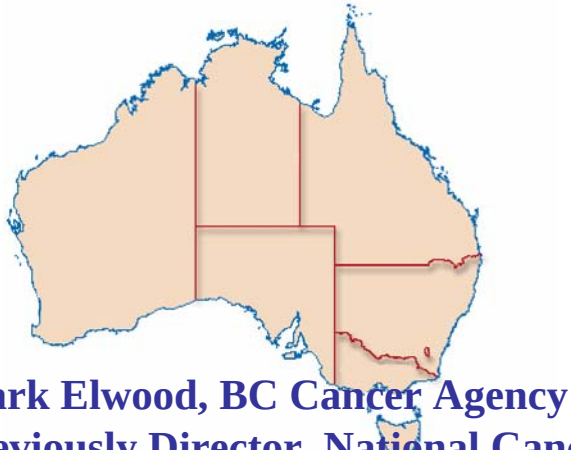
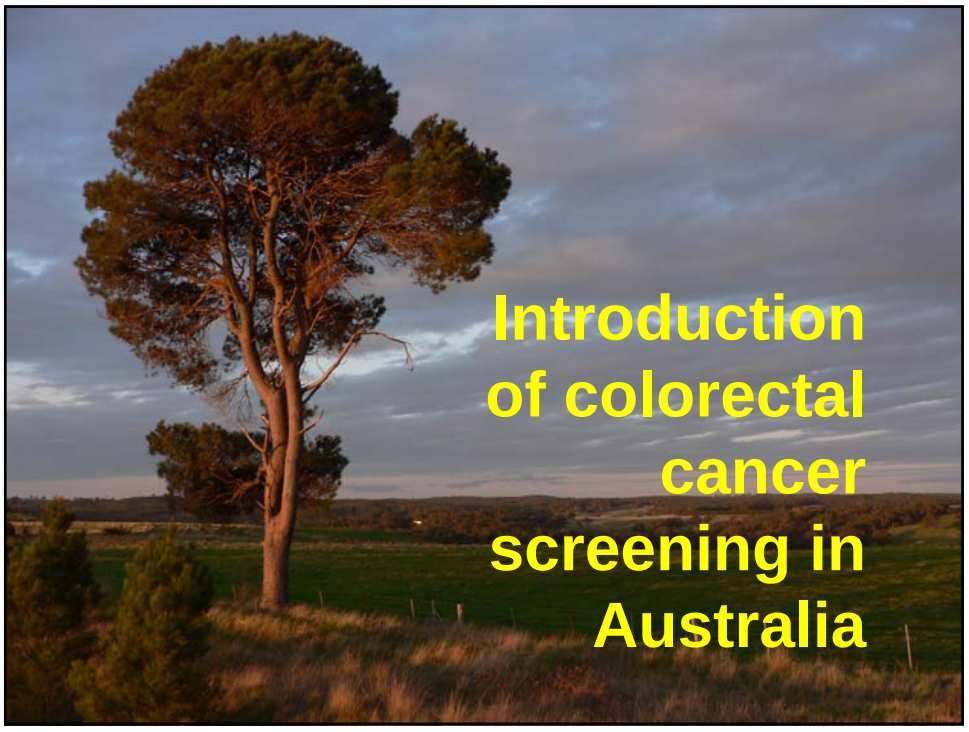
Colorectal cancer screening: an international viewpoint

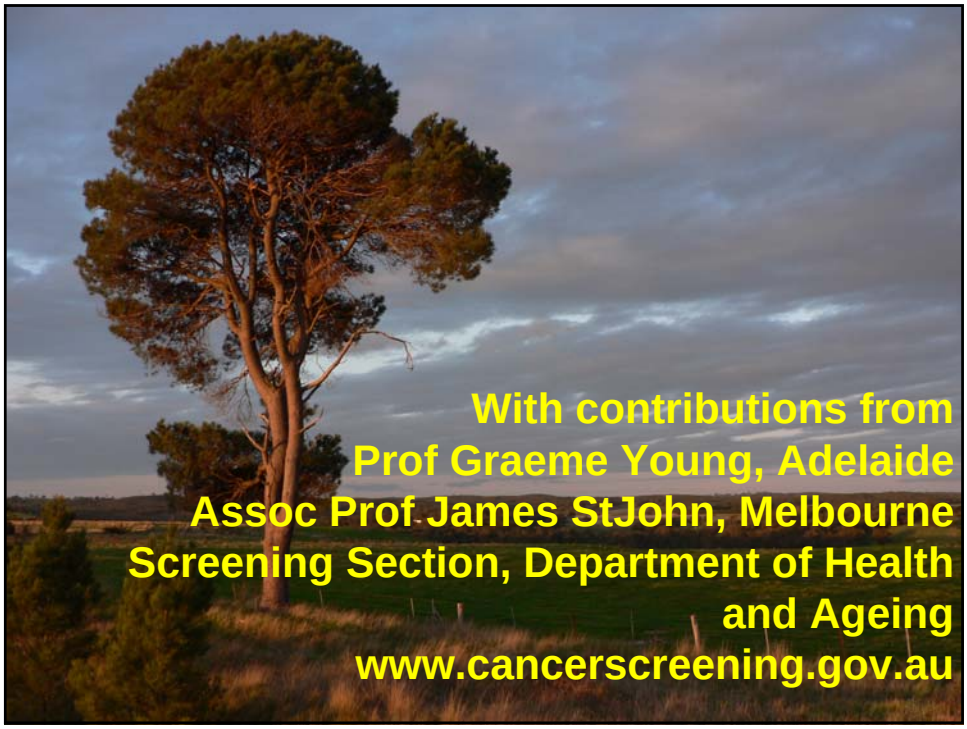


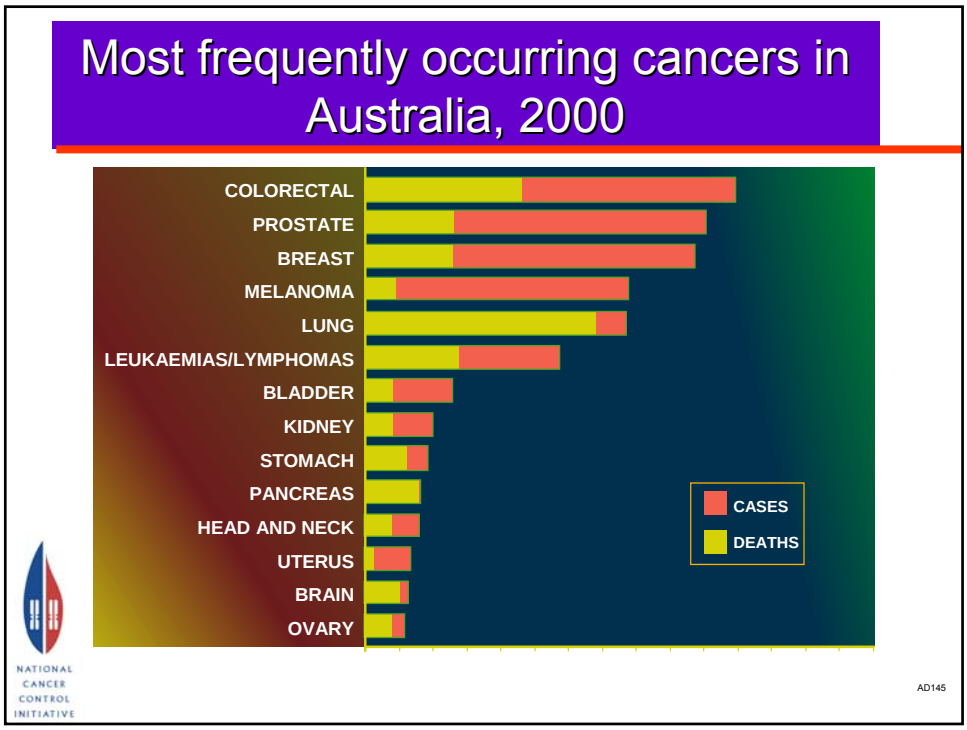
Mark Elwood, BC Cancer Agency
Previously Director, National Cancer Control Initiative, Australia

NATIONAL CANCER CONTROL INITIATIVE



Cette présentation a été effectuée le 26 octobre 2006, au cours du Symposium "La santé publique et le dépistage du cancer : espoirs et réalités" dans le cadre des Journées annuelles de santé publique (JASP) 2006. L'ensemble des présentations est disponible sur le site Web des JASP, à l'adresse http://www.inspq.qc.ca/jasp.


With contributions from
Prof Graeme Young, Adelaide
Assoc Prof James StJohn, Melbourne
Screening Section, Department of Health and Ageing
www.cancerscreening.gov.au


Most frequently occurring cancers in Australia, 2000
COLORECTAL
PROSTATE
BREAST
MELANOMA
LUNG
LEUKAEMIAS/LYMPHOMAS
BLADDER
KIDNEY
STOMACH
PANCREAS
HEAD AND NECK
UTERUS
BRAIN
OVARY
CASES
DEATHS
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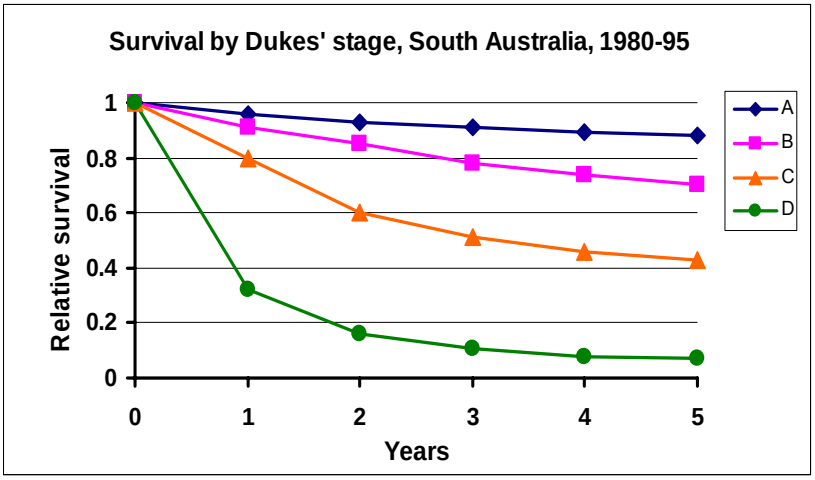
AD145

Survival by stage: South Australia



Screening using faecal occult blood tests

Four randomised trials:

- **Minnesota USA hydrated tests, volunteer group, started 1975, published 1993**
- **Nottingham UK general practice pop, started 1981, published 1996**
- **Funen, Denmark; general pop, started 1985, published 1996**
- **Gothenburg, Sweden; general pop, started 1982, published 1994**

AHTAC (Aust Hlth Tech Advisory Comm) report on screening for bowel cancer – Dec 1997

Australia should develop a program for colorectal cancer screening by FOBT for the average-risk population (well population aged over 50)

The program should commence with preliminary testing involving a number of pilot and feasibility studies

NATIONAL CANCER CONTROL INITIATIVE

National Cancer Control Initiative proposals for a pilot study, 1998, 99

Involving 200+ stakeholders:

- **Deliver the screening program within the existing system for service delivery**
- **Ensure high quality care**
- **Have a smooth interface between screening and diagnostic follow-up**
- **Collect robust data and develop and maintain a register**

NATIONAL CANCER CONTROL INITIATIVE

National Cancer Control Initiative proposals for a pilot study, 1998, 99

Some issues:

- **Avoid the word 'research'**
- **Invitation process from health insurance; reqd legislation**
- **Pilot areas decided by demographics**
- **Pilots to be managed directly by federal health department**

NATIONAL CANCER CONTROL INITIATIVE

- European results published 1996
- AHTAC report 1997
- Proposals for pilot studies 1998, 1999

NATIONAL CANCER CONTROL INITIATIVE

- European results published 1996
- AHTAC report 1997
- Proposals for pilot studies 1998, 1999
- Peer-reviewed cancer clinical guidelines recommend biennial FOBT age 50 y and older, 1999
- Cancer Strategies Group highlights CRC screening as a priority, and conducts economic analysis: estimate $16,000 per DALY gained.

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- Federal funding for pilot in budget May 2000
- Pilot projects start Nov 2002 – April 2003

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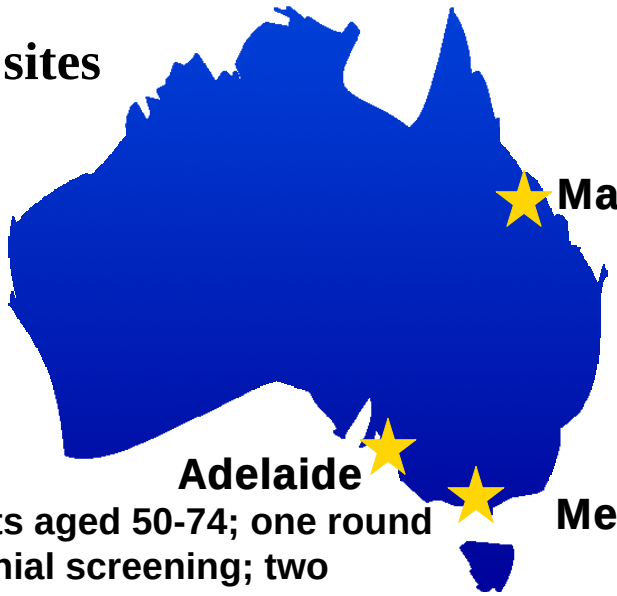
Pilot sites



Subjects aged 50-74; one round of biennial screening; two immunochemical tests compared. Total invited 57,000

FEATURES OF THE PILOT

- **Register based within the federal Health Insurance Commission**
- **Invitation and kits mailed to total of 57,000 people aged 55-74 in three areas chosen on demographic criteria; one reminder at 6 wks**
- **Self testing kits returned by mail**
- **Two immunochemical tests (Bayerdetect and !nform) compared**
- **FOBT results sent to participants, GPs and central register**
- **Phone helpline set up**

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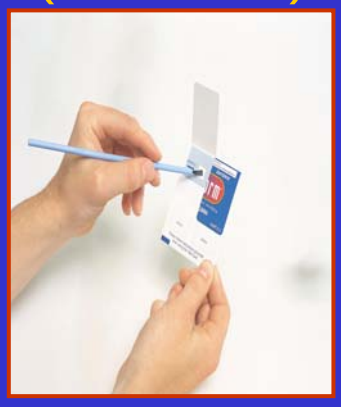
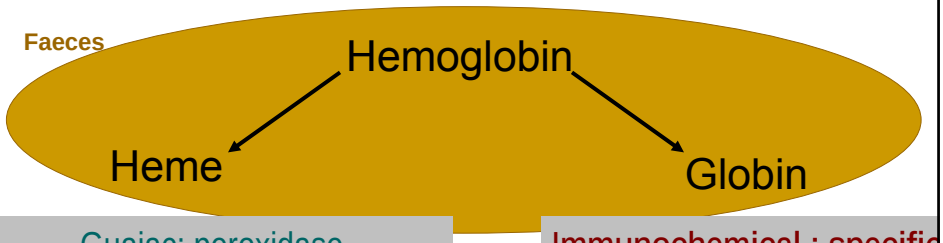
Bayer Detect

!nform (Enterix)



Both tests require samples from each of two bowel motions.

Immunochemical tests



Guaiac; peroxidase.

Interference by
Meat, vegies, vitamin C, NSAIDs.

Detects bleeding from
Stomach, small & large intestine.

chemical

Immunochemical.: specific to human globin

No interference.

Detects bleeding from large intestine.

immuno

From: Prof G Young

Advantages of immunochemical tests

- *Make it easier for screenee and improve participation*
  - **Remove need for diet and drug restriction**
- *Improve sensitivity*
- *Improve specificity*
  - **Selectively target colonic bleeding**
  - **Avoid diet and drug interference**
- *Improve discrimination and quality control*
  - **Easier-to-read endpoint**
  - **Allow quantification**
  - **Allow automation**

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From: Prof G Young

Guaiac tests

- **How to prepare for the test:**
- Do not consume red meat, any blood-containing food, cantaloupe, uncooked broccoli, turnip, radish, or horseradish for 3 days prior to the test.
- You may need to discontinue drugs that can interfere with the test such as vitamin C and aspirin if possible. Check with your health care provider regarding medication changes that may be necessary.

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Participation

- 56,907 invitations issued
- 25,840 (45.4%) completed FOBTs
- Mackay 57.5%, Adelaide 46.3%, Melbourne 39.9%
- Participation higher with Bayer detect 47.2% than !nform 43.6%
- Only local publicity

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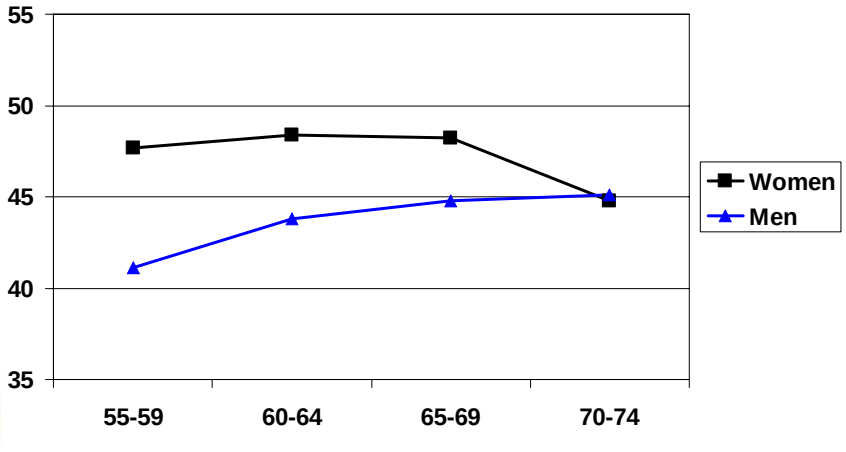
Participation by age & sex



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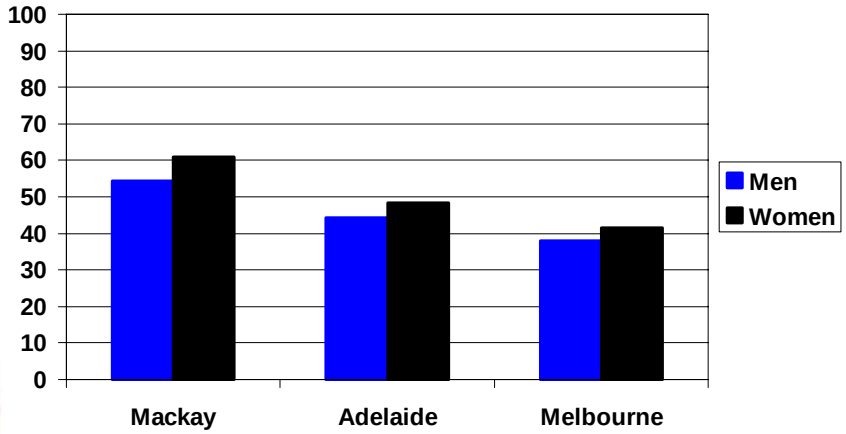
Participation by centre



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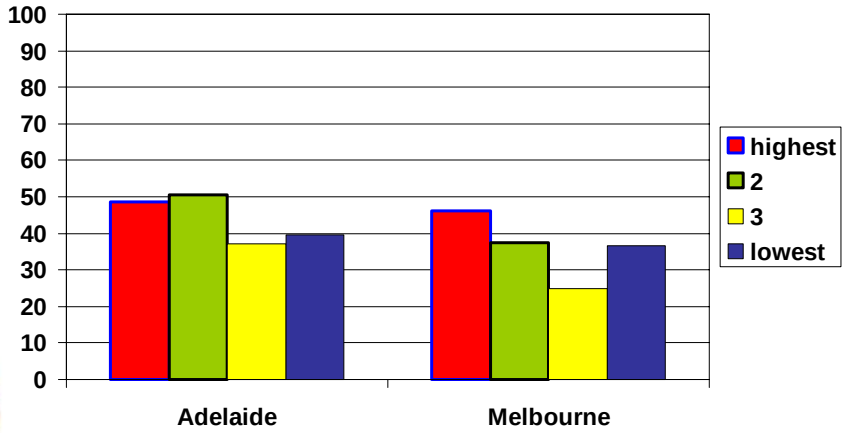
Participation by socio-economic group (post code)



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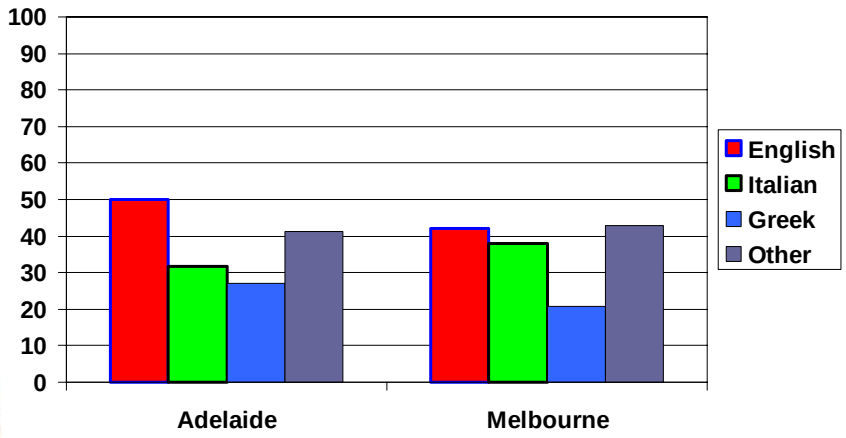
Participation by preferred language



NATIONAL CANCER CONTROL INITIATIVE

Positivity rates

- 56,007 invitations issued
- 27,064 (45.4%) completed FOBTs
- 25,668 (95%) satisfactory
- **Positivity rate 9.0 %**
- Positivity Bayer detect 8.2%, !nform 9.9%

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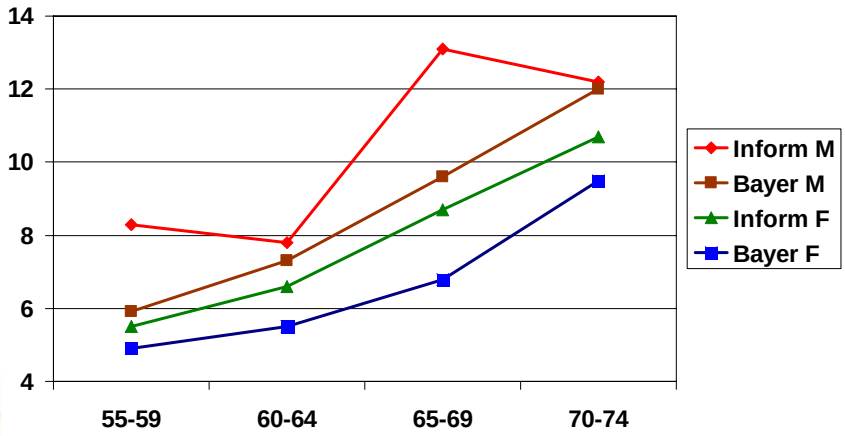
Positivity by age, sex and test: overall 9%

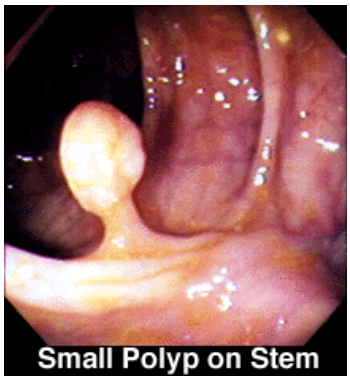


NATIONAL CANCER CONTROL INITIATIVE

Available data on subjects with positive tests

Colonoscopy (n = 1265)

- Cancer: 67 (5.3%)
- Advanced adenoma: 176 (13.8%)



NATIONAL CANCER CONTROL INITIATIVE

Available data on 2308 subjects with positive tests

Colonoscopy (n = 1265)

- Cancer: 67 (5.3%)
- Advanced adenoma: 176 (13.8%)

Unknown outcome (n = 1035)

- No results retrieved for 1035

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Colonoscopy referral in pilot: Adelaide

Positive FIT, n=1437	Referred for colonoscopy	Referred for other	No referral
Males	93.4%	1.8%	4.8%
Females	93.7%	2.3%	4.0%

NATIONAL CANCER CONTROL INITIATIVE

From: Prof G Young

Colonoscopy waiting times – pilot: Adelaide

Phase of activity	Days waiting		
	Mean	Median	Maximum
Consultation to colonoscopy (d)	38.5	30	394

NATIONAL CANCER CONTROL INITIATIVE

From: Prof G Young

Available data on all subjects with colonoscopy

Positive FOBT (n = 1265)

- Cancer: 67 (5.3%)
- Advanced adenoma: 176 (13.8%)
- Other adenoma 75 (5.9%)

Other referral by GP (n = 529)

- Cancer: 2 (0.4%)
- Advanced adenoma: 19 (3.4%)
- Other adenoma 21 (4.0%)

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Conclusions from pilot studies

- Participation rates adequate, given little publicity
- Positivity rate high
- Referral for colonoscopy without positive FOBT of little value
- Symptom history not predictive – omit; FH only limited value
- Data systems for invitation reasonable
- Data systems for follow up inadequate

Some problem areas identified in pilot

- Invitation and consent package – too much information
- Collection of data – incomplete, slow
- Follow up safety net – clinical data system inadequate
- Communications between register, participants and clinicians often poor
- Quality issues related to colonoscopy and histopathology

Estimated cost-effectiveness

- Lifetime cost per life year gained $24,000
- Comparisons: breast screening $ 13,000
- cervix screening $ 44,000

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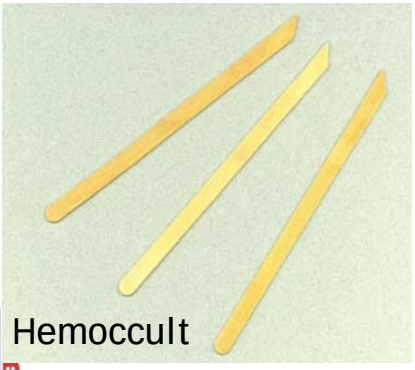
No-one likes sampling faeces



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- This applies to specialists, family doctors, managers, and politicians also!

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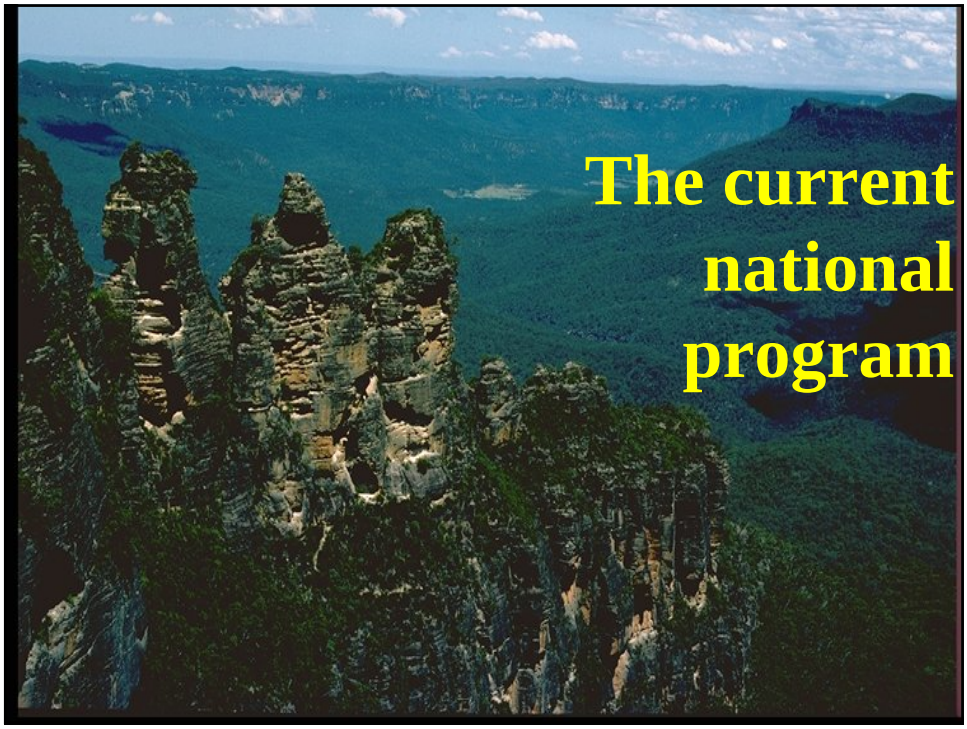
Dr Michael Woodridge, Australian federal minister of health:

Dr Michael Woodridge, Australian federal minister of health:

"It took me five budgets to get the bowel screening program. I don't think they thought paying someone to have something stuck up their bum would be politically popular"

From: S, Maiden in 'The Howard Factor', Melbourne Univ Press, 2006



National Program

- Screening is resourced federally from funds separate to other medical care
- Federal funding to initiate the national bowel cancer screening program: $43 million over 4 years, 2005 budget.
- Uses Bayer immunochemical test, every 2 yrs. This is free. Follow-up colonoscopies in public sector, or private (likely some patient payment).

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Current Eligibility Criteria

- People who:
  - are turning 55 or 65 years of age between May 1, 2006 and June 30, 2008, or
  - (Plus those were invited to participate in the Pilot Program)
  - This is 12 % of target group aged 55-74

Some diversions on the way…

- Recommended that screening for indigenous population (ATSI) should start at age 45

Current initial National Program

- 380,000 people to be invited over 2 yrs
  - **230,000 55 year olds**
  - **150,000 65 year olds**
- Anticipated participation rate - 50%
- Anticipated FOBT positivity rate - 8%

Thus, 7500 colonoscopies needed per year: 150 per week

500 accredited colonoscopists: < 1 extra per week each

** screening only; ignores follow up

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Future annual workload

3,200,000 Australians aged 55-74 years.

FOBT screening (biennial, 50% uptake; 8% positivity rate)

64,000 colonoscopies; 128 complications

2-3 extra scopes per week per colonoscopist

Colonoscopic screening (10-yearly)

160,000 colonoscopies (*50% uptake*); 320 complications

6-7 extra scopes per week per colonoscopist

Ignores follow up

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Follow up of those with adenomas

- Finding adenomas currently means on-going surveillance
  - Threshold for surveillance has huge impacts
  - Limited evidence-base for follow-up frequency

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Conclusions

NATIONAL CANCER CONTROL INITIATIVE

Australian experience

- Objective has been to produce a whole population, cost controlled, centrally organised and monitored program

Issues of central control

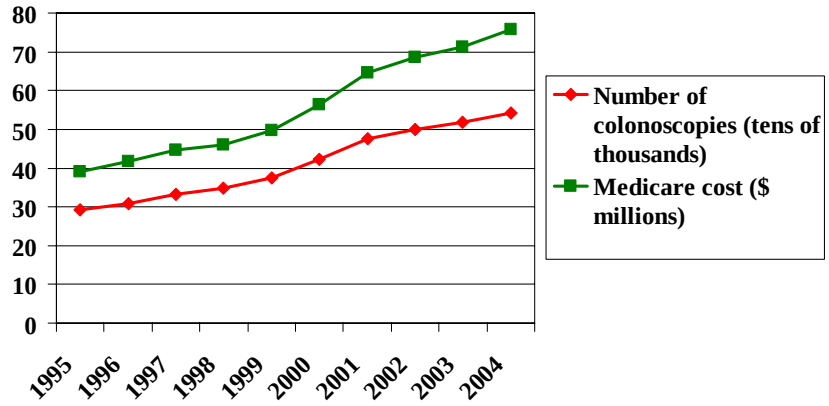
- All funding steps have required specific items in the annual federal budget

- Evidence of benefit – 1996
- Aust recommendation to proceed – 1998
- Pilot program protocol – 1998, 1999
- Funding for pilot – 2000
- Pilot starts – 2002
- Pilot finishes – 2005
- Program for 12% of eligible group starts, 2006

Pilot studies of colorectal cancer screening: $2 million per year for 4 years

Health care costs of colorectal cancer: $200 million per year

Increase in costs of colonoscopies: $4 million per year



NATIONAL CANCER CONTROL INITIATIVE

Australian experience

- Objective has been to produce a whole population, cost controlled, centrally organised and monitored program
- Alternative would be making tests and follow up available with subsidy on the Medical Benefits Schedule, and educate the public, family doctors, and specialists

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A contrast

- USA experience
- Prop of pop screened in 2004 - 57% (FOBT 1 yr 18.7, endoscopy 10 yr 50.6)
- Australian experience
- Prop of pop screened in 2006 - <10 % ?

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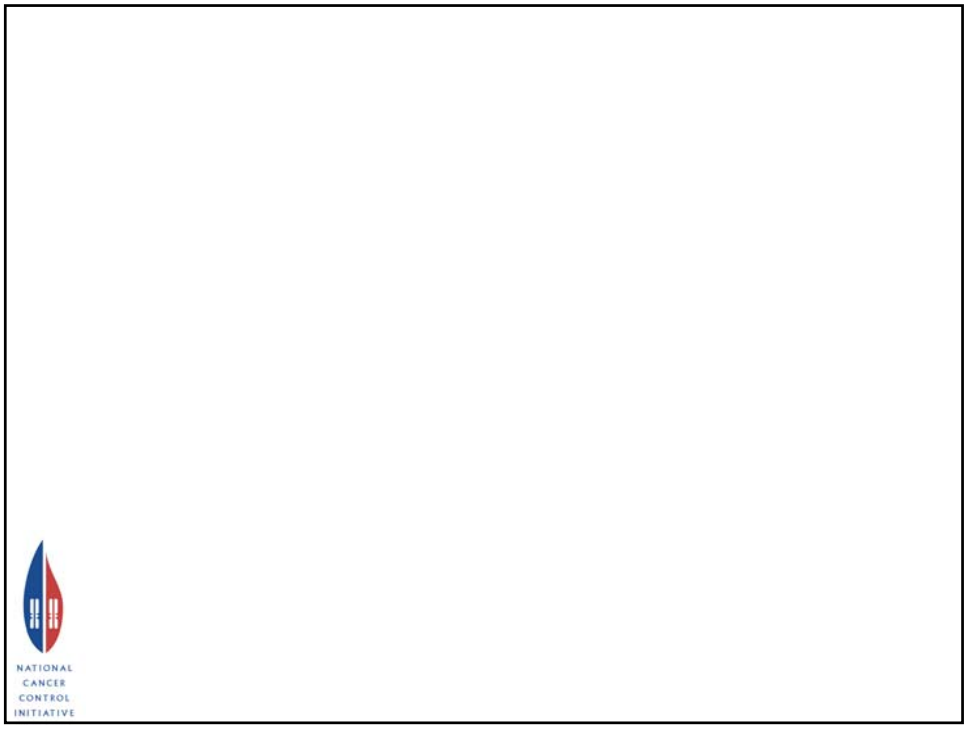
Thank you

melwood@bccrc.ca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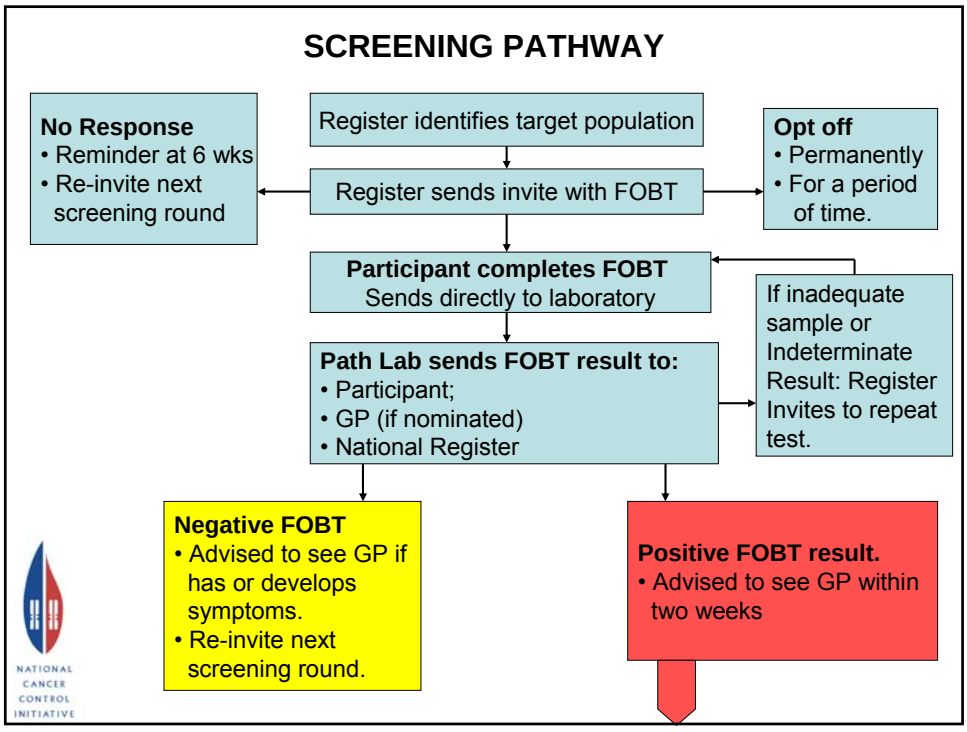
SCREENING PATHWAY
Register identifies target population
Register sends invite with FOBT
No Response
• Reminder at 6 wks
• Re-invite next screening round
Opt off
• Permanently
• For a period of time.
Participant completes FOBT
Sends directly to laboratory
If inadequate sample or Indeterminate Result: Register Invites to repeat test.
Path Lab sends FOBT result to:
• Participant;
• GP (if nominated)
• National Register
Negative FOBT
• Advised to see GP if has or develops symptoms.
• Re-invite next screening round.
Positive FOBT result.
• Advised to see GP within two weeks
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