The Challenge of Diagnosing Cancer in Specific Populations: Improving Outcomes for Rural Populations

Peter Murchie

Institute of Applied Health Sciences
The Cotter’s Saturday Night – Robert Burns

Long may thy hardy sons of rustic toil
Be blest with health, and peace, and sweet content!
Scotland’s Rural Population

20% (> 1 million) Scots live rurally

Rural Scots are most likely to be in work and work longer hours

Rural industries important to Scotland’s economy
Rurality and Cancer in Scotland

Are we failing our rural population?

- Campbell et al, 2002 – Seminal Work
- 63,976 patients diagnosed with one of six common cancers between 1991 and 1995
- Increasing distance from a cancer centre was associated with:
  - Less chance of diagnosis before death
  - Poorer survival, especially prostate and lung
- Widely replicated in global-literature but never explained!
Potential Explanations for Poorer Rural Cancer Outcomes

Do rural patients present later to their GP?
• *Rural stoicism; nature of work; access difficulties*

Do rural patients take longer to be diagnosed with cancer?
• *Access difficulties, availability of services*

Do rural patients take longer to be treated for cancer?
• *Distance to hospital, arranging time away*

Do rural patients receive different treatment for cancer?
• *Less inclined to stay in hospital, logistical issues at community hospitals*

Do rural patients receive less-intensive follow-up for cancer?
• *Focus is on structured care delivered at hospital out-patient departments*
Two existing sources of evidence

The CRUX Studies (2002-2016)

- Comparing rural and urban cancer care
- 1097 people diagnosed with colorectal and 1223 women diagnosed with breast cancer between 1996 and 1996
- Detailed collection of primary care data
- Linked to national datasets (cancer registry, death records, out and inpatients)
- Qualitative interviews with subsets of patients

The NASCAR study (2014 – ongoing)

- Northeast and Aberdeen Cancer and Residence Study – NASCAR
- 12,339 people diagnosed with one of eight common cancers, 2007-2014
- Detailed clinical data for NHS Grampian Cancer Care Pathway database
- Linked to national datasets (Cancer registry, inpatients, death records)
- State of the art GIS modelling applied to postcodes calculate patients’ travelling times to all key healthcare facilities
What have we learned? (1)

Do rural patients present later to their GP?

CRUX qualitative Interviews
Some support for rural stoicism, patients being “less demanding.”
Relationship with GP in rural communities could “help or hinder”
However timely access was perceived as easier in rural areas

CRUX quantitative study
Rural patients with CRC no more likely to present with alarm symptoms
No more likely to have more advanced cancer

NASCAR study
Rural patients with any cancer no more likely to be diagnosed with metastatic disease
What have we learned? (2)

Do rural patients take longer to be diagnosed with cancer? and/or

Do rural patients take longer to be treated for cancer?

**CRUX quantitative study**

Rural women with breast cancer *treated more quickly*

Rural patients treatment with CRC not delayed compared to urban patients

**NASCAR study**

People living on Orkney or Shetland or more than 60 minutes travelling time from a cancer centre *more likely* to receive diagnosis and treatment within target times even when accounting for the potential of more advanced disease
Do rural patients receive different treatment for cancer?

**CRUX quantitative study**
Some evidence of less radiotherapy received by rural patients

**NASCAR study**
No good evidence of important differences in treatment received by rural patients when potential confounders are controlled for
What have we learned? (4)

Do rural patients receive less-intensive follow-up for cancer?
Challenges and unknowns

• Existing knowledge is going out-of-date
• Most research activity focuses on Northeast Scotland
• So, could there be regional difference and why
• We currently lack a “Scottish Cancer Intelligence Network” to explore these issues on a national scale
Group 1

*Can you perceive challenges to diagnosing cancer in your practice or area in patients living further away?* What are they, and what could you do about them?

Group 2

*Based on knowledge of your own areas could rurality and cancer issues differ in different parts of Scotland?* How can we investigate it? What could we do about it?

Group 3

*Based on your clinical or management experience do patients from further away receive less input following cancer treatment?* If no, why not? If so why, and what could we do about it?