

# Colorectal Screening

## Invitation vs Education

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## Invitation

- Direct approach to individuals
- Onus on health services

## Education

- Strategies to increase opportunistic screening
- Onus on individuals and physicians

# Proving Screening Works

Population-based randomised trials in which the *whole* group offered screening (including refusers and interval cancers) is compared with the control group



# Meta-Analysis of FOBT Trials (Relative Risks)

- Overall
  - 0.84 (CI 0.77 - 0.93)
  - 16% reduction in mortality
- Adjusted for compliance
  - 0.77 (CI 0.57 - 0.89)
  - 23% reduction in mortality

(Towler et al 1998)

# Interventions for increasing Uptake of Screening - A meta-analysis

- 23 databases
- 46,000 studies screened
- 65 studies met inclusion criteria

Jepson et al 2000 ( NHS HTA)

# Interventions for increasing Uptake of Screening

## - A meta-analysis

- Effective interventions
- Possibly effective interventions
- Ineffective interventions

Jepson et al 2000 ( NHS HTA)

# Effective Interventions

- Invitation appointments
- Invitation letters
- Invitation telephone calls
- Removal of financial barriers

Jepson et al 2000 ( NHS HTA)

# Possibly Effective Interventions

- Opportunistic screening
- Educational home visits
- Multicomponent community interventions

Jepson et al 2000 ( NHS HTA)

# Ineffective Interventions

- Printed or audiovisual educational materials
- Group educational sessions
- Individual educational sessions

Jepson et al 2000 ( NHS HTA)

# Cochrane Protocol

Interventions for improving uptake of  
population-based screening for colorectal  
cancer using FOBt

Flight et al 2007 ( Adelaide)

# FOBt Screening in France

- Organised screening in 22 departments
- Invitation by mail
- Free of charge to all aged 50-74

# EDIFICE Survey

- Nationwide telephone survey
- Jan 18 – Feb 2 2005
- 1609 subjects

Eisinger et al 2007

# EDIFICE Survey

- Socio-demographic characteristics
- Attitude to cancer screening
- Actual screening experience

Eisinger et al 2007

# EDIFICE Survey

## - multivariate analysis

6 variables correlated with uptake of FOBt screening:

-ve

- Afraid of results
- Age 50 –54 years

+ve

- Motivated by screening
- High educational level
- Concerned by screening
- Place of residence

Eisinger et al 2007

# EDIFICE Survey

## - Place of residence

- Living in department with organised screening
  - Proportion screened = 64%
- Living in department without organised screening
  - Proportion screened = 30%

OR 3.91 (2.49-6.16)

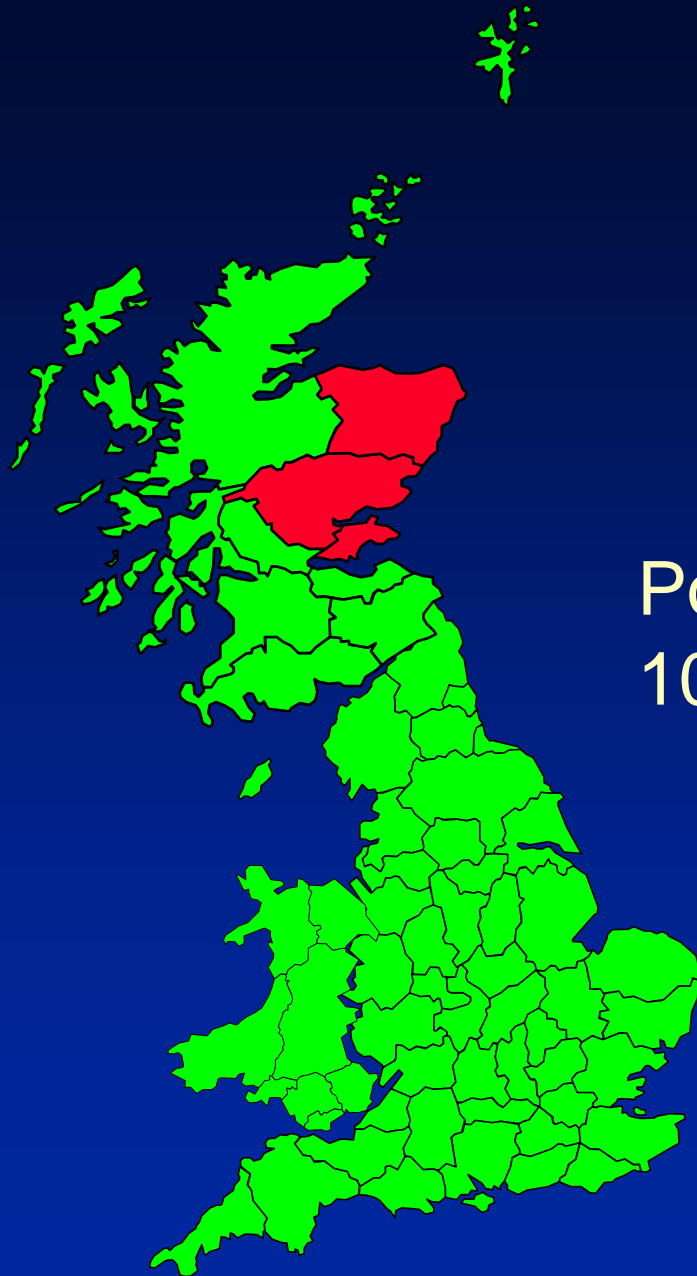
Eisinger et al 2007

# National UK Colorectal Cancer Screening Pilot

*Aim:* to test the feasibility of a National  
Screening Programme

# Screening Pilot

- Two sites, population ~ 1m
  - Coventry and Warwickshire
  - Grampian, Tayside and Fife
- Selected on the basis of competitive bids
- Two screening rounds completed in Scotland



Population 1.5 m  
100,000 invitees annually

# Scottish Screening Pilot

Start date: 29 March 2000

- Postal delivery of test kit from Centre
- Telephone help line
- One reminder test kit
- Repeat for weak positive
- Nurse interview

Scottish Bowel Screening Centre  
 Kings Cross  
 Clackmanton Road  
 DUNDEE  
 DD3 9EA

**NHS**  
 SCOTLAND

Date: 20 June 2008  
 CHI No.: 2312600010  
 Kit Number: 299732  
 Enquiries to: 0845 2700030

**PRIVATE & CONFIDENTIAL**  
 CAROLE MORTON  
 17 THE GYLE  
 EDINBURGH  
 EH1 5OH

Dear CAROLE MORTON

I would like to invite you for bowel screening. Finding bowel cancer at an early stage increases the chances of successful treatment and cure. Your name and address have been supplied from your health board records as you are within the eligible age range. More information is enclosed to help you decide whether or not to take part and to explain what to do. The test looks for very small amounts of blood in your bowel motion. This identifies the few people who may need further investigations. We will be in this invitation comes at an inappropriate time please accept our apologies. We will be sending a reminder letter within a month if we have not heard from you. If you decide not to be screened you need take no action. Your decision will not affect any care you receive from your GP or hospital.

**Next Step:**

- Please return your completed test kit as soon as you can in the envelope provided.
- Your result will be sent to you within two weeks.
- All information will be treated in confidence.

**Please phone the Helpline if:**

- You have any disabilities that prevent you completing the test kit.
- You need information translated into another language.
- Your details need updating - do not change the kit as we cannot test altered kits.
- Do not enclose letters with your kit, as they will be destroyed in the automated opening process.

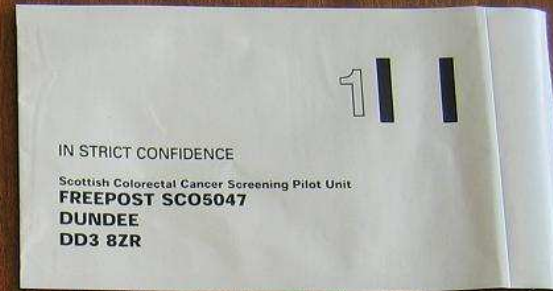
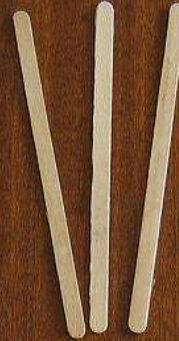
If there is anything that you are unsure about please call our specially trained staff on the Helpline.

Yours sincerely

PROFESSOR A MOWAT  
 LEAD CLINICIAN (GRAMPIAN)

Helpline 0845 2700030  
 Open 9.30am - 4.30pm Monday to Friday  
 Answer phone available outside these hours.  
 Please keep this letter in case you need to contact us.

**REGULAR SCREENING FOR BOWEL CANCER CAN SAVE LIVES**  
 If you did the kit last time please do it again.



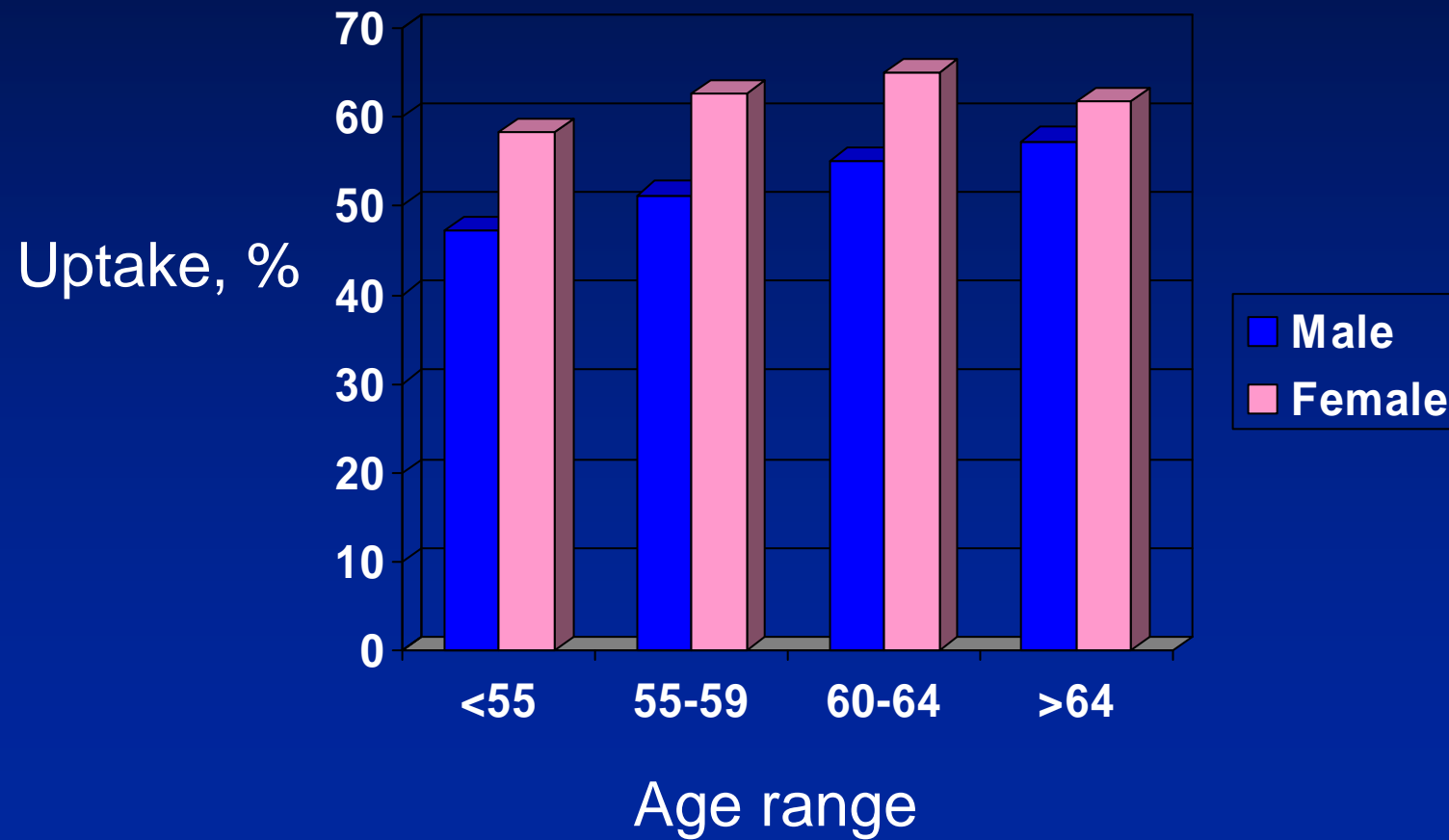
# Key Performance Indicators (KPIs)

1. Uptake
  - overall
  - by deprivation category
  - response rate to first invitation
  - response rate to reminders
2. Time to colonoscopy
3. Proportion of +ves undergoing colonoscopy
4. Colonoscopy completion rate
5. Colonoscopy complication rate
  - admissions
  - perforations
  - bleeding
  - deaths
6. Positivity rate
7. Cancer Detection Rate
8. Stage at diagnosis (incl. polyp cancers)
9. Adenoma detection rate
  - overall
  - high risk
10. PPV
  - for cancer
  - for adenoma
  - for high risk adenoma
  - for any neoplasia

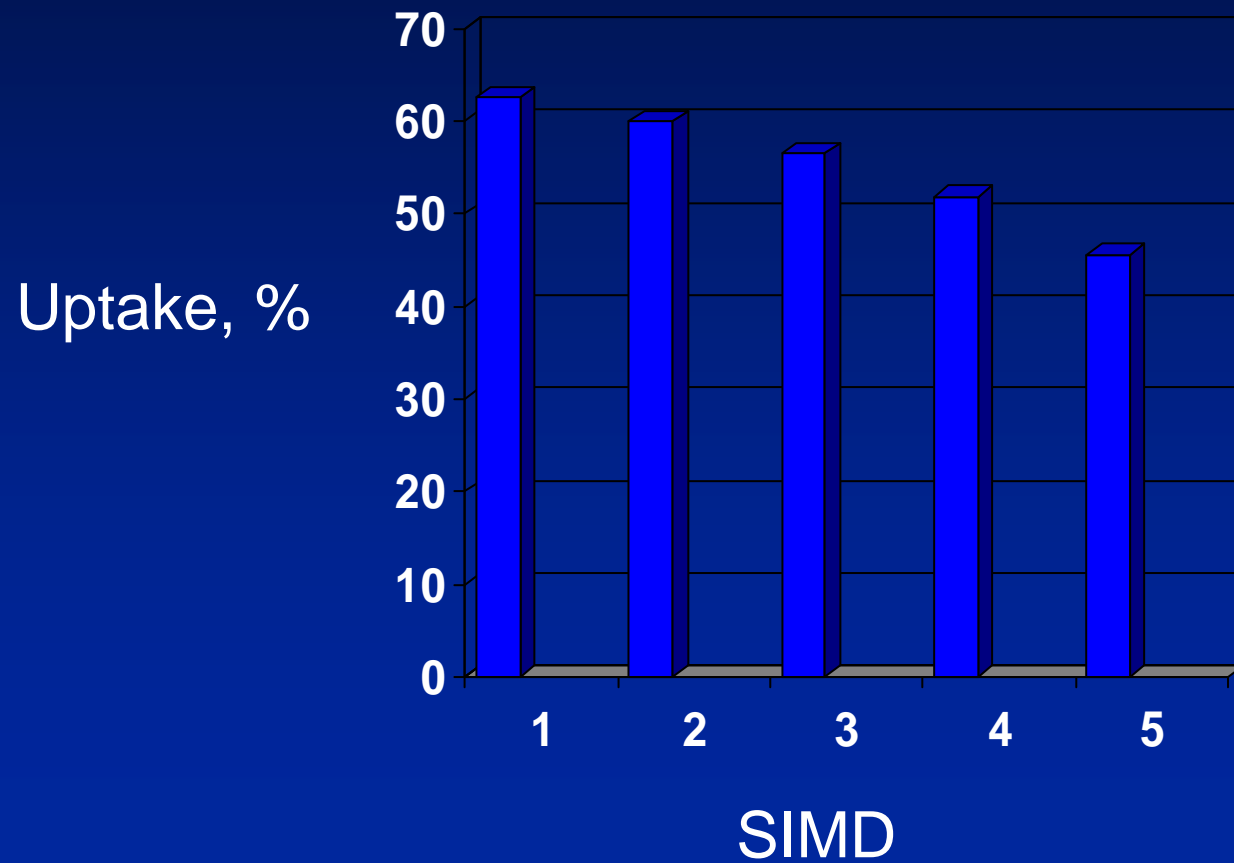
# KPI 1 (Uptake)

	1 <sup>st</sup> round	2 <sup>nd</sup> round
Overall	55%	53%
1 <sup>st</sup> invite	43.8%	51.5%

# Age and Sex



# Deprivation Category



# KPI 1 (Uptake)

	2 <sup>nd</sup> round
Non-responders in 1 <sup>st</sup> round	13.8%
Responders in 1 <sup>st</sup> round	85.4%

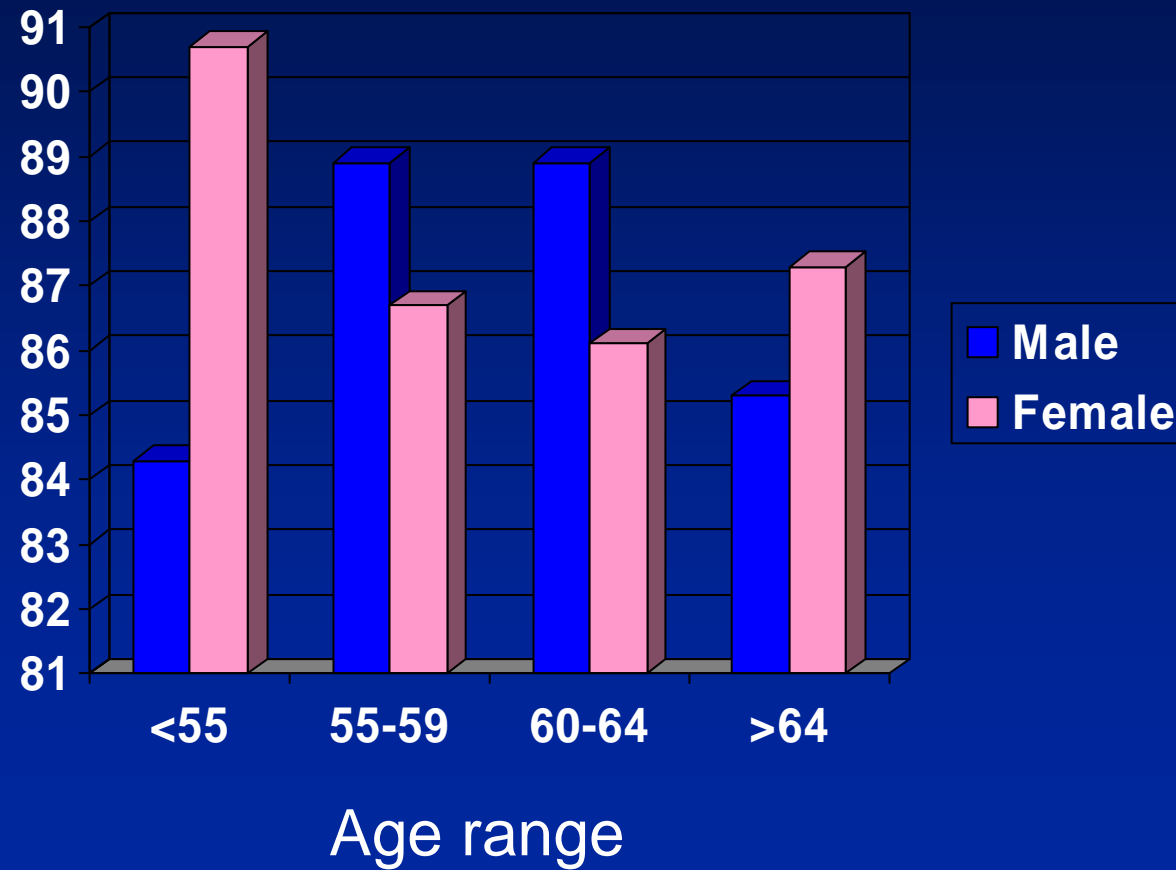
# KPI 3

(Proportion of FOBT positive individuals undergoing colonoscopy)

1 <sup>st</sup> round	2 <sup>nd</sup> round
85.5%	89.5%

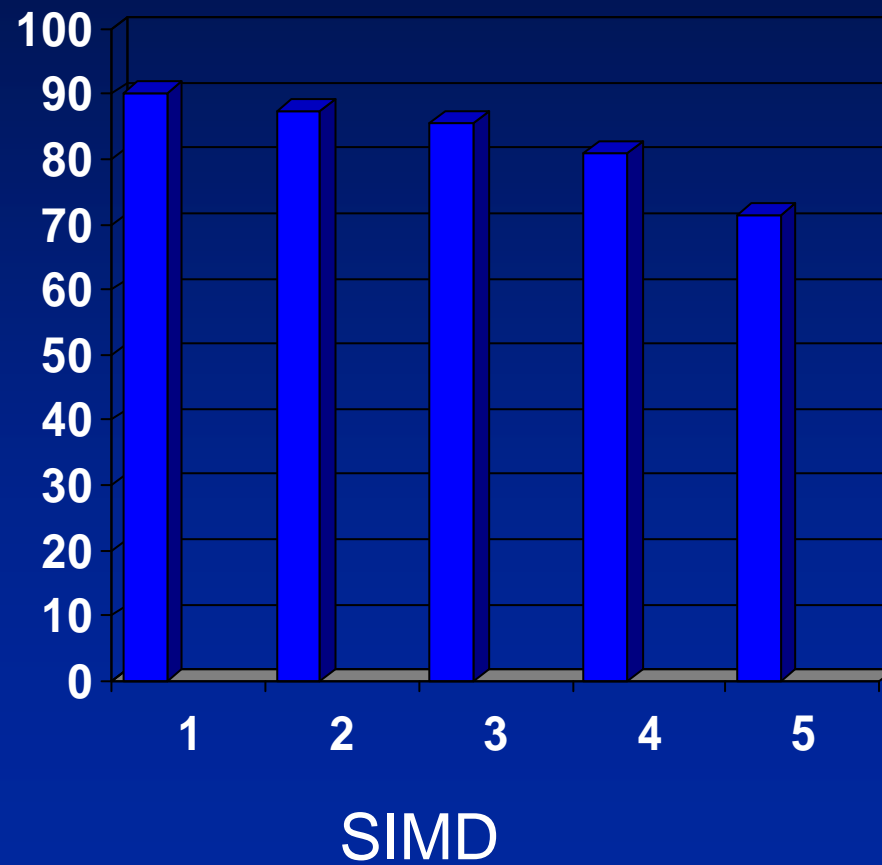
# Age and Sex

Percentage  
having  
colonoscopy



# Deprivation Category

Percentage  
having  
colonoscopy



# KPI 6 (FOBT Positivity)

1 <sup>st</sup> round	2 <sup>nd</sup> round
2.07 %	1.90%

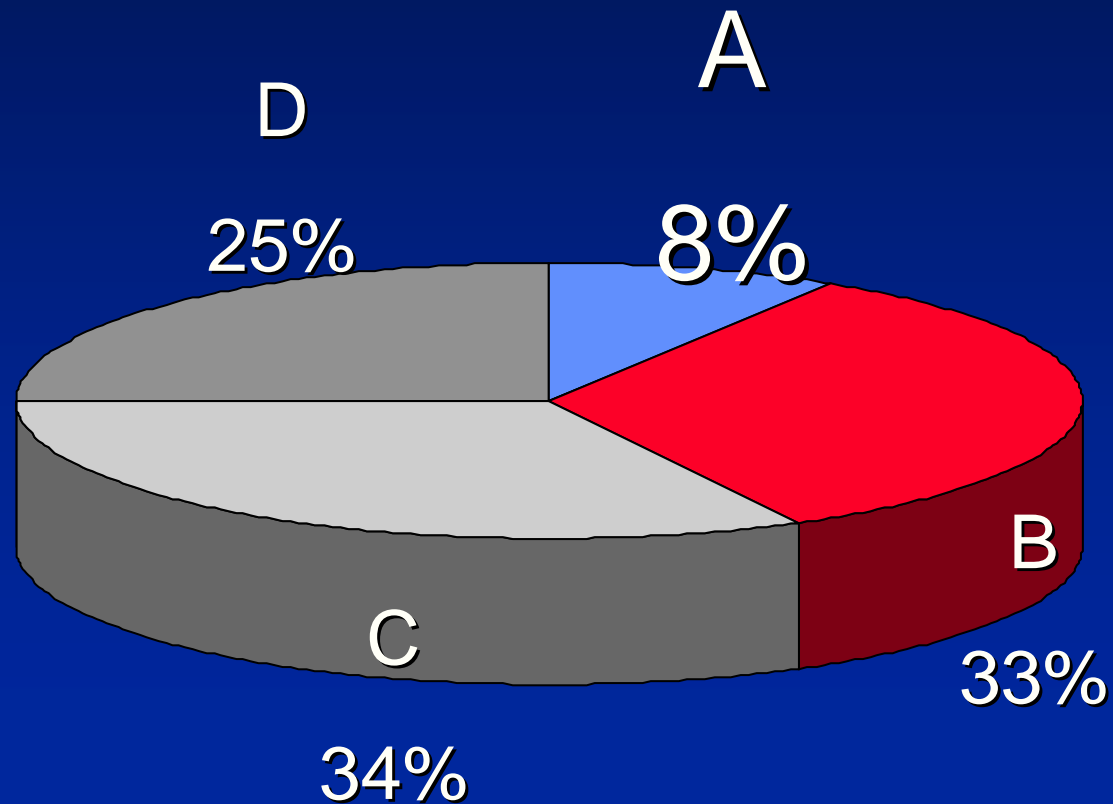
# KPI 8

## (Stage at diagnosis)

Stage	1 <sup>st</sup> round	2 <sup>nd</sup> round
A	49.2%	38.4%
B	20.3%	25.8%
C1	18.1%	20.5%
C2	2.8%	3.7%
D	7.1%	1.9%
Polyp	17.8%	12.6%
Unknown	2.5%	10.0%

# Stage Distribution of Symptomatic Colorectal Cancer (n=479)

(NHS Tayside only, May 2000 – April 2002)



# KPI 10 (PPV)

PPV	1 <sup>st</sup> round	2 <sup>nd</sup> round
Cancer	12.0%	6.8%
Adenoma	36.5%	29.5%
HR Ad	4.3%	2.9%
All neopl.	48.5%	36.3%

# Interval Cancers

(All cancers diagnosed in the population who responded to the 1<sup>st</sup> round screening invitation within 2 years of their FOBT result)

	Number	%
Screen-detected	354	58.4
True Interval	180	29.7
Missed on colonoscopy	7	1.2
Miscellaneous	65	10.7
Total	606	100

# Scotland

Health Department Letter –

Instructions to NHS Boards to  
implement the Bowel Cancer  
Screening Programme by 2009

Scottish Executive, February  
2006



# Conclusions

- Positivity and PPV fall in second round
- Uptake around 50%
- Males and deprived communities need special attention