Yorkshire Cancer Research
Yorkshire Bowel Cancer initiative

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What’s the problem?
1990’s Rectal cancer - surgically treated cases in the Yorkshire Region - % survival by years since diagnosis vs Basingstoke

% Survival

Years since diagnosis

? Position in 2016
? TME
? Low rectal cancer

68%
51%
46%
35%
Colon cancer

Stockholm

English hospitals

Cumulative Proportion Surviving (Kaplan-Meier)

Time (months)

Cumulative Proportion Surviving (%)

Years since diagnosis

Trusts

National Average
Aim:

- To improve outcomes by in depth analysis of performance of bowel cancer teams and developing new/improved care pathways to identify and address weaknesses in the management of bowel cancer in Yorkshire. We will improve survival by as much as 15%.

Link with Yorkshire and Humber network
Lisa Marriott
Matt Hale
Yorkshire and Humber Cancer SCN

- Successor of YCN and Yorkshire and Humberside Coast Network

- 2015/16 Bowel cancer priority
- Follow up – policy
- Priorities decided but are complimentary to ours and would benefit from our approach
- Lisa Marriott/Matt Hale
- Together we may be very powerful at improving outcomes
Collaborators

• University of Leeds
  – Eva Morris
  – Paul Finan Surgery
  – Nick West Pathology
  – David Sebag-Montefiore Clinical Oncology
  – Penny Wright Proms
  – Matt Seymour Medical Oncology/NCRN

• Others who want to help

  Educators and advisors
  - Anders Bertelsen
  - Gina Brown
  - Brendan Moran
  - Robin Kennedy
  - Bill Heald
  - Torbjorn Holm
  - Soren Laurberg
  - Werner Hohenberger

  Associates
  – Lisa Marriott YHCN
  – Matt Hale
Yorkshire and Humber hospitals

- Voluntary participation encouraged by Cancer network/purchasers
- Patient consent for parts
  - Data access
  - Specimen photographs, tissue blocks and HNPCC screening
  - PROMS
- Establish baseline data year 1
  - Agree scoring system (Pahlman)
- Look for continued improvement not blame
- Compared to gold standard – Basingstoke?
- Compared to national data
How well do we do?

Educational interventions ← What are the weaknesses

YCR – Y&H CN Partnership
Aim 1 Obtain permissions, create the database generate the best data

Create the best information database

All cases treated by NHS in Yorkshire

Integrate databases
- Health Episode Statistics
- Cancer registry
- Basic Pathology data
- Radiotherapy database
- Chemotherapy prescriptions
- Screening data

Create new databases
- Patient reported outcomes and LARS
- Quality of service/feedback/improvements
- Full pathology dataset?
- Full radiology dataset?

Resource 2 grade 8 posts to establish database and fill and analyse it
Consent/data research nurses

Give it back to you so you know how you are doing

- National data
  - HES
  - COSD6&7
  - Chemo/Radio databases
Aim 2 Analyses

1-5 year survival
30 day mortality
Frequency of operative intervention
Radiotherapy usage and pattern
Chemotherapy usage and pattern

Screening data
- FOBT
- Bowelscope

Social class effects
Screening uptake
Local excision rates
Frequency of abdominoperineal excision
Referral for liver resections
Patient outcomes/Lars and satisfaction
Overall score

Morris et al
Quality of pathology

Stage
Positive Circumferential Margin rate
Node retrieval
% High risk features
  - EMVI
  - Extent of extramural spread
  - Peritoneal involvement
  - pT3a,b,c

Quality of surgery
Photographs and central review
Quantitation

TME
APE
Mesocolon
Assessment of quality of surgery

Margin positive rates

Node retrievals

% High Risk stage II

Resource: Technician for measurement
Testing case
Proformas

Frequency of use
Quality of radiology

- Rectum
- Colon

Accuracy
Correlation with Pathology
Stage
EMVI
Extramural spread

Radiologist time
Previous examples of control data

Risk adjusted 30 day mortality
English hospitals

Use of hepatic resection

APE excision rates

Use of laparoscopic surgery

English radiotherapy variation

Early deaths

Figure 1. Number of laparoscopic resections performed by each NHS Trust between 1998 and 2006.
Baseline analyses and scoring

- Outcomes
  - Survival
  - Recurrence
  - Patient reported outcomes
  - PROMS and LARS
  - Screening uptake
  - Operation type

- Variability of practice
  - Surgeons
  - Pathologists
  - Radiologists
  - Radiotherapists
  - Oncologists

Compared to England data where available
Aim 3 Other initiatives

• Patient reported outcomes from Yorkshire Hospitals
  – New website and use

• Central submission of blocks to Leeds for screening for HNPCC and targeted therapies
  – Pathway created

• Asked for consent for further research on material
Aim 4 Interventions

• Surgical tuition
  – Total Mesorectal excision
  – Abdominoperineal excision
  – Mesocolic excision with high tie
  – Local Excision

• Pathology tuition
  – Cut up
  – Reporting
  – Proforma
  – Methylene blue injection

• Radiology tuition
  – Technique, proforma and interpretation
  – Mesocolic excision with high tie

• Radiotherapy tuition
• Chemotherapy tuition
• Screening uptake tuition
Aim 5 Re-audit and repeat the circle

How well do we do?

Educational interventions  What are the weaknesses

Design second round of education
160K budget over the 5 years
What are we trying to do?

- Reduce deaths from bowel cancer by:
  - Identifying causes of failure
  - Identifying improvements and education necessary
  - Undertaking training
  - Implementing them into practice through local/Regional guidelines
  - Identifying continuing sub-optimal practice
  - Repeating the process
- Improve our understanding of PROMS
- Improve diagnosis of NHPCC
- Improving access to targeted therapy
- Extension of process to other cancers
Milestones

- **Year 1:** Create local/national baseline data and create novel datasets on patient reported outcomes, quality of surgery, patterns of radiology, radiotherapy and drug usage. Create agreed pathways and mechanisms for testing for possible genetic causation and sensitivity to new targeted drugs. Implement data collection and establish feedback loops to local multidisciplinary teams.

- **Year 2:** Agree and perform the educational and systems interventions within each Trust whilst continuing data collection.

- **Year 3:** Review data flows, re-audit the data. Implement collection of further indicators of quality of delivery of the service.

- **Year 4:** Identify second round of educational and systems interventions and reassess areas where performance has not improved and develop an alternative intervention.

- **Year 5:** Re-audit the programme and the outcomes compared to national data to determine the effectiveness of the programme and the level of improvements in outcomes obtained and the cost per improvement identified.

- Benefit seen in years 2-5.
Structure

- Steering group YCR programme holders + YCN plus lay representation
- Operational committee Core plus project and data managers
- Specialist group committees to review data and determine appropriate educational initiatives to the steering committee.
  - Surgery
  - Pathology
  - Radiology
  - Oncology – Med/Clin
Participation

- Each MDT determine participation
- YES – full data collection, full data feedback, access to educational initiatives and input into programme.
- No – Background data collection only.
- Review the need for differing levels of participation
  - Platinum
  - Gold
  - Silver
  - Bronze

- Proms data collection
- Tissue consent and feedback
Tissue

- Need consent
- HNPCC screen on block of tumour
- dMMR negative go on to Braf mutation testing
- If Braf wild type then refer to Regional genetics service with gene identified to be sequenced

- Therapeutic screen as relevant
  - Her2, TRK, new novel genes for Focus 4 if patient consents
Can we raise the bar in Yorkshire

Years since diagnosis

Colon Relative survival (%)
First YCR network event

15\textsuperscript{th} June 2016 here
Data and discussions
If it works we may be able to get a phase 2 funded.