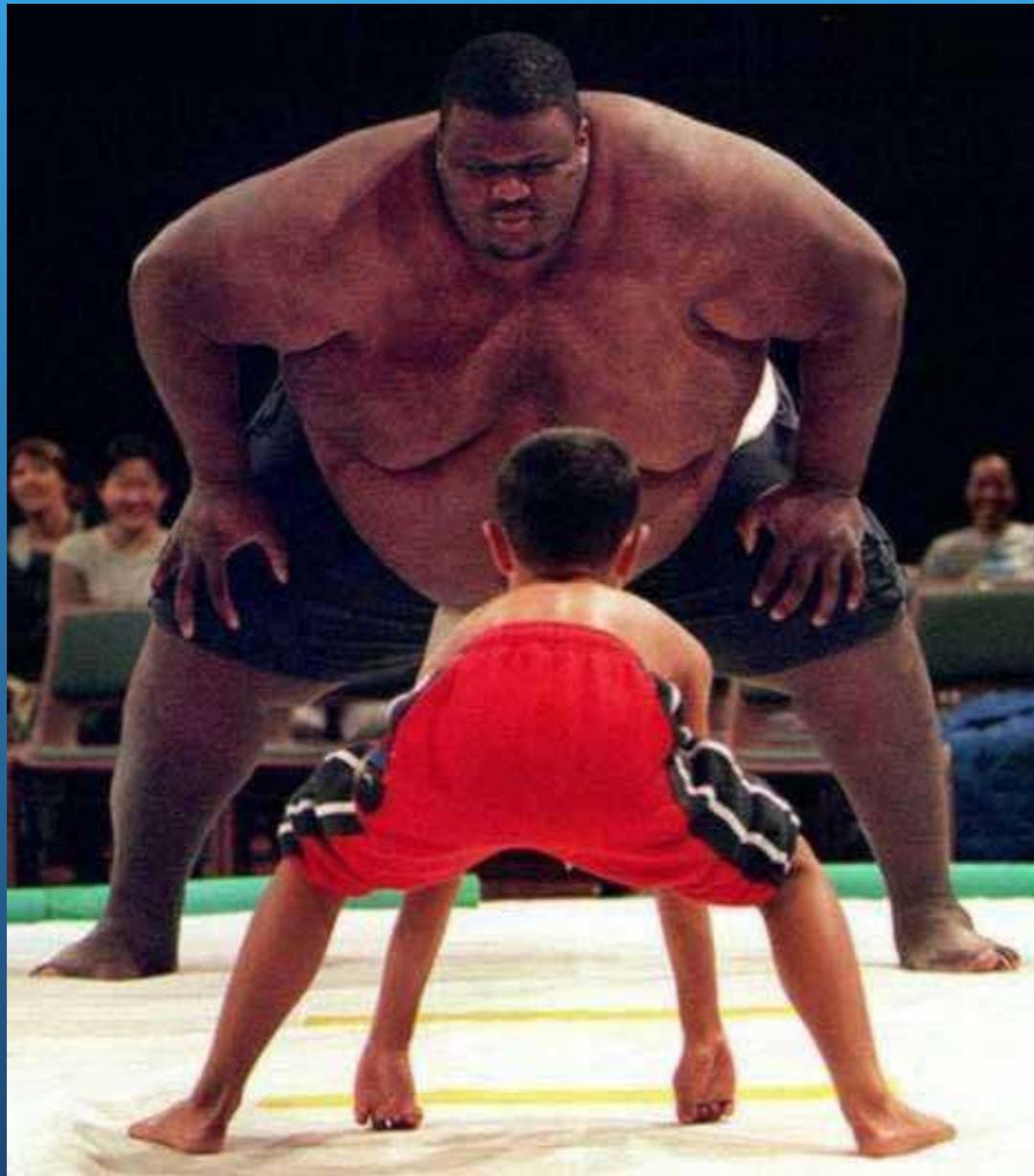
Polypectomy  
/ EMR



# Polyp - Cancer sequence 10 years

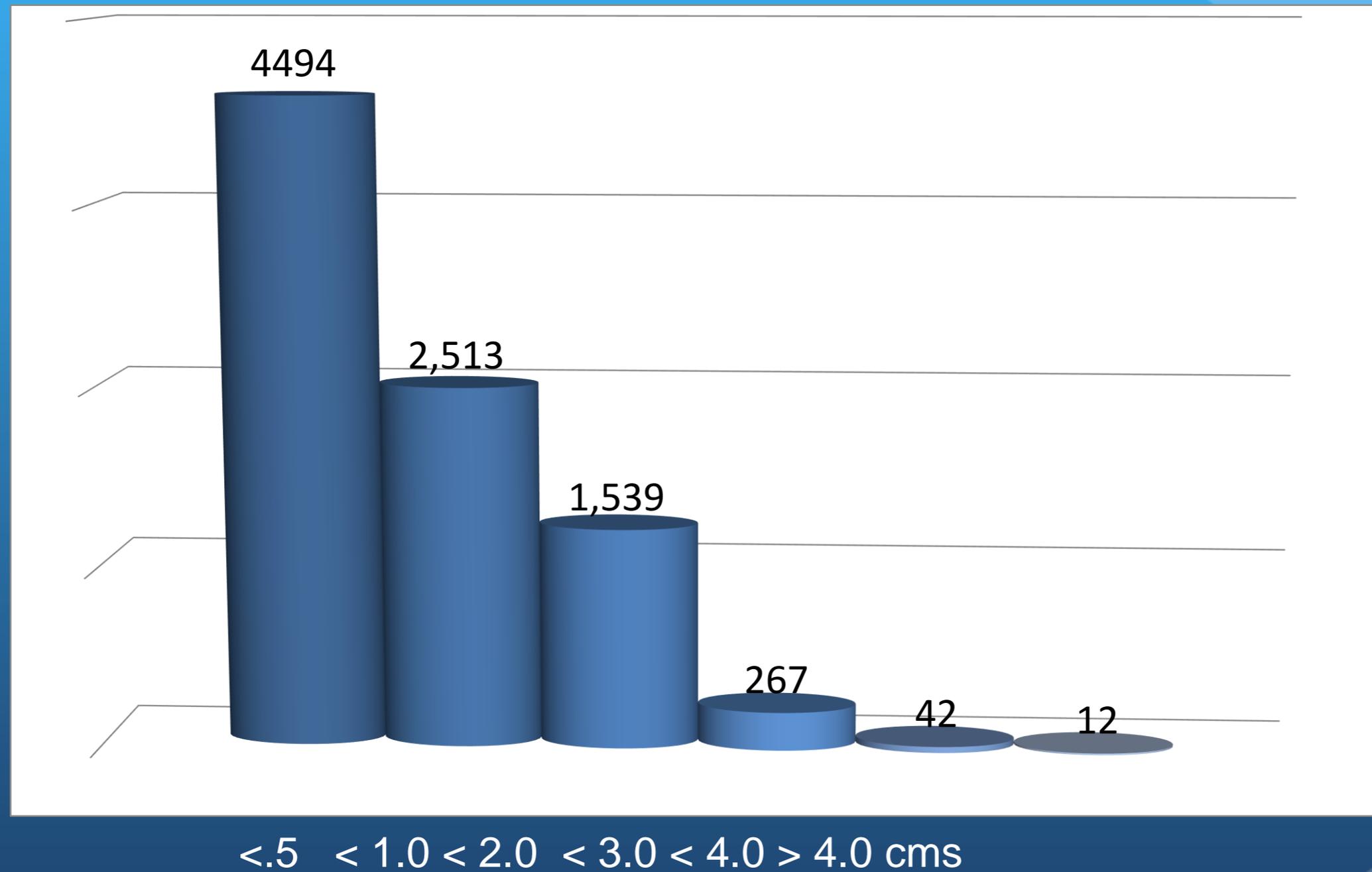


# Does Polyp size matter?



- $>10\text{mm}$  – yes
- $5 - 10\text{mm}$  – yes?
- $<5\text{mm}$  – unclear

# Adenomas (50% of Colonoscopies)



# Endomucosal Resection (EMR)

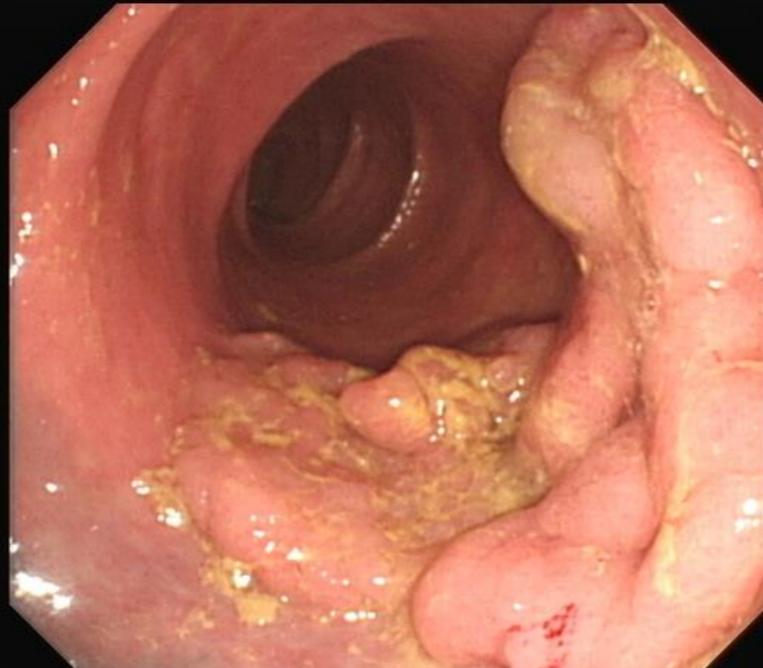
Name :

Sex : Age :  
D.O.Birth :

09/05/2016  
12:41:58

SCV:40

Cr: N Eh: A1  
Ce: O Z: 1.0



Physician :

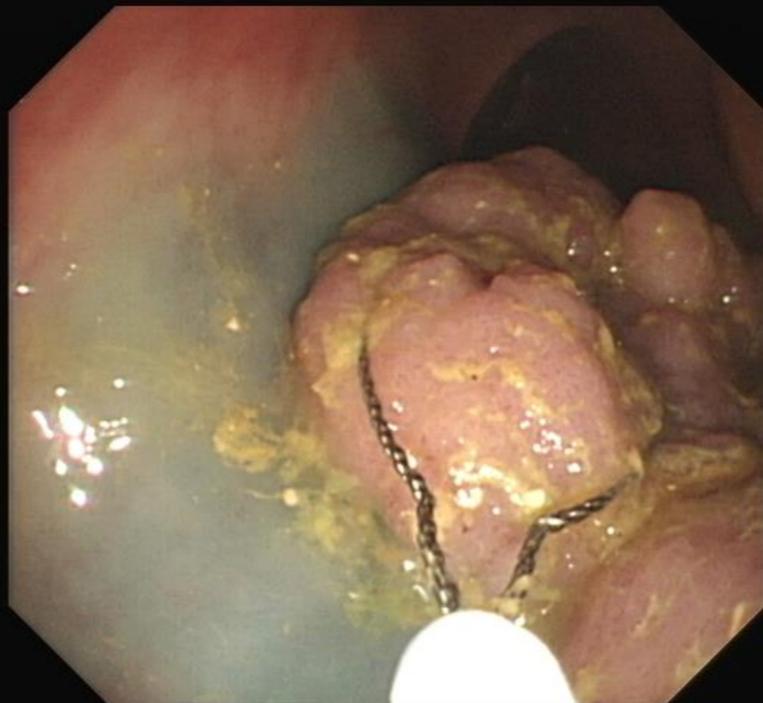
Name :

Sex : Age :  
D.O.Birth :

09/05/2016  
13:03:00

SCV:44

Cr: N Eh: A1  
Ce: O Z: 1.0



Physician :  
Comment :

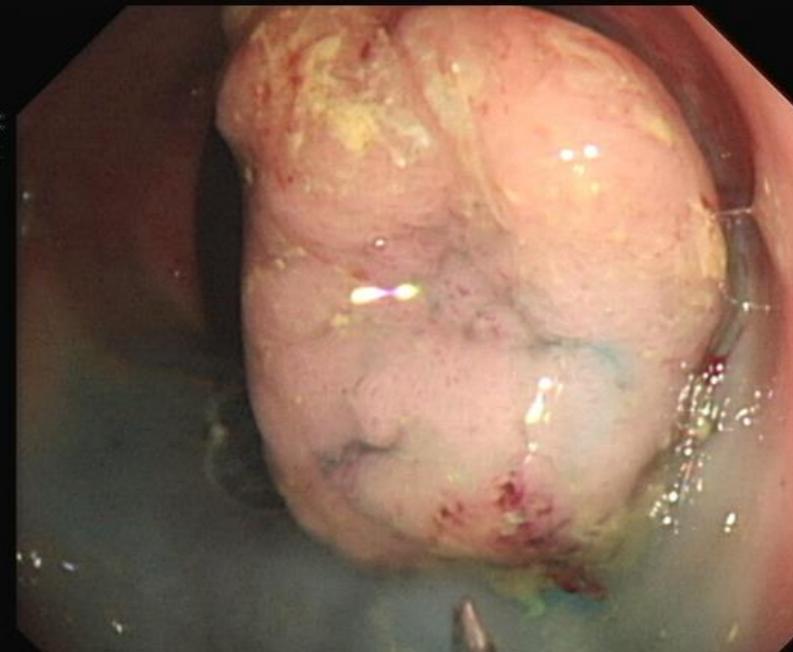
Name :

Sex : Age :  
D.O.Birth :

09/05/2016  
13:10:46

SCV:45

Cr: N Eh: A1  
Ce: O Z: 1.0



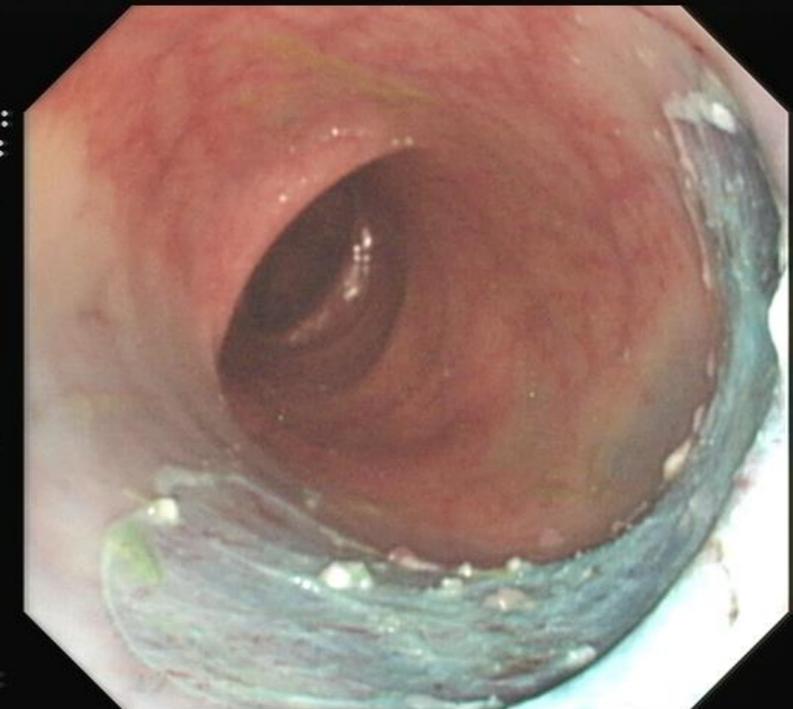
Name :

Sex : Age :  
D.O.Birth :

09/05/2016  
13:31:00

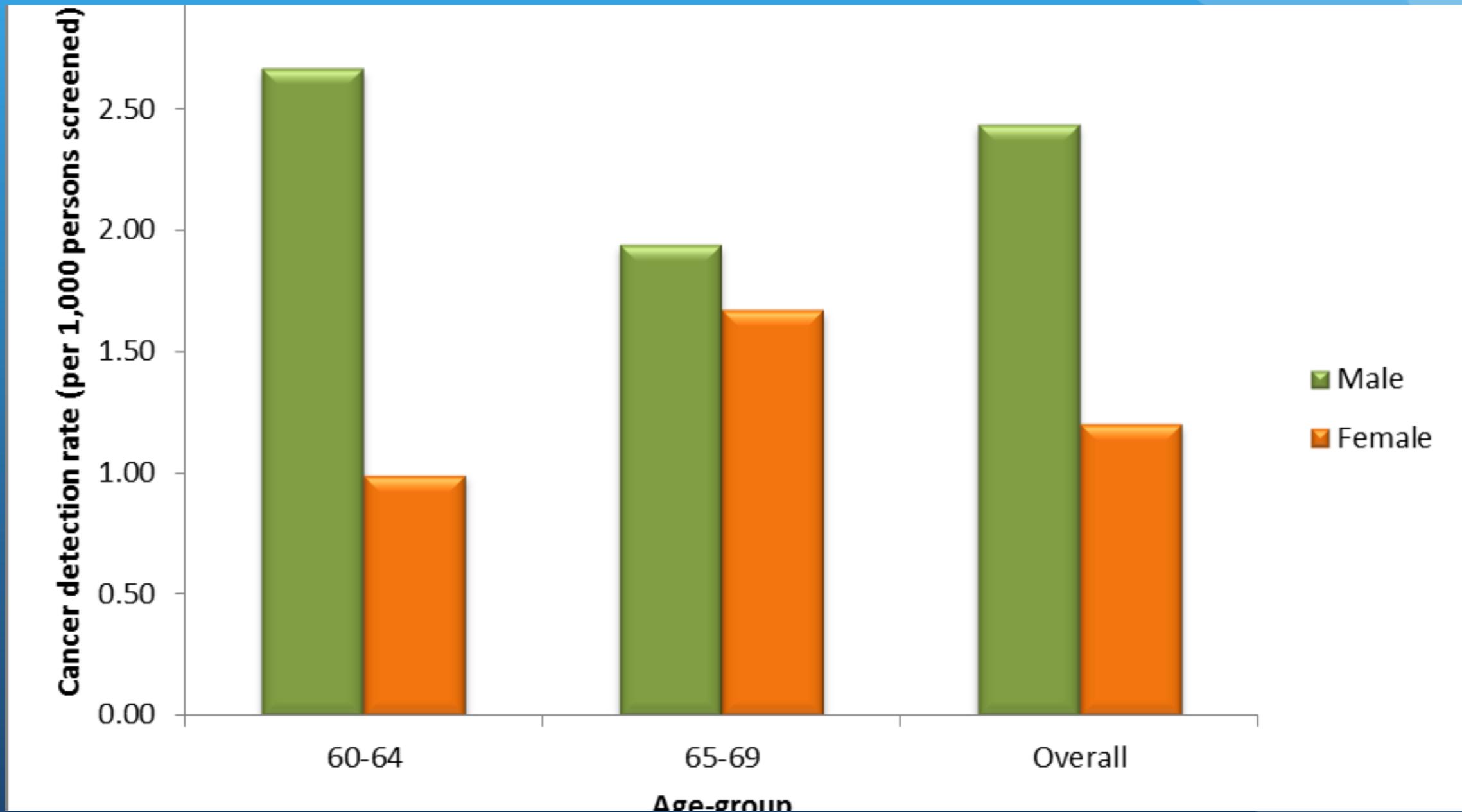
SCV:47

Cr: N Eh: A1  
Ce: O Z: 1.0



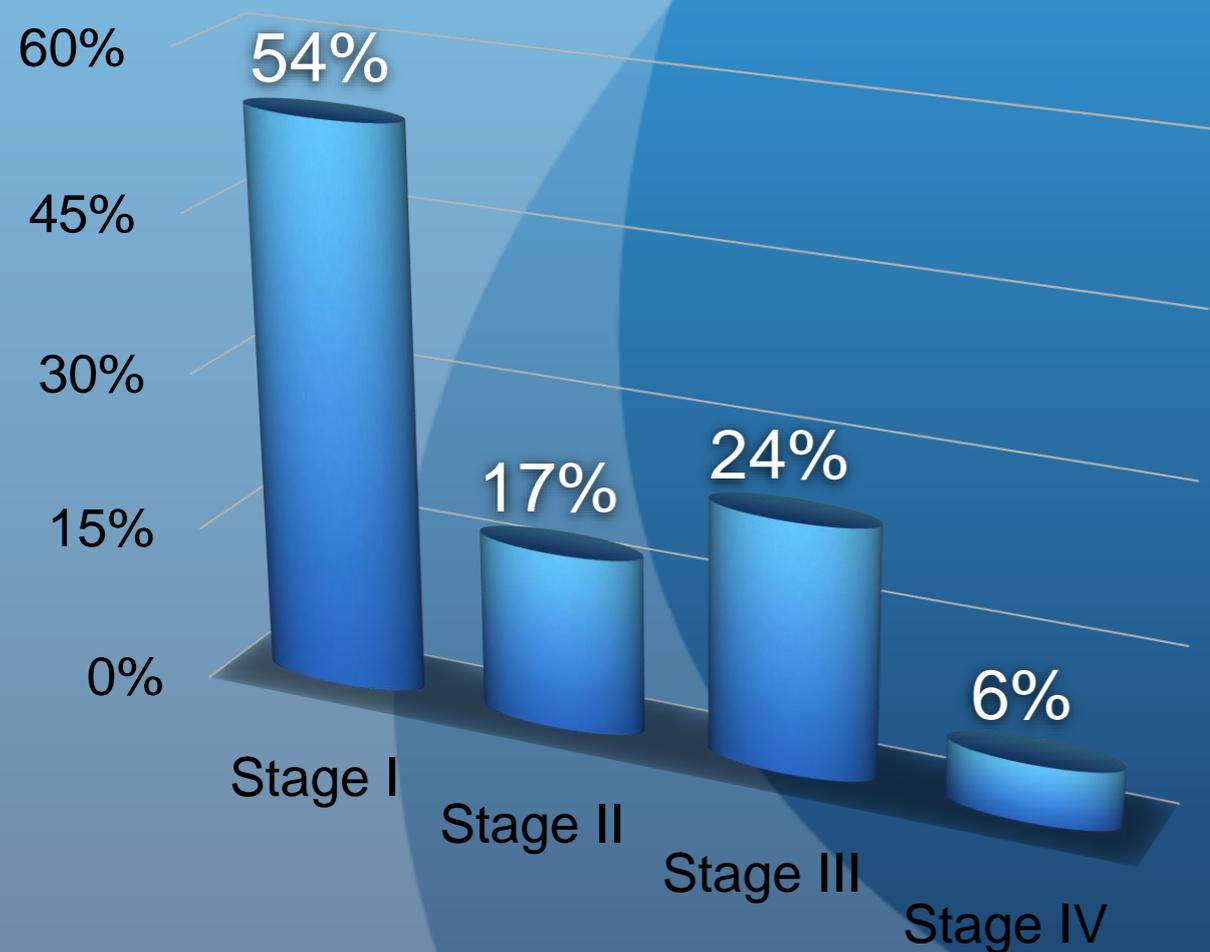
Physician :  
Comment :

# Cancer Detection (3-5%)

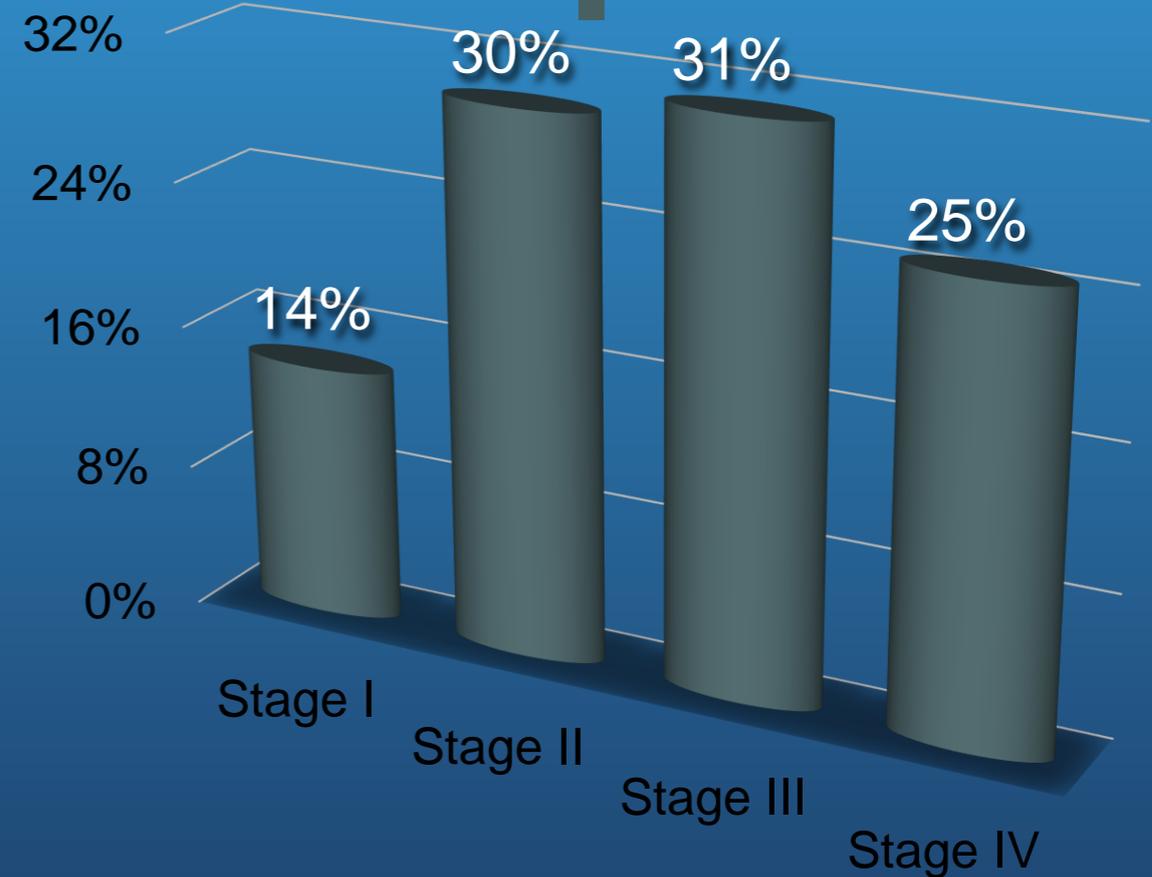


# Cancer staging

## Staging of screen detected CRCs



## Staging of symptomatic CRCs NCRI



# Achievements

- FIT rolled out nationwide 14 centres
  - 44% uptake
  - Increasing recognition
- 4-5% Cancer
  - major shift to earlier stage 1 & 2
- > 50% Adenoma detection
- Serrated lesions recognition
- EMR reducing resection rate
- Post colonoscopy CRC <3% (KPI)
- Mortality reduction? Too early to say

# Challenges



Covid Pandemic

Cyber attack

Interval Cancer

Medico-legal environment

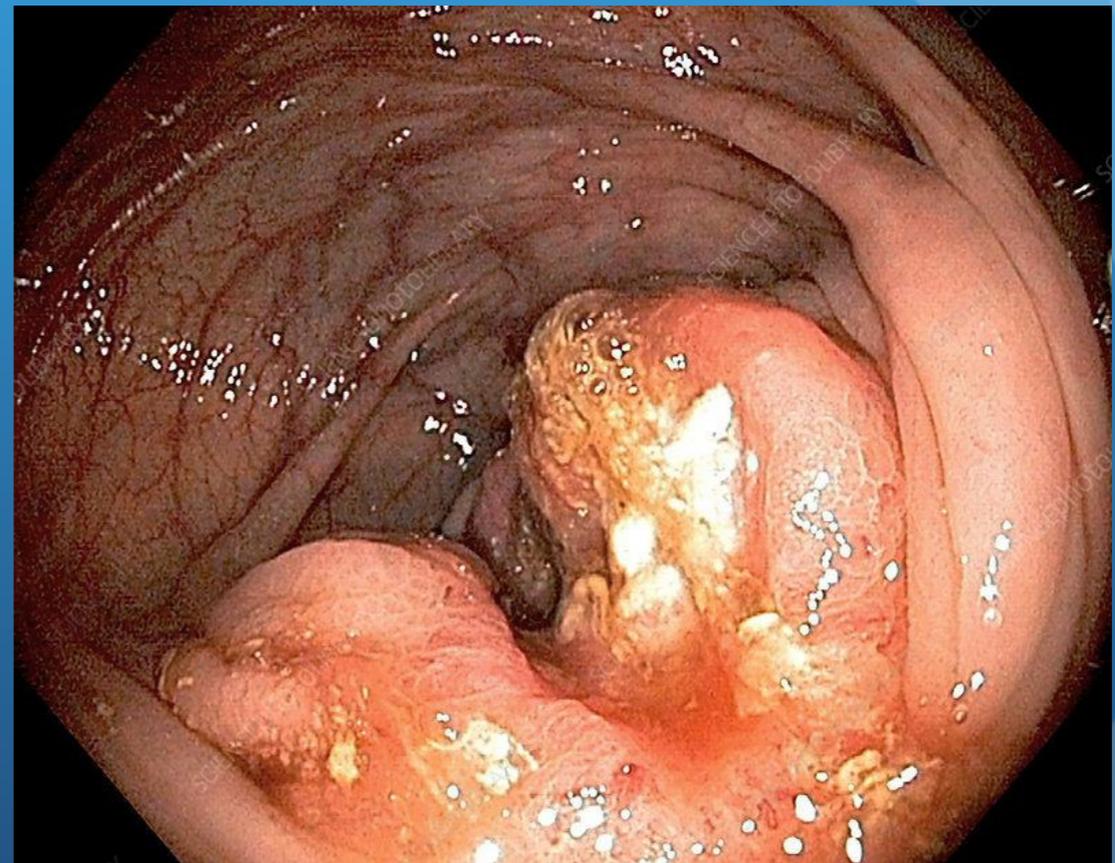
# Covid Pandemic



- Since March 2020
- Entire health service activity reduced
- Colonoscopy suspended x > 3/12
- Reduced capacity
- Gradual return to 'Normal' into 2021
- Reduction in FIT invitations to match colonoscopy capacity
- Cyber attack: compounded reduction in capacity

# Risk management / Impact on KPIs

- FIT
- Colonoscopy (<3/52)
- Regional differences (HSE v Voluntary IT)
- Interval cancers?
- Clinical outcome?

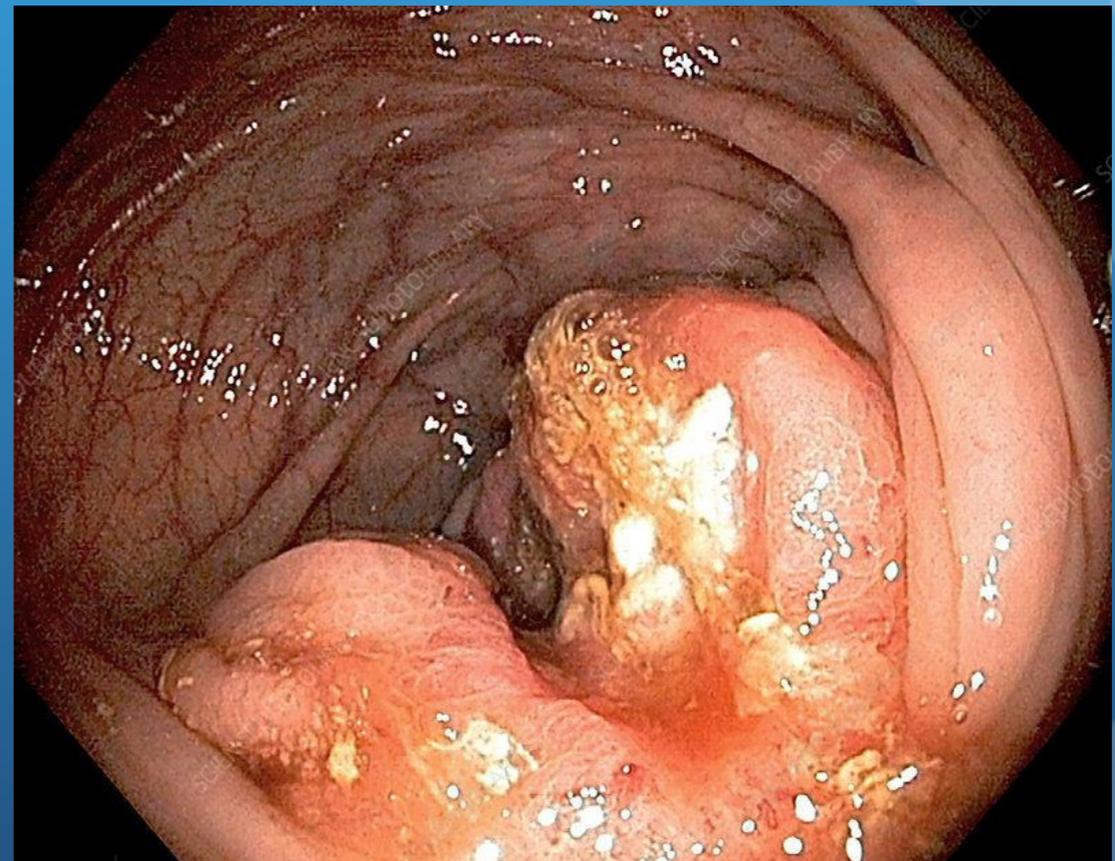


# Risk management

## Delayed Colonoscopy

### Adverse outcome?

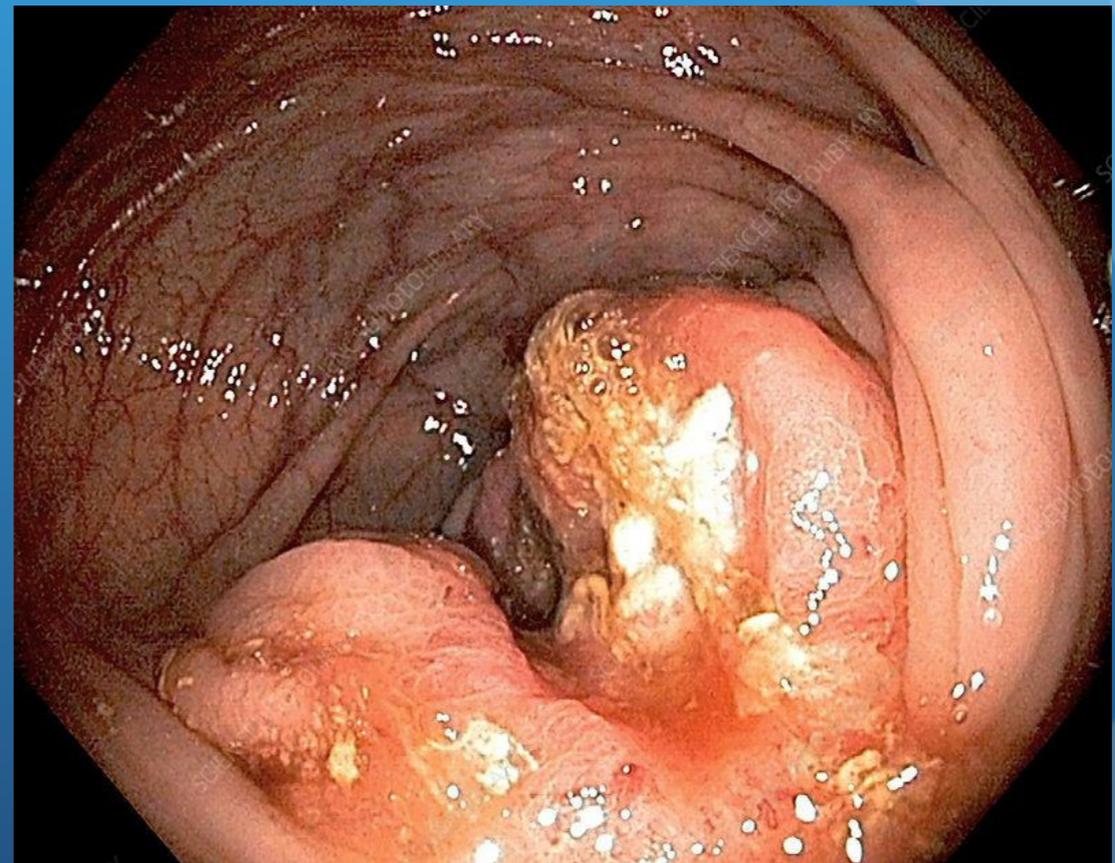
- FIT +ve
- Colonoscopy >3-8/12
- Cancer: 3%
- No adverse Clinical outcome
- Despite KPI breach



# Interval Cancers

## Key KPI

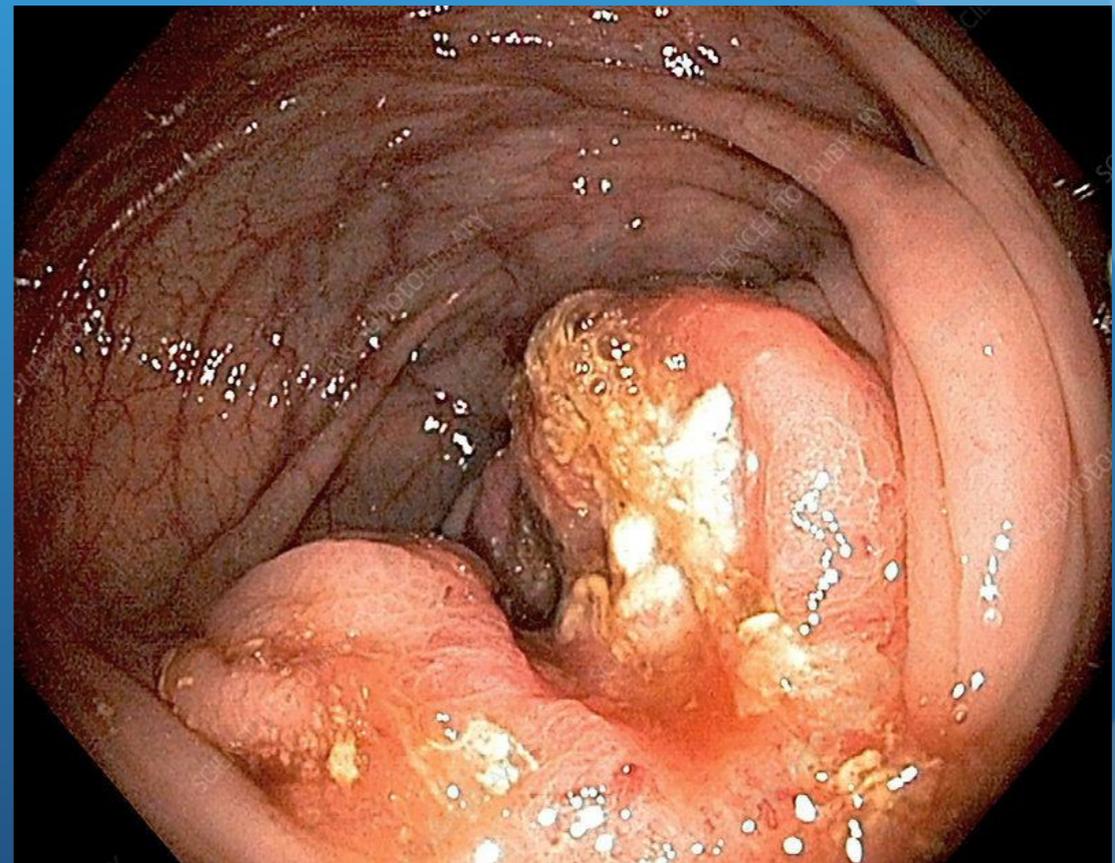
- Cervical controversy
  - No agreed KPI
- BreastCheck
  - KPI 1% (from 13%)
  - Cancer < 2 years
- Colorectal
  - FIT? No
  - Colonoscopy



# Key KPI - PCCRC

## *'Post Colonoscopy Colorectal Cancer'*

- IC Audit group
- FIT?
  - Cancer <3yrs following negative FIT
  - not measured
- Colonoscopy: PCCRC
- Cancer < 3 years after index colonoscopy
- 5%
- <2/1000
- To date, minimal numbers
- NCRI to verify



# Challenges



- Colonoscopy capacity
  - symptomatic waiting times
  - Post Covid
- Improving participation rates - esp. men
  - will increase pressure on colonoscopy capacity
- Need to expand programme to 55-74 age group
- Medico-legal environment (unique!)

# Cancer Genetics



- Circulating biomarkers
- Cancer
- Premalignant
- Sensitive
- Specific
- Cheap

# Do Doctors know it all?

‘I mean some doctor told me I had six months to live and I went to his funeral.’

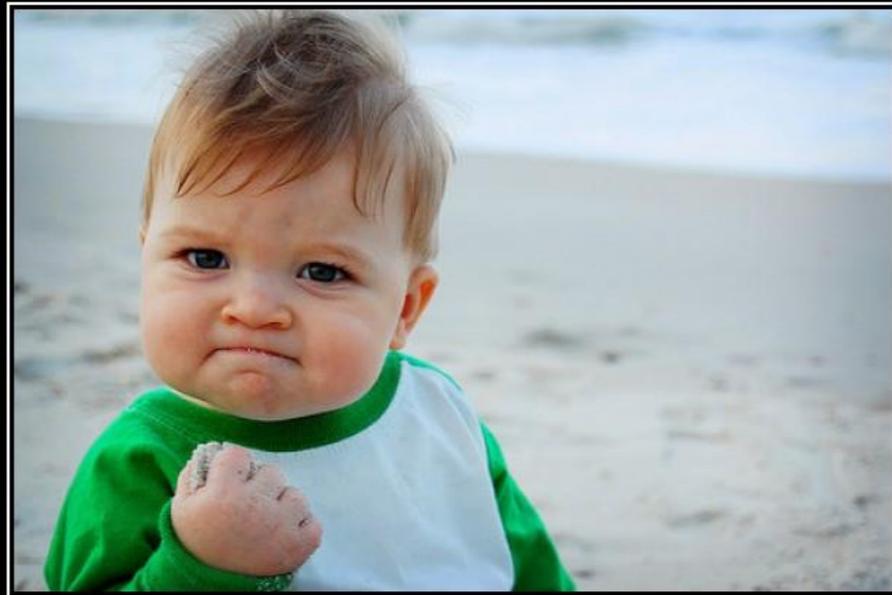


Keith Richards

# Future is positive....

## Acknowledgement

- NCSS / BowelScreen
  - Hilary Coffey
  - Mary Sheedy
  - Clinical Advisory Group
  - QA group
  - PEU



# S U C C E S S

Because you too can own this face of pure accomplishment

DIYDESPAIR.COM