Colorectal Cancer in New Zealand: The PIPER Project.

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Worldwide Variations in Colorectal Cancer
Female CRC Incidence NZ, Aus, USA

Teo, Sneyd, Jackson 2012, Unpublished data
Inequities in CRC: Ethnicity

Hill, Sarfati et al Cancer 2010
Time to first treatment – Early Rectal Ca

Akl median 64 days
SI median 92 days

Murray et al 2011; SCN 2012
## Components of delay to adjuvant treatment

<table>
<thead>
<tr>
<th>Component</th>
<th>Dunedin n=38</th>
<th>Invercargill n=25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical</td>
<td>20 days</td>
<td>32 days</td>
</tr>
<tr>
<td>Inpatient stay</td>
<td>8 (6-13)</td>
<td>6 (5-12)</td>
</tr>
<tr>
<td>Post-operative complications / readmission</td>
<td></td>
<td>17%</td>
</tr>
<tr>
<td>Clerical factors</td>
<td>5 (1-7)</td>
<td>14 (11-21.5)</td>
</tr>
<tr>
<td>Decision delay</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Oncological</td>
<td>36 (26-48)</td>
<td>28 (22-39)</td>
</tr>
<tr>
<td>FSA capacity delay</td>
<td>14 (11-20)</td>
<td>16.5 (13-21)</td>
</tr>
<tr>
<td>Treatment capacity delay</td>
<td>12.5 (7.25)</td>
<td>6 (5-12)</td>
</tr>
<tr>
<td>Overall time to adjuvant treatment</td>
<td>56 (47-69)</td>
<td>60 (44-68)</td>
</tr>
</tbody>
</table>

Jackson, Parkin et al – in preparation
Quality of follow-up

Timeliness of colonoscopy related to surgery, by age and tumour site
# Quality of follow-up

<table>
<thead>
<tr>
<th>Colon cancer</th>
<th>Presentation</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colon cancer</td>
<td>Total n=186</td>
<td>Acute n=55*</td>
</tr>
<tr>
<td>- None by 12 months after surgery</td>
<td>124 (66.7%)</td>
<td>45 (81.8%)</td>
</tr>
<tr>
<td>- Complete ≤ 12 months before surgery</td>
<td>49 (25.8%)</td>
<td>3 (5.5%)</td>
</tr>
<tr>
<td>- Complete by 12 months after surgery</td>
<td>62 (33.3%)</td>
<td>10 (18.2%)</td>
</tr>
<tr>
<td>Abdominal CT-scan ≤ 3months post-op</td>
<td>116 (62.4%)</td>
<td>43 (78.2%)</td>
</tr>
<tr>
<td>CEA before surgery</td>
<td>47 (25.3%)</td>
<td>9 (16.4%)</td>
</tr>
</tbody>
</table>

Ahmadi, Jackson NZAGS 2010
Gaps in NZ research

• Exclusion of rectal cancer from previous work
• Data capture limited to categories
  – eg chemo: yes/no; surgery yes/no; stoma yes/no
• Focus on inputs and treatments rather than outcomes
  – eg local or distant recurrence; quality of follow-up; survival
• Nuanced quality aspects not examined
  – eg TME, local recurrence, follow-up, pre-operative evaluation
• Pilot work demonstrates significant gaps in quality
  – < 25% with complete colonoscopy within 12 months
  – < 40% with annual CT follow-up
• Network and Registry data contain gaps
HRC Partnership Programme: RFP

- Part of the Research Partnerships for New Zealand Health Delivery (RPNZHD) initiative
- Request for proposals in Bowel Cancer Research issued in Oct 2010
  - Examination of the bowel cancer pathway – including treatment outcomes
  - Identify variations across NZ
  - Investigate ethnic disparities (particularly in treatment and management)
  - Provide an evidence base for strengthening current services in NZ
  - Strongly encouraged national collaboration
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Methods

• 3 year project

• National retrospective review of patient notes and relevant regional databases for all patients diagnosed with CRC in 2007 & 2008

• Extended cohort of Maori and Pacific cases to include 2006, 2009, 2010 and 2011

• Expected number of cases is 6352

• Regional data collection

• Summer studentship to assess quality of ethnicity data
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Methods

• Proportions of patients meeting Key Performance Indicators considered best practice internationally will be calculated.
• Proportions will be compared between groups of urban/rural residence, ethnicity and socioeconomic status.
• Suggested recommendations for service changes will be developed by the research group with guidance from the advisory group.

Main outcome measure:
Progression-free survival at 3 years post diagnosis.
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Key Performance Indicators

• Examples:
  – Staging process
    • method of diagnosis
    • synoptic pathological reporting
    • number of lymph nodes examined
    • incomplete colonoscopy follow-up
    • pre-op investigations (radiology + CEA)
  – Treatment
    • review at an MDM
    • participation in a clinical trial
    • Stage-specific KPIs e.g. % stage III offered adjuvant chemotherapy
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Key Performance Indicators

• Examples:
  – Management
    • median time referral receipt to diagnosis
    • median time diagnosis to treatment
    • median time to initiation of adjuvant treatment
    • % <50 years old undergoing MSI testing
    • family history recorded at diagnosis
    • proportion receiving 3 follow-up CT scans over 3 years
    • proportion receiving at least one follow-up colonoscopy within 3 years
Challenges

• Logistical
  – 6 Regional Cancer Centres
  – 39 Public Hospitals
  – Private hospitals also
  – 6500 sets of notes
    • Archival access

  – Time . . .
E.g.1 MACRO ...remaining mucosa is of normal appearance. **7 lymph nodes** are identified in the pericolic tissue, ranging up to 8mm max...

MICRO... **Two of eight lymph nodes contain deposits of metastatic tumour.** The involved nodes...

Number of **positive regional lymph nodes:** 3 Total lymph nodes retrieved: 12 Apical node positive: No Peritumoural deposits: No Other metastases: Unknown ...Stage: T3b **N2** Mx

Mesorectal integrity

Not all reports are synoptic

Defining progression . . .
THE FUTURE . . .
The PIPERer Strikes Back

• Comprehensive data set
• Validation of routine data
• Validation of meaningful endpoints
• Information for targeted service intervention
• Definition of evidence based core data set
• Infrastructure
• Correlation with existing biological specimens
An effective treatment can only improve overall survival if it is delivered to a patient.
National Rectal Cancer Summit

9 August 2013 – Wellington

www.nzsoncology.co.nz

Keynote speakers include:

- Kirsten Gormly
- Sam Ngan
- Frank Frizelle
- Ian Bissett
- Diana Sarfati
- Michael Solomon
- Martin Whitehead

Join us in Wellington for the 1st National Rectal Cancer Summit

www.nzsoncology.co.nz