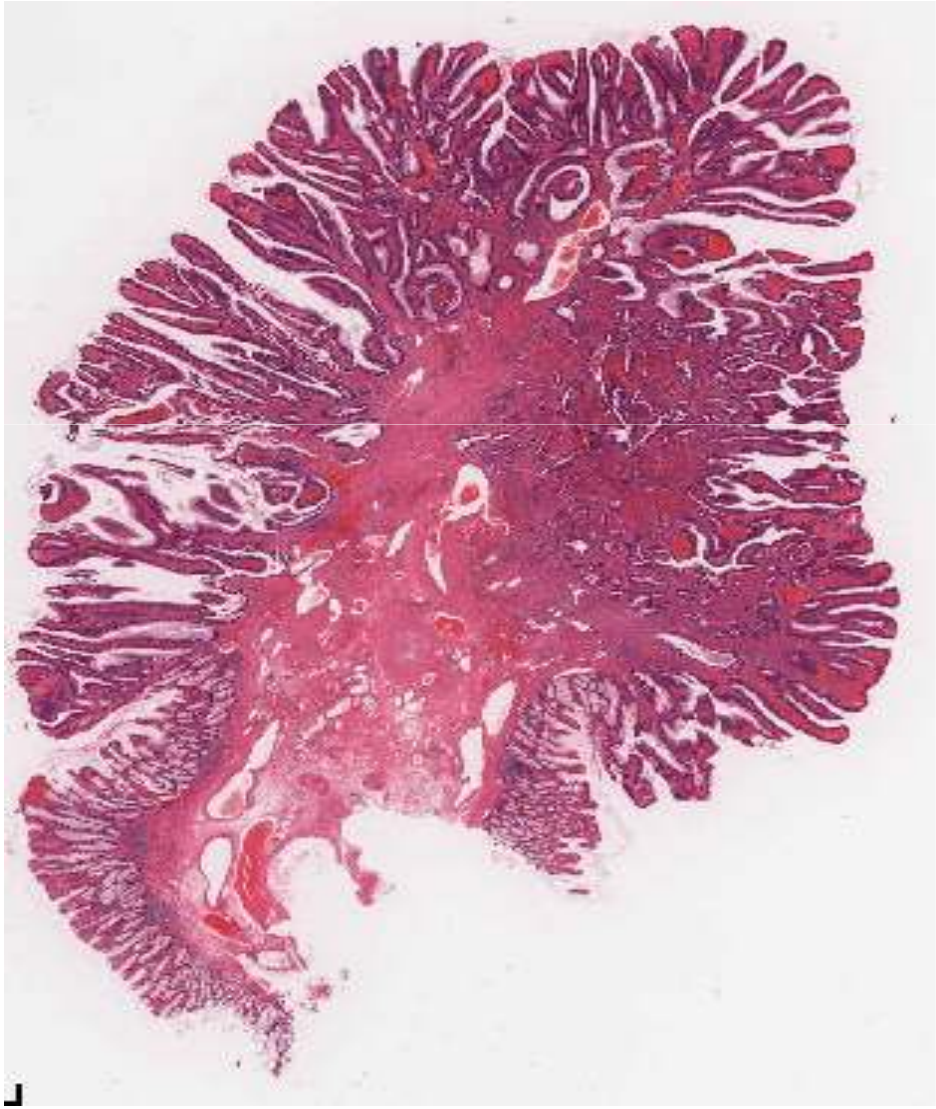
Bowel Screening Pathology Beyond Round 1

Frank Carey

Dundee

Pathology issues

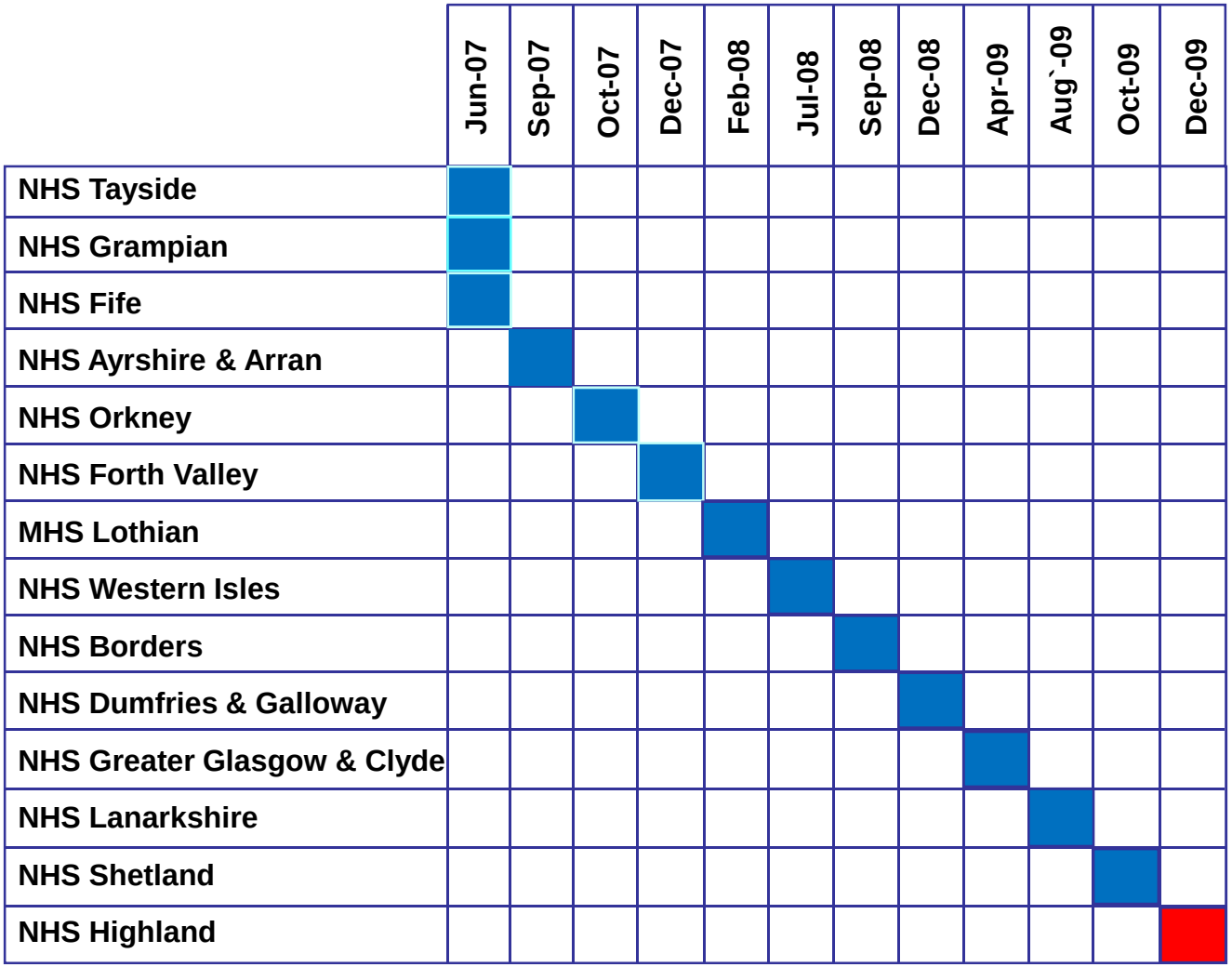
- Organisation
  - Local
  - Regional
  - National
- Workload
- QA
- Polyp cancers
- Interval cancers



Timelines

- April 2000 – Scottish Pilot (Tayside, Grampian, Fife)
- Extended for 3x 2yr periods
- Programme began in June 2007
- Most Scottish Boards are on 2nd round of screening
- Pilot Boards have completed 4 rounds

Roll – out in Scotland

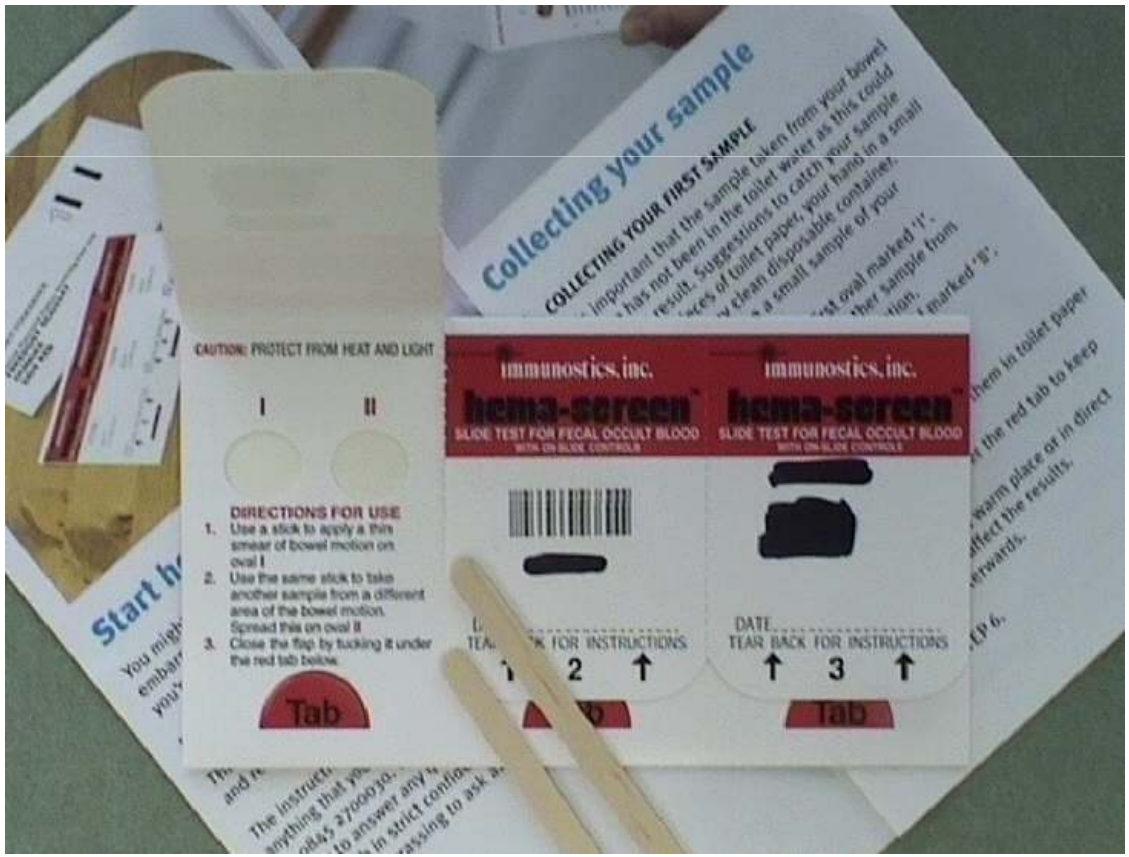


Organisation

- Pilots involved only 6 pathologists
- Dataset developed (still the basis of current dataset)
- Moving from pilot to programme
  - Different organisation across UK
  - Developing QA
  - Changing pathology (new challenges)
  - Developing screening technology (FIT, sigmoidoscopy)

Meaning of FOBT +

- ***Initial*** positivity 2%. Of these;
  - 50% have neoplasia (40% adenoma 10% cancer)
  - 10% have something else (eg inflammatory bowel disease)



Key Performance Indicators (KPIs)
- monitoring quality of Scottish Programme

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 10
(PPV)

	1st round	2nd round	3rd round
Cancer	12.0%	6.8%	8.5%
Adenoma	36.5%	29.5%	30.1%
HR Adenoma	3.3%	2.9%	3.0%
All Neoplasia	48.5%	36.3%	38.6%

Cancer Staging (%)

GUT

Results from the first three rounds of the Scottish demonstration pilot of FOBT screening for colorectal cancer

R J C Steele, P L McClements, G Libby, R Black, C Morton, J Birrell, N A G Mowat, J A Wilson, M Kerricer, F A Carey and C G Fraser

Gut 2009;58:530-535; originally published online 26 Nov 2008; doi:10.1136/gut.2008.162883

	Round 1	Round 2	Round 3
“Dukes A”	49.2	40.1	36.3
Polyp cancer (T1Nx)	17.8	15.2	9.7
Dukes B	20.3	29.2	21.8
Dukes C1	18.1	20.3	31.5
Dukes C2	2.8	3.0	2.4
Dukes D	7.1	2.0	0.8
Unstaged	2.5	5.1	7.2

KPI 9
(Adenoma detection rate /1000 screened)

	1st round	2nd round	3rd round
Adenomas	**6.5**	**5.0**	**3.9**
HR Adenomas (>1cm, 3+ lesions)	**0.8**	**0.5**	**0.3**

Workload change in colorectal pathology (Dundee)

	1999	**Peak**	**Change (%)**
Colon and Rectum (all)	3280	3621 (2006)	+10.4
Carcinoma	426	522 (2005)	+22.5
Adenoma	895	1102 (2001)	+23.1

Cancers in a screened population

- Screen detected
- Interval cancers
  - After negative FOB
  - After positive FOB/negative colonoscopy (missed cancers?)
- Cancers in those refusing FOB screening

Interval Cancers

(All cancers diagnosed *within 2 years of a -ve FOBT result* in the population who responded to the screening invitation)

	Round 1	Round 2
Screen-detected	354 (58.4%)	197 (56.3%)
True Interval	180 (29.7%)	129 (36.9%)
Missed on colonoscopy	7 (1.2%)	4 (1.1%)
Miscellaneous	65 (10.7%)	20 (5.7%)
Total	606 (100%)	350 (100%)

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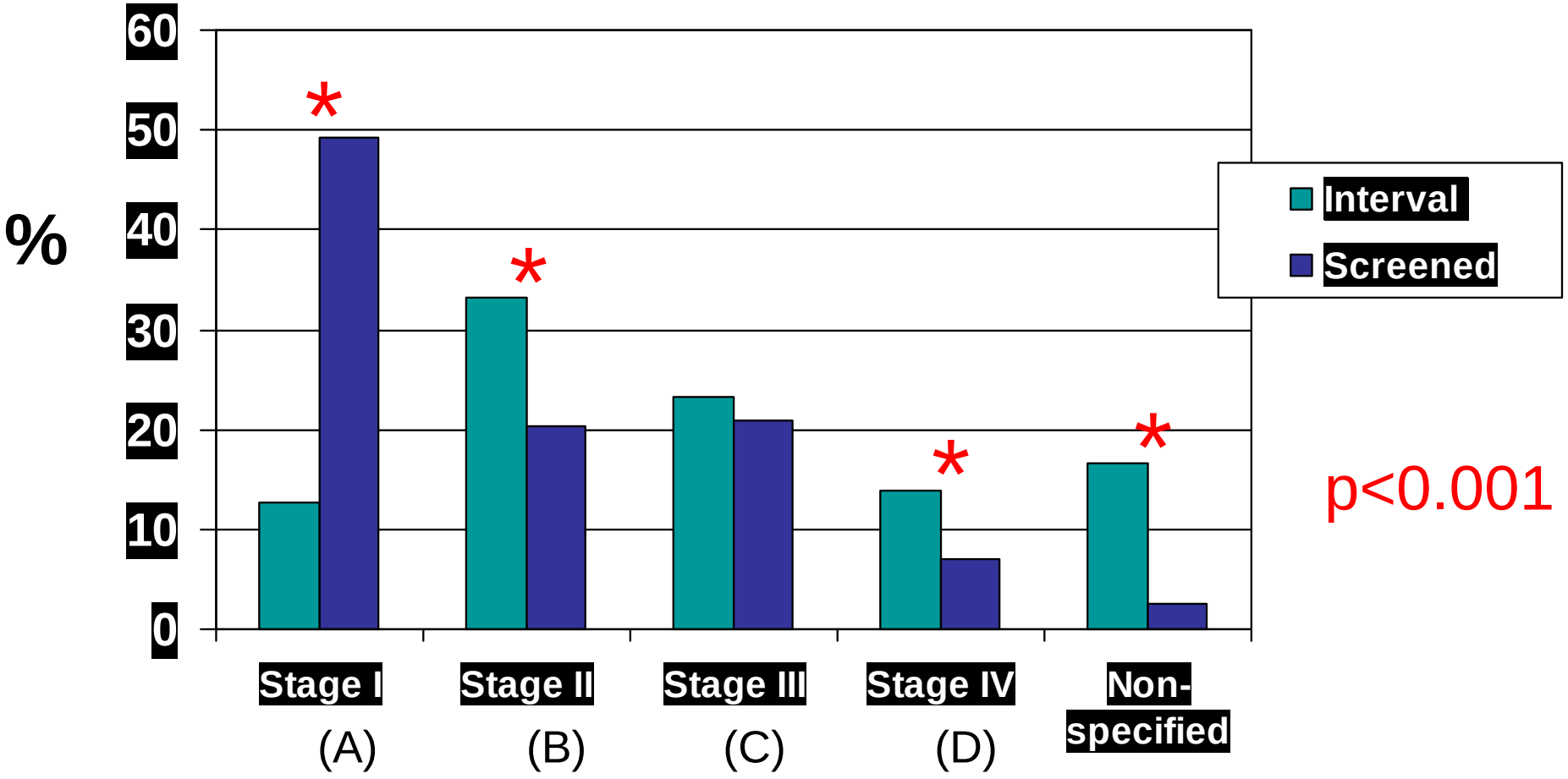
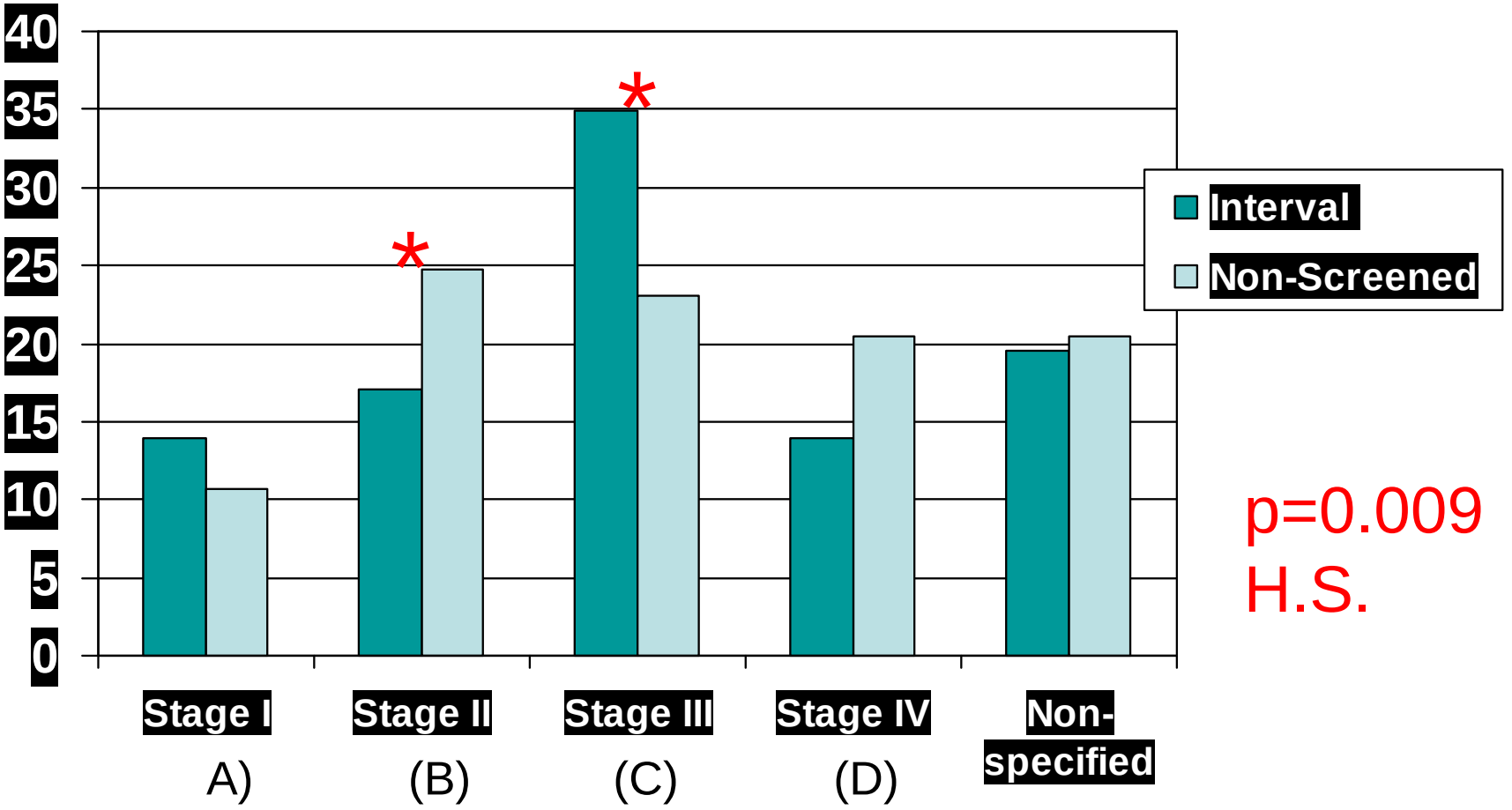
Stage Distribution

Interval (180) vs Screen-Detected (367) Cancers – Round 1



Stage Distribution

Interval (129) vs Non Screened (2185) Cancers – Round 2



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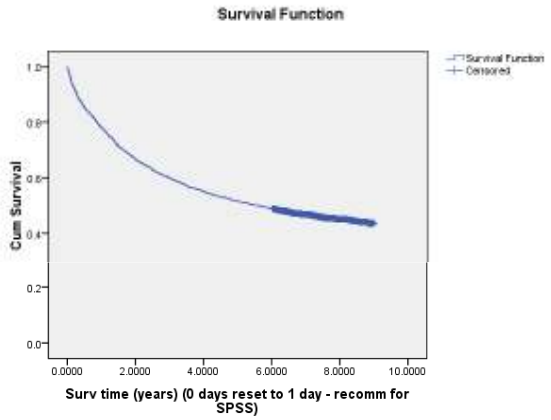
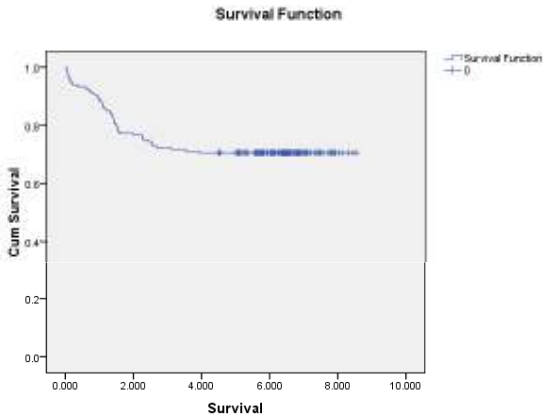
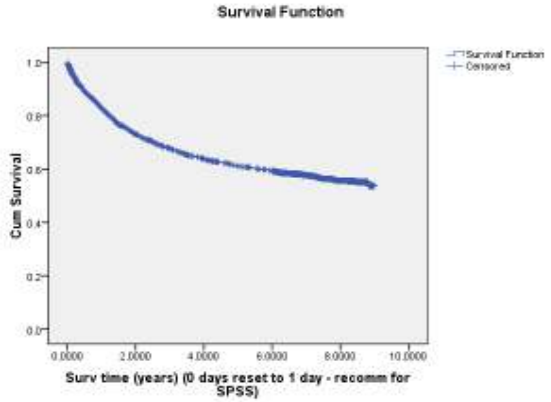
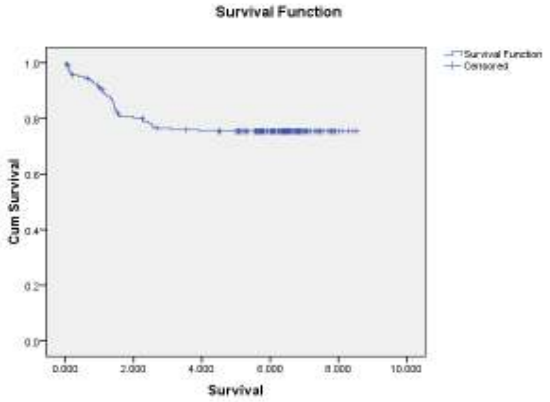
H.S.

Overall and CRC Specific Survival - *Round 1*

	Non-Screened	Interval	
Overall			**p<0.01**
CRC-S			**p<0.05**

Summary of cancer outcomes

- Screened-detected cancers have a more favourable stage distribution and outcome than interval and non-screened cancers
- By second round, interval cancers have poorer stage distribution than cancers from comparable screening-naïve population but...
- Interval cancers are associated with better overall survival
- Interval cancers are not associated with poorer CRC-specific survival

QA in Scotland

- EQA participation (uptake is poor)
- Compulsory referral scheme for polyp cancers. Suspected/suspicious cases encouraged (~ 5% of submitted cancer diagnoses “reversed”). Again participation is variable.

Conclusions

- Workload stabilises
- Gathering of quality data on new cancer groups (polypoid, interval) hugely important
- QA a major issue
- (Will we need to develop new diagnostic terminology)