Liberating Information, Improving Outcomes

15th, 16th & 17th June 2011
Hilton London Metropole

ukacr
United Kingdom Association of Cancer Registries

NCIN
national cancer intelligence network
Using information to improve quality & choice

CONFERENCE PROGRAMME AT A GLANCE

DAY 1 – 15th JUNE

12:00 to 13:00	Posters and exhibition with buffet lunch	Monarch suite, 1st floor
13:00 to 15:00	Plenary session: Improving outcomes for cancer	Sandringham (King's suite), 3rd floor
15:00 to 15:30	Refreshments, posters and exhibition	Monarch suite, 1st floor
15:30 to 17:30	Parallel sessions:	
Session 1	Less common cancers	Meeting rooms A and B, 3rd floor
Session 2	Socioeconomic deprivation and cancer	Balmoral (King's suite), 3rd floor
Session 3	Putting information to work	Sandringham (King's suite), 3rd floor
17:30	Close of day 1	

DAY 2 – 16th JUNE

08:30 to 09:30	Posters and exhibition	Monarch suite, 1st floor
09:30 to 11:00	Plenary session: Innovation	Sandringham (King's suite), 3rd floor
11:00 to 11:30	Refreshments, posters and exhibition	Monarch suite, 1st floor
11:30 to 13:00	Parallel sessions:	
Session 1	Survivorship	Balmoral (King's suite), 3rd floor
Session 2	Capturing diagnosis and stage: pathology, radiology, MDTs and beyond	Sandringham (King's suite), 3rd floor
Session 3	European Network of Cancer Registries	Meeting rooms A & B, 3rd floor
13:00 to 14:00	Lunch, posters and exhibition	Monarch suite, 1st floor
14:00 to 15:30	Parallel sessions:	
Session 1	Cancer and primary care	Balmoral (King's suite), 3rd floor
Session 2	Cancer site-specific analysis	Meeting rooms A & B, 3rd floor
Session 3	EUROCOURSE project: cancer registry data for research	Sandringham (King's suite), 3rd floor
15:30 to 16:00	Refreshments, posters and exhibition	Monarch suite, 1st floor
16:00 to 17:30	Plenary Session: Thames Cancer Registry at 50 years	Sandringham (King's suite), 3rd floor
17:30	Poster awards	Sandringham (King's suite), 3rd floor
17:45	Close of day 2	
19:30	Conference dinner	King's suite, 3rd floor

DAY 3 – 17th JUNE

08:30 to 09:30	Posters and exhibition	Monarch suite, 1st floor
09:30 to 11:00	Plenary session: Supporting commissioning	Sandringham (King's suite), 3rd floor
11:00 to 11:30	Refreshments, posters and exhibition	Monarch suite, 1st floor
11:30 to 13:00	Plenary session: Early detection	Sandringham (King's suite), 3rd floor
13:00	Close of conference and buffet lunch	

Conference Exhibition

Monarch Suite, 1st Floor, West Wing

You are invited to visit the Exhibition, which comprises:

Electronic cancer intelligence products

Poster presentations

Exhibitor stands

Exhibition opening times:

15 June, 12:00 to 17 June, 13:00

Stands will be manned during all refreshment breaks

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CONTENTS

UK ASSOCIATION OF CANCER REGISTRIES - ANNUAL GENERAL MEETING

The Annual General Meeting of the UK Association of Cancer Registries will take place at 08:30 on the 17th June in the King's suite.

CPD ACCREDITATION

The conference is approved for 13 external, non-clinical CPD credits from the Royal College of Physicians.

To obtain a certificate for these credits please sign the register available at the conference registration desk. Certificates will be available for collection at the end of the conference.

50

THAMES
CANCER
REGISTRY

Celebrating 50 Years of Thames Cancer Registry Data

A short film exploring the history of the Thames Cancer Registry

16th June 2011 4pm

NCIN and UKACR Conference

LIBERATING INFORMATION, IMPROVING OUTCOMES – AN INTRODUCTION

High quality information is essential to drive improvements in cancer experience and outcomes. It lets us assess our current performance, increases our understanding of the causes of poor cancer outcomes, and supports the research that will lead to future improvements. The presentations and posters running throughout this conference will highlight the work that has been done in the last twelve months, showing where improvements in outcomes have been made, and where variations in the quality of cancer services and outcomes continue to exist.

Much of what you will see at this conference would not have been possible without the improvements in cancer information which have been introduced in recent years, and would certainly not have been possible without the hugely significant developments which have been implemented by the cancer registries.

The conference will also focus on the opportunities and challenges which lie ahead. The migration to a single cancer registration system for England is well underway and is the basis for a step-change in the collation and supply of high quality, timely, relevant information on different aspects of cancer services. The National Cancer Intelligence Network (NCIN), sitting within the umbrella of the National Cancer Research Institute, will continue to work across registries to improve the relevance, quality and timeliness of information available on cancer services, and to enable this information to be used effectively to support service improvements.

This conference, organised by the NCIN and by the Thames Cancer Registry (on behalf of the UK Association of Cancer Registries), is designed to appeal to a range of people, from patients to clinical teams, commissioners to charities and policy makers to researchers. Many organisations have taken the opportunity to have a stand in the exhibition area, and I encourage you to visit these stands to appreciate the range of information and services available.

I look forward to a very interesting and enjoyable conference. I hope that you find it informative and stimulating.

Chris Carrigan
Head of the NCIN Coordinating Team

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INTERACTIVE DEMONSTRATION AREA

DAY 1 - 15th JUNE

12:20 - 12:35: Cancer e-Atlas
15:10 - 15:25: Cancer Profiles

DAY 2 - 16th JUNE

08:50 - 09:05: Cancer Commisioning Toolkit
11:10 - 11:25: Cancer Profiles
13:10 - 13:25: National Cancer Registration System
13:30 - 13:45: Cancer e-Atlas
15:10 - 15:25: National cancer e-learning training package for Non-Clinical Staff

DAY 3 - 17th JUNE

08:50 - 09:05: Cancer Commissioning Toolkit
11:10 - 11:25: National Cancer Registration System

National Cancer Registration System

'The migration to a single system is a real opportunity for cancer registration in England – the implementation is a challenge but the immediate and long-term benefits for patient care are significant'

Cancer Profiles

'Cancer profiles comprise a range of data which are used to paint an overall picture of cancer burden and outcomes locally, in a GP Practice, a GP Consortium, or a provider Trust'

Cancer Commissioning Toolkit

'The Cancer Commissioning Toolkit (CCT) is an online library of key cancer information and data which can be easily accessed by commissioners for use in the preparation of their commissioning plans'

Cancer e-Atlas

'The Cancer e-Atlas provides national and regional data for cancer incidence, mortality and survival - see how this tool makes finding, comparing and analysing information easier'

National cancer e-learning training package for Non-Clinical Staff

'This interactive e-learning programme, which will be clinically peer reviewed with an associated accreditation, covers the following MDT areas: Cancer Surveillance within the NHS, Medical Terms, Tests and Treatments relating to Cancer and Cancer - Site Specific Cancers with information on incidence, survival, mortality, diagnosis and treatment'

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DAY 1 – 15th JUNE

12:00 to 13:00	**Registration, posters and exhibition with buffet lunch**
13:00 to 15:00	**Plenary session: Improving outcomes for cancer**
13:00	Chair's welcome David Ardron, Chair, NCRI Consumer Liasion Group
13:10	Paul Burstow MP, Minister of State for Care Services (provisional)
13:25	Information in the new world: can we make cancer data count? (The Brian Cottier Invitation Lecture) Mike Birtwistle, Managing Director, Head of MHP Health
13:50	Future requirements for stratified medicine Harpal Kumar, Chief Executive, Cancer Research UK
14:15	The worldwide burden of cancer – challenges and opportunities Dr David Forman, Head of Cancer Information Section, IARC
14:40	Questions from the audience
14:55	Chair's closing remarks
15:00 to 15:30	**Refreshments, posters and exhibition**
15:30 to 17:30	**Parallel sessions**
Session 1:	**Less common cancers**
15:30	Chair's introduction Simon Davies, Chair, Cancer 52
15:40	What the NCIN is doing for less common cancers Chris Carrigan, Head of the NCIN Co-ordinating Team
16:00	Ovarian cancer surgery by specialists in specialist centres John Butler, Department of Health
16:20	Defining soft tissue sarcomas Matthew Francis, West Midlands Cancer Intelligence Unit
16:40	Specialisation of treatment of bone sarcomas in England (2000 – 2008) Sally Vernon, West Midlands Cancer Intelligence Unit
17:00	Predictors of use of orthotopic bladder reconstruction after radical cystectomy for bladder cancer: Data from a pilot study of 2414 cases 2004-2010 Luke Hounsome, South West Public Health Observatory
17:20	Chair's summary

Session 2:	Socioeconomic deprivation and cancer
15:30	Chair's introduction Professor Henrik Møller, Director, Thames Cancer Registry and National Lead for Analysis and Research, NCIN
15:40	Socioeconomic inequalities in cancer risk by site, age, and sex in Scotland, 2000 - 2007 Katharine Sharpe, ISD
16:00	Increasing early detection of cancer in a deprived, inner-city area through collaboration and partnerships Anna Garner, NHS City and Hackney
16:20	Avoidable deaths due to cancer and other causes by eliminating the mortality differences between educational levels of cancer patients Arun Pokhrel, Finnish Cancer Registry
16:40	The impact of socio-economic deprivation on cancer survival in England Margreet Lüchtenborg, King's College London, Thames Cancer Registry
17:00	Does socioeconomic deprivation increase the chance of dying in hospital for cancer patients? Andy Pring, South West Public Health Observatory
17:20	Chair's summary

Session 3:	Putting information to work
15:30	Chair's introduction Mike Birtwistle, Managing Director, MHP Health
15:40	Provision of routine cancer information in a changing public health setting Tim Evans,West Midlands Cancer Intelligence Unit
16:00	GP, PCT and consortium profiles Lucy Irvine, NCIN
16:20	Using cancer waiting times data to improve cancer registration Andy Smith, Trent Cancer Registry
16:40	National chemotherapy database: a pilot study to evaluate requirement to support the collection and central management of cancer chemotherapy data across England Kellie Peters, Oxford Cancer Intelligence Unit
17:00	Investigating the use of period survival analysis to measure variation in survival rates between West Midlands NHS trusts Tim Evans, West Midlands Cancer Intelligence Unit
17:20	Chair's summary

17:30	Close of day 1

data
sarcomas
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survival
patients
using
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DAY 1 PARALLEL SESSION ABSTRACTS

Session 1: Less common cancers

16:00 - OVARIAN CANCER SURGERY BY SPECIALISTS IN SPECIALIST CENTRES

John Butler, Department of Health; Carolynn Gildea, Trent Cancer Registry; David Meechan, Trent Cancer Registry; Andrew Nordin, NCIN

Objectives

Improving Outcomes in Gynaecological Cancers (DH, 1999) recommends that "Surgery for ovarian cancer should be carried out by specialised gynaecological oncologists at Cancer Centres.", with evidence suggesting this leads to better outcomes for ovarian cancer patients. In light of this recommendation, we investigated whether there is evidence of its implementation.

Methods

For English ovarian cancer patients (ICD10 C56-C57) diagnosed 2000-2008, the National Cancer Data Repository and Hospital Episodes Statistics (HES) were used to identify those receiving relevant surgery. We investigated the annual trend in the percentage of surgery performed by gynaecological oncologists or in specialist centres. A gynaecological oncologist (GO) is a gynaecologist who has received formal training in gynaecological oncology and spends most of their time working in the field. However, there is no comprehensive register of GOs in England. Therefore, a surrogate definition of a GO was a surgeon operating on 20 or more new ovarian cancer cases per year. Within English cancer networks, there are currently 41 specialist ovarian cancer centres. Since the HES data doesn't always detail the specific hospital site, trusts with specialist centres were defined as cancer centres. As a validation exercise, several clinicians are checking the accuracy of their trust level data.

Results

From 2000 to 2007, the percentage of ovarian cancer patients receiving surgery by GOs increased from 17% to 48%. In the same period, the percentage treated in specialist trusts increased from 40% to 71%.

Conclusions

These results suggest that the improving outcomes guidance has been effective in increasing the proportion of ovarian cancer patients operated on by specialists in specialist centres. However, many patients appear not to receive specialist treatment, suggesting there is room for further improvement. A potential development of this work would assess whether there is evidence of improved patient outcomes associated with the implemented changes.

Session 1: Less common cancers

16:20 - DEFINING SOFT TISSUE SARCOMAS

Francis, M., West Midlands Cancer Intelligence Unit; Vernon, S., West Midlands Cancer Intelligence Unit; Wong, Y.K., West Midlands Cancer Intelligence Unit; Lawrence, G., West Midlands Cancer Intelligence Unit

Objectives

As lead registry for sarcoma, the West Midlands Cancer Intelligence Unit produces headline figures on the epidemiology of soft tissue sarcomas. However, this group of cancers is highly non-homogeneous, and there was no national definition. Working with the Site Specific Clinical Reference Group (SSCRG) an agreed definition of "soft tissue sarcomas" was reached.

Methods

ICD-10 site codes were inadequate for identifying soft tissue sarcomas, as sarcomas of sites such as breast and uterus cannot be identified just by site. Therefore soft tissue sarcomas were defined by morphology code. A list of all morphology codes which could constitute a soft tissue sarcoma was compiled by the WMCIU in conjunction with a leading sarcoma pathologist, based on the WHO classification of soft tissue sarcomas. This was circulated to the SSCRG. Issues where a consensus could not be reached by email were debated at the next meeting of the SSCRG.

Results

The final agreed definition consists of a list of 125 morphology codes, to be used for producing headline figures on 'all soft tissue sarcomas'. The list includes invasive tumours only, to parallel headline figures on 'all cancers' produced by the NCIN. Some debated morphologies such as Kaposi's sarcoma and dermatofibrosarcoma were included, but other morphologies such as gliosarcomas and neuroblastomas were excluded. A full list of soft tissue sarcoma morphology codes can be supplied by the WMCIU on request.

Conclusions

Defining soft tissue sarcomas by ICD-10 site code greatly underestimates the number of cases. Therefore it is essential that high level statistics define soft tissue sarcomas by morphology code. Soft tissue sarcomas are not a homogeneous group, and this crucial fact must be emphasised when producing epidemiological statistics. Consistently defining soft tissue sarcomas across the country is essential for the production of comparable statistics.

Session 1: Less common cancers

16:40 - SPECIALISATION OF TREATMENT OF BONE SARCOMAS IN ENGLAND (2000 – 2008)

Vernon, S., West Midlands Cancer Intelligence Unit; Francis, M., West Midlands Cancer Intelligence Unit; Wong, Y.K., West Midlands Cancer Intelligence Unit; Brown, J., West Midlands Cancer Intelligence Unit; Lawrence, G., West Midlands Cancer Intelligence Unit

Objectives

The Improving Outcomes Guidance (IOG) recommends that sarcoma care in England should be specialised, with patients being referred to specialist sarcoma MDTs treating at least 50 new patients annually. The National Cancer Data Repository (NCRDR) data allowed analysis of where patients had been treated to see if this goal was being met, and to identify key factors that affect whether patients receive specialist care.

Methods

Patients diagnosed with bone cancer in England (2000-2008) were extracted from the NCDR. The Trust where their bone cancer was first recorded was identified. All admissions to hospital were examined to see if patients were ever seen by a specialist centre, and if they received surgical treatment. These data, and the one-year relative survival, were analysed by age, sex, deprivation, tumour site, and distance to the specialist centre.

Results

Over 3,500 patients were registered with bone cancer. Around 40% had no record of being seen in a specialist centre. These patients were more likely to be elderly, have poorer survival, and have a non-extremity sarcoma. Never being seen by a specialist centre resulted in a greatly reduced likelihood of receiving surgical treatment. The proportion of surgical treatments performed within the specialist centres did not significantly change over time. The likelihood of treatment in a specialised centre varied with tumour site, distance to the centre and age.

Conclusions

National data identify important gaps in bone sarcoma care in England. However, the most recent national data remain 3 years out of date, limiting the relevance of findings. Treatment specialisation can be seen, but a there remains a significant proportion of people who are not seen in a specialist centre.

Session 1: Less common cancers

17:00 - PREDICTORS OF USE OF ORTHOTOPIC BLADDER RECONSTRUCTION AFTER RADICAL CYSTECTOMY FOR BLADDER CANCER: DATA FROM A PILOT STUDY OF 2414 CASES 2004-2010

Luke Hounsome, South West Public Health Observatory; Gary Abel, Cambridge Centre for Health Services Research, University of Cambridge; Julia Verne, South West Public Health Observatory, Bristol; David Neal, Cancer Research UK Cambridge Research Institute, Cambridge; Georgios Lyratzopoulos, Cambridge Centre for Health Services Research, University of Cambridge

Background
Following cystectomy for bladder cancer, orthotopic reconstruction (neo-bladder formation) can enable near-normal voiding through the urethra. Variability in the use of orthotopic reconstruction may indicate potential for quality improvement.

Objectives
To examine patient and organisational level variation in use of orthotopic bladder reconstruction.

Methods
We analysed data from the British Association of Urological Surgeons Cancer Registry database of complex procedures, and Hospital Episode Statistics. Three-level (patient, consultant, and Cancer Network) mixed effect logistic regression models were used to examine socio-demographic and organisational predictors of use.

Results
In the study sample, 2,414 patients were treated by cystectomy in 28 English hospital networks (by 158 consultants), of whom 135 (6%) had orthotopic bladder reconstruction in 16 networks (by 50 consultants). There was higher use of orthotopic surgery in younger patients (odds ratio [OR]=0.37 per increasing 10-year age group from 30-39 to ≥70, p≤0.001) and men (OR=2.20, p=0.006); whilst there was some evidence of less frequent use among more deprived patients (OR per increasing deprivation quintile=1.16, p=0.051). After accounting for patient and consultant level variation, there was large (i.e. greater than four-fold) variation in use of orthotopic reconstruction between different Cancer Networks (case-mix adjusted OR for 98th compared with 3nd network volume centiles=4.33, p<0.001).

Conclusions
Within the study context, use of orthotopic surgery was limited and variable. Patient and tumour characteristics are unlikely to explain large variation between hospital networks, which may reflect limited availability of surgical expertise or other healthcare system factors. Examining the dissemination of orthotopic surgery use using nation-wide data is advisable.

Session 2: Socioeconomic deprivation and cancer

15:40 - SOCIOECONOMIC INEQUALITIES IN CANCER RISK BY SITE, AGE, AND SEX IN SCOTLAND, 2000 - 2007

Katharine Sharpe, ISD; Alex McMahon, University of Glasgow; Paula McClements, ISD; David H Brewster, ISD; David I Conway, University of Glasgow

Objectives
Some cancers are associated with socioeconomic inequality (SEI); this study quantified the extent and differences by cancer type, age and sex.

Methods
We reviewed 216,315 incident cancers (excluding non melanoma skin cancer) from 2000 to 2007 classified into 27 anatomical groups. Further analyses were performed by morphology or sub site. Deprivation was measured using the Scottish Index of Multiple Deprivation and SEI using the slope index of inequality and the relative index of inequality (RII). Analyses were partitioned by five-year age group and sex.

Results
For both sexes, incidence was positively associated with deprivation for lung, head and neck, stomach, oesophagus, bladder, liver, pancreas and negatively associated with deprivation for cutaneous melanoma. Prostate, rectum (male), cervical and breast (female) cancers also show inequalities; only prostate and breast cancers are negatively associated with deprivation. Female RII (0.36) was lower than male RII (0.53). For males, SEI is pronounced at ages 45-74 years, peaking at 60-64 years (RII=0.39 – 0.58). For females, SEI begins at 20-24 years (RII=0.27) with pronounced inequalities at 60-79 years and peaking at 65-69 years (RII=0.30 - 0.48). All four morphology groups demonstrate inequalities for lung cancer. For cervical cancer, squamous cell carcinoma dominates; in oesophageal cancer, squamous cell carcinoma followed by adenocarcinoma and ultimately other morphologies show inequalities. For head and neck cancers; hypopharynx, piriform sinus and larynx followed by lip, oral cavity and ultimately oropharynx, base of tongue, palate and tonsil show inequalities.

Conclusions
We conclude: age, morphology, sex and site provide important information to better understand SEI.

Session 2: Socioeconomic deprivation and cancer

16:00 - INCREASING EARLY DETECTION OF CANCER IN A DEPRIVED, INNER-CITY AREA THROUGH COLLABORATION AND PARTNERSHIPS

Anna Garner, NHS City and Hackney; Vicky Hobart, NHS City and Hackney

Objectives

North East London (NEL) has high levels of deprivation and ethnic diversity. Mortality from cancer is high, linked with significantly lower survival than national levels (which is associated with late presentation and deprivation). To improve outcomes from cancer in our population, NEL PCTs have established a programme of work to improve survival, including: - Needs assessment - Setting up planning and governance structures, to share learning and work collaboratively - A focus on increasing population awareness of cancer symptoms, improving diagnosis in primary care and increasing screening uptake

Methods

Thorough analysis of incidence, mortality, survival, stage at diagnosis, routes of diagnosis, treatment and inequalities led to the identification of specific issues which could benefit from intervention. Strong links between cancer leads/commissioners in each of the PCTs and with the NEL Cancer Network, Thames Cancer Registry and acute trusts were established. A lead cancer commissioner was appointed to lead the commissioning of the three screening programmes and regular meetings established for the PCT leads to share learning and advise on improving the service provided. These forums allowed successful interventions shown to increase improving screening coverage in one PCT to be rolled out across the area. Working closely with the cancer network, we have implemented a number of initiatives to reduce delays in primary care including GP training, auditing cancer cases and piloting decision support tools.

Results

This programme of work has led to an increase in breast screening coverage of 3-7% per year in each of the PCTs over the last few years and an increase in the number of cases diagnosed through the 2ww route increased by 2-4% in each of the 3 PCTs

Conclusions

- Strong partnerships and evaluation are critical to implementing interventions to improve cancer outcomes - Sharing learning from successful interventions allows more efficient use of resources.

Session 2: Socioeconomic deprivation and cancer

16:20 - AVOIDABLE DEATHS DUE TO CANCER AND OTHER CAUSES BY ELIMINATING THE MORTALITY DIFFERENCES BETWEEN EDUCATIONAL LEVELS OF CANCER PATIENTS

Arun Pokhrel, Finnish Cancer Registry; Timo Hakulinen, Finnish Cancer Registry

Objectives

The aim of this study is to give a method for estimating crude death probabilities and estimate the "potentially" avoidable deaths due to cancer and other causes by eliminating the mortality differences between patient groups.

Methods

Patients diagnosed in Finland with cancer at 27 sites in 1971-2005 were linked with population censuses made every five years in 1970-2000 to obtain patient's educational level. The educational level was categorized into three depending on highest attained educational degree: basic (less than 10 years), secondary (10-12 years) and high (13 years or more). The cause-specific 5- and 10-year net survival probabilities were derived using the life table method. Theory of competing risks of death (Chiang 1968) was used to obtain the crude probabilities of death. The numbers and proportions of avoidable deaths were calculated for each period and site by assuming that the age and sex specific hazards of dying were equal to those in the high educational category by cancer site and cause of death.

Results

By assuming the cancer mortality of high education group for all, 6% of the cancer deaths in patients diagnosed at ages 25-89 years during first five years after diagnosis in 1971-1985 would be theoretically avoidable. For periods 1986-1995 and 1996-2005, these proportions were even higher, 7 and 9% respectively. With the other-cause mortality of high educated for all, a large proportion, 22-23% deaths due to other causes would have been avoided in 1996-2005. This proportion would, however, be lower, 17-19%, by assuming both the cancer and other-cause mortality of high educated for all.

Conclusions

The crude death probabilities derived using the Chiang's method can be used to estimate the avoidable deaths by eliminating the mortality differences between education levels of cancer patients. Many deaths saved from one cause will not be saved because of other cause. As the deaths will not be saved for long time, person-years savings are more important.

Session 2: Socioeconomic deprivation and cancer

16:40 - THE IMPACT OF SOCIO-ECONOMIC DEPRIVATION ON CANCER SURVIVAL IN ENGLAND

Margreet Lüchtenborg, King's College London, Thames Cancer Registry; Fredrik Sandin, Regional Oncology Centre, Uppsala/Örebro Region, Sweden; Karen M Linklater, King's College London, Thames Cancer Registry; Henrik Møller, King's College London, Thames Cancer Registry

Objectives
In England, cancer survival varies with socio-economic deprivation. We analysed avoidable deaths in relation to socio-economic deprivation for 14 common cancers.

Methods
Data on individuals diagnosed with any of the 14 most common types of cancer in England between 1999 and 2007 were extracted from the National Cancer Repository Dataset and analysed for survival in 2004-2007. Death-certificate-only cancer registrations and cases with a survival time of zero days were excluded. Patients were assigned to a socio-economic deprivation quintile based on the Income Domain of the Indices of Multiple Deprivation 2007. Avoidable deaths were calculated as the difference between the observed and corresponding expected number of deaths based on deprivation quintile-specific life tables.

Results
A total of 1,551,164 cases were included in the analyses. For all cancers, survival was higher in the most affluent group compared to the most deprived group. For the majority of the cancers, the greatest differences in survival between socio-economic groups were observed in the first month of follow-up. If all socio-economic groups experienced survival similar to that of the most affluent group, the proportion of avoidable deaths in the first month ranged from 0% in uterine cancer to 38% in melanoma, with an inter-quartile range of 17% to 26%. In absolute terms, the greatest numbers of avoidable deaths per annum over a five-year follow-up period were observed for colorectal (694), breast (494), prostate (334) and lung cancer (330).

Conclusions
In general, socio-economic deprivation gives rise to survival inequality among all the studied cancers and is most pronounced in short-term follow-up. This suggests that late presentation is a driving factor behind the survival inequality.

Session 2: Socioeconomic deprivation and cancer

17:00 - DOES SOCIOECONOMIC DEPRIVATION INCREASE THE CHANCE OF DYING IN HOSPITAL FOR CANCER PATIENTS

Andy Pring, South West Public Health Observatory; Dr Julia Verne, SWPHO

Objectives
About 128,000 people die in England every year with cancer as the underlying cause. Our objective was to determine whether deprivation is a significant factor affecting the likelihood of cancer patients dying in hospital rather than elsewhere.

Methods
Data on deaths registered in England between 2007 and 2009 were extracted from the ONS Public Health Annual Mortality Extract 2010. The proportion of deaths in a hospital was analysed by cause of death and sex for quintiles of social deprivation (IMD 2007 income domain) based on residential postcode.

Results
The proportion of deaths in hospital from any cause was greatest for the most deprived (61%) exceeding the proportion for the least deprived (54%), the two proportions having a ratio most deprived to least deprived of 1.13. Among deaths from cancer, the proportion in hospital was greatest for the most deprived (49%) exceeding the least deprived (41%); a ratio of 1.13. The pattern was present in: breast cancer (ratio 1.20), colorectal cancer (1.24), lung cancer (1.13) and prostate cancer (1.24 i.e. a quarter higher). The effect of deprivation is stronger in females (F) than males (M): all cancers (ratio: F 1.20, M 1.17), colorectal cancer (F 1.29, M 1.21) and lung cancer (F 1.16, M 1.11). Death in a hospice or own residence is least common among cancer deaths from the most deprived population.

Conclusions
For people dying from cancer hospital is a more common place of death for residents from the most deprived than from the least deprived communities. The effect is stronger for females than males. Inequalities in access to services at the end of life are a gross social injustice. Providers of health and social services must strive to ensure people are not disadvantaged at the end of their life by the circumstances in which they live.

Session 3: Putting information to work

15:40 - PROVISION OF ROUTINE CANCER INFORMATION IN A CHANGING PUBLIC HEALTH SETTING

Evans, T., West Midlands Cancer Intelligence Unit; Greaves, H., West Midlands Cancer Intelligence Unit; Broggio, J., West Midlands Cancer Intelligence Unit; Vernon, S., West Midlands Cancer Intelligence Unit; Bray, C., West Midlands Cancer Intelligence Unit; Lawrence, G., West Midlands Cancer Intelligence Unit

Objectives

The coalition government plans to abolishment of Primary Care Trusts (PCTs) and transfer public health functions to Local Authorities. These changes mean that there is a demand for cancer registries to move away from producing information for PCT boundaries and to make available high level 'off the shelf' information that supports the new geographies.

Methods

The key cancer information required by Local Authorities was prioritised into a focused two page fact-sheet for each of the Top Tier Local Authorities in the West Midlands. This covered incidence, mortality and survival analyses for the four most common cancers, with age groups chosen to align with the proposed outcome indicators in Transparency in outcomes. The profiles were based on data for the most recent year available (2008).

Results

Fourteen strategic Local Authority-based cancer profiles were created together with a West Midlands overview profile. Key points were summarised and a map was included. Colours and the template were standardised across the profiles. A methodology profile to support the interpretation of the data was also created. The profiles and methodology were published on the WMCIU's website in order to facilitate widespread dissemination. When 2009 data became available the profiles were updated.

Conclusions

Producing the Local Authority cancer profiles has allowed consistent and timely data using the new geographies to be provided to all interested stakeholders and has encouraged closer working relationships between the WMCIU and external partners. The cancer profiles were well received, and were repeated due to demand from stakeholders. Clear public provision of key information has reduced the demand for information requests.

Session 3: Putting information to work

16:00 - GP PRACTICE, PCT AND CONSORTIUM PROFILES FOR CANCER

Lucy Irvine, NCIN; Jennifer Benjamin, Department of Health; Kathy Elliot, National Cancer Action Team; Sean McPhail, NCIN; David Meechan, East Midlands Public Health Observatory & Trent Cancer Registry; Greg Rubin, Audit and evaluation of the GP Leadership Project; Kath Yates, NCIN; Di Riley, NCIN

Objectives

Good data and information are of vital importance for demonstrating improvement in early diagnosis of cancer and the outcomes for cancer patients, as outlined in the National Awareness and Early Diagnosis Initiative (NAEDI) and the Improving Outcomes: A Strategy for Cancer. The GP Practice, PCT and Consortium profiles support this by providing comparative information for benchmarking and reviewing variations. They are intended to help primary care and commissioners think about clinical practice and service delivery in cancer and, in particular, early detection and diagnosis.

Methods

The profiles have health indicators for a range of data, including practice population demographics, cancer incidence and mortality, cancer screening, two week wait referrals, diagnostics and presentation. We have worked with a wide range of stakeholders to ensure the profiles are useful, including consultation and regular communication with GPs, PCTs and Cancer Networks.

Results

The GP practice profiles were launched in October 2010, and the PCT profiles in December. They are mainly used by practices, Cancer Networks and PCTs. As part of the GP Leadership project, Cancer Network GP leads use the profiles to help select practices for further discussion and target use of the Primary Care Audit.

Conclusions

The profiles provide a valued and holistic insight about clinical practice and service delivery in cancer, and they are useful for asking the right questions locally. This has been confirmed by the positive feedback that we have received from users of the profiles.

Although it is not clear exactly what the configurations will be for the new GP Consortia, NCIN are testing ways to bring data together based on aggregates of GP Practices and piloting this concept with several consortia. Profiles at this level will bring new challenges and discussions as we begin to understand the information needs for commissioning at this level along with the availability of the required data.

Session 3: Putting information to work

16:20 - USING CANCER WAITING TIMES DATA TO IMPROVE CANCER REGISTRATION

Andy Smith, Trent Cancer Registry; Louise Hollingworth, Trent Cancer Registry; Gillian Gull, Trent Cancer Registry

Objectives
To assess the usefulness of GFoCWT data for cancer registration.

Methods
Trent Cancer Registry (TrCR) actively followed up all 2008 CWT and 2009 GFoCWT records that indicated a new primary diagnosis of cancer. Significant numbers of these cases were neither inpatients or had a pathology record indicating cancer. This cohort of Cancer Waiting Times Only (CWTO) cases were followed up with individual trusts. CWTO records were matched against other data sets (HES, RES, MDT databases, NBOCAP) and lists sent to trusts for confirmation of diagnosis or a definitive statement that the patient has not had a new primary cancer. As part of the rapid review CWT records indicating a positive cancer diagnosis were compared against registry records in the National Cancer Data Repository (NCDR).

Results
The majority of CWTO records that were actively followed up with provider trusts were found to be genuine cancer cases. These cases were not sent to the registry through the existing electronic data feeds. Comparing CWT records with the NCDR for all England showed significant differences by PCT in the percentages of cases on CWT found in the NCDR. Clustering these by registry collection area indicate that the differences may be due to individual registry practice rather than idiosyncrasies with data submission by trusts.

Conclusions
For diagnosis years 2008 and 2009 TrCR have seen a significant increase in data flows from provider trusts supplemented with national data feeds (RES, HES, NCASP). Notwithstanding these new data feeds CWT/GFoCWT data has significantly contributed to the ability of the registry to ascertain all cancer cases and through effective follow up complete the cancer registration dataset for these cases. Correlation of GFoCWT data and registry data can indicate the quality of case ascertainment.

Session 3: Putting information to work

16:40 - NATIONAL CHEMOTHERAPY DATABASE: A PILOT STUDY TO EVALUATE REQUIREMENT TO SUPPORT THE COLLECTION AND CENTRAL MANAGEMENT OF CANCER CHEMOTHERAPY DATA ACROSS ENGLAND

Kellie Peters, Oxford Cancer Intelligence Unit; Matthew Greenslade, South West Cancer Intelligence Unit; Regina Lally, Oxford Cancer Intelligence Unit; Dr Ken Lloyd, NCIN; Sue Forsey, NCIN

Objectives

In October 2010 the Oxford Cancer Intelligence Unit was commissioned by NCIN to evaluate the requirements to support the collection and central management of cancer chemotherapy data across England.

Methods

Working with 6 cancer centres across England, OCIU with support from the South West Cancer Intelligence Unit were tasked with:

- Developing the architectural design of the national chemotherapy repository.
- Evaluating the chemotherapy extracts from e-prescribing systems/electronic clinical systems to establish compliance with the draft Chemotherapy dataset;
- Providing a technical solution that ensured a seamless secure transfer of the chemotherapy dataset;
- Provide sample chemotherapy activity reports from the central chemotherapy repository.

Results

Between January and March 2011, chemotherapy data has been extracted from each of the participating pilot sites electronic clinical systems, securely transferred, processed and extracted into activity reports. The final report submitted to NCIN/NCAT highlights that the pilot exercise has identified that there are major areas that will require substantial development before a complete Systemic Anti-Cancer Therapy dataset can be returned from all providers of chemotherapy.

Conclusions

The pilot exercise has successfully demonstrated that it is possible to extract data on cancer chemotherapy from disparate hospital systems and to securely transfer and collect these data into a single database. It has also demonstrated that the data can be interpreted in such a way that meaningful analyses can be derived.

Session 3: Putting information to work

17:00 - INVESTIGATING THE USE OF PERIOD SURVIVAL ANALYSIS TO MEASURE VARIATION IN SURVIVAL RATES BETWEEN WEST MIDLANDS NHS TRUSTS

Evans, T., West Midlands Cancer Intelligence Unit; Vernon, S., West Midlands Cancer Intelligence Unit; Lawrence, G., West Midlands Cancer Intelligence Unit

Objectives

Measurement of survival outcomes has been highlighted in the Cancer Reform Strategy as being of great importance to the planning of cancer services. Key to this is the availability of up-to-date and meaningful data. The WMCIU has improved its survival methodologies - using period survival instead of cohort survival to improve timeliness, age standardisation, and analysing by the NHS Trust where the patient was first treated, rather than by geographical cohorts such as PCTs which may hide varied care pathways.

Methods

Cancer registration data for cases diagnosed over a ten year period (2000-2009) were matched to Cancer Waiting Times data to identify the "Trust first seen". Survival experience was then observed in the period 2007-2009 for the four most common cancers. In order to mitigate the effect of case-mix, tumour diagnoses were matched to an age, year, sex and deprivation specific life table, and the survival rates were age standardised.

Results

Relative survival varied widely between NHS Trusts, but these differences were often not statistically significant. Correcting for age by age-standardisation reduced variation between Trust survival rates, but did not fully explain all the observed differences. Survival outcomes for patients first seen at specialist centres were often better than for those first seen at non-specialist centres.

Conclusions

As the public focus on survival analysis grows, it is increasingly important to ensure that data are up-to-date, adjusted for case-mix and relate to the patient pathway followed. Period survival analysis and age standardisation address some of these issues, but could be improved further – particularly by fuller case-mix adjustment. There is also a need to produce consistent figures using a nationally agreed methodology, so that cross-region comparisons do not draw false conclusions.

DAY 2 – 16th JUNE

08:30 to 09:30	**Registration, posters and exhibition**
09:30 to 11:00	**Plenary session: Innovation**
09:30	Chair's welcome & introduction to session Chair – Dr David Brewster, Director, Scottish Cancer Registry
09:40	Data variation and patient experience Ciarán Devane, Chief Executive, Macmillan Cancer Support
10:05	A new single registration system for England Dr Jem Rashbass, National Director for Registry Modernisation
10:30	NHS Reform – opportunities and risks John Baron MP, Chair, All Party Parliamentary Group on Cancer
10:55	Chair's summary
11:00 to 11:30	**Refreshments, posters and exhibition**
11:30 to 13:00	**Parallel sessions**
Session 1:	**Survivorship**
11:30	Chair's introduction Ray Murphy, Chair of the National Cancer Partnership Forum
11:35	Cancer survivorship in the United Kingdom Jacob Maddams, Thames Cancer Registry, King's College London
11:55	Increased risk of skeletal and cardiac events in prostate cancer patients Luke Hounsome, South West Public Health Observatory
12:15	Using clinical attendance patterns to determine likely survivorship journey (colorectal cancer, multiple myeloma, hodgkin's disease) in England James Wells, Monitor Group, Europe
12:35	Electronic patient-reported outcomes from cancer survivors (EPOCS): preliminary results from feasibility testing of a scalable electronic system for collecting pros and linking with cancer registry data Laura Ashley, University of Leeds
12:55	Chair's summary

Session 2:	**Capturing diagnosis and stage: Pathology, radiology, MDTs and beyond**
11:30	Chair's introduction Dr Gifford Batstone, National Clinical Lead for Pathology
11:35	The national cancer staging panel for registration: driving improvements in the collection of national staging data Brian Rous, Eastern Cancer Registration and Information Centre
11:55	The influence of multidisciplinary team (MDT) delivered care on survival from breast cancer: results from a comparative, intervention study Eileen Kesson, NHS Greater Glasgow and Clyde
12:15	Early mortality from colorectal cancer: an exploratory study using national Eva Morris, University of Leeds
12:35	Assume nothing? Can lack of evidence be taken as evidence of lack when staging information? Sally Vernon, West Midlands Cancer Intelligence Unit
12:55	Chair's summary
Session 3:	**European Network of Cancer Registries**
11:30	Chair's introduction: the ENCR, its role and future perspectives Dr Stefano Rosso, Chairman of the ENCR Steering Committee www.encr.com.fr/
11:35	Cancer registration in Europe: context and practices Dr Sabine Siesling
11:55	Building the European database of cancer registry data Dr Eva Steliarova-Foucher
12:15	Making sense of the data: Europe-wide comparisons Dr Freddie Bray
12:35	Cancer registries in Europe are needed everywhere Dr Max Parkin
12:55	Chair's summary
13:00 to 14:00	**Lunch, posters and exhibition**

14:00 to 15:30	Parallel sessions

Session 1:	Cancer and primary care
14:00	Chair's introduction Professor Greg Rubin, Professor of General Practice and Primary Care, Durham University
14:05	Findings from a national audit of cancer diagnosis in primary care in England Sean McPhail, NCIN
14:25	Variations in usage of the two week wait referral system in general practice Carolynn Gildea, Trent Cancer Registry
14:45	Approximately a quarter of persons with cancer don't have a cancer waiting times record – who are they? Jon Shelton, NCIN
15:05	Providing cancer information and statistics for GP commissioning consortia Diane Edwards, West Midlands Cancer Intelligence Unit
15:25	Chair's summary

Session 2:	Cancer site-specific analyses
14:00	Chair's introduction Robin Burgess, Chief Executive, HQIP
14:05	Improved survival of breast cancer patients in the UK breast screening programme Gill Lawrence, West Midlands Cancer Intelligence Unit
14:25	Is the lack of surgery amongst older postmenopausal women with breast cancer in the UK explained by co-morbidity? Steven Oliver, University of York and HYMS
14:45	Interval cancers in a FOBT-based colorectal cancer population screening programme: implications for tumour site and gender PL McClements, Scottish Cancer Registry
15:05	What do patients with prostate cancer die of? An analysis of 50,000 cases from the Thames Cancer Registry. Simon Chowdhury, King's College London
15:25	Chair's summary

Session 3:	**EUROCOURSE project: cancer registry data for research**
14:00	Chair's introduction: on the road towards an Oncopolicy summit with ECCO Professor Jan Willem Coebergh, EUROCOURSE coordinator www.eurocourse.org/
14:05	Privacy regulations and ethics: obstacles to cancer registry research in Europe? Dr Hans Storm
14:25	Achievements and pitfalls: the trade off between completeness and timeliness Dr Roberto Zanetti
14:45	The role of cancer registries in the evaluation of organised screening Dr Stefan Lönnberg
15:05	Essential role of cancer registries in evaluation of clinical management and outcome Dr Valery Lemmens
15:25	Chair's summary
15:30 to 16:00	**Refreshments, posters and exhibition**
16:00 to 17:30	**Plenary Session: Thames Cancer Registry at 50 years**
16:00	Chair's introduction Dr Maggie Barker, Medical Director, Thames Cancer Registry
16:05	Celebrating 50 years of Thames Cancer Registry data (film) Kenny Lee and Jonathan Davis, Thames Cancer Registry
16:25	Fifty year cancer incidence trends in South East England Professor Henrik Møller & colleagues, Thames Cancer Registry
16:45	Hormone receptor status and ethnicity in women with breast cancer in North East London Ruth H Jack, Thames Cancer Registry
17:05	Cancer registration: Infancy, adolescence and maturity. The memoirs of Gerontius. Dick Skeet
17:30	**Poster Awards**
	Presented by Professor Sir Alex Markham, Chair of the NCIN Steering Group
Award 1:	Selected by a panel of patients, consumers and carers
Award 2:	Selected by a panel of clinicians and health professionals
17:45	**Close of day 2**
19:30	**Conference dinner – King's suite, 3rd Floor**

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DAY 2 PARALLEL SESSION AND PROFFERED PAPER ABSTRACTS

Morning session 1: Survivorship

11:35 - CANCER SURVIVORSHIP IN THE UNITED KINGDOM

Jacob Maddams, Thames Cancer Registry, King's College London; Martin Utley, Clinical Operational Research Unit, University College London; Henrik Møller, Thames Cancer Registry, King's College London

Objectives

In the UK there are approximately two million cancer survivors (3.2% of the entire population), composed of groups of people in different phases of survivorship and with different health service needs. The aim of this study was to quantify the level of acute health service utilisation by cancer survivors in the UK, according to tumour type, age, sex, time since diagnosis, and time until death.

Methods

Linked national cancer registry and Hospital Episode Statistics (HES) data were analysed. These covered all cancer-related admissions to NHS hospitals in England occurring in 2006 among people diagnosed with cancer in the period 1990-2006. The intensity of cancer-related acute health service utilisation was categorised as 'none', 'low' (up to 10% of time), or 'high' (>10% of time), among groups defined by time since diagnosis and time until death. Results were extrapolated from the population of England in 2006 (51 million) to that of the UK in 2008 (61 million).

Results

61,000 of the two million cancer survivors (3%) were in the 'high' utilisation category; 240,000 (12%) were in the 'low' category; 1,702,000 (85%) had no cancer-related hospital admissions. 309,000 cancer survivors (15%) were within one year from diagnosis and/or death, and it was these groups that had the highest levels of hospital utilisation. 1,568,000 cancer survivors (78%) were more than one year from both diagnosis and death, and had no cancer related hospital admissions.

Conclusions

A considerable proportion of cancer survivors in the UK have a high level of hospital utilisation soon after diagnosis or before death, but the large majority are not recently diagnosed nor near the end of their life, and do not utilise acute health services for cancer-related care.

Morning session 1: Survivorship

11:55 - INCREASED RISK OF SKELETAL AND CARDIAC EVENTS IN PROSTATE CANCER PATIENTS.

Luke Hounsome, South West Public Health Observatory; Edward Jefferies, Royal United Hospital, Bath; Maike Eylert, Bristol Royal Infirmary, Bristol; Julia Verne, South West Public Health Observatory, Bristol; Amit Bahl, Bristol Haematology and Oncology Centre, Bristol; Raj Persad, Southmead Hospital, Bristol

Objectives

Studies in the USA have shown an increased risk of fractures in men treated with Androgen Deprivation Therapy (ADT) for prostate cancer, due to induced osteoporosis. There is also evidence of increased cardiac events in men undergoing hormone therapy. We examined whether these side-effects are significant in England.

Methods

Men diagnosed with prostate cancer were selected from the National Cancer Data Repository and their subsequent admissions to hospital with a cardiac diagnosis, or with a bone fracture, counted for the period 2004-2007. The analysis was repeated for those recorded on NCDR as having hormone therapy. A rate was derived based on the prevalent population and compared to the rate of admissions in all men.

Results

Men who have a diagnosis of prostate cancer are more likely to be admitted for hospital for a cardiac-related event. This effect is strongest in 50-59 year olds, although the total amount of admissions increases with age. Those men having ADT treatment have an even greater rate of admission, and again the ratio to the background population is greatest for those aged 50-59. The number of admissions for fractures is smaller, but the overall pattern of higher rates of admissions in prostate cancer patients and ADT patients is repeated. Younger men have a greater percentage increase in admissions, but after age 60 the ratio is consistent.

Conclusions

Prostate cancer patients are at greater risk of admission to hospital for cardiac events or bone fractures. Those undergoing ADT have a further increased risk. Women undergoing hormone therapy for breast cancer are often prescribed bisphosphonates to protect against fractures, and this practice needs to be extended to men being treated with ADT. Awareness of the high rate of cardiac events should be raised to prompt discussion of lifestyle changes to reduce risk.

Morning session 1: Survivorship

12:15 - USING CLINICAL ATTENDANCE PATTERNS TO DETERMINE LIKELY SURVIVORSHIP JOURNEY (COLORECTAL CANCER, MULTIPLE MYELOMA, HODGKIN'S DISEASE) IN ENGLAND

James Wells, Monitor Group, Europe; A Woolmore, Monitor Group, Europe; T Welchman, Monitor Group, Europe; KL Edwards, University of Nottingham, School of Clinical Sciences; K Harris, University of Leeds, Centre of Epidemiology and Biostatistics; H Nai, University of Leeds, Centre of Epidemiology and Biostatistics; J Flynn, Macmillan Cancer Support; J Ritchie-Campbell, Macmillan Cancer Support; D Forman, IARC

Objectives

This study was designed as a way of describing in detail the actual burden of cancer from diagnosis onward for eight years. We take the perspective of both patients and the healthcare system. Our approach involves charting the different 'journeys' of cancer patients toward a set of clearly defined and meaningful clinical outcomes. Our intention was to describe the 'natural history' of three cancer types: colorectal, multiply myeloma and Hodgkin's disease. The different 'journeys' are described using quantitative data concerning both inpatient activities and the costs associated with that activity.

Methods

The analysis is based on around ten years (both pre and post diagnosis) of linked cancer registry and Hospital Episode Statistics inpatient records from the National Cancer Intelligence Network. This National dataset incorporates all patients diagnosed with colorectal cancer in Q2 of 2001 (6509 patients). Due to the lower incidence we included multiple myeloma (6000 patients) or Hodgkin's disease (2081 patients) diagnosed between Q2'01 – Q1'03. The HES dataset predates diagnosis by 12 months to allow the analysis of inpatient activity prior to the diagnosis of the target cancer.

Results

Relevant outcomes for each cancer were defined in collaboration with an expert clinical panel. These outcomes include the duration of survival post diagnosis for all cancer types. For each cancer individually, we describe the additional clinically meaningful outcomes, for example renal disease, or cardiovascular disease. Burden of disease measures are also included, for example the percentage of days patients spent in an in-patient setting.

Conclusions

Later stages of the project will focus on designing an assignment algorithm using Decision tree (CHAID) analysis to indicate the likely 'journey' for a given patient, based on variables known at the point of diagnosis. This will include variables such as demographic and clinical factors but will also utilize a range of pre-diagnosis pathway variables as independent variables.

Morning session 1: Survivorship

12:35 - ELECTRONIC PATIENT-REPORTED OUTCOMES FROM CANCER SURVIVORS (EPOCS): PRELIMINARY RESULTS FROM FEASIBILITY TESTING OF A SCALABLE ELECTRONIC SYSTEM FOR COLLECTING PROS AND LINKING WITH CANCER REGISTRY DATA

Laura Ashley, University of Leeds; Helen Jones, University of Leeds; Galina Velikova, University of Leeds; David Forman, International Agency for Research on Cancer; Owen Johnson, University of Leeds; Alex Newsham, University of Leeds; Ada Keding, University of Leeds; James Thomas, National Cancer Intelligence Network; Penny Wright, University of Leeds

Objectives

The ePOCS study aims to test the feasibility of an electronic system for regularly collecting patient-reported outcomes (PROs), and linking these with Cancer Registry data. We have designed and built a system in which: 1) PROs are completed on the internet using a bespoke questionnaire administration tool (QTool), 2) the data are stored in the cancer registries/NCDR, 3) patient management is semi-automated via a tracking database application, and 4) patient communication is primarily email-based.

Methods

The system is being tested in two Yorkshire NHS Trusts with non-metastatic breast, colorectal and prostate cancer patients. Patients are consented within 6 months of diagnosis, by secondary care clinical teams and research nurses, and managed thereon by the ePOCS team. Patients complete a range of health and quality-of-life measures (e.g. EQ-5D, SDI-21, EORTC-QLQ-BR23) at three time-points; when they join (T1), and 9 months (T2) and 15 months (T3) post-diagnosis. At each time-point, patients receive up to two reminders.

Results

Feasibility testing commenced late November 2010 and is planned to continue to autumn 2011. To press, 193 patients have joined the system; 39% have declined participation. The most common reasons for decline are lack of internet use and/or access. For T1, the PROs completion rate is currently 73% (80 questions), the average completion time 20 minutes, and the proportion of missing responses <1%. T1 reminders have thus far been sent to 52% of patients, 63% of whom have responded. Most patients have provided an email address for communications (83%), and few have reported difficulties with the system (n≈13).

Conclusions

Preliminary feasibility results are promising. The ePOCS system has potential to provide an inexpensive UK-scalable means of sustainably adding PROs to cancer registries' datasets, which, in turn, has potential to advance understanding of the psychosocial challenges of survivorship, aid risk stratification, and inform service and intervention development.

Morning session 2: Capturing diagnosis and stage: Pathology, radiology, MDTs and beyond

11:35 - THE NATIONAL CANCER STAGING PANEL FOR REGISTRATION: DRIVING IMPROVEMENTS IN THE COLLECTION OF NATIONAL STAGING DATA

Brian Rous, Eastern Cancer Registration and Information Centre; Gina Brown, Royal Marsden NHS Foundation Trust; Gill Lawrence, West Midlands Cancer Intelligence Unit; Sean McPhail, National Cancer Intelligence Network; Steven Oliver, Northern and Yorkshire Cancer Registry and Information Service; Mick Peake, National Cancer Intelligence Network; Trish Stokes, National Cancer Intelligence Network

Objectives

'Delivering the cancer reform strategy' highlighted the paucity of data in most regions about the stage that a patient's cancer has reached at the time of diagnosis and set a target to dramatically improve this within the next two years. The aim is to share procedures and algorithms across the registry community, to identify best practice and to drive improvement in the ascertainment and quality of staging data.

Methods

The NCIN has established a National Cancer Staging Panel for Registration to improve the collection of staging. The panel is bringing together experts from the clinical and registry communities and will identify which staging information the registries must collect for each tumour type. As well as encouraging the collection of staging data from multidisciplinary team meetings and pathology reports, the panel will establish rules and guidance for deriving a final integrated 'registry' stage where partial stage information is received from multiple sources.

Results

Guidance is being issued to registries on staging systems in use, conversion between staging systems and extraction of staging information from pathology reports, radiology reports and patient notes. The rules established will be embedded with the English Cancer Registration System to improve standardisation of stage recording across the English Cancer Registries.

Conclusions

Establishment of better guidance on collecting stage information and sharing of best practice is expected to lead to improvement in the ascertainment and quality of staging data across England.

Morning session 2: Capturing diagnosis and stage: Pathology, radiology, MDTs and beyond

11:55 - THE INFLUENCE OF MULTIDISCIPLINARY TEAM (MDT) DELIVERED CARE ON SURVIVAL FROM BREAST CANCER: RESULTS FROM A COMPARATIVE, INTERVENTION STUDY

Eileen Kesson, NHS Greater Glasgow and Clyde; David S Morrison, University of Glasgow; Gwen Allardice, NHS Greater Glasgow and Clyde; WD George, University of Glasgow

Objectives

Multidisciplinary team (MDT) delivered breast cancer care was introduced in one health board in the West of Scotland in 1995. We investigate the influence that MDT care had on breast cancer survival in this region compared to standard care in other parts of the West of Scotland.

Methods

Incident cases of female breast cancer diagnosed between 1990 and 2000 in the 5 health board regions in the West of Scotland were extracted from the Scottish Cancer Registry (SMR 06). Patient records were linked to the General Registry Office for Scotland (GROS) death records to provide follow-up data. Baseline, pre-intervention time-period was 1990 to mid-1995, and intervention time-period was mid-1995 to 2000. Breast cancer specific 5-year survival rates for the region where MDT care was introduced (intervention group) were compared to survival in the 4 health board regions delivering standard care (control group). Multivariate analysis, funnel plots and life table survival analyses were produced.

Results

A total of 13,722 patients were included, 6050 in the intervention group and 7672 in the control group. In both time-periods more patients in the intervention group lived in the most socio-economically deprived areas compared to the control group ($p<0.001$). Prior to the introduction of MDTs, there was an 11% increased risk of death from breast cancer in the intervention group (HR 1.11, CI 1.01, 1.21) compared to the control group. After the introduction of MDT care there was a 16% reduced risk of dying in the intervention group (HR 0.84, CI 0.76 to 0.93). Funnel plots indicated that between-hospital variations in survival were reduced in the MDT group to a greater extent than in the control group.

Conclusions

The introduction of MDT care was associated with a significant reduction in cancer specific mortality for patients treated for breast cancer in the West of Scotland.

Morning session 2: Capturing diagnosis and stage: Pathology, radiology, MDTs and beyond

12:15 - EARLY MORTALITY FROM COLORECTAL CANCER: AN EXPLORATORY STUDY USING NATIONAL DATASETS

Amy Downing, University of Leeds; Steven Oliver, NYCRIS; Eva Morris, University of Leeds; James Thomas, Self-employed; Louise Whitehouse, University of Leeds; Paul Finan, Leeds Teaching Hospitals NHS Trust; John Wilkinson, NYCRIS; Una Macleod, Hull & York Medical School

Objectives
Research shows that the UK fairs poorly in comparisons of colorectal cancer survival, with lower survival immediately after diagnosis accounting for much of the variation. This study uses data within the National Cancer Data Repository (NCDR) to compare patients who survive or die within 1 month, 3 months, 6 months or 1 year of diagnosis in terms of patient, tumour and treatment characteristics.

Methods
Data on cases of colorectal cancer diagnosed in England in 2008 were extracted from the NCDR. Cases were split into the following groups according to their survival time after diagnosis: 0-30 days, 31-90 days, 91-180 days, 181-365 days, >365 days.

Results
Of the 32,292 cases, 8.9% died within 1 month, 15.9% within 3 months, 21.8% within 6 months and 29.6% within 1 year. Mean age at diagnosis decreased from 79 years in those dying within 30 days to 69 years in those surviving at least 1 year. Females were more likely to die within 30 days, whereas males were more likely to die in subsequent time periods. Patients living in more affluent areas were least likely to die within 30 days and most likely to survive 1 year. A higher proportion of patients dying early were diagnosed with colon cancer (compared to rectal cancer). Patients dying within the first year were more likely to be diagnosed with Dukes D tumours (32.7% compared to 8.4% in those surviving 1 year) although the proportion with unknown stage was also higher in those dying earlier. Surgery was performed in 32.9% of those dying within 30 days, increasing to 87.6% in those surviving 1 year.

Conclusions
These preliminary results show clear differences between patients dying early and those surviving at least 1 year. Further data relating to screening, waiting times and general practice attendance will be linked to the existing data enabling us to investigate routes to diagnosis.

Morning session 2: Capturing diagnosis and stage: Pathology, radiology, MDTs and beyond

12:35 - ASSUME NOTHING? CAN LACK OF EVIDENCE BE TAKEN AS EVIDENCE OF LACK WHEN RECORDING STAGING INFORMATION?

Vernon, S., West Midlands Cancer Intelligence Unit; Bray, C., West Midlands Cancer Intelligence Unit; Greaves, H., West Midlands Cancer Intelligence Unit; Porter, M., West Midlands Cancer Intelligence Unit; Pearce, N., West Midlands Cancer Intelligence Unit; Barrett, G., West Midlands Cancer Intelligence Unit; Lawrence, G., West Midlands Cancer Intelligence Unit; Evans, T., West Midlands Cancer Intelligence Unit

Objectives

Cancer registries are striving to reach the 70% staging target. Data incompleteness, particularly around metastasis and nodal status, is a known barrier. There are cancers where the data received by the registry is a strong predictor for the missing data – a small tumour with negative nodes is unlikely to have metastasised – and it is tempting to assume that the missing data item can be presumed to be negative. However, making untested assumptions reduces the reliability of registry data. Validating the assumptions against cases where the metastatic/nodal status is known aims to produce an evidence-based algorithm for when assumptions can be made.

Methods

The key predictors for metastases and nodal status were deduced by running multivariate regression analysis on cases where metastatic and nodal status were known. Cancers were grouped by these key predictors. In each group, the percentage of negative cases of all known cases was calculated. Survival curves were plotted for known positives, known negatives, and unknowns. A high percentage of negative cases and no statistically-significant difference between the survival of negatives and unknowns was taken to imply that the unknowns were negative.

Results

The methodology produced a strong evidence base for making nodal and metastatic assumptions, particularly for small tumours. However, there are many cases where although no data had been provided, the key predictors and corresponding survival analysis suggested that the negative assumption could not be made.

Conclusions

Improving the quality of data submitted to the registries, so that the true value of metastases and nodal status is reported directly, should be the main focus of data improvement. However, evidence based assumptions can be made and have the potential to improve staging data for analyses as an interim solution.

Afternoon session 1: Cancer and primary care

14:05 - FINDINGS FROM A NATIONAL AUDIT OF CANCER DIAGNOSIS IN PRIMARY CARE IN ENGLAND

Sean McPhail, NCIN; Chris Carrigan, NCIN; Kathy Elliott, National Cancer Action Team; Nicola Hall, School of Medicine and Health, Durham University; Greg Rubin, of Medicine and Health, Durham University

Objectives

The English National Awareness and Early Diagnosis Initiative is intended to better understand and address perceived deficiencies primary health care performance in cancer diagnosis. A national audit of cancer diagnosis in primary care was undertaken in 2009/10 as part of this initiative. Participation agreements were reached with 17/28 cancer networks in England. Three networks used a sampling approach to practice selection. In the remaining 14 networks all practices wishing to participate were able to do so.

Methods

An audit template was developed and piloted by an expert group of academic and service GPs, utilising experience in earlier local audits of cancer diagnosis. Participating cancer networks identified GP leads for the initiative, who also validated practice returns before submission. Data was imported into a single database for cleaning and analysis by the National Cancer Intelligence Network.

Results

Data was collected on 18,113 patients by over 1000 practices in 17 cancer networks. Data quality was high with most categorical fields (including stage) being 90%+ complete. Comparison with cancer registry data demonstrated that the dataset was representative.
1066 (5.9%) patients were described as housebound and 934 (5.2%) had a communication difficulty. Both disabilities were associated with significantly increased odds of later stage at diagnosis (OR 1.77, 1.21 respectively) while age, sex and ethnicity were not.
The median duration of the primary care and referral intervals was 4 days and 12 days respectively, with considerable variation by cancer site. Emergency presentation, usually associated with worse outcomes, occurred in 12.8% of all cases but ranged from 3.8% (breast) to 40.0% (brain). In 6.1% of cases the GP believed that better access to investigations would have reduced delay in diagnosis. This also varied considerably by site, rising to 19.5% for brain and 12-14% for ovary, pancreas and kidney.

Conclusions

This is one of the largest and most comprehensive studies to date of the primary care pathway to cancer diagnosis. It provides detailed insights into current clinical practice that can direct initiatives to reduce the time to diagnosis for cancer, as well as raising important questions for future research.

Afternoon session 1: Cancer and primary care

14:25 - VARIATIONS IN USAGE OF THE TWO WEEK WAIT REFERRAL SYSTEM IN GENERAL PRACTICE

Carolynn Gildea, Trent Cancer Registry; David Meechan, Trent Cancer Registry; Louise Hollingworth, Trent Cancer Registry

Objectives

To investigate the patterns in the use of the two week wait referral system by GPs. BACKGROUND: Early diagnosis is an important part of the cancer outcomes strategy and, within this, the two week wait referral system plays a key role. As part of their lead role for Cancer Waiting Times (CWT), Trent Cancer Registry provided referral, conversion and detection rates for the GP practice profiles developed by NCIN and NCAT. These measures are also being used to support the National Awareness and Early Diagnosis Initiative to improve early diagnosis of cancer and outcomes for cancer patients.

Methods

Three measures provide key ways to assess the usage of the two week wait referral system, namely:

- Referral rate – number of two week wait referrals as a standardised rate
- Conversion rate – proportion of two week wait referrals resulting in a cancer diagnosis
- Detection rate – proportion of cancers referred through the two week wait system
- To gain a better understanding of the data and investigate referral patterns/ trends, this analysis explores variations in referral, conversion and detection rates at GP practice level and the correlations between them.

Results

Initial results show significant differences in the way GP practices use the two week wait referral system for the diagnosis of cancer. Relationships between the three measures demonstrate complex patterns in practice referrals; as expected, increases in referral rate correspond to decreases in conversion rates and increases in detection rates. However, surprisingly, conversion and detection rates appear to be positively correlated. Presented results will update analysis provided for the NAO, in order to inform their “Delivering the Cancer Reform Strategy” report.

Conclusions

These results are being used by cancer networks in their discussions with primary care providers to understand referral patterns and share best practice.

Afternoon session 1: Cancer and primary care

14:45 - APPROXIMATELY A QUARTER OF PERSONS WITH CANCER DON'T HAVE A CANCER WAITING TIMES RECORD – WHO ARE THEY?

Jon Shelton, NCIN; Sean McPhail, NCIN; Louise Hollingworth, Trent Cancer Registry; Andy Smith, Trent Cancer Registry; David Meechan, Trent Cancer Registry; Henrik Møller, NCIN

Objectives

To characterise the population who have tumours present in the cancer registries but do not have a 31-day Cancer Waiting Times record.

Methods

Patient level Cancer Waiting Times data (including patient identifiers) were downloaded from the DH Cancer Waiting Times Database for 2006-2008. These were linked to patient level data in the NCIN National Cancer Data Repository. The demographics of the patient cohort not present in the 31-day Cancer Waiting Times database were compared to that present in both.

Results

Prior to 2009 31-day Cancer Waiting Times data were recorded for patients with any invasive cancer except basal cell carcinoma of the skin, and also recorded for in-situ breast cancers. All patients diagnosed with these cancers should be recorded, even if all treatment was declined. Numbers of 31-day Cancer Waiting Time patients increased from 203,000 to 213,000 for years between 2006 and 2008. Over the same period, and with the same range of cancers, cancer registries recorded between 273,000 and 300,000 cases. Over these three years only 74% of cases registered have a 31-day Cancer Waiting Times record. Analysis of the demographics of the cases in the NCDR without a corresponding 31-day Cancer Waiting Times record is underway. Their nature will be characterised by age, sex, cancer type, geography, deprivation quintile, ethnicity, and co-morbidity.

Conclusions

Numbers of 31-day patients are routinely used by frontline services to assess and plan capacity needs. Rates and ratios derived from Cancer Waiting Times data are used to benchmark services and performance. An accurate understanding of the completeness and character of the 31-day patient cohort is necessary to correctly interpret and use these figures.

Afternoon session 1: Cancer and primary care

15:05 - PROVIDING CANCER INFORMATION AND STATISTICS FOR GP COMMISSIONING CONSORTIA

Edwards, D.E., West Midlands Cancer Intelligence Unit; Evans, T., West Midlands Cancer Intelligence Unit; Vernon, S., West Midlands Cancer Intelligence Unit; Lawrence, G., West Midlands Cancer Intelligence Unit

Objectives

Responsibility for commissioning health care is to move from PCTs to GP Commissioning Consortia. In order to produce the most meaningful cancer statistics for commissioners, Pathfinder Consortia have been identified, and their population profile, cancer incidence and mortality rates calculated. This initial analysis of GP clusters enables issues with producing statistics for these new organisations to be identified early.

Methods

16 Pathfinder GP Commissioning Consortia have been identified in the West Midlands by the Department of Heath. Patient profiles and cancer statistics for these consortia were collated and compared with those not currently included in GP Consortia. Denominator populations were developed using 2008 GP practice list demographics and best-fit ONS mid-year estimates for LSOAs. The geographical extent of each GP consortia was approximated by assessing the location of GP practices and the residential addresses of their patients diagnosed with cancer.

Results

Pathfinder consortia include 415 of the 997 practices in the region, covering 2.6 of the 5.2 million people. GP Consortia range widely in size – some organised to mirror the old PCT boundaries with over 50 GP practices, whereas others covering only 9 practices. The 4 PCTs with the best coverage by GP consortia include an average of 93% of GP practices and declare populations of up to 9.6 % higher than their known resident PCT populations.

Conclusions

To provide consistent cancer statistics both a geographical extent and a denominator population for each area need to be established to reduce the risk of 'double counting' or 'identification of an individual.' The more fragmented GP consortia become the less reliable our statistics will be and less efficient the commissioning of cancer services.

Afternoon session 2: Cancer site-specific analyses

14:05 - IMPROVED SURVIVAL OF BREAST CANCER PATIENTS IN THE UK BREAST SCREENING PROGRAMME

Lawrence G., West Midlands Cancer Intelligence Unit; Cheung S., West Midlands Cancer Intelligence Unit; Kearins O., West Midlands Cancer Intelligence Unit

Objectives

To compare the survival rates of breast cancer patients diagnosed in 1992/93 and 2002/03 through UK NHS Breast Screening Programme (NHSBSP), and to ascertain if there is any improvement in prognosis between the two time periods.

Methods

Death information and prognostic details were collected for 6,705 eligible patients with screen-detected (SD) breast cancer who were screened between 1 April 1992 and 31 March 1993, and for 10,252 patients who were screened between 1 April 2002 and 31 March 2003. Cumulative relative survival probabilities for women in the general UK population were calculated using the Ederer II method with life tables supplied by the Government's Actuary Department. Survival was calculated using the statistical package STATA.

Results

The number of SD breast cancers in the UK has increased by over 50% in 10 years. Data completeness has improved from 50% with unknown NPI group in 1992/93 to only 6% in 2002/03; largely due to improvements in the clinical practice of assessing lymph nodes for invasive cancers and the recording of nodal status. The 10-year and 15-year relative survival rates for invasive SD cancers diagnosed in 1992/93 are 97.9% and 83.0% respectively. 5-year relative survival has improved significantly over the 10-year period studied. Analyses of size, grade and nodal status show significant improvements in 5-year survival rates for cases with the worst prognosis. The 5-year relative survival rate for cancers in the Nottingham Prognostic Index Poor Prognosis Group in 1992/93 is 58.5%, compared to 92.4% in 2002/03.

Conclusions

Significant increases in the survival of patients with screen-detected breast cancer in the worst prognostic group indicate that improvements in surgical and adjuvant treatment have made a difference to breast cancer patient survival.

Afternoon session 2: Cancer site-specific analyses

14:25 - IS THE LACK OF SURGERY AMONGST OLDER POSTMENOPAUSAL WOMEN WITH BREAST CANCER IN THE UK EXPLAINED BY CO-MORBIDITY?

Steven Oliver, University of York and HYMS; Katrina Lavelle, University of Manchester; Amy Downing, University of Leeds; James Thomas, NYCRIS; Gill Lawrence, West Midlands Cancer Intelligence Unit; David Forman, International Agency for Research on Cancer

Objectives

Audit data consistently report around 60% of UK women aged ≥80 years old do not have surgery for their breast cancer (compared with < 10% of younger women). However, previous studies have not adjusted for patient co-morbidity. We have therefore investigated the extent to which age-associated differences in breast cancer surgery rates, amongst women aged ≥65 years, can be accounted for by co-morbidity.

Methods

Women with invasive breast cancer diagnosed between 1997- 2005 in the Northern & Yorkshire and West Midlands regions were identified from cancer registration, along with whether surgery was received. Linkage to Hospital Episode Statistics (HES) was used to estimate co-morbidity in the preceding year. The Charlson co-morbidity score (range 0 [no co-morbidity] to 6 [greatest co-morbidity]) was derived from clinical coding within HES. In addition to co-morbidity, the impact of tumour stage, deprivation, year and region on treatment received were also examined.

Results

Records were available for 23,038 women aged ≥65 years. The proportion receiving surgery fell in the presence of increasing co-morbidity (Charlson score 0= 74%, score 1= 66%, score 2= 52%, score 3+=43%) However, after adjustment for co-morbidity and other covariates, older age continued to predict lack of surgery. Compared to 65-69 year olds, the odds of surgery decreased with age from 0.74 (95% CI: 0.66-0.83) for 70-74 year olds to 0.13 (95% CI: 0.11-0.14) for women aged ≥85 years. The proportion of women receiving surgery was significantly lower in more deprived areas, but increased with each successive diagnosis year group.

Conclusions

Whilst co-morbidity, as measured in administrative data, is associated with a reduced likelihood of surgery, it does not explain the apparent shortfall in surgery amongst older women in the UK. Future research should consider the importance of patient preferences for treatment in addition to individual-level measures of co-morbidity and frailty.

Afternoon session 2: Cancer site-specific analyses

14:45 - INTERVAL CANCERS IN A FOBT-BASED COLORECTAL CANCER POPULATION SCREENING PROGRAMME: IMPLICATIONS FOR TUMOUR SITE AND GENDER.

PL McClements, Scottish Cancer Registry; RJC Steele, Ninewells Hospital, University of Dundee; C Watling, Scottish Cancer Registry; G Libby, Scottish Bowel Screening Centre; D Weller, Centre for Population Health Sciences, University of Edinburgh; DH Brewster, Scottish Cancer Registry; R Black, Scottish Cancer Registry; FA Carey, Department of Pathology, University of Dundee; C Fraser, Scottish Bowel Screening Centre

Objectives

The Scottish Bowel Cancer Screening Programme, based on biennial guaiac faecal occult blood testing (gFOBT) between ages 50 and 74, defines interval cancers as those diagnosed within two years of a negative gFOBT. The majority of interval cancers are probably cancers missed by the screening test either at an invasive or non-invasive (adenoma) stage. Thus, the interval cancer rate is an important performance indicator of a population-based screening programme. Stage, gender and anatomical site distribution, all-cause and cancer-specific survival were compared amongst interval cancers, screen-detected cancers and cancers found in the unscreened population.

Methods

Screening records from the three rounds of the screening pilot were linked with confirmed colorectal cancer records (Scottish Cancer Registry). The time between final screening test result and date of diagnosis was used to categorise the cancers. Survival times were calculated for all individuals with colorectal cancers diagnosed within the time periods of the three rounds of the demonstration pilot (follow up to 31st December 2009).

Results

In the population with a final screening test result, the percentage of diagnosed cancers that were interval cancers increased in each round of the demonstration pilot. Stage distribution for the screen-detected cancers was significantly more favourable than in either the interval cancers or non-screened cancers in all three rounds. Comparing interval cancers and non-screened cancers, stage distribution was more favourable in the interval cancers only in Round 1. The proportion of cancers diagnosed in females in the screen-detected group was significantly lower than that seen in both the interval and non-screened groups.

Conclusions

The interval cancer rate increased steadily from Round 1 to Round 3 but the absolute number of interval cancers varied very little and was in keeping with previous reports. gFOBT tends to underdiagnose cancers in women and may also tend to miss right-sided and rectal cancers.

Afternoon session 2: Cancer site-specific analyses

15:05 - WHAT DO PATIENTS WITH PROSTATE CANCER DIE OF? AN ANALYSIS OF 50,000 CASES FROM THE THAMES CANCER REGISTRY.

Simon Chowdhury, King's college London; Lars Holmberg, King's College London; David Robinson, King's College London; Henrik Moller, King's College London

Objectives
Prostate cancer incidence has increased rapidly in the last 20 years but mortality rates have remained relatively constant. It is often stated that 'prostate cancer patients are more likely to die with rather than of their disease'. We have examined causes of death in a UK cohort of prostate cancer patients.

Methods
We analysed data on 50,066 men with prostate cancer diagnosis between 1997 and 2006 reported to the Thames Cancer Registry (TCR). Subjects were followed up to the end of 2007. Uptake of PSA screening was low in the UK during the studied period. We examined the relation between cause of death and patient characteristics at diagnosis: age, cancer stage, and first treatment (within six months of diagnosis).

Results
20,181 deaths occurred during the period, 49.7% recorded as being due to prostate cancer, 11.8% to other cancers, 17.8% to cardiovascular disease, 7.5% to pneumonia and 13.2% to other causes. Irrespective of subgroup defined by age, cancer stage, or first treatment, prostate cancer was an important cause of death varying from 31.6% of all deaths in men undergoing radical prostatectomy to 74.3% of all deaths in men with stage IV disease at diagnosis. The corresponding figure was 46.4% for men 75 and over.

Conclusions
Prostate cancer was the underlying cause of death in a substantial proportion of men dying in a UK cohort diagnosed from 1997 to 2006, and remained an important cause of death in all subgroups including those treated with curative intent and in older men. For men with prostate cancer diagnosed in a setting where uptake of PSA screening is low, our findings challenge the notion that prostate cancer is a negligible problem in any subgroup as defined by age, stage or treatment.

Thames Cancer Registry at 50 years

16:45 - HORMONE RECEPTOR STATUS AND ETHNICITY IN WOMEN WITH BREAST CANCER IN NORTH EAST LONDON

Ruth H Jack, Thames Cancer Registry, King's College London; Henrik Møller, Thames Cancer Registry, King's College London; Christine Renshaw, Thames Cancer Registry, King's College London; Melanie J Grocock, Thames Cancer Registry, King's College London; Victoria H Coupland, Thames Cancer Registry, King's College London; Elizabeth A Davies, Thames Cancer Registry, King's College London

Objectives
To determine the association between ethnicity and triple negative breast cancer (defined as tumours negative for oestrogen receptor (ER), progesterone receptor (PGR) and human epidermal growth factor receptor 2 (HER-2) status) in North East London.

Methods
Electronic pathology reports received by the Thames Cancer Registry (TCR) from the North East London Cancer Network (NELCN) on patients diagnosed with breast cancer between 2005 and 2007 were collated. The status of ER, PGR and HER-2 were extracted, and a single record per patient created. Women were coded as not having triple negative disease if at least one receptor was positive or borderline, and coded with triple negative disease if all three were negative. These records were matched to data from TCR on women resident in NELCN diagnosed with breast cancer in the same period. Logistic regression was used to quantify the association between triple negative breast cancer and ethnicity, adjusting for age, year of diagnosis and socioeconomic deprivation.

Results
There were 2,417 women resident in NELCN diagnosed with breast cancer between 2005 and 2007. Pathology reports were found and matched for 1,538 (64%) of these women, and whether the patient had triple negative disease was determined for 1,228 (51%) women. Compared with White women, Black (OR=2.82, $p<0.001$) and Asian (OR=1.81, $p=0.043$) women with breast cancer were more likely to have triple negative disease.

Conclusions
Black and Asian women with breast cancer are more likely to be diagnosed with triple negative disease than White breast cancer patients. As this is a more aggressive disease, this finding may help to explain the higher proportion of Black women diagnosed with a more advanced stage. Further studies should explore the relationship between triple negative disease and age, tumour size, stage of disease at presentation and prognosis.

DAY 3 – 17th JUNE

08:30 to 09:30	**Registration, posters and exhibition**
09:30 to 11:00	**Plenary session: Supporting commissioning**
09:30	Chair's welcome & introduction to session Professor Sir Mike Richards, National Cancer Director for England
09:40	Commissioning in the new NHS Stephen Parsons, Director, National Cancer Action Team
10:00	Cost of skin cancer in England, including projections to 2020 Dr Julia Verne, South West Public Health Observatory
10:20	Variation in surgical resection for lung cancer in relation to survival: population-based study in England 2004-2006 Professor Henrik Møller, Thames Cancer Registry
10:40	Questions from the audience
10:55	Chair's closing remarks
11:00 to 11:30	**Refreshments, posters and exhibition**
11:30 to 13:00	**Plenary session: Early detection**
11:30	Chair's welcome and introduction to session Sara Hiom, Director of Health Information and Cancer Data, Cancer Research UK
11:35	Cancer intelligence – a vision for the future Professor Sir Mike Richards, National Cancer Director for England
11:55	Promoting early symptomatic presentation of breast cancer: implementing an evidence-based intervention in routine clinical practice Dr Lindsay Forbes, King's College London
12:15	Exploring the deprivation gap in colorectal cancer survival: the influence of disease stage at diagnosis Mr Raymond Oliphant, West of Scotland Cancer Surveillance Unit
12:35	Early/late diagnosis patterns in older patients with breast, lung, and colorectal cancers: population-based evidence to inform NAEDI initiatives Dr Georgios Lyratzopoulos, University of Cambridge
12:55	Conference closing remarks
13:00	**Close of conference and buffet lunch**


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DAY 3 PROFFERED PAPER ABSTRACTS

Plenary session: Supporting commissioning

10:00 - COST OF SKIN CANCER IN ENGLAND, INCLUDING PROJECTIONS TO 2020

Julia Verne, South West Public Health Observatory; veronique.poirier, South West Public Health Observatory; Luke Hounsome, South West Public Health Observatory; Jonas Kinge, University College London; Laura Vallejo-Torres, University College London; Steve Morris, University College London

Objectives

Skin cancer is the most common cancer in England and its incidence is increasing every year. The potential costs associated with its treatment are likely to constitute a significant share of the overall NHS costs of cancer in England and will increase in line with incidence. The South West Public Health Observatory (SWPHO) undertook a costing exercise as part of its involvement with the National Awareness and Early Diagnosis Initiative to evaluate the cost of skin cancer in England including projections up to 2020.

Methods

Three approaches were used. 1/ 'Top down' approach based on data from the National Programme Budgeting project. 2/ 'Top down' approach updating a previous study(1) using routine administrative sources. 3/ 'Bottom up' approach based on the costs of care incurred by individual patients receiving skin cancer treatment, aggregated to the national level based on the numbers of patients receiving treatment. Data on incidence of malignant melanoma were taken from ONS data for 2006-8. Incidence of non melanoma skin cancer was calculated using a model developed by SWPHO. Cost projections to 2020 were based on published estimates of future incidence of melanoma.(2)

Results

Using the three approaches, the total financial cost of skin cancer to the NHS in England in 2008 was calculated to be £105-£112 million. Total societal costs were estimated to be £270 million. NHS and total costs were projected to be £185 million and £445 million, respectively, by 2020.

Conclusions

The costs of skin cancer are substantial. The estimates calculated are likely to be conservative. More research is required to assess the cost-effectiveness of interventions to prevent and treat skin cancer.

1. Morris S., Cox B., Bosanquet N. Cost of skin cancer in England. Eur J Health Econ 2009; 10: 267-73.
2. Diffey BL. The future incidence of cutaneous melanoma in the UK. Br J Dermatol 2004; 51: 868-72.

Plenary session: Supporting commissioning

10:20 - VARIATION IN SURGICAL RESECTION FOR LUNG CANCER IN RELATION TO SURVIVAL: POPULATION-BASED STUDY IN ENGLAND 2004-2006

Henrik Moller, Thames Cancer Registry; Margreet Luchtenborg, King's College London; Ruth H Jack, King's College London; Victoria H Coupland, King's College London; Karen M Linklater, King's College London; Michael D Peake, National Cancer Intelligence Network

Objectives
Compared with some European countries, England has low lung cancer survival and low use of surgical resection for lung cancer. The use of surgical resection varies within England. We assessed the relationship between surgical resection and the survival of lung cancer patients in England.

Methods
We extracted data on 77,349 non small cell lung cancer (NSCLC) patients diagnosed between 2004 and 2006 from the English National Cancer Repository Dataset. We calculated the frequency of surgical resection by age, socio-economic deprivation and geographical area. We used Cox regression to compute mortality hazard ratios among all 77,349 lung cancer patients, and separately for the 6,900 resected patients, in relation to the frequency of surgical resection in geographical areas.

Results
We found large geographical variation in the surgical resection rate for NSCLC. The geographical variation in resection was strongly associated with overall survival and only moderately inversely associated with survival among the resected patients.

Conclusions
The survival among the resected patients suggests a scenario of diminishing survival returns as the frequency of resection increases. However, the differences in the magnitudes of both the hazard ratios and the absolute excess deaths within resected patients and all lung cancer patients suggests that lung cancer survival in England could plausibly increase if a larger proportion of patients were resected. Carefully designed research into the benefit of increasing resection rates is indicated.

Plenary session: Early detection

11:55 - PROMOTING EARLY SYMPTOMATIC PRESENTATION OF BREAST CANCER: IMPLEMENTING AN EVIDENCE-BASED INTERVENTION IN ROUTINE CLINICAL PRACTICE

Lindsay Forbes, King's College London; Julietta Patnick, NHS Cancer Screening; Sarah Sellars, NHS Cancer Screening; Amanda Ramirez, King's College London

Objectives

To implement an evidence-based intervention to promote early presentation of breast cancer in women attending for final invited mammogram on the NHS Breast Screening Programme. Women over 70 have poorer breast cancer survival than younger women. This is at least partly due to late stage at presentation (Møller et al, Int J Cancer 2010). Promoting early presentation with symptoms in older women attending for final round of breast screening may reduce stage at diagnosis cost-effectively, and is unlikely to lead to overdiagnosis. We have developed a radiographer-delivered intervention to promote early presentation by increasing breast cancer awareness, aiming to equip women with the knowledge, motivation and skills to detect breast changes and present promptly to primary care. In a RCT, the Promoting Early Presentation (PEP) Intervention improved breast cancer awareness six-fold after one year (Linsell et al, BJC, 2009) and four-fold after two years (submitted) compared with usual care, an effect greater than any other intervention of its kind (Austoker et al, BJC 2009).

Methods

The NHS Breast Screening Programme has commissioned a pilot of implementing the PEP Intervention in routine practice by all screening mammographers. In the RCT, quality assurance was intensive and services were reconfigured to accommodate the intervention. Early piloting in two screening services identified ways of refining the PEP intervention so that it could be integrated into the service without disruption.

Results

The refined PEP Intervention is shorter, integrated into the final invited mammogram appointment, with a sustainable approach to quality assurance.

Conclusions

The PEP Intervention will now be offered to all women attending for final mammogram in three NHS breast screening services, to assess costs, feasibility and effect on breast cancer awareness in routine practice. If implemented across the whole programme, it has the potential to reduce avoidable deaths from delayed symptomatic presentation in older women.

Plenary session: Early detection

12:15 - EXPLORING THE DEPRIVATION GAP IN COLORECTAL CANCER SURVIVAL: THE INFLUENCE OF DISEASE STAGE AT DIAGNOSIS

Raymond Oliphant, West of Scotland Cancer Surveillance Unit; David Morrison, West of Scotland Cancer Surveillance Unit

Objectives

Colorectal cancer survival is known to vary by socioeconomic position with the lowest survival rates among the most deprived. Disease stage at diagnosis is the main determinant of survival from colorectal cancer, however, the interaction between stage and deprivation remains unclear. We examine the influence of deprivation on survival from colorectal cancer by stage at diagnosis after adjustment for age, sex and background mortality.

Methods

First primary incident cases of colorectal cancer (ICD-10 C18–C20) from the West of Scotland were extracted from the Scottish Cancer Registry from 1997 to 2005 and linked to General Registry Office death records. Socioeconomic circumstances were measured using the area-based Scottish Index of Multiple Deprivation and stage of disease was recorded using Dukes' stage. Relative survival was estimated adjusting for differential background mortality in each deprivation group by age, sex, and calendar year and the difference in survival between the most and least deprived groups (deprivation gap) was calculated. Stage-specific and conditional survival analyses were also performed.

Results

13,787 patients (aged 17-99 years) were included of whom 53.3% were male. There was a small excess of advanced disease among the most deprived compared to the most affluent groups. Overall relative survival up to 5-years was higher among the most affluent compared to the most deprived groups in both sexes. Stage-specific survival by deprivation group demonstrated that the magnitude of the deprivation gap became increasingly significant as disease stage became more advanced. Conditional relative survival of those surviving more than 1-year post-diagnosis revealed a significant narrowing of both the overall and stage-specific deprivation gaps.

Conclusions

The deprivation gap in relative survival from colorectal cancer became wider as stage of disease advanced. Socioeconomic inequalities emerge early after diagnosis and are not entirely explained by a modest excess of advanced disease among the most deprived.

Plenary session: Early detection

12:35 - EARLY/LATE DIAGNOSIS PATTERNS IN OLDER PATIENTS WITH BREAST, LUNG, AND COLORECTAL CANCERS: POPULATION-BASED EVIDENCE TO INFORM NAEDI INITIATIVES

Georgios Lyratzopoulos, Cambridge Centre for Health Services Research, Department of Public Health and Primary Care, University of Cambridge; Josephine M Barbiere, Cambridge Centre for Health Services Research, Department of Public Health and Primary Care, University of Cambridge; Gary Abel, Cambridge Centre for Health Services Research, Department of Public Health and Primary Care, University of Cambridge; Clement H Brown, Eastern Cancer Registration and Information Centre (ECRIC); Brian Rous, Eastern Cancer Registration and Information Centre (ECRIC); David C Greenberg, Eastern Cancer Registration and Information Centre (ECRIC)

Objectives
To examine early/late diagnosis patterns for three common cancers.

Methods
Population-based data from the Eastern Cancer Registration and Information Centre (ECRIC, population ~5.7 million). Multi-level logistic regression models were used to predict odds of advanced stage at diagnosis based on patients' age, deprivation quintile (IMD 2004), tumour type and sex.

Results
During 2006-9, there were 17,836, 13,286 and 14,930 patients with breast (female), lung and colorectal cancer; stage information was complete for 92% (16,560), 79% (10,435) and 86% (12,834) of all patients, respectively. Among staged patients, 41%, 15% and 17% were diagnosed at stage I, and 86%, 21% and 50% at stages I-II, respectively for breast, lung and colorectal cancer patients. Patients aged 70-74, 75-79, 80-84 and ≥85 were compared with those aged 65-69 (reference): For breast cancer, odds ratios of stage III-IV diagnosis were 1.53, 2.04, 2.47, 2.61, $p<0.001$ – attenuated to 1.20, 1.46, 1.68 and 1.77 after adjustment for whether the tumour was detected through screening or symptomatically. For colorectal cancer, patterns for stage III-IV diagnosis with increasing age were not significant ($p=0.549$) but odds ratios for stage II-IV diagnosis were 1.22, 1.29, 1.46, 1.56, $p<0.001$. For lung cancer, there was no apparent association between late stage diagnosis and increasing age; we will be investigating this further. Variation in stage at diagnosis between different deprivation groups was relatively small for all three cancers, and mainly related to stage II disease for breast cancer and stage I disease for colorectal cancer. Sensitivity analysis using multiple (statistical) and normative imputation of stage produced highly similar findings.

Conclusions
There is substantial potential for improvements in early diagnosis among older patients with breast and colorectal cancer. The findings could help inform breast and colorectal cancer early diagnosis initiatives addressed at older people.

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younger
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POSTER ABSTRACTS

Poster 1: LUNG CANCER MORTALITY TRENDS IN THE ELDERLY IN THE NORTH OF ENGLAND

Sarah Lawton, Northern & Yorkshire Cancer Registry and Information Service; Lily Sharma, Northern & Yorkshire Cancer Registry and Information Service; Ariadni Aravani, Northern & Yorkshire Cancer Registry and Information Service

Objectives

Lung cancer is the most commonly diagnosed cancer (not including skin C44) after breast in women and prostate in males and is the most common cause of cancer death. We aim to demonstrate the trend of lung cancer mortality across 3 cancer networks within the NYCRIS region - Yorkshire cancer network, Humber and Yorkshire Coast cancer network and North of England cancer network, compared to the national average.

Methods

Information on lung cancer mortality between the years 1995-2009 was obtained from the ONS Deaths file. 3 year average age standardised rates have been used by sex, time period, cancer network and PCT for comparison value.

Results

Age standardised rates show that lung cancer mortality in males has reduced since 1995-97, whereas it has increased significantly in females. In the three cancer networks, men have shown a reduction in mortality of between 3.1% and 18% while in women, the increase has been between 40.7% and 56.9% - much higher than the national increase of 27.4%. Some PCTs within the cancer networks show an increase of around 90% in elderly female mortality from lung cancer in 2007-09 compared to 1995-97.

Conclusions

Lung cancer mortality in elderly men is still higher than in elderly women. However, reduction in mortality has been more successful in men than in women in the NYCRIS region.

Poster 2: DO VARIATIONS IN POPULATION CANCER MORTALITY RISK BY SOCIO-ECONOMIC DEPRIVATION VARY WITH AGE IN OLDER PEOPLE? A COMPARISON OF CANCER MORTALITY PATTERNS IN THE NORTH WEST FOR THE PERIOD 1995/97 AND 2006/08

Dr. Gabriel Agboado, North West Cancer Intelligence Service; Dr. Tony Moran, North West Cancer Intelligence Service

Objectives

Variations in cancer mortality by age and deprivation have been extensively described. However the variations of the effect of socio-economic deprivation with age have not been extensively investigated. Our report aims to describe variations in population cancer mortality risks by socio-economic deprivation (as assessed by the Index of Multiple Deprivation) and age, and attempts to quantify the changes in the risk between the 2 periods.

Methods

Records of cancer deaths in North West, excluding deaths from non-melanoma skin cancers (ICD–10 C44), were obtained for those aged 55 years and above for 1995 to 1997 and 2006 to 2008 from ONS. The data was grouped by the variables of interest and linked to the ONS mid-year population projection for the respective years. A multivariate logistic regression model for grouped data was used to evaluate variations in population cancer mortality risk.

Results

There were significant variations in the cancer mortality risk for each age group across the deprivation quintiles. For females, during the period spanning 1995 to 1997 the effect of deprivation on age-specific cancer mortality risk was greatest among those aged 65 to 74 years while the least effect was observed for those aged 85 years and above in the North West. In males the effect of deprivation on age-specific cancer mortality risk was greatest for those aged 55 to 64 years in while the least effect of deprivation was observed for those aged 85 years and above over the 1995/97 period. For both sexes the effect of deprivation attenuated during the 2006/08 period except for the older age groups in whom there was a slight accentuation of effects.

Conclusions

The effect of deprivation was stronger in the younger age group in whom the greatest relative decline in the mortality risk was observed over the period.

Poster 3: TRENDS OF PROSTATE CANCER INCIDENCE BY DISEASE GRADE AND SOCIOECONOMIC CIRCUMSTANCE IN THE WEST OF SCOTLAND FROM 1991-2007: JOINPOINT REGRESSION ANALYSIS

Kashif Shafique, University of Glasgow; Raymond Oliphant, West of Scotland Cancer Surveillance Unit; Philip McLoone, West of Scotland Cancer Surveillance Unit; David Morrison, West of Scotland Cancer Surveillance Unit

Objectives

Prostate cancer is the commonest cancer among men in Scotland, however, the relationship between socioeconomic circumstances and histological grade-specific incidence as measured by the Gleason score remains unclear. This study describes trends in prostate cancer incidence by deprivation group over time in the West of Scotland.

Methods

Incident cases of prostate cancer (ICD-10 C61) from the West of Scotland were extracted from the Scottish Cancer Registry from 1991 to 2007. Socioeconomic circumstance was measured using the Carstairs scores. Annual population estimates were obtained from Information Services Division Scotland. Deprivation-specific European age-standardised incidence rates were calculated and disease grade (high versus low) was measured using the Gleason score. Joinpoint regression analysis was carried out to identify significant changes in trends over time and calculate annual percent change (APC).

Results

15,519 incident cases of prostate cancer were diagnosed in the West of Scotland between 1991 and 2007. Overall incidence (age adjusted) increased by 70% from 44 per 100,000 in 1991 to 75 per 100,000 in 2007, an average annual growth of 3.59%. This pattern was largely driven by significant increases in low-grade compared to high-grade disease. Age-adjusted incidence rates among all socioeconomic groups increased over this period with the largest rises found among the most affluent. Incidence was inversely associated with deprivation with the highest rates among the more affluent groups. A widening deprivation gap in incidence was evident from 1998 onwards due to the increase in low-grade disease among the most affluent.

Conclusions

The relatively large increase in incidence among most affluent is mainly due to an increase in diagnosis of low grade disease. The further work is needed to understand whether the detection of low grade disease is associated with survival benefits among affluent men.

Poster 4: NATIONAL CANCER REGISTRATIONS IN TEENAGERS AND YOUNG ADULTS DIAGNOSED BETWEEN 2001 AND 2006 - A DATA CLEANING EXERCISE

Rebecca Birch, University of Leeds; Eva Morris, University of Leeds; James Thomas, Northern and Yorkshire Cancer Registry and Information Service; Robert West, University of Leeds; Richard Feltbower, University of Leeds

Objectives

We aimed to produce a deduplicated dataset containing diagnostic information for all patients aged 15-24 diagnosed with a malignant condition in England between 2001 and 2006 from data held by the National Cancer Data Repository.

Methods

All diagnoses for patients with more than one tumour were examined to determine if they were duplicate registrations. Decisions were made as to which registration to keep according to date of diagnosis, postcode of residence and morphology. Exact duplications were identified using NHS number, registry ID, date of birth, sex, site and morphology codes. Cross register duplicates were identified using the same criteria, with the exception of the registry ID. Tumours which could potentially have been bilateral duplications were examined separately. Those with the same morphology, laterality and diagnosis date were excluded as real duplicate records. As per IARC/IACR guidelines, tumours with the same site but differing morphology were treated as unique registrations.

Results

A total of 34,027 eligible registrations were initially identified. Exact duplicates were dropped from the analysis (n= 649). Duplicate records from registers other than the residence were also excluded (n=207). 54 tumour registrations were dropped as incorrectly registered bilaterals. Tumours recorded as having different diagnosis dates but the same diagnosis, within 30 days were excluded from the dataset as incorrectly registered ‘multiple’ diagnoses (n=129). The majority of duplicate diagnoses were found to be testicular cancer, Hodgkin’s and non-Hodgkin’s lymphoma and bone tumours. Finally 22,764 in situ and benign diagnoses were excluded leaving a final data set of 10,224 unique tumours.

Conclusions

Approximately 70% of the original dataset were excluded from the final analysis due to duplicate registrations along with benign and in situ conditions highlighting the importance of a thorough and methodical cleaning plan for accurate use of the NCDR, in particular when examining multiple cancer sites.

Poster 5: COMMON CANCERS IN THE WEST MIDLANDS: ASSESSING THE IMPACT OF AGE AND DEPRIVATION

Broggio, J., West Midlands Cancer Intelligence Unit; Evans, T., West Midlands Cancer Intelligence Unit; Vernon, S., West Midlands Cancer Intelligence Unit; Lawrence, G., West Midlands Cancer Intelligence Unit

Objectives

Although the age profiles and links to deprivation of the most common cancers are known, these had not been presented clearly and consistently for the most recent West Midlands data in an accessible format. Much of the routine public information produced has focussed on the four most common cancers. The WMCIU aimed to produce for the cancer incidence and mortality data that were publicly available concise and focussed factsheets demonstrating the variation with age and deprivation.

Methods

The WMCIU records key demographic and tumour details for every cancer patient in the West Midlands. Incidence and mortality for the ten most common types of cancer were analysed for the age groups 0-14, 15-49, 50-69 and those aged 70 years and over and separately by deprivation quintiles based on the English Indices of Deprivation 2007. Consistent colours and user-friendly lay-out were used to aid comparisons between groups.

Results

West Midlands cancer incidence and mortality rates broadly follow English patterns except in reflecting the higher than average levels of deprivation with raised lung and colorectal cancer incidence in particular and a lower incidence of breast cancer. There are clear differences between age groups. Deprivation remains a major driver of differences in mortality, with lung cancer responsible for 30% of deaths in the most deprived and only 16% in the least deprived.

Conclusions

High level cancer statistics can hide wide variations due to age and deprivation. Regional analysis broadly mirrors national trends but can highlight local issues. Open publication of cancer statistics increases patient information and awareness, and reduces the burden of information requests. However, presentation and clarity are of the utmost importance to reduce misinterpretation.

Poster 6: INCIDENCE OF CHILDHOOD CANCER AMONG BRITISH INDIANS AND BRITISH WHITES IN LEICESTER: 1996 – 2007

Dr Raghib Ali, University of Oxford; Dr Isobel Barnes, University of Oxford; Professor Valerie Beral, University of Oxford

Objectives

Cancer incidence in British Indian adults has been shown to be lower than in British White adults and Leicester has the largest population of British Indians in the U.K. The aim of this study was to calculate childhood cancer incidence in British Indians and Whites in Leicester using self-assigned ethnicity.

Methods

Trent Cancer Registry provided data on all cancer registrations from 1996 to 2007 for children under the age of 15 residing in Leicester, including information on age, and cancer site. Ethnicity for each child was obtained by linkage to the Hospital Episodes Statistics database (which has collected data on ethnicity since 1996) and was available for 92% of registrations (78/85). Population estimates were obtained from the 2001 census, stratified by ethnicity and age. Poisson regression was used to estimate incidence rate ratios, adjusted for age, comparing British Indians to British Whites.

Results

There were 32 cancers registered among British Indian children and 32 among British White children in Leicester. The two most common forms of cancer were leukaemia (Indians: n = 11; Whites: n = 9) and brain cancer (Indians: n = 9; Whites n = 6). The risk of all cancers combined was significantly greater in British Indians. In addition, there was evidence that the risk of leukaemia and the risk of brain cancer were greater in British Indians.
Incidence rate ratios (95% CI) for all cancers combined, leukaemia and brain cancer were as follows:

- All cancers: 1.8 (1.1, 2.9)
- Leukaemia: 2.2 (0.9, 5.4)
- Brain cancer: 2.4 (0.8, 6.9)

Conclusions

This study shows British Indian children are at significantly greater risk of developing cancer than British White children. This is in contrast to studies in adults which have shown that cancer incidence in British Indians is lower than that in British Whites.

Poster 7: CANCER INCIDENCE IN BRITISH INDIAN & BRITISH WHITE ADOLESCENTS AND YOUNG ADULTS IN LEICESTER: 1998 – 2007.

Dr Raghib Ali, University of Oxford; Dr Isobel Barnes, University of Oxford; Professor Valerie Beral, University of Oxford

Objectives

Cancer incidence in British Indians has been shown to be lower than in British Whites and Leicester has the largest population of British Indians in the U.K. The aim of this is to calculate cancer incidence in British Indian and White Adolescents and Young Adults (AYA) using self-assigned ethnicity.

Methods

Trent Cancer Registry provided data on all cancer registrations for Adolescents and Young Adults (age 15-39) from 1998 to 2007 for Leicester, including information on age, and cancer site. Ethnicity for each case was obtained by linkage to the Hospital Episodes Statistics database (which has collected data on ethnicity since 1996) and was available for 95% of registrations (528/556). Population estimates were obtained from the 2001 census, stratified by ethnicity and age. Poisson regression was used to estimate incidence rate ratios adjusted for age, comparing British Indians to British Whites.

Results

There were 109 cancers registered among British Indian AYAs and 286 among British White AYAs in Leicester. The five most common sites of cancer in British Indians were breast (19) Hodgkin's disease (10), Leukaemia (10), Lymphoma (9) and Ovary (9.) whereas in Whites they were breast (48), cervix (43), testis (41), Ovary (14) and Hodgkins disease (13). There were no significant differences in the incidence rate ratios (IRR) comparing British Indians to British Whites for any individual cancers or all cancers combined (IRR = 0.86). However, the IRRs (95% CI) for the haematological malignancies were all much greater than 1.0 as shown below:

- Hodgkin's disease: 1.8 (0.8 – 4.2)
- Non-Hodgkins lymphoma: 2.1 (0.8 – 5.3)
- Leukaemia: 2.2 (0.9 – 5.3)

Conclusions

This study shows that the distribution of cancers in British Indian AYAs is different to that in British White AYAs. Although overall cancer incidence is similar in both groups, British Indians appear to be at increased risk of developing haematological malignancies compared to British Whites. Further aetiological investigation is required.

Poster 8: HOW MANY TEENAGERS AND YOUNG ADULTS ARE BEING REFERRED TO SPECIALIST CARE IN ENGLAND?

Catherine O'Hara, North West Cancer Intelligence Service; Gavin Flatt, North West Cancer Intelligence Service; Sabina Khan, North West Cancer Intelligence Service

Objectives

Current guidelines for teenagers and young adults (TYA) with cancer recommend that all 15 to 24 year olds should be referred to a TYA MDT at a principal treatment centre (PTC). We present here an evaluation of patient referral to a TYA PTC in England between 2009 and 2010, comparing percentage referral by age, sex, diagnosis and place of residence. Data presented are the most up to date available on the implementation of TYA cancer guidelines in England since their publication in 2005.

Methods

Details of all TYA patients diagnosed with a malignant neoplasm or borderline or benign CNS tumour in 2009 and 2010, and referred to a TYA PTC, were extracted from TYAC notifications. We then used annual average cancer incidence (2005-2007) for 15 – 24 year olds, generated from the 2007 national cancer data repository (NCDR), to estimate the proportion of TYA patients currently being referred to a TYA PTC.

Results

Approximately 40% of all TYA patients diagnosed between 2009 and 2010 were notified as being referred to a PTC, although regional referral rates were variable ranging from 15% to 74 % across cancer networks. There was also variation by diagnoses; soft tissue sarcoma and bone tumour patients had the highest percentage referral. Combining all diagnostic groups together, the proportion of males referred to a TYA PTC was less than females and the 15 – 18 year age group were more likely to be referred than 19 – 24 year olds.

Conclusions

Current levels of referral to TYA specialist care appear to be variable not only in the context of age and diagnosis but also geography. Some of these differences may be attributable to under reporting and/or variation in definitions of TYA specialist care. Future work will involve linking TYAC notifications data with 2009 national cancer registration data to investigate more comprehensively these apparent inequalities.

Poster 9: CAPTURING CANCER OF UNKNOWN PRIMARY (CUP) DATA – KNOWN UNKNOWNS OR UNKNOWN UNKNOWNS?

Dr Kathie Binysh, North West London Cancer Network; John Symons, CUP Foundation; Richard Osborne, Dorset Cancer Centre

Objectives

To understand how CUP data are recorded presently by Cancer registries with a view to establishing: (1) completeness and accuracy of the data (2) whether current practice and protocols are aligned (3) how best to incorporate the new categorisations of CUP recommended by the 2010 NICE Guideline. (4) how the quality of data collection might be improved in the future.

Methods

A questionnaire was sent to UK Cancer Registries to elicit how CUP is recorded within the registry; the level of evidence required to record this diagnosis; how and when records may be amended and how the data is analysed and presented.

Results

Six responses were received. The findings show considerable inconsistencies in recording, analysis and presentation of the data. Most registries had not carried out detailed analysis.

Conclusions

- There is a lack of clarity in defining CUP. C80 is the most commonly used ICD code.
- The move to a single IT system within registries presents an opportunity to agree definitions and bring about greater consistency in recording.
- There is limited analysis of this data
- HES Data input from MDTs is inconsistent. Anecdotal evidence suggests CUP patients reviewed at MDTs are often classified as having a probable primary tumour which corresponds to the site-specialty of the MDT. In the absence of rules for recording CUP there is variability between MDTs in terms of the precision of the diagnosis recorded.
- MDTs will have different “thresholds” for attributing a probable site-specific diagnosis and further investigation is needed
- Assumptions are made often about a cause of death based on previous medical records and will contribute to an under-registration of CUP mortality.

Poster 10: DIABETES, CO-MORBIDITY AND COLORECTAL CANCER SURVIVAL

Jacob Maddams, Thames Cancer Registry, King's College London; Henrik Møller, Thames Cancer Registry, King's College London

Objectives

To examine the effect of pre-existing diabetes, and co-morbidity in general, on cancer survival.

Methods

A cohort of colorectal cancer patients (ICD-10 C18-C21) diagnosed in South East England in the period 2004-2008 was defined using the Thames Cancer Registry. For each patient, a Charlson score of co-morbidity was defined using the Hospital Episode Statistics database, which is linked to the cancer registry at the patient level. All hospital episodes occurring in the year prior to cancer diagnosis were examined and the number of unique Charlson co-morbid diseases mentioned was defined as the Charlson score. The presence or absence of pre-existing diabetes was also noted using the same method. Cox proportional hazards regression modelling was conducted for all-cause and cancer-specific survival, adjusting for age and socio-economic status and, in the diabetes model, the presence of a non-diabetes co-morbidity.

Results

Charlson score was associated with worse all-cause survival but had no effect on cancer-specific survival. Adjusted hazard ratios for all-cause survival in the presence of any co-morbidity were 1.18 (1.12-1.24) for males and 1.15 (1.08-1.21) for females. For cancer-specific survival these figures were 1.01 (0.95-1.07) for males and also 1.01 (0.95-1.07) for females. The presence of pre-existing diabetes at the time of cancer diagnosis had no significant effect on either all-cause survival (HR 0.95 (0.88-1.02) for males / HR 1.02 (0.94-1.11) for females) or cancer-specific survival (HR 0.96 (0.88-1.05) for males / HR 1.03 (0.93-1.13) for females).

Conclusions

There was no evidence to support the hypothesis that diabetes or its treatment accelerates the progression of cancer. Although lower overall survival was observed in colorectal cancer patients who had other co-morbidities, there was no evidence that the presence of co-morbidity at the time of cancer diagnosis effects cancer-specific survival.

Poster 11: THE CANCER BURDEN IN THE UK IN 2007 DUE TO RADIOTHERAPY

Jacob Maddams, Thames Cancer Registry, King's College London; D.M. Parkin, CRUK Centre for Epidemiology, Mathematics and Statistics, Wolfson Institute of Preventive Medicine; S.C.Darby, University of Oxford, Clinical Trial Service Unit

Objectives

The number of long-term cancer survivors in the UK is substantial and increasing rapidly. Many cancer survivors have been treated with radiotherapy but the likely number of radiotherapy-related second cancers has not previously been estimated.

Methods

Estimates of the numbers of cancer survivors in the UK at the beginning of 2007 were used in conjunction with estimates of the relative risk of a second primary cancer associated with previous radiotherapy from the United States Surveillance Epidemiology and End Results programme to estimate the numbers of incident cancers in the UK in 2007 that were associated with radiotherapy for a previous cancer and that may have been caused by it.

Results

It was estimated that 1,346 cases of cancer, or about 0.45% of the 298,000 new cancers registered in the UK in 2007, were associated with radiotherapy for a previous cancer. Almost half of these were associated with radiotherapy received for a previous breast cancer. The largest numbers of radiotherapy-related second cancers were lung cancer (23.7% of the total), oesophageal cancer (13.3%), and female breast cancer (10.6%). 54% of radiotherapy-related second cancers were in individuals aged 75 or over. The highest percentages of second cancers related to radiotherapy were among survivors of Hodgkin's disease and cancers of the oral cavity and pharynx and cervix uteri; over 15% of second cancers among these survivors were associated with radiotherapy for the first cancer.

Conclusions

This study provided an estimate of the fraction of incident cancers in the UK attributable to past radiation therapy. However, any long-term side effects of radiotherapy should always be considered in the context of the considerable benefits in terms of control of symptoms and disease.

Poster 12: TREATMENT INEQUALITIES IN THE NORTH TRENT AND EAST MIDLANDS CANCER NETWORKS

Carolynn Gildea, Trent Cancer Registry; Jason Poole, Trent Cancer Registry; Elspeth Macdonald, East Midlands Cancer Network; Rupert Suckling, NHS Doncaster; David Meechan, Trent Cancer Registry

Objectives

To further investigate variations and potential inequalities in breast, colorectal and lung cancer treatment in the North Trent (NTCN) and East Midlands Cancer Networks, by considering several patient or tumour level factors, namely tumour stage, geography, deprivation, grade, co-morbidity, performance status, age, sex, ethnicity and travel time.

Methods

For patients diagnosed in 2004-2007, Hospital Episode Statistics (HES) inpatient data and trust-provided radiotherapy data is used to quantify the percentage receiving relevant surgery, radiotherapy and chemotherapy. Chi-squared tests indicate statistically significant variations by the considered factors. Logistic regression models are used to investigate differences in treatment rates while adjusting for differing case-mixes.

Results

Initial treatment rate results were presented at the 2010 conference. With clinical guidance, improvements have been made; results are now produced separately for small cell and non-small cell lung cancers and for colon and rectal cancers, the calculation of a Charlson co-morbidity score has been refined and additional factors (travel time, lung cancer stage and grade) are included. Improved unadjusted results and case-mix adjusted treatment rates will be presented. Results, for NTCN in 2007, indicate that 82% of breast cancer tumours, 72% colorectal and 47% lung receive at least one of these three treatments. There are numerous statistically significant differences by the factors considered and many remain significant when considering only patients with the same stage of disease. For example, for breast and lung cancer, NTCN results indicate that living more than 45 minutes from Weston Park Hospital reduces the radiotherapy treatment rate by a third.

Conclusions

Unadjusted results indicate statistically significant variations in cancer surgery, radiotherapy and chemotherapy. Case-mix adjusted treatment rates should further help to provide the cancer networks with information on the treatment received by their patients. It is important to improve the understanding of treatment variations and implement measures to reduce inequalities.

Poster 13: ANALYSIS AND COLLECTION OF STAGING DATA: A STRATEGY FOR LUNG CANCER

Anna Murray, Merseyside and Cheshire Cancer Network; Julie Hendry, St. Helens & Knowsley Teaching Hospital NHS Trust

Objectives

Introduction: The Improving Outcomes: A Strategy for Cancer (Department of Health, 2011) highlighted the disparity between England and the best in Europe with regards to survival and mortality. This reaffirmed the need to achieve earlier diagnosis of cancers to ensure effective and appropriate treatment for patients, stating the need for accurate staging data to support this process. Data on lung cancer provide an ideal opportunity to investigate collection and analysis of staging data due to the regular collection of information for the LUCADA National Audit and the North West Staging Project.

Methods

Method: A clinical audit of 248 (137 males, 111 female) lung cancer patients diagnosed at St. Helens and Knowsley Teaching Hospitals NHS Trust during January to December 2009 was carried out to investigate stage of disease at diagnosis. This analysis addressed the proportionality of stage of disease with respect to gender, performance status and route of referral. Further analysis investigated the length of survival of patients by stage.

Results

Results: The clinical audit found that there were a higher proportion of patients presenting with late stage disease. A poor performance score was indicative of these individuals with a large proportion being capable of only limited self-care (performance score 3) or completely disabled (performance score 4). It was found that a quarter of males were diagnosed at stage 3 disease, whereas the majority of females were diagnosed at stages 3 and 4 in equal proportions.

Conclusions

Conclusions: Collection of accurate staging data enables local trusts to develop an in depth picture of patients that are diagnosed at their trust. Statistical analysis of staging data with respect to one- and five-year survival would be beneficial in providing a further evidence base of the need for early detection. Survival analysis by stage and mode of treatment would further develop this and merits further research.

Poster 14: INTELLIGENT COMMISSIONING FOR CANCER: THE CANCER DASHBOARD AND ITS RELEVANCE TO GP CONSORTIA

Anna Murray, Merseyside and Cheshire Cancer Network; Paul MacKenzie, Merseyside and Cheshire Cancer Network

Objectives

Outcome-driven cancer intelligence is vital to inform and achieve strong commissioning of cancer services to meet the aims of the coalition government. During the transitional period and beyond, cancer networks will be able to provide expertise to support GP consortia. Merseyside and Cheshire Cancer Network has responded to this by designing an outcome-driven intelligence dashboard, utilising baseline measures and GP practice profiles to facilitate assessment of patient outcomes and to highlight priorities in particular need of attention. The further aim of providing a reporting template demonstrates compliance to the need to use data intelligence to improve patient care.

Methods

The dashboard uses national and local data from a variety of sources; cancer waiting times, cancer registration and commissioning datasets, screening, clinical outcome data and GPO practice profiles. This provides national and international comparisons as well as key trends and variations at Network, PCT, Local Trust and GP Practice level. Operational leadership, implementation plans, audit and other reporting mechanisms would also be reviewed. This includes the Cancer Awareness Measure (CAM) of public awareness, staging, screening, clinical outcomes, referral and emergency activity and health inequalities.

Results

The amalgamation of organisational evidence and intelligence into a cancer performance summary where levels of performance are attributed to the assessed measures will provide the GP consortia with a method by which issues can be identified and action plans can be developed. The comparative information available through use of the cancer dashboard would facilitate benchmarking and the review of variations in patient outcomes. It further facilitates the assessment and discussion of clinical practice and service delivery and early detection and diagnosis.

Conclusions

Implementation of a monitoring and performance framework such as the dashboard would help GP consortia develop a consensus regarding the importance of intelligence and facilitate local priority setting in line with national recommendations.

Poster 15: SAVIOUR SYMPTOMS: THE POTENTIAL FOR EARLIER CLINICAL DIAGNOSIS IN THREE CANCER SITES.

Conan Donnelly, Northern Ireland Cancer Registry; Deirdre Fitzpatrick, Northern Ireland Cancer Registry; Finian Bannon, Northern Ireland Cancer Registry; Anna Gavin, Northern Ireland Cancer Registry

Objectives

Background Efforts to increase cancer survival are increasingly focused on the area of early disease diagnosis especially through clinical detection. While much of the recent focus on earlier clinical detection has concentrated on the predictive power of cancer symptoms to assist primary care in early detection, there is also a need to enhance understanding of the relationship between symptoms and their duration with patient outcomes, and how earlier presentation and referral have the potential to improve outcomes. Objectives: To determine the prevalence and trends of symptoms in lung, colorectal and breast cancer, if links exist with presentation delays and to investigate relationships between symptoms, presentation stage and survival.

Methods

Outcome measures: tumour size, stage, emergency admission, survival Retrospective secondary care note review for all cases of colorectal, lung and breast cancer diagnosed 1996, 2001 and 2006 in N. Ireland. Using logistic regression, the relationship between disease symptoms, delays and outcomes was investigated accounting for covariates including age, year of diagnosis, sex, co-morbidities, route to diagnosis and tumour grade.

Results

8,151 patients were included. The most prevalent symptoms were cough in lung cancer (65%), a breast/axillary lump in breast cancer (66%) and abdominal pain in colorectal cancer (53%). Symptoms varied little over time however increasingly patients presenting asymptomatically for breast and lung cancer with increased recording of abdominal pain in colorectal cancer. Among breast cancer patients, there was evidence for earlier presentation with a breast lump, while the proportion of lung cancer patients with delayed presentation of a persistent cough has increased. Results of multivariate analysis will be presented.

Conclusions

This research provides a baseline for monitoring symptomatic presentation across a three disease sites. It also informs guidlines and interventions to promote earlier diagnosis to improve survival.

Poster 16: IS DEATH WITHIN ONE YEAR AN INDICATOR OF DELAYS IN PRESENTATION FOR SARCOMAS?

Robert Grimer, Royal Orthopaedic Hopsital

Objectives

Death within one year has been shown for some cancers to be an indicator of late presentationThe aim of this study is to identify if this holds true for patients with bone and soft tissue sarcomas.

Methods

A prospective sarcoma database was used to identify all patients with a newly diagnosed bone or soft tissue sarcoma and to compare those who had died within one year with those who had survived for at least that time.

Results

5633 patients were included in the analysis of whom 3039 had a bone sarcoma and 2593 a soft tissue sarcoma. 839 patients (15%) died within one year of diagnosis, of whom 430 had a bone sarcoma (14%) and 409 a soft tissue sarcoma (16%). For patients with bone tumours the ones who died were older (40.7 vs 30.3) and had bigger tumours (13.3cm vs 10.3cm) and 44% already had metastases at diagnosis (all $p<0.0001$). For STS they were older (58.7 vs 52.8), had bigger tumours (12.9 vs 9.4cm), shorter symptom duration (39 vs 76 weeks) and 41.5% had metastases at diagnosis (all $p<0.0001$).

Conclusions

15% of patients with a newly diagnosed sarcoma will be dead within one year. This is associated with known poor prognostic factors (metastases at diagnosis, age and tumour size). It is an easily measurable index but whether it is a surrogate for delays in diagnosis has not been proved by this study.

Poster 17: TRENDS IN PRESENTATION OF BONE AND SOFT TISSUE SARCOMAS OVER 25 YEARS - LITTLE EVIDENCE OF EARLIER DIAGNOSIS.

Robert Grimer, Royal Orthopaedic Hospital; Sally Vernon, WMCIU

Objectives

Earlier diagnosis is one of the key aims in achieving improved outcomes for patients with cancer. We have investigated how tumour size at diagnosis and duration of symptoms, both of which may act as a proxy for delay in diagnosis have varied over a 25 year period and whether there is evidence of improvement.

Methods

Data were available for 2568 patients with primary bone sarcomas(BS) and 2366 with STS.

Results

The mean size at diagnosis was 10.7 cm for bone tumours and 9.9cm for STS. The size of BS had not changed with the passage of time but there had been a slight decrease in the size of soft tissue sarcomas (10.3 cm before 2000 vs 9.6cm after 2000, $p=0.03$). The duration of symptoms reported by patients varied widely with a median of 16 weeks for BS and 26 weeks for STS. The median duration of symptoms for BS had actually increased since 2000 (16 weeks before to 20 after 2000, $p<0.01$), whilst it remained unchanged for STS. Females tended to present with smaller tumours than males and slower growing tumours (eg liposarcoma and chondrosarcoma) tended to be larger and have a longer duration of symptoms than other tumours. 15% of patients with a soft tissue sarcoma had undergone a previous inadvertent excision – and this % has not changed over 20 years. Younger patients had smaller soft tissue soft tissue sarcomas than older patients but there was little difference for bone sarcomas.

Conclusions

This data shows there is huge room for improvement in diagnosing bone and soft tissue sarcomas.

Poster 18: WHY DO CANCER PATIENTS DIE IN ACUTE HOSPITALS?

Dr Anna Gavin, Queen's University Belfast; Dr Janine Blaney, Queen's University Belfast; Dr Lisa Ranaghan, Queen's University Belfast

Objectives

To determine reasons for a hospital death among cancer patients. It is widely acknowledged that the majority of cancer patients' preferred place of death (PPD) is home. However, latest figures for Northern Ireland show that only 34% achieve this. This study investigated the most likely factors influencing a hospital death.

Methods

Retrospective note review of adult cancer patient deaths within an acute hospital setting (July–December 2007). In addition to medical and demographic information, detailed data was collected on the events surrounding patients' last hospital admission. Classification of reason for admission was performed by a clinician.

Results

695 patients, (53% Male), average age 72 years, died in an acute hospital, only 32% had home specialist palliative care. The majority were admitted as an emergency (79%) by their GP (53%) with urgent physical (54%) or cancer-related symptoms (33%). Over one quarter (26%) were diagnosed on their last admission and 14% of the total sample died within 48 hours of admission. Average length of stay was 11 days. While 93% of deaths were anticipated, preferred place of death was recorded for only 41% of patients, with the majority (61%) having a preference for home. The Liverpool Care Pathway was in place for 56% of patients however, this varied considerably by Trust. Most patients had numerous hospital admissions in their last year of life, significantly related to age, marital and socioeconomic status (all $p=0.01$). There were no major interventions during the last admission.

Conclusions

Although late diagnosis accounts for 26% of patients, findings suggest that community care services could be improved. Appropriate healthcare professional training to ensure the timely identification of the dying patient and implementation of appropriate end of life care pathways, as well as the recording of preferred place of death, may facilitate individuals' achieving their PPD.

Poster 19: TO EXAMINE VARIATIONS IN EMERGENCY PRESENTATIONS FOR LUNG CANCER.

Alexander Ives, SWPHO; Luke Hounsome, SWPHO; Andy Pring, SWPHO; Julia Verne, SWPHO

Objectives

The NAEDI aims to promote early diagnosis of cancer and thereby improve survival rates and reduce cancer mortality. The National Routes to Diagnosis Project (NRDP) showed that 23% of newly diagnosed cancer patients come through as emergency presentations. This study has looked in more depth at variations in emergency presentations for lung cancer.

Methods

The main output of the NRDP was used for analysis; this describes the distribution of routes to diagnosis for cancer patients resident in England and diagnosed in 2007. The project methodology is described in the 'Routes to Diagnosis – Technical Supplement: http://www.ncin.org.uk/search/Routes+to+Diagnosis.aspx.

Results

These results focus on lung cancer emergency presentations. There is wide variation across Primary Care Trusts in England, with the highest rate in Croydon (47%) while the lowest rate was in Buckinghamshire (27%). Female rates (39%) are significantly higher ($p < 0.01$) than males (37%). The rate is significantly higher ($p < 0.01$) in the most deprived (41%) compared with the least deprived group (35%), and similarly for both females (41% vs.35%, $p < 0.01$) and males (40% vs. 34%, $p < 0.01$). In addition, the proportion of patients presenting as an emergency increases with age, from 45-49 (30%) to 85+ age group (55%). One year survival is lower than the 'all routes' survival average for each sex and deprivation category. Survival is significantly higher ($p < 0.01$) in females than males (10% vs. 8%). There is no significant difference ($p = 0.31$) in one year survival between the most deprived group (9%) and the least deprived group (10%).

Conclusions

These variations in emergency presentations provide important information for commissioners and providers to guide their focus on early detection. The high emergency presentations for females were unexpected.

Poster 20: TO EXAMINE VARIATIONS IN EMERGENCY PRESENTATIONS FOR UROLOGICAL CANCERS.

Alexander Ives, SWPHO; Luke Hounsome, SWPHO; Andy Pring, SWPHO; Julia Verne, SWPHO

Objectives

The NAEDI aims to promote early diagnosis of cancer, improve survival rates and reduce cancer mortality. The National Routes to Diagnosis Project (NRDP) showed that 23% of newly diagnosed cancer patients present as emergencies. This study has looked at the similarities and differences in emergency presentations in the main urological cancers (prostate, bladder and kidney).

Methods

The main output of the NRDP was used for analysis; this describes the distribution of routes to diagnosis for cancer patients resident in England and diagnosed in 2007. The project methodology is described in the 'Routes to Diagnosis – Technical Supplement: http://www.ncin.org.uk/search/Routes+to+Diagnosis.aspx.

Results

For each of the urological cancers, the proportion of emergency presentations was higher in the most deprived populations, with the biggest difference for bladder cancer (24% vs.14%, $p < 0.01$). For bladder cancer, more women than men (25% vs. 16%, $p < 0.01$) present as emergency cases, this is the same for kidney cancer (26% vs. 23%, $p = 0.01$). Emergency presentations increase with age, and this is most notable in kidney cancer where 53% of those aged 85 and over are emergency presentations. The greater proportion of women in the population at these ages will likely lead to an interaction effect with the differences in diagnosis by sex. There is variation by PCT, which is largest for kidney cancer (6% vs.83%), and smallest for prostate cancer (2% vs. 27%). The proportion of prostate cancer patients overall diagnosed by an emergency route is low (9%). One year survival is lower than the 'all routes' survival average for each age, sex and deprivation category.

Conclusions

There are significant differences between bladder, kidney and prostate cancers in the proportion of patients diagnosed via an emergency route. These data show complex interactions between sex, age and socio-economic deprivation. These data help to direct NAEDI.

Poster 21: VARIATION BETWEEN THE DUKES STAGING ON THE WEST MIDLANDS CANCER REGISTRATION DATABASE AND THE NATIONAL BOWEL CANCER SCREENING SYSTEM

Johnson, S., West Midlands Cancer Intelligence Unit; Lawrence, G., West Midlands Cancer Intelligence Unit

Objectives

Cancer registry staging is important for evaluating the success of the NHS Bowel Cancer Screening programme. Accurate staging is essential for comparing screen-detected cancers to symptomatic cancers and to examine screening histories. In this study Dukes staging for cases on the Bowel Cancer Screening System (BCSS) was matched to the West Midlands cancer registration database (GRACE), to identify how many cases were present on the two databases and any variation in the stages recorded.

Methods

Screen-detected cancers from 2006 to 2009 were extracted from the BCSS. NHS numbers were used to identify the patients on GRACE and to match the respective tumours. Pathological and clinical Dukes' stages A, B, C, C2 and D from the BCSS were compared with the Dukes' staging on GRACE.

Results

Only 45% of cases with pathological Dukes' staging matched across the two systems for the time period studied. 13% of cases were found to be recorded on the BCSS but not at the WMCIU. The remaining cases were either blank or did not match between the two systems. This included cases where the recorded stage was different and polyp cancers. None of the recorded stage D tumours matched across the two databases.

Conclusions

Accurate staging data is crucial for improving screening to help to reduce the human and financial cost of bowel cancer. Further work is being done to bring the staging systems together to reduce variation and to combine their data, removing any blanks in staging. This will improve the accuracy of the staging at the WMCIU and help the Bowel Cancer Screening QA reference centre to improve services for patients.

Poster 22: BOWEL CANCER SCREENING PROGRAMME - TUMOUR CATEGORIES

Thomas Farrell, University of Leeds; Thomas Farrell, NYCRIS, University of Leeds; Louise Whitehouse, NYCRIS, University of Leeds; Philip Quirke, LIMM, University of Leeds; Claire Nickerson, NHS cancer screening programme; Julietta Patnick, NHS cancer screening programme; John Wilkinson, NYCRIS; Eva Morris, NYCRIS, University of Leeds

Objectives

In 2006 the NHS implemented a bowel cancer screening programme (BCSP). The programme achieved national coverage in 2010 and has successfully identified several thousand tumours. Unfortunately, however, participation rates in the programme vary. This study aimed to categorise all the tumours diagnosed across England in the screening age range between July 2006 and December 2008 and investigate differences between tumours diagnosed both within and without of the screening programme.

Methods

Data obtained from the BCSP were linked to the NCDR database allowing screen detected tumours to be identified within a population-based dataset of all other colorectal tumours. Tumours were then allocated into the following categories of; those diagnosed in people 'never invited' to participate in the BCSP, 'lapsed' participants and 'refusers/non-participants'. 'Screen-detected' cancers and 'interval' cancers found between screening episodes were also identified. The characteristics of the tumours in each group were then compared.

Results

Over the study period 20,018 tumours were diagnosed across England in individuals in the screening age range. Initial analyses indicate that 7,777 (38.8%) of the tumours were diagnosed in those not yet invited to participate in the BCSP due to its ongoing rollout. 771 (3.8%) were diagnosed in invited non participants and 1 (0.005%) of those participated in one round of the programme but not the further screening rounds. 1,840 (9.2%) of the tumours were screen detected and 465 (2.3%) were interval cancers. Screen detected tumours were found to be of significantly lower stage than those identified via other routes.

Conclusions

Tumours identified via the BCSP were of significantly earlier stage that those identified symptomatically and so have better prognosis. The BCSP is very likely therefore to improve colorectal cancer survival in England.

Poster 23: AUDIT OF FERTILITY-SPARING SURGERY FOR EARLY STAGE CERVICAL CANCER

Caroline Wilde, University of Liverpool; Mr Jonathan Herod, Liverpool Women's Hospital

Objectives

To analyse the oncological results, complications and fertility rates in a group of women who have undergone fertility-sparing surgery for early-stage cervical cancer.

Methods

From January 2000 to July 2010, 40 radical trachelectomy or radical cone biopsy procedures with pelvic lymphadenectomy were planned.

Results

A total of 40 women were followed up for a median period of 16 months. 21 women (52.5%) underwent a radical trachelectomy. One procedure was abandoned due to extensive disease at the time of surgery. A radical cone biopsy was performed in the remaining 18 women (45%).Three patients (7.5%) had completion treatment (one radical hysterectomy and two chemoradiotherapy) at the time of initial treatment. There was one recurrence among the women who had completion treatment and another recurrence in those who did not. The perioperative complication rate was low (2.5%) and 14 postoperative complications occurred in 10 women (25%). There was no bladder or urethral injury. Three women discovered they were pregnant pre-operatively and two delivered a live birth after a radical cone biopsy. 28 women attempted pregnancy post-operatively. There were eight pregnancies in seven women and four live births. There was one first trimester abortion and three continuing pregnancies.

Conclusions

Radical trachelectomy and radical cone biopsy with pelvic lymphadenectomy are oncologically safe procedures in selected patients with early stage cervical carcinoma. The morbidity is low and it allows fertility preservation.

Poster 24: AN EXPLORATORY STUDY: INDOOR AND OUTDOOR WORK, SOCIO-ECONOMIC STATUS AND SKIN CANCER

Nicola Bowtell, South West Public Health Observatory; Matthew Iles, South West Public Health Observatory; Veronique Poirier, South West Public Health Observatory; Julia Verne, South West Public Health Observatory

Objectives

UK studies exploring the risk of skin cancer in occupational settings are limited. This study investigates the relationship between indoor and outdoor work, socio-economic status and skin cancer.

Methods

Data on persons (3,096), in the South West, where skin cancer (C43 and C44) was recorded as an underlying or contributory cause of death on the Death Certificate (2001-2010) were extracted. Occupation was classified in terms of exposure using an occupational health led New Zealand model (outdoor, intermittent, and indoor), and socio-economic status (NS-SEC).

Results

Most had worked indoors (68.5%), 19.6% outdoors, 11.9% in intermittent occupations. Only 6.2% of outdoor and 24.9% of intermittent workers, were women ($p<0.001$). The distribution across the three social economic groups, for both indoor and outdoor groups was similar, with the highest proportion of workers in the intermediate and routine occupations. The intermittent group had a greater proportion of professional occupations ($p<0.001$) Outdoor workers were more likely to die older and with a non melanoma, and indoor workers die younger with a melanoma ($p<0.001$). No significant difference was observed for intermittent workers. Two outdoor professions (agriculture and unskilled outside) appear to have a significant association with non melanoma skin cancers, whereas two indoor groups (medical and allied professions and managerial) appear to be associated with melanoma ($p=0.001$). No association was shown for clerical workers and outdoor professionals.

Conclusions

There appears to be different induction mechanisms for melanoma and non melanoma, with outdoor workers more likely to die with a non melanoma and indoor workers (especially those from higher socio economic groups) to die with a melanoma. The study highlights the need for protective measures against all types of solar radiation (occupational and recreational: intermittent and continuous). [1] Cooke KR, Skegg DCG, Fraser J. Socio-economic status, indoor and outdoor work, and malignant melanoma. International Journal of Cancer 1984, 34, 57-62.

Poster 25: EMERGENCY ADMISSION AS A ROUTE FOR OESOPHAGOGASTRIC CANCER DIAGNOSIS: A MARKER OF POOR OUTCOME AND A CANDIDATE QUALITY INDICATOR FOR LOCAL SERVICES

M Shawihdi, University of Liverpool; N. Stern, Digestive Diseases Unit, University Hospital Aintree; E. Thompson, Clinical science building (3rd floor) University Hospital Aintree; R. Sturgess, Digestive Diseases Unit, University Hospital Aintree; N. Kapoor, Digestive Diseases Unit, University Hospital Aintree; M. G. Pearson, Clinical science building (3rd floor) University Hospital Aintree; K. Bodger, Digestive Diseases Unit, University Hospital Aintree

Objectives

The UK National Cancer Plan (2000) introduced a 'two week' waiting time standard for suspected malignancy and guidance to encourage early diagnosis. Improved access to elective (ELECT) investigation should reduce the need for emergency (EMERG) admission. This study examined route of diagnosis and outcomes for oesophagogastric cancer (OGC), both locally and nationally.

Methods

Local cases were audited for 2-year periods before ("Pre": 1997-99) and after ("Post": 2001-02) service re-design, collecting details of demographics, dates of diagnosis, treatment and survival. Within a project funded by the NHS Information Centre, we developed novel linkage algorithms to analyse Hospital Episode Statistics for England (2006-8) and methods to track OGC care chronologically, selecting only cases with a valid pathway of coded diagnostic and therapeutic interventions. External linkage to death registry established date of death and 2-year survival.

Results

LOCAL DATA: n=333 cases (Pre, n=152; Post, n=181). No change in % of patients diagnosed via EMERG route after service re-design (Pre: 30.9% v Post: 31.5%; p=0.981). Local EMERG cases were older (75 v 68 yrs; p<0.0001), less likely to have potentially curative treatment (13.5% v 40%; p<0.0001) and had poorer 3yr survival (10.6% v 22.2%, p=0.013). NATIONAL DATA We identified 33,115 patients with OGC, of whom 26,097 (79%) met study criteria. Of these, 7,082 (27%) were EMERG and 19,015 ELEC (73%). EMERG cases were older (74 yrs v 70 yrs; p<0.001), less likely to undergo surgery (516 [7.2%] v 3,780 [19.8%], p<0.001) and had poorer 2 yr survival (19.6% v 32.9%, p<0.001). The % of EMERG cases varied widely between cancer networks (22% to 40%).

Conclusions

Our national linkage suggests 27% of OGC cases in England are diagnosed as EMERG and this mode of presentation predicts a poor outcome, confirmed by detailed local audit. Although EMERG admission is unavoidable for some cases, the observed variation may suggests possible unresolved inequalities in patient access.

Poster 26: PREDICTORS OF EMERGENCY ADMISSIONS IN CHILDREN AND YOUNG ADULTS WITH AN INTRACRANIAL TUMOUR

Thomas P C Chu, London School of Hygiene & Tropical Medicine; Anjali Shah, London School of Hygiene & Tropical Medicine; Michel Coleman, London School of Hygiene & Tropical Medicine; David Walker, University of Nottingham

Objectives

Intracranial tumours affect over 400 children and young adults each year in England. Clinical features are often non-specific, which may contribute to delays in their diagnosis. Patients with a CNS tumour had the highest probability (58%) of emergency presentation, which may lead to poor survival. We investigated the characteristics of patients and their cancers which are associated with one or more emergency hospital admissions during which a neurosurgical intervention had been carried out.

Methods

We have extracted from the linked cancer registry – Hospital Episode Statistics dataset 85,464 episodes relating to 4,129 patients diagnosed with an intracranial tumour at age 0-24 years between 1997 and 2007. We estimated the probability of having at least one emergency admission associated with patient age, sex, tumour location and morphology.

Results

2,116 patients (51.2%) had at least one relevant emergency admission recorded in HES. The proportion of patients who had one or more emergency admissions was the highest in those who were aged 0-5 years at the time of diagnosis (n=666, 59.7%). Difference between sex is small (45.4% in males and 43.9% in females). Patients with an infratentorial tumour (n=588, 50.9%), a pineal gland tumour (n=35, 76.1%), an embryonal tumour (n=465, 66.4%), or a choroid plexus tumour (n=216, 61.0%) are likely to have at least one emergency admission.

Conclusions

Age at diagnosis, tumour location and morphology are important predictors of the probability of emergency admissions. Patients with a tumour which has a greater potential to impinge on the CSF drainage pathway are more likely to have at least one emergency admission. Since the pattern of symptoms and signs of a tumour is closely related to its anatomical location, we hypothesise that the probability of emergency presentation could be mediated through the length of diagnostic delay. This hypothesis will be investigated further in this on-going project.

Poster 27: INVESTIGATING THE LOW SURVIVAL FOR MALIGNANT MELANOMA OF THE SKIN AND CERVICAL CANCER IN WALES

Ceri White, Welsh Cancer Intelligence and Surveillance Unit; Lloyd Evans, Welsh Cancer Intelligence and Surveillance Unit; Julie Howe, Welsh Cancer Intelligence and Surveillance Unit; Rebecca Thomas, Welsh Cancer Intelligence and Surveillance Unit

Objectives

The Welsh Cancer Intelligence and Surveillance Unit (WCISU) have investigated the low survival for malignant melanoma of the skin and cervical cancer in Wales following the EUROCARE4 study results.

Methods

The UK Cancer Information Service (UKCIS) was used as a source of information for the UK countries to compare the incidence, mortality and survival trends from 1990 up to 2008 to identify whether the period 1995-1999 was consistent with other diagnosis periods for the low survival in Wales. The European Age Standardised Rate per 100,000 population was used to compare incidence and mortality trends with one year and five year relative survival rates examined for survival trends. Relative survival by deprivation quintile was also examined.

Results

For malignant melanoma of skin, the incidence trends for males in Wales are very similar to England, however females show much lower incidence rates than the other UK countries throughout the majority of the 1990s and are the lowest of all UK countries. Mortality trends show Wales generally having the highest rates over the period for both cancers. Survival rates show consistently low survival for both cancers over the entire periods with the most affluent quintile in Wales for malignant melanoma being lower than the most deprived in Northern Ireland for 1999-2003.

Conclusions

Mortality rates in Wales for these cancers are the highest in the UK with incidence rates similar to England. The high mortality rates have resulted in very low survival in Wales. Deprivation also appears to be a factor in these results, especially for malignant melanoma of the skin, possibly due to late diagnosis. Further work is currently ongoing with regards incidence and mortality trends by deprivation in Wales and survival by stage of diagnosis for cervical cancer to address this issue.

Poster 28: ORAL CAVITY CANCER AND DEPRIVATION: INCIDENCE, MORTALITY AND SURVIVAL TRENDS IN MALES AND FEMALES IN ENGLAND

Gabriele Price, Oxford Cancer Intelligence Unit; Monica Roche, Oxford Cancer Intelligence Unit; Ann Watters, Oxford Cancer Intelligence Unit

Objectives

Oral cavity cancer is one of the most common sub-types of head and neck cancers. This poster evaluates:

- time trends in oral cavity cancer incidence, mortality and survival for males and females in England; and
- variations in incidence, mortality and survival in males and females across areas of varied deprivation levels.

Methods

Incidence, mortality and relative survival between 1990-1993 and 2005-2007 in England were extracted from the National Cancer Information Service. The Index of Multiple Deprivation 2007 was used to examine age-standardised rates (ASRs) for incidence and mortality, and 1- and 3-year relative survival rates (RSRs), by national deprivation quintiles. This analysis utilised data from the National Cancer Data Repository and from the Office for National Statistics for the period 2004 to 2006.

Results

In the study period an increase in the incidence (ASRs per 100,000: males from 3.23 to 4.14 and females from 1.58 to 2.30) and relative survival (1-year RSRs: males from 74% to 78% and females from 74% to 80%; 3-year RSRs: males from 55% to 60% and females 58% to 68%) was observed in England. This rise was accompanied by a fall in mortality (ASRs per 100,000: males from 1.56 to 1.45 and females from 0.69 to 0.68). Men and women living in the least deprived areas in England had lower incidence and mortality rates, and higher relative survival, than individual from the most deprived areas.

Conclusions

The incidence rate of oral cavity cancer has significantly increased in the study period. Despite the rising incidence, mortality remained relatively unchanged which can be partially explained by the significant improvement in the relative survival. Men and women from more deprived areas had generally worse incidence, mortality and relative survival than those from less deprived areas. The deprivation gradient was more clearly apparent in men than in women.

Poster 29: DOES AGE AND TREATMENT AFFECT THE SURVIVAL OF LUNG CANCER PATIENTS?

Marie Horton, Thames Cancer Registry; Vivian Mak, Thames Cancer Registry; Henrik Møller, Thames Cancer Registry

Objectives

To investigate how treatment and other factors affect the survival of lung cancer patients in different age groups.

Methods

Details of 57,807 lung cancer patients (ICD-10 C33-C34) resident in South East England and diagnosed between 1998 and 2007 were extracted from the Thames Cancer Registry database. Death-certificate-only registrations were excluded from the analyses. Patients were divided into seven groups according to their age at diagnosis. For each age group Kaplan-Meier one year survival estimates were calculated to compare patients with and without; any treatment, chemotherapy, radiotherapy and cancer surgery recorded within six months of diagnosis. The log-rank test was used to assess the differences between groups. Cox proportional-hazards regression analyses were carried out to evaluate the impact of age, year of diagnosis, sex, socio-economic deprivation quintile (based on the income domain of the Indices of Multiple Deprivation 2007), disease stage, Charlson comorbidity score, cancer network of residence, ethnicity and urban indicator, on survival.

Results

One year survival of lung cancer patients in all age groups was higher in patients having treatment. The differences between patients in the same age group with and without treatment were significant ($p<0.005$) and most pronounced in the first 2 months after diagnosis. The exception was younger patients with a record of radiotherapy. Sex, socio-economic deprivation quintile, stage and comorbidity were all associated with the risk of dying.

Conclusions

For all age groups, the short term survival of lung cancer patients with treatment in South East England was significantly better than the survival of patients without treatment. Patients with cancer surgery and other treatments may have better survival due to selection of good prognosis patients for such treatments, as well as the direct treatment effect. Younger patients may be more likely to receive treatment other than radiotherapy.

Poster 30: A NATIONAL PERSPECTIVE ON THE USE OF SURGERY IN THE MANAGEMENT OF COLORECTAL CANCER

Mohammed Gouda, Northern and Yorkshire Cancer Registry and Information Service (NYCRIS); Mohammed Gouda, NYCRIS; Eva Morris, NYCRIS; Paul Finan, Leeds Teaching Hospitals; Phil Quirke, Leeds Teaching Hospital; James Thomas, NYCRIS; Louise Whitehouse, NYCRIS; John Wilkinson, NYCRIS; David Jayne, Leeds Teaching Hospitals

Objectives

Surgery remains the main curative treatment for colorectal cancer so optimising its delivery is important. This study aimed to examine patterns of use of surgery in the management of this disease across England in 2008

Methods

Information on all individuals diagnosed with a colorectal cancer diagnosed in 2008 were extracted from the National Cancer Data Repository (NCDR). Patterns of surgical care were then examined.

Results

32,307 individuals were diagnosed with a primary colorectal cancer in 2008. 30,282 (93.7%) were identifiable within the HES data within the NCDR enabling their surgical treatment to be assessed. Of these individuals 19,687 (65.6%) underwent a major resection. Major surgery was more commonly used in those diagnosed at a younger age (70% of those ≤60 at diagnosis vs. 50.4% in those >80, ($p<0.01$)), in those living in more affluent areas (66.8% of those in the most affluent quintile vs. 62.2% in the most deprived ($p<0.01$)) and in those with early stage disease (79.4% of Dukes A patients versus 30.3% in Dukes D, $p<0.01$). 4,080 (20.7%) of the major resections were undertaken laparoscopically. 2,646 (13.4%) of the major resections were undertaken following an emergency admission to hospital. 30-day post-operative mortality following major resection was 5.3% (13.64% for emergency cases verses 2.92% for elective cases). Further analyses will now be undertaken to investigate the use of local excisions, bypass surgery, and stoma formation and reversal. Variation in practice across the country will also be examined.

Conclusions

This study will give a national perspective on the use of surgery in the management of colorectal cancer.

Poster 31: DIFFERENCES IN THE INCIDENCE OF ORAL AND PHARYNGEAL CANCERS BY ETHNICITY IN LONDON

Mr Chris Donaldson, Thames Cancer Registry; Ruth H Jack, Thames Cancer Registry; Henrik Møller, Thames Cancer Registry; Margreet Lüchtenborg, Thames Cancer Registry

Objectives

We examined the association between ethnicity and the incidence of oral and pharyngeal cancers in the London population.

Methods

Data on London residents diagnosed with oral and pharyngeal cancer (ICD-10 codes C00-C14) between 1998 and 2007 were retrieved from the Thames Cancer Registry. Separate male and female age-standardised incidence rate ratios (IRR) were calculated for different ethnic groups using White males and females as the baseline groups. These were produced for cancers of the nasopharynx (C11), oropharynx (C09-C10), hypopharynx (C12-C13), oral cavity (C00.3-C06), salivary glands (C07-C08) and Waldeyer's ring (C02.4, C09, C11.1, C14.2).

Results

Records on 5,833 individuals were examined, and ethnicity information was available for 4,679 (80%) of these patients. Compared with their White counterparts, the highest incidence rate ratios of nasopharyngeal cancer were seen in Chinese males (IRR: 23, 95% confidence interval (CI): 7-73) and females (IRR: 16, 95% CI 2-107). Waldeyer's ring cancers were most common in Bangladeshi and White groups. Analysis of the oropharynx and oral cavity cancers gave rise to variable but less obvious patterns among the different ethnic groups, whereas less variation was observed between ethnic groups for cancers of the hypopharynx and salivary glands.

Conclusions

Although the incidence rates of individual oral and pharyngeal cancer types are low, they vary by ethnic group. The variation in incidence appears to be unique to the different cancer subgroups and may therefore reflect specific ethnicity-related risk factors.

Poster 32: BREAST CANCER SCREENING UPTAKE IN ETHNIC GROUPS IN LONDON

Ruth H Jack, Thames Cancer Registry, King's College London; H Møller, Thames Cancer Registry, King's College London; Tony Robson, London Quality Assurance Reference Centre; Elizabeth A Davies, Thames Cancer Registry, King's College London

Objectives

To determine whether breast cancer screening uptake varies between ethnic groups in London.

Methods

Information on women resident in London who were sent a breast cancer screening invitation between 31/03/2006 and 31/12/2009 was obtained from the London Quality Assurance Reference Centre. Women aged 50-52 who had a first call invitation (a first invitation to the national screening programme), and women aged 50-69 who had a routine recall invitation (after previously being screened as part of the screening programme) in this period were analysed. Where ethnicity was not known, multiple imputation was used. First call and routine recall data were analysed separately. Screening attendance in different ethnic groups was assessed using logistic regression, and adjusted for age at invitation, socioeconomic deprivation and screening area of residence. Data for the six individual screening areas were also analysed separately.

Results

Data on 159,078 women were included in the first call analysis, and on 496,438 women in the routine recall analysis. Ethnicity information was available for 475,478 (73%) of these women. Compared with White British women, women from all other ethnic groups were less likely to attend their first call screening invitation. White British women were also most likely to attend for routine recall screening sessions. Some screening areas showed less variation, with women from several ethnic groups having similar screening attendance as White British women.

Conclusions

Breast cancer screening attendance varies by ethnic group for both the first invitation and for subsequent invitations after previously being screened, with White British women more likely to attend.

Poster 33: BREAST CANCER AND AGE IN BLACK AND WHITE WOMEN IN SOUTH EAST ENGLAND

Ruth H Jack, Thames Cancer Registry, King's College London; Elizabeth A Davies, Thames Cancer Registry, King's College London; Henrik Møller, Thames Cancer Registry, King's College London

Objectives

Black women have lower age-standardised breast cancer incidence rates than White women in the UK. However, little is known about such differences in risk in separate age groups. We therefore explored the age-specific rates and examined whether there is a difference in the age at which Black Caribbean, Black African and White women are diagnosed with breast cancer, and whether such differences are related to population age structures.

Methods

Records on female residents of South East England diagnosed with breast cancer between 1998 and 2003 were extracted from the Thames Cancer Registry database. This period was chosen so that the population data from the 2001 Census would be appropriate. Age-specific rates were calculated for each 5 year age group for White, Black Caribbean and Black African women.

Results

Black Caribbean and Black African breast cancer patients were younger than both the White patients and those with no ethnicity recorded. Black Caribbean and Black African women in the population also had a younger age profile than White women. The computed age-specific rates in women aged under 50 were similar in the different ethnic groups, whereas in women aged 50 and over White women had higher rates.

Conclusions

Breast cancer incidence rates are similar in Black Caribbean, Black African and White women aged under 50 years. The younger age of Black Caribbean and Black African breast cancer patients in South East England reflects the younger age of these populations, rather than an increased risk of disease at younger ages.

Poster 34: THE USE OF "INFORMAL DEATH" INFORMATION IN LUNG CANCER SURVIVAL ANALYSIS OF ETHNIC GROUPS

Ruth H Jack, Thames Cancer Registry, King's College London; Elizabeth A Davies, Thames Cancer Registry, King's College London; Henrik Møller, Thames Cancer Registry, King's College London

Objectives

An "informal death" is defined as one where a death is recorded on the NHS Care Records Service (CRS), but no formal death certificate has been issued. This study investigated the effect of these deaths on male lung cancer survival in different ethnic groups.

Methods

Data on 25,687 males resident in South East England who were diagnosed with lung cancer between 1998 and 2003 were extracted from the Thames Cancer Registry. Patients were followed up until 31/12/2006, and those diagnosed from a death certificate only were excluded. Men originally recorded as still alive at the end of follow up were matched to the NHS CRS, and death information from the same period was extracted. Overall survival was examined using the original and updated death data, adjusted for age, socioeconomic deprivation, stage of disease and treatment. Results are reported for White, Indian, Pakistani, Bangladeshi, Black Caribbean, Black African and Chinese men.

Results

Using the original death data, Bangladeshi men had better survival estimates compared with White men (hazard ratio (HR)=0.46, $p<0.001$). Indian (HR=0.84, $p=0.048$), Black Caribbean (HR=0.87, $p=0.47$) and Black African (HR=0.68, $p=0.007$) men also had better survival estimates. The largest proportion of patients with updated death information was in the Bangladeshi group (13/27, 48%). Using the updated death information had little effect on the hazard ratios for most ethnic groups. The Bangladeshi group result was attenuated to HR=0.60 ($p<0.001$) but was still statistically significantly better than the White group estimate.

Conclusions

Routinely used formal death information does not capture all deaths, and the extent of this varies by ethnic group. Survival analysis results were not materially affected where a small proportion of patients had additional information; however, Bangladeshi men's survival estimate was attenuated.

Poster 35: CANCER SPEND: HOW MUCH? AND ON WHAT?

David Lemon, Dorset PCT; Rabia Khan, Dorset PCT

Objectives

The NHS is struggling to cope with increasing health care costs and rising demand due to an aging population, spending cuts and new technology. Hence, there have been several financial initiatives in the NHS to motivate improved performance. The aim of this study is to examine how money is being spent on cancer within Dorset PCT and to investigate how to maximise the health gain per unit of additional investment. Additionally we want to investigate the relationship between cancer health outcomes and deprivation and examine how health care expenditure at a local level is related to this. This study is unique as Dorset PCT has one of the highest proportions of over 75 year olds in England, and good cancer outcomes.

Methods

The data used in this study is based on routinely collected data from financial programme budgeting as well as health datasets (incidence, mortality and hospital activity data) including SUS and UKCIS. We examined what factors influenced expenditure in terms of age at admission, deprivation and hospital activity. The effects of covariates on years of life lost will be assessed using generalized linear models (GLM). Using a years of life lost as a measure of health outcomes, the expenditure required to save a year of life for different age groups will be estimated.

Results

The results from this study will be used to help improve decision making at the local level, which is particularly important in the current economic climate.

Conclusions

Results will be presented at the conference.

Poster 36: HOSPITAL DEATHS OR ACUTE HOSPITAL DEATHS?

Adebowale Osinowo, South West Public Health Observatory; Julia Verne, South West Public Health Observatory

Objectives

Deaths occurring in hospital is an increasingly important indicator for End of Life (EOL) care. We explore variations in hospital deaths with emphasis on cancer deaths and those occurring in acute hospital settings.

Methods

Data on cause and place of death were extracted from ONS annual mortality files for years 2007-2009. Hospital deaths as a proportion of all deaths were calculated for Local Authorities (LAs) in England. Similar analyses were then repeated for deaths occurring in acute hospitals.

Results

Over half (57%) of all deaths from any cause occurred in hospital with LA variations ranging between 43% (Cambridge) and 75% (Waltham Forest). 45% of deaths from cancer occurred in hospital. It was not possible from available data at National level to sub-categorise hospital types. One reason for this is the organisational nature of many secondary care providers e.g. many NHS Hospital Trusts have multiple locations and render secondary care services within the community. This makes it impossible to estimate the proportion of deaths that occurred in acute hospital settings at a National level. Local knowledge of the South West (SW) region however showed the proportion of hospital deaths is reduced from 52% to 43% for acute hospitals with SW LAs varying between 22% (Penwith) and 59% (Christchurch) in acute hospitals. This reduction is also reflected in cancer deaths from 43% in all hospitals to 32% in acute hospitals (varies between 14% - Penwith and 60% - Christchurch).

Conclusions

Place to place variations exist in the proportion of hospital deaths in England. The differences shown between hospital and acute hospital deaths reflects a need to better define the indicator to support ongoing efforts to reduce numbers of people near EOL that are unnecessarily admitted to die in acute hospitals.

Poster 37: USING QUADRANT ANALYSES TO INVESTIGATE CANCER MORTALITY, INCIDENCE, ONE AND FIVE-YEAR SURVIVAL IN THE NORTH WEST

Flatt, G, North West Cancer Intelligence Service (NWCIS); Khan, S, North West Cancer Intelligence Service (NWCIS); Moran, A, North West Cancer Intelligence Service (NWCIS)

Objectives

As part of our recent report 'Cancer in the North West: Inequalities by PCT of residence and socio-economic status' we wanted to compare rates and trends in rates for mortality, incidence, one and five-year survival for all 24 PCTs within the North West SHA. In order to do this, we used quadrant analyses.

Methods

How the rates for each PCT compare with England are shown on the vertical (y) axis as a percentage and how trends in rates compare with national trends are on the horizontal (x) axis, also as a percentage. For mortality and incidence quadrants, the red box indicates high rates and an increase in rates compared with England and the green box for low rates and a higher decrease in rates. The top left amber box includes PCTs with high rates which are decreasing faster than England; the bottom right box is for PCTs with low rates but increasing compared with England. As high and increasing survival rates are desirable, the red and green boxes have been switched for the quadrants showing five and one-year survival rates, so that green remains the most and red the least desirable.

Results

Quadrant analyses allow PCTs to clearly see how their rates and trends compare with England. PCTs which have high rates but have made good progress in decreasing them or vice versa can be readily identified, for example, mortality for all cancers in Knowsley. By comparing the mortality and incidence quadrants, Oldham demonstrates the highest mortality rates but the lowest incidence rates for female breast cancer. We have recommended that this finding warrants further investigation.

Conclusions

The advantage of using quadrants is that one can show rates and trends in rates on the same graph. This allows one to readily identify PCTs which have high rates but have made good progress in decreasing them or vice versa. Those who commission cancer services, particularly at PCT level, may well find this analyses of interest.

Poster 38: CHEMOTHERAPY TRENDS

Jinan Ridha, Solutions for Public Health; Monica Roche, Solutions for Public Health

Objectives

To compare patterns of chemotherapy given to cancer patients in providers serving the Thames Valley Cancer Network, from 2003/04 – 2009/10.

Methods

Standardised comparative information on chemotherapy is still not routinely available at national level, but standardised data from hospitals serving one large cancer network have been provided for analysis for the last ten years. The data includes all the chemotherapy regimens given to cancer patients by the providers in the Cancer Network (including those for non residents) and by two major external providers to the Network population.

Results

We will present analyses showing:

- changes in the numbers of courses given over time by provider and for each main cancer site/grouping
- variations in the regimens used over time and between providers to treat specific cancers
- variations in the rates of chemotherapy treatments in local populations

Conclusions

We will demonstrate the feasibility and usefulness of collecting a standardised chemotherapy dataset for the residents of one large cancer network. We will give examples of how the data have been used to track trends over time and to monitor variations between providers. The experience in the Thames Valley will be valuable in informing the plans for the roll-out in 2012 of a mandatory national chemotherapy dataset.

Poster 39: LUNG CANCER DASHBOARD – AN EFFECTIVE TOOL FOR PRESENTING COMPARATIVE CANCER INTELLIGENCE FOR COMMISSIONERS

Lily Sharma, HYCCN/NYCRIS/YHPHO; Dr Carol Hunt, Humber & Yorkshire Coast Cancer Network; Dr Colin Pollock, Yorkshire and Humber Public Health Observatory

Objectives

Good health intelligence leads to real improvements in the quality and efficiency of services. Lung cancer is the second most commonly diagnosed cancer and the most common cause of cancer death with low survival rates in the UK compared to internationally. The lung cancer dashboard offers a clear, simple and informative solution to commissioner's needs for information, and compares performance against other organisations within the network and nationally to help identify areas of concerns.

Methods

At the Humber and Yorkshire Coast Cancer Network (with support from YHPHO and NYCRIS), we created a lung cancer dashboard – a visual display of text and graphics combined on a single screen/sheet of paper. The dashboard includes indicators in various domains – cancer outcomes including incidence, mortality and survival rates; lung cancer audit data (LUCADA), cancer waiting times, elective and emergency admissions, length of stay, etc. These indicators are not cast in stone, and can be modified according to organisational requirements. Graphics used in the dashboard include 'sparklines' to show trends and progress against targets; bullet charts to benchmark performance against peers and nationally; up/down icons, etc. These can be quickly updated as latest figures become available.

Results

The dashboard presents lung cancer outcomes and key activity process measures for the network, commissioners and provider organisations. It enables sharing of a wide range of comparative organisational data on outcomes and treatment identifying areas of concern quickly and effectively.

Conclusions

This analysis will help the Lung NSSG at the network to identify problem areas and result in audits where performance is of concern. It will help the commissioners to quickly and effectively assess their and their providers' progress towards targets. It can help to meet the information needs of the GP commissioning consortia for decision making in a simple and effective manner.

Poster 40: THE CANCER INFORMATION SERVICE: A DECADE INFORMING THE NHS ABOUT CANCER

Vivian Mak, Thames Cancer Registry; Jason Poole, Trent Cancer Registry; Sandra Edwards, Oxford Cancer Intelligence Unit; Neil Kennedy, Oxford Cancer Intelligence Unit; Catherine S Thomson, Cancer Research UK; Henrik Møller, Thames Cancer Registry

Objectives

The Cancer Information Service (CIS) is a web-based reporting tool containing data on cancer incidence, mortality and survival for many levels of geographies within the whole of the United Kingdom. The aim is to chronicle the development of the CIS over the last decade, from being a single regional installation to the UK-wide product it now is.

Methods

Details of CIS key milestones will be presented, including the standardisation of many practices across the registries. Various collaborations and the overall governance of this product will be described. Future development plans will also be mentioned.

Results

A poster will be presented to showcase the significant events in the life of the CIS. The key outputs from the CIS will be highlighted, as well as examples showing where CIS data have been used in practice to make a difference. The data from the CIS has been used to populate other electronic toolkits such as the Cancer Commissioning Toolkit and the various cancer e-Atlases.

Conclusions

The CIS continues to play a key role in the provision of data within the UK cancer intelligence community.

Poster 41: ESTIMATING FINANCIAL SAVINGS RESULTING FROM SMOKING RELATED CANCER PREVENTION IN LANCASHIRE AND SOUTH CUMBRIA CANCER NETWORK (LSCCN)

Mukesh Kumar Dherani, North West Cancer Intelligence Service (NWCIS); Holger Moeller, North West Cancer Intelligence Service (NWCIS); Stephen Raynor, North West Cancer Intelligence Service (NWCIS)

Objectives

Smoking related cancers pose a huge burden on NHS finances. For health policy, planning and resources allocation it is important to have information possible net savings from health programmes. In this study we analyse data on smoking related cancers and NHS Programme Budget to estimate possible financial savings from prevention programmes.

Methods

Cancer incidence and mortality (2006-08 average) for the LSCCN has been obtained from the North West Cancer Intelligence Service database. Using Global Burden of Disease project (WHO) methodology number of smoking attributable cancers were estimated. Expenditure on cancers by tumour groups has been obtained using Programme Budgeting (PB) data (DH) and expenditure on stop smoking services (SSS) has been obtained from the NHS Information Centre (IC). It was assumed that equal amount was spent on each of the cancers in the tumour group as PB provided expenditure by groups. Savings due to successful prevention measures have been calculated by multiplying the reduction in smoking attributable cancers by the PB data.

Results

In the LSCCN 80% of the cancers are associated with smoking costing NHS more than £70 million per annum. If smoking was stopped entirely, more than 3000 cases and deaths combined could be averted equivalent to >18000 DALYs, at a value of >£15 million per annum. The SSS spends nearly £3 million annually on quitters with a 4-week quit success rate of 45% among service seekers across LSCCN.

Conclusions

The cost of cancer treatment is over 2000% (>23 times) the investment on SSS. The potential return on the investment in SSS is 5-times the investment cost. These savings are only for cancers, hence a gross underestimation of overall savings. Further research is needed to compare the effectiveness of various interventions used for smoking cessation and methods to enhance uptake for interventions to maximise the benefits.

Poster 42: INVESTIGATING POOR LUNG CANCER SURVIVAL IN THE NORTH TRENT CANCER NETWORK

Jason Poole, Trent Cancer Registry; Ros Hancock, Trent Cancer Registry; Rupert Suckling, North Trent Cancer Network; Kim Fell, North Trent Cancer Network; Patricia Fisher, North Trent Cancer Network

Objectives

Trent Cancer Registry was approached by the North Trent Cancer Network to assess and investigate poor lung cancer survival across the network (South Yorkshire and northern Derbyshire) compared with England.

Methods

The Cancer Information Service (CIS) was used to assess network trends in 1, 3 and 5-year relative survival against those nationally, as well as comparing survival by deprivation. Recent registry data was used to explore 1, 3, 6 and 12 month conditional survival by PCT within the network. National LUCADA audit data was additionally used to assess differences in stage of disease by deprivation across the network. Hospital Episode Statistics data was additionally used to explore potential treatment inequalities.

Results

Initial analyses suggest:

- There have been improvements in network survival, more recently for patient's one year after diagnosis.
- Despite a higher profile of population deprivation in the network than nationally, survival by deprivation is similar to that nationally. However, there is some evidence of better network survival for those living in the most affluent fifth of areas.
- Evidence of better survival from 6 months after diagnosis in some PCT areas than others.
- No evidence that patients living in more deprived areas present with later stage of disease than those in more affluent areas.
- There are several factors suggesting treatment inequalities for non-small cell lung cancer.

Conclusions

Further analyses are required to clarify these results, particularly around treatment inequalities and the potential link with patient outcomes, such as survival. The communication of findings with clinical colleagues continues to be an important step in interpreting these results.

Poster 43: QUANTIFYING NEW PATHWAYS OF CARE FOR CANCER SURVIVORS

Professor Jane Maher, Consultant Clinical Oncologist and Chief Medical Officer, Macmillan Cancer Support; Hannah McConnell, Health Data Manager, Macmillan Cancer Support

Objectives

Two million people in the UK have had a cancer diagnosis, some were diagnosed last week, others where diagnosed more than 20 years ago.[1] A key part of Macmillan's survivorship approach is to identify those who are at risk of disability or disruption to productive lives as a result of cancer and its treatment and to intervene. Based on five identified phases in a care pathway we explore a way of presenting data as a tool to promote discussion about redistributing where resources are allocated.

Methods

We identify five phases on a cancer care pathway based on what patients have told us – initial diagnosis and treatment; rehabilitation after treatment; monitoring to provide support if recurrence occurs or consequences of treatment develop; progressive care for metastatic disease and more severe treatment related consequences and end of life care. Using available data and clinically led assumptions about patient need and outcomes we make indicative estimates to quantify need across the pathway. We estimate, for different cancers, the number of people requiring support in each of the five identified phases of the cancer care pathway.

Results

For a larger tumour group such as Breast cancer we estimate there are around 250,000 women a year in England requiring clinical support – around 1 in 12 will be in progressive care for metastatic disease. Estimates could be provided for each phase of the pathway and for different cancers.

Conclusions

It is currently not possible to segment the 2 million into these specific phases, making it very difficult to target intervention. We discuss the benefits and risks of making these estimates and if the data are directionally correct. Using this method and readily available data we identify where along the care pathway need is greatest. These data could inform the targeting of resources for service providers.

Poster 44: BREAST CANCERS DIAGNOSED IN WOMEN BELOW THE SCREENING AGE ARE MORE COMMONLY INVASIVE WITH A MODERATE OVERALL PROGNOSIS

Lawrence G., West Midlands Cancer Intelligence Unit; Sidhu J., West Midlands Cancer Intelligence Unit; Lagord C., West Midlands Cancer Intelligence Unit; Kearins O., West Midlands Cancer Intelligence Unit

Objectives

To assess the prognostic features of breast cancers diagnosed in women below the screening age.

Methods

English breast cancer diagnoses were identified using the National Cancer Data Repository (NCDR) which holds patient and tumour details for cancers diagnosed between 1990 and 2008. Data were linked to the Hospital Episode Statistics (HES) database which contains details of admissions to NHS hospitals in England between April 1997 and March 2010. Women aged 16-48 diagnosed with an invasive (C50) or non-invasive (D05) breast cancer were included in the cohort.

Results

Between 1990 and 2008, 119,000 women aged between 16 and 48 were diagnosed with breast cancer. New diagnoses increased from around 5,100 in 1990 to over 7,100 in 2008; the greatest increases in new diagnoses were in the 1990's (2% average annual increase). More than 90% of breast cancers diagnosed in women below the screening age were invasive. The proportions of non-invasive breast cancer diagnosed each year increased from 5% in 1990 to 9% in 2008. Most invasive breast cancers were diagnosed in women aged 40-48 (67%). 24% were diagnosed in women aged 30-39. In the age groups 20-29 and 30-39, women with a known invasive tumour grade had mainly Grade 3 tumours (39% and 36% respectively). Women aged 40-48 had similar proportions of Grade 2 (27%) and Grade 3 (28%) tumours. The Nottingham Prognostic Index Group was known for 21% of women with an invasive breast cancer (of these, 21% were in the Excellent or Good Prognostic Group and 52% in Moderate Prognostic Group 1 or 2).

Conclusions

Women below the screening age are more likely to develop breast cancers that are invasive in nature, with a higher grade and a moderate overall prognosis.

Poster 45: AN ONLINE PORTAL WITH STRONG SECURITY ASSURANCES FOR CANCER REGISTRY/MDT DATA SHARING

Brian Shand, Eastern Cancer Registration & Information Centre / CBCU Research; Petr Hosek, Imperial College London; Ioannis Papagiannis, Imperial College London; Matteo Migliavacca, Imperial College London; David M. Eyers, University of Cambridge / University of Otago; Jean Bacon, University of Cambridge; Peter Pietzuch, Imperial College London

Objectives

The Eastern Cancer Registry (ECRIC) aims to maximise MDT data quality, by providing detailed feedback on data completeness through an online web interface. However, security concerns have previously limited this to aggregated monthly summaries. Our goal was to make patient-level data available online to MDTs, while maintaining strong guarantees of data confidentiality, by using data-centric security techniques developed in the SmartFlow research project.

Methods

SafeWeb software architecture was developed to enforce fundamental, mandatory controls over data flows, e.g. between NHS organisations and users. These were integrated into a web portal to facilitate dynamic, but safe, sharing of data between hospital MDTs, and cancer registries. Multiple levels of safety net compartmentalise the software so that, even if parts of the system contain programming faults, widespread disclosure of sensitive data is still prevented. Since a new MDT portal was needed, the additional SafeWeb requirements were incorporated into the portal's design from the outset. Best practice was followed with respect to configuring network firewalls, and ensuring appropriate isolation of sensitive databases.

Results

A pilot SafeWeb-based MDT portal system for registry data was successfully completed in March 2011. Lessons learned from matching the strict data management practices of ECRIC to the data-linked security provided by SafeWeb will be presented.

Conclusions

SmartFlow's SafeWeb architecture has been shown to be applicable for real clinical applications. The engineering requirements of SafeWeb were able to be merged into the existing software development methodology for custom web portals, providing additional levels of strong data management guarantees. The promising progress of this pilot is hoped to encourage the adoption of SafeWeb into other similar data sharing software.

Poster 46: COMPLETENESS OF STAGING DATA IN THE SOMERSET CANCER REGISTER DATABASE IN THE WEST MIDLANDS

Davies, P., West Midlands Cancer Intelligence Unit; Barrett, G., West Midlands Cancer Intelligence Unit; Francis, O., West Midlands Cancer Intelligence Unit; Pearce, N., West Midlands Cancer Intelligence Unit; Porter, M., West Midlands Cancer Intelligence Unit; Wood, N., West Midlands Cancer Intelligence Unit; Lawrence, G., West Midlands Cancer Intelligence Unit

Objectives

Cancer registries are being encouraged to improve the completeness of staging data within their records. Eleven NHS Trusts in three cancer networks in the West Midlands use the Somerset Cancer Register database which could provide a good source of coded staging data, depending on the completeness of the staging fields within the records.

Methods

Somerset Cancer Register records received by the WMCIU for the diagnosis year 2009 were analysed for the completeness of T, N and M components and overall TNM stage in the pre-treatment, pathological and integrated TNM stage fields. The completeness for the main cancer site groups in the different NHS Trusts was assessed.

Results

Data will be presented showing the proportions of records with complete T, N and M components and overall TNM stage fields, including those where an overall stage is not given but could be derived from the individual T, N and M components. Variations in staging data completeness with cancer site group (including NCASP sites) and NHS Trust will be presented.

Conclusions

It has been suggested that MDT data recorded in systems such as the Somerset Cancer Register will be vital in improving the completeness of staging data in the cancer registration dataset. However, initial analysis suggests that the completeness of the staging data for many cancer sites (excluding NCASP sites) and in some NHS Trusts is insufficient to provide a significant improvement.

Poster 47: FOUR-FOLD INCREASE IN RECRUITMENT OF CANCER PATIENTS TO NCRN PORTFOLIO STUDIES BETWEEN 2001 AND 2010: A TALE OF INVESTMENT BRINGING RETURNS

Dr Matt Cooper, National Cancer Research Network; Professor David Cameron, University of Edinburgh; Professor Bob Haward, National Cancer Research Network; Professor Rick Kaplan, National Cancer Research Network; Professor Max Parmar, Medical Research Council Clinical Trials Unit; Ms Nancy Lester, National Institute for Health Research Clinical Research Network; Dr Karen Poole, National Cancer Research Network; Ms Ruth McLaren, National Cancer Research Network; Professor Peter Selby, National Institute for Health Research Clinical Research Network; Dr Rachel Moser, National Cancer Research Network

Objectives

The National Cancer Research Network was established in 2001 to improve cancer patient outcomes by improving the coordination, integration and speed of cancer research.

Methods

Baseline recruitment of cancer patients in England to clinical studies was around 4% of incident population. Research networks were established, initially in England and then across the UK, co-terminus with clinical cancer service networks, and a per capita based funding model used to provide a research infrastructure to support recruitment to a nationally defined research portfolio.

Results

Within 3 years, as the networks were established, recruitment of patients to studies doubled from 10,000 to 20,000 cancer patients per year. Recruitment has continued to increase year on year, supported initially by underspend that had accrued from earlier years in the life of the NCRN, and more recently from additional resources invested via the NIHR comprehensive networks.In 2009/2010 over 40,000 patients enrolled into portfolio studies in England, with over 45,000 across the whole of the UK. 2001/2: England = 10067, UK = 10339 2002/3 England = 13136, UK = 13774 2003/4 England = 21968, UK = 24137 2004/5 England = 23843, UK = 26370 2005/6 England = 26335, UK = 30247 2006/7 England = 27547, UK = 31683 2007/8 England = 29055, UK = 33689 2008/9 England = 33696, UK = 37863 2009/10 England = 42018, UK = 46914

Conclusions

Recruitment data to 2010 will be presented, together with analyses by network, region and study type (including commercial). Dedicated, targeted, clinician-led NHS investment into supporting national portfolio studies, has delivered an unprecedented four-fold increase in recruitment of cancer patients into clinical trials across the UK. This required coordinated research infrastructure, close cooperation with research funders; particularly Cancer Research UK and the National Cancer Research Institute, and the enthusiasm and hard work of many clinicians, patients and others working to deliver clinical cancer care in the NHS.

Poster 48: USING ELECTRONICALLY AVAILABLE CLINICAL ONCOLOGY SYSTEM TO IMPROVE LUNG STAGING IN THE NORTHERN IRELAND CANCER REGISTRY

Richard Middleton, N.Ireland Cancer Registry; Michael O'Rorke, Centre for Public Health; Claire Kirk, N.Ireland Cancer Registry; Rosemary Ward, N.Ireland Cancer Registry; Anna Gavin, N.Ireland Cancer Registry

Objectives

To improve lung cancer staging within a population based registry. The N. Ireland Cancer Registry (NICR) is an electronic registry with pathology, radiotherapy and hospital discharge information sources. Staging for lung cancer is poorly recorded as reflected in the very poor staging held by the NICR which ranged from 3.8% in 2005 to 0% in 2008.

Methods

Patients in the NICR without a stage were identified and the Clinical Oncology Information System. (COIS) searched for staging data online within the secure environment of the registry. Scanning information (CT, PET etc.) from COIS was used to complete the TNM profile for unstaged tumours using guidelines (AJCC TNM version 6).

Results

Staging was improved to over 63% for lung cancers 2004-2009. Early stage (I &II) accounted for 21.5% of staged cancers whilst late stage (III&IV) accounted for 78.5%. This compares with 17.9% for early and 82.2% for late cancers in LUCADA data for England 2007. It also compares well with direct note inspection, where 22.5% of staged cancers were early and 77.5% were late stage. Note Inspection did yield more fully staged cancers, 71.6% compared to the 63.5% in this study. This reflects that not all patients appear on COIS. To collect data on over 3,013 lung cancer patients, staging almost 2000 took approximately 3 months cancer registrar time, Cost £7,000 approximately , £3.50 per additional case staged, £2.30 per record examined.

Conclusions

By use of electronic COIS the Registry was able improve the staging information from under 5% to over 60% for lung cancer patients. The information appears to be equivalent to that collected from clinical note review but at a cheaper cost

Poster 49: EVALUATION OF THE COMPLETENESS OF NATIONAL HAEMATOLOGICAL MALIGNANCY REGISTRATION: COMPARISON OF NATIONAL DATA WITH A SPECIALIST POPULATION-BASED REGISTER

Steven Oliver, NYCRIS; Alex Smith, University of York; Ed Bolton, NYCRIS; Hamish Ross, NCIN; Russell Patmore, Castle Hill Hospital, Hull; Andrew Jack, HMDS, St James's University Hospital, Leeds; Eve Roman, University of York

Objectives

The quality of routine data on the incidence of haematological cancers in England has been questioned by clinicians and researchers, with concerns focusing on the possibility of under-ascertainment and inaccuracy in the diagnoses registered. This project seeks to assess the completeness of national data through comparison with a specialist population-based haematological cancer register - the Haematological Malignancy Research Network (HMRN).

Methods

The HMRN covers a population of 3.6 million in two adjacent cancer networks (Yorkshire and Humber & Yorkshire Coast Cancer). Within this catchment a single integrated laboratory makes all diagnoses of haematological malignancies with morphology coded at source to ICD-O-3. Diagnoses recorded within the HMRN over the period 2004-09 (n= 10,727) have been used to estimate 'expected' disease-specific registrations for England and for the eight English cancer registry populations. Observed counts derived from the National Cancer Data Repository (2004-07) have then been compared with HMRN estimates. The Observed/Expected (O/E) ratio was established for the Acute Lymphoblastic Leukaemia (ALL); Acute Myeloid Leukaemia (AML); Chronic Lymphocytic Leukaemia (CLL); Chronic Myeloid Leukaemia (CML); Hodgkin Lymphoma (HL), non-Hodgkin Lymphoma (NHL); Multiple Myeloma (MM).

Results

At a national level the overall disease-specific O/E ratios were: ALL: O/E=106% (95% CI: 97-114%); AML: O/E=113% (CI: 108-117%; $p<0.001$); CLL: O/E=72% (CI: 69-75%; $p<0.001$); CML: O/E=115% (CI: 106-126%; $p<0.01$); HL: O/E=100% (CI: 95-105%); NHL: O/E=116% (CI: 113-118%; $p<0.001$); MM: O/E=104% (CI: 101-108%; $p<0.05$). At the level of cancer registries minimal differences were seen between O/E ratio for ALL, CML and HL, with the greatest variation between registries observed for CLL and NHL.

Conclusions

With the exception of national registrations for CLL, comparison with HMRN predictions did not indicate under-enumeration of haematological cancers. In general observed registration rates exceeded those predicted by HMRN incidence. Further work is required to explore these variations.

Poster 50: ESTIMATING INCIDENCE AND SURVIVAL BY ETHNICITY FOR MYELOMA IN THE FACE OF MISSING DATA: AN APPLICATION OF MULTIPLE IMPUTATION METHODS WITHIN THE NATIONAL CANCER DATA REPOSITORY (NCDR)

Steven Oliver, NYCRIS; Faye Taylor, NYCRIS; Louise Whitehouse, NYCRIS/University of Leeds; Hamish Ross, NCIN; Eva Morris, NYCRIS/University of Leeds; Brian Ferguson, NYCRIS

Objectives

To establish estimates of incidence and survival for patients with myeloma by ethnicity.

Methods

The NCDR was used to identify registrations of myeloma (C90) in English cancer registries from 2002-2007. Ethnicity was categorised using records in linked Hospital Episode Statistics. Missing ethnicity data were imputed deterministically using the 'ICE' command in Stata, for 10 and 50 imputations with the assumption that data were 'missing at random'. Age-standardised incidence rates (ASR) were calculated, relative survival estimated at 1, 3 and 5 years and excess mortality modelled using Poisson regression.

Results

Of the 19,484 cases recorded in the NCDR, ethnicity was missing in 5,279 (27%). Missingness decreased from 29% (2002-2004) to 25% (2005-2007). The distribution of recorded ethnicity was White 93.5%, Black 3.3%, South Asian 2.1%, Other (Mixed/Chinese/Other) 1.2%, these proportions were largely unchanged following 50 imputations (93.8%, 3.0%, 2.1%, 1.2%). Incidence (per 100,000) was highest in the Black ethnic category, ASR=15.1 (95% CI 13.8-16.4) and lowest in White ASR=5.0 (95% CI 4.9-5.0). Relative survival (RS) was significantly worse in the White group at 1, 3 and 5 years when compared to the other groups – Black: 1yr RS=80% (95%CI 76%-83%), 3yr RS=61% (95%CI 65%-66%, 5yr RS=49% (95%CI 40%-48%) compared with White: 1yr RS=66% (95%CI 65%-66%), 3yr RS=43% (95%CI 42%-44%), 5yr RS=29% (95%CI 27%-30%). Relative survival analysis found risk of death to be lower in the Black category for both 1 and 3 year survival HR=0.65 (95%CI 0.51-0.82) and 0.71 (95% CI 0.57-0.87) respectively, when compared to the reference White category.

Conclusions

This study confirms NCIN analyses indicating a higher incidence of myeloma in the Black ethnic group and persists after adjustment for confounders. Whilst a survival advantage has been seen amongst African American men with myeloma, our findings on survival patterning by ethnicity were unanticipated and merit further investigation.

Poster 51: TRENDS IN COLORECTAL CANCER IN NORTHERN IRELAND

Anna Gavin, N.Ireland Cancer Registry; Catherine Toye, School of Medicine, Dentistry & Biomedical Sci.

Objectives

To document colorectal cancer incidence and stage before the introduction of population based screening. Colorectal cancer (CRC) is the second most common cancer in the UK, including Northern Ireland .A CRC screening programme was introduced in N. Ireland in 2010 and the effect on numbers and stage will be an outcome measure. A baseline is therefore required.

Methods

Information on all the patients diagnosed with primary CRC between the years 1995-2009 were obtained from the Northern Ireland Cancer Registry (NICR). Any unstaged cases were staged using the TNM and/or Dukes systems based on information from pathological reports and scanning information. Crude and age standardised rates were calculated to show incidence trends and how these related to sex, age, site of tumour and stage. The effect of the additional staging on stage specific survival will be calculated.

Results

Annually there were 966 cases on average of colorectal cancer diagnosed. CRC incidence in NI is increasing by 0.8 % annually driven by increases in males only,(1.7%). Stage was available for 71.1% cases from the registry, this was enhanced to 74.0% following examination of pathology and other staging sources e.g. CT scans. From 2001 onwards the number of CRC staged was roughly 80%. Survival changes will be presented .

Conclusions

It is possible to increase staging so that meaningful measurements on the impact of screening implementation can be made.

Poster 52: IMPROVING STAGING DATA FOR THE NORTH WEST

Garcia-Russo, E, North West Cancer Intelligence Service (NWCIS); Flatt, G, Cancer Intelligence Service (NWCIS); Khan, S, Cancer Intelligence Service (NWCIS); O'Hara, C, Cancer Intelligence Service (NWCIS)

Objectives

The North West staging team has been working on improving stage data. To this end, Trusts within the North West have been encouraged to use the Somerset Cancer Register (SCR), developed with the aim of assisting in the diagnosis and management of patients. Previously data were provided in different forms including paper. The SCR system facilitates the recording of stage by Trusts in a consistent format to be uploaded directly to the North West Cancer Intelligence Service (NWCIS) on a regular basis. The system also facilitates the provision of timely feedback reports to trusts on the completeness of their data.

Methods

For 2009 and 2010 diagnoses, we have undertaken an evaluation exercise to measure the effectiveness of the SCR system for improving the capture of stage data in the North West. Currently 26 out of 28 Trusts in the NW use the SCR system. The remaining Non-SCR Trusts provide data to NWCIS in electronic form.

Results

All Trusts submitted their data to an agreed timeframe. Stage data from SCR Trusts improved in 2009-2010 compared with 2007-2008. All submitting NW Trusts received quarterly and year-end data completeness reports for 2010. The quarterly reports were evidently effective in driving continuous improvements in data feeds throughout the registration year. Non-SCR Trusts also received completeness reports but these were less timely due to the need to standardised data formats at NWCIS.

Conclusions

The SCR system has made a significant contribution to the capture of stage data in the North West. The feedback completeness reports have proved successful in prompting Trusts to improve the amount and quality of the staging data they are providing throughout the registration year. Stage distribution analysis is now also being produced which was previously not possible. Our aim for 2011 is to facilitate the ongoing improvement in stage data collection and quality for all Trusts in the North West. We also hope to incorporate the tableau system to further aid reporting by Trust and MDT.

Poster 53: DATA QUALITY AND COMPLETENESS OF THE UPPER GASTROINTESTINAL NATIONAL CANCER REPOSITORY DATASET, 1998-2007

Victoria H Coupland, Thames Cancer Registry, King's College London; Karen Linklater, Thames Cancer Registry, King's College London; William Allum, Royal Marsden Hospital; Henrik Møller, Thames Cancer Registry, King's College London; Elizabeth A Davies, Thames Cancer Registry, King's College London

Objectives

It is important to assess the data quality and completeness of the upper gastrointestinal (UGI) Cancer Dataset to determine 1) whether poor quality or large proportions of missing data could lead to inaccurate conclusions and 2) identify areas for improvement.

Methods

Data were extracted from the National Cancer Repository Dataset on 233,183 patients diagnosed with UGI cancers between 1998 and 2007. Data quality measures investigated included the proportion of registrations that were death certificate only (DCO), had an unspecified anatomical sub-site, were not microscopically verified, had missing ethnicity or stage information, and had no linked hospital episode statistic (HES) records. Using HES data, patients with a diagnosis of UGI cancer who had a relevant operation and no matching registry record were identified. The combination of relevant diagnosis and surgery codes increases the likelihood that these were cancer cases that were missed in the cancer registration process, rather than a record of a suspicion of cancer.

Results

The proportion of DCO registrations ranged from 3% (oesophageal cancer) to 11% (liver cancer). Around one half of oesophageal, stomach and pancreatic cancers had unspecified anatomical sub-site. The proportion of cases that were not microscopically verified ranged from 56% (pancreatic cancer) to 9% (oesophageal cancer). Missing ethnicity ranged from 18% (oesophageal cancer) to 27% (gallbladder cancer). Over three quarters of registrations had no stage information. This proportion varied by cancer registry, but was improving nationally over time. Low proportions of registrations had no linked HES records (from 15% gallbladder cancer to 5% oesophageal cancer). Overall, less than 1% of patients between 1998 and 2007 were identified as potentially missed by the cancer registration process.

Conclusions

The completeness of the dataset was good and the proportion of DCO registrations was low. Better anatomical classification is needed to allow more specific subgroups to be defined. The availability of staging information should be improved and it is encouraging that this process has already begun.

Poster 54: DOES THE INCIDENCE OF OESOPHAGEAL CANCER VARY BETWEEN ETHNIC GROUPS IN ENGLAND?

Victoria H Coupland, Thames Cancer Registry, King's College London; Ruth H Jack, Thames Cancer Registry, King's College London; Julie Konfortion, Thames Cancer Registry, King's College London; William Allum, Royal Marsden Hospital; Jane Blazeby, University of Bristol; Mike Mendall, Mayday Hospital; Karen M Linklater, Thames Cancer Registry, King's College London; Henrik Møller, Thames Cancer Registry, King's College London

Objectives

This study aimed to investigate the variation in incidence of oesophageal cancer between ethnic groups in England.

Methods

Data on patients diagnosed with oesophageal cancer (ICD10 C15) in England between 2001 and 2007 were extracted from the National Cancer Dataset Repository. Ethnicity was classified using self-assigned ethnicity from the Hospital Episode Statistics dataset and ethnic groups were combined into seven categories; White, Indian, Pakistani, Bangladeshi, Black Caribbean, Black African and Chinese. Male and female age-standardised incidence rate ratios (IRR) were calculated for each ethnic group, using the White groups as the baseline. IRR were calculated for oesophageal cancer and three subgroups: cancers of the upper and middle oesophagus, lower oesophagus and oesophagus with an unspecified subsite.

Results

Ethnicity information was available for 37,248 of 44,307 (84%) patients. In males, the majority of oesophageal cancer occurred in the lower oesophagus, followed by the upper and middle oesophagus, whereas in females similar numbers of cases occurred in these groups. Compared with White men, Indian, Pakistani, Bangladeshi, Black Caribbean, Black African and Chinese men had a lower incidence of oesophageal cancer. Compared with White women, Bangladeshi women had a higher incidence of oesophageal cancer (IRR 2.0 95%CI[1.2-3.3]), Black African women had a similar incidence (0.9[0.6-1.3]) and Indian, Pakistani, Black Caribbean and Chinese women had a lower incidence. The higher incidence of oesophageal cancer among Bangladeshi women was largely due to a high incidence of upper and middle oesophageal cancer (3.1[1.6-6.0]) compared with women in other ethnic groups. Bangladeshi women had a similar incidence rate to White women for lower oesophageal cancer (0.9[0.4-2.0]).

Conclusions

White men and Bangladeshi women have the highest incidence of oesophageal cancer compared with other ethnic groups of the same sex. The high incidence of upper and middle oesophageal cancer in Bangladeshi women is possibly associated with betel quid and tobacco chewing.

Poster 55: DEVELOPMENT OF AN ON-LINE PORTAL FOR THE VALIDATION OF BCCOM DATA

Lagord, C., West Midlands Cancer Intelligence Unit; Shand, B., Clinical & Biomedical Computing Unit; Kearins, O., West Midlands Cancer Intelligence Unit; Rashbass, J., Eastern Cancer Registration & Information Centre; Lawrence, G., West Midlands Cancer Intelligence Unit

Objectives

The BCCOM audit aims to provide, for all symptomatic breast cancers diagnosed in the UK, data to enable the generation of outcome measures. Breast surgeons are invited to validate and/or supplement the information recorded by cancer registries for patients under their care. In the past, surgeons were sent encrypted files containing their patients' details and edited these documents before returning them to the BCCOM audit team at the WMCIU. In 2011 the WMCIU and the ECRIC, have developed an online BCCOM portal allowing surgeons to log in, access, amend and sign off their data. Automatic reports are generated, allowing clinicians to document their current practice and compare it against well accepted guidelines for validation purposes.

Methods

The online audit is built as an extension of the OncORE national cancer registration platform – sharing the same support for comprehensive audit, strong data security, and complex validations. To minimise the risk of disclosure, surgeons can access only their assigned patients, and the BCCOM audit database is isolated from the main registration database.

Results

10 breast surgeons in England and Wales were invited to test the new system in March 2011. A national pilot, inviting over 200 clinicians will be launched in April 2011. Lessons learned from the national pilot will be presented, together with an initial measure of the quality/quantity of information added by clinicians.

Conclusions

The online system developed for the BCCOM audit will not only allow clinicians to audit their practice, it will also make available to cancer registries data items they do not collect routinely and provide them with an additional way to audit their own data. In addition to obvious advantages in term of data security, it is anticipated that this new technology will encourage clinicians' participation.

Poster 56: AN AUTOMATIC TOOL TO ASSIGN RECEPTOR STATUS FOR BREAST CANCERS

Giulio Napolitano, NICR; Richard Middleton, NICR; Anna Gavin, NICR; A. Wilkinson, NICR

Objectives

The receptor status for breast cancer is an important prognostic factor for determining treatments and outcomes. Previously it was necessary to extract this information manually from histopathology reports. We planned to design and use a simple program in PERL to extract the oestrogen, progesterone and Her-2 receptor status from reports.

Methods

90 histopathology reports were analysed in their way to represent receptor status. Independently, a surgeon extracted receptor status manually manual from the same documents. A PERL script was designed to capture receptor status and tested on the reports, comparing the captured values with the surgeon's extracted values.

Results

At the first run, the routine recall for oestrogen, progesterone and Her-2 receptor status, respectively, resulted 88%, 81% and 85%; precision was 97%, 92% and 85%; sensitivity was 97%, 95% and 71%; specificity was 100%, 83% and 88%.

Conclusions

The PERL script can identify the status for all three receptors with an extremely high degree of accuracy. Further refinements in the script, already identified, will increase performance even further. This will make the extraction of these data items more economical and timely and with less need for manual intervention.

Poster 57: POPULATION AND BIBLIOGRAPHIC DATA TO SUPPORT EVIDENCE-BASED CLINICAL ASSESSMENT AND DECISION MAKING: AN INFOBUTTON FOR ONCOLOGISTS AND GPS

Giulio Napolitano, NICR; Anna Gavin, NICR; Finian Bannon, NICR

Objectives

Cancer treatment and prognosis varies with disease type, stage and patient factors, including age and comorbidity. The understanding of these factors is always developing and healthcare professionals find it difficult to stay abreast of the volume of evidence-rich research generated yearly. The risk is the underestimation of prognosis of terminally ill patients, resulting in inadequate patient care and inadequate patient' choices for their future. There is a need, thus, to provide busy clinicians with user-friendly, objective, evidence-based solutions.

Methods

Summary data from population based cancer registries provided information related to the patients' disease, stage and age. Data were stored in a MySQL database accessed via PHP and Perl. PubMed Clinical Queries were used to automatically retrieve patient-relevant bibliographic references from MEDLINE. The PICO structure (problem, intervention, comparison, outcome) was loosely used to model query/answer couples. On screen, the clinical query categories and MeSH headings/subheadings were used as layers of paper classification. For each paper, the first line of the conclusion of the abstract was given, embedding a hyperlink to PubMed.

Results

A fully automated prototype clinical decision support system which provides a selection of peer-reviewed publications filtered on the basis of a patient's profile, in addition to epidemiological data has been developed and tested.

Conclusions

This project demonstrates an effective method to support the cancer care decision process by exploiting 1. cancer registry data to provide objective information on prognosis and survival estimates and 2. bibliographic resources to induce a logically consistent hierarchical classification of relevant journal papers, which is informative, intuitive and fast to navigate.

Poster 58: USING CLINICAL ATTENDANCE PATTERNS TO DEFINE CANCER SURVIVORSHIP (COLORECTAL CANCER, MULTIPLE MYELOMA, HODGKIN'S DISEASE) IN ENGLAND

K Harris, University of Leeds, Centre of Epidemiology and Biostatistics; H Nai, University of Leeds, Centre of Epidemiology and Biostatistics; J Wells, Monitor Group Europe; T Welchman, Monitor Group Europe; J Flynn, MacMillan Cancer Support; J Ritchie-Campbell, MacMillan Cancer Support; D Forman, The International Agency for Research on Cancer; A Woolmore, Monitor Group Europe; KL Edwards, University of Nottingham, School of Clinical Sciences

Objectives

The number of individuals living beyond a diagnosis of cancer is rising. This has a substantial effect on society and will inevitably lead to strain on existing cancer services. In light of this it is necessary to understand the pattern of service use and need, to enable survivors to assimilate back into daily life whilst simultaneously reducing the burden on health care services.

Methods

This study used linked cancer registry and Hospital Episode Statistics inpatient records from the NCIN hosted National Cancer Data Repository from 2000 to 2008. All patients diagnosed with colorectal cancer (CR) in quarter 2 2001 and multiple myeloma (MM) or Hodgkin's disease (HD) Q201-Q103, who were in both datasets, were included. Patterns of hospital episodes ('NHS footprints') (number, frequency, duration) were plotted over time determining differences by site and, where available, stage. K-medoid cluster analyses were used to describe differences between cancer survivor groups.

Results

NHS footprints for each cancer site and clusters of cancer survivors were determined. For CR survivors, those with the best survival were typically presented at stage 2, youngest, low episode duration, female, and white, but had intestinal late effects. Conversely patients with worst survival were older, also had low episode duration (but high as percentage of survival days), male. Similarly distinct clusters were determined for MM and HD survivors.

Conclusions

This study shows that large, longitudinal, routinely recorded medical records can be used to illustrate the nature, extent, and timing of difficulties that survivors face. Future work will include additional datasets, such as the General Practice Research Dataset, in order to include information about other levels of patient care. This thorough knowledge, from the actual experiences of other survivors, will facilitate giving people living beyond cancer comprehensive, specific information about the morbidities and adversities they may experience going forward.

Poster 59: TRANSITION OF CARE FOR SURVIVORS OF CHILDHOOD CANCER TO ADULT CANCER CARE

Marlous van Laar, University of Leeds; Adam Glaser, Leeds Teaching Hospitals NHS Trust; Robert Phillips, Leeds Teaching Hospitals NHS Trust; Richard Feltbower, University of Leeds; Daniel Stark, Leeds Teaching Hospitals NHS Trust

Objectives

In the UK over 10,000 people over the age of 19 are survivors of childhood cancer; 60% have long term medical morbidity after treatment. Many receive care in paediatric departments, despite national policy to transition their care. When long-term follow-up care for survivors of childhood cancer in our region moved from a paediatric to an adult environment as a collaborative exercise in 2009, we prospectively assessed the impact of this change on patient satisfaction.

Methods

Questionnaire data were collected in paediatric and adult clinical environments regarding the level of satisfaction with care, and its' mediators; quality of life, psychological health and social difficulties. Predictors of satisfaction were described using path analysis and compared to a previously published model.

Results

Satisfaction with care was high. There was no significant difference in satisfaction between the paediatric and adult settings. Short waiting times and increased understanding of the purpose of follow-up were significantly associated with increased satisfaction.

Conclusions

Within our service, transition to adult care did not impact upon patient satisfaction. Joint working between adult and paediatric cancer professionals enabled adult survivors of childhood cancer to receive highly satisfactory care in adult services.

Poster 60: SEASONALITY OF BIRTH IN CANCER AMONGST 15-24 YEAR OLDS IN ENGLAND, 1996-2005

Marlous van Laar, University of Leeds; Sally Kinsey, Leeds Teaching Hospitals NHS Trust; Susan Picton, Leeds Teaching Hospitals NHS Trust; Catherine O'Hara, The Christie NHS Foundation Trust; Richard Feltbower, University of Leeds

Objectives

There is increasing evidence that environmental factors, such as infections, occurring around the time of birth may affect subsequent development of childhood cancer; few studies have examined whether this is true for teenagers and young adults (TYA). We tested this hypothesis by analysing seasonality of birth amongst 15-24 year olds diagnosed with cancer in England.

Methods

Cases were derived from the national TYA register, covering all diagnoses between 1996 and 2005. Sex- and month-specific birth populations from 1972 to 1990 were taken into account within the analysis. Seasonality of birth was assessed using logistic regression with cosine functions of varying periods. Models were originally adjusted for age and sex, and subsequent analyses stratified by age and sex, allowing for varying seasonal patterns between groups. Analyses were performed for leukaemia, lymphoma and central nervous system (CNS) tumours and their subgroups as defined by the Birch classification scheme for TYA cancer.

Results

There were 6251 cases diagnosed with leukaemia (n=1299), lymphoma (n=3070) and CNS tumours (n=1882). Sex-adjusted results showed significant evidence of a seasonal effect for those with other Gliomas (which does not include Astrocytoma and Ependymoma) with peaks in May and November (P=0.015). We observed significant seasonal effects in males with non-Hodgkin's lymphoma (peaks in January and July; P=0.040) and CNS tumours (peaks in December and June; P=0.006); no seasonality was present in females. Amongst 15-19 year olds, we found seasonal effects for all diagnostic groups combined (peak in December, P<0.001), as well as for leukaemia, lymphoma, Hodgkin lymphoma, CNS tumours, Astrocytoma and other Gliomas. No significant seasonal effects were observed for 20-24 year olds.

Conclusions

Our findings support an infectious aetiological hypothesis for certain subgroups of TYA cancer in England. Further work will examine seasonality around the month of diagnosis and correlation with specific infections occurring around the time of birth and diagnosis.

Poster 61: USING TRAVEL TIME ANALYSIS TO INFORM THE DECISION MAKING PROCESS REGARDING THE PROVISION OF LATE EFFECTS CARE CLINICS FOR CHILDHOOD CANCER SURVIVORS IN THE PENINSULA CANCER NETWORK

Matthew Iles, South West Public Health Obervatory; Prof. Mike Stevens, University Hospitals Bristol NHS Foundation Trust; Paul Beynon, University Hospitals Bristol NHS Foundation Trust; Dr. Veronique Poirier, South West Public Health Obervatory; Dr. Julia Verne, South West Public Health Obervatory

Objectives

Survivors of childhood cancer face a lifetime of follow-up. This analysis was conducted to inform the decision making process as to the optimal number/geographical positioning of late effects care clinics for childhood cancer survivors in the Peninsula Cancer Network area utilising GIS and travel time analysis.

Methods

245 eligible childhood cancer survivors were identified from the South West Childhood Cancer Research Registry (SWCCRR). Questionnaires were sent to identify concerns and issues facing this population, including travel for follow-up. The response to the question regarding how long/far a patient would be willing to travel to attend a proposed late effects clinic was studied. Five existing acute hospital sites were put forward as the location of the late effects clinics. A total of 31 combinations of sites exist; one site, 10 dual sites, 10 triple sites, five quadruple sites or all possible sites exist at once. Using postcode of residence for survivors with a valid postcode (209, 85%), travel times were calculated to each of the possible 31 combinations of sites to assess the optimal configuration/number of sites.

Results

It was found that 77% of respondents would be willing to travel for up to one hour. A clear, incremental reduction in patients travel times was seen when increasing the number of hospital sites. Only a three site model would provide sufficient coverage to meet the majority, 68%, of respondent's expectations to reach a clinic within an hour. One of the four site models provided coverage for 100% of the survivor cohort to access a clinic within one hour. It does not appear advantageous to consider a five site model over a four site model.

Conclusions

Based on a purely geographical/travel time standpoint a four site model is most appropriate. Other factors including cost will play an important role in deciding the final configuration of sites.

Poster 62: COLORECTAL CANCER CARE AND OUTCOME IN NORTHERN IRELAND 2006 (WITH COMPARISONS 1996 AND 2001)

Deirdre Fitzpatrick, N.Ireland Cancer Registry; Anna Gavin, N.Ireland Cancer Registry

Objectives

Cancer Strategy in Northern Ireland recommended centralisation of services, multidisciplinary working in expert teams and enhancements to oncology and palliative care services. NICR tracked service provision and outcome for colorectal cancer (1000 patients annually in Northern Ireland) over a 10 year period 1996, 2001 and 2006 to determine change.

Methods

Retrospective clinical note review for patients diagnosed with colorectal cancer in 1996, 2001 and 2006. Data were entered onto an electronic proforma, developed with clinicians. Information on patient referral, symptoms, co-morbidities, investigations, staging, treatment, aftercare and survival was collected.

Results

Data were collated on 719, 812 and 913 patients diagnosed 1996, 2001 and 2006 respectively. Co-morbidities, presenting symptoms and their duration differed little overtime, with abdominal pain (53%) and rectal bleeding (47%) most frequently recorded symptoms. Over 50% of patients presented as outpatients, whilst one third were admitted via A&E. More patients were investigated by CT (92% 2006, 44% 2001, 18% 1996) and MRI (51%, 4%, <1%). 72% patients had 11 nodes or more examined (25% 1996). Stage was similar over the 10 years, with 50% Dukes C/D and 10% unstaged. 60% patients in 2006 had an MDT recorded (21% 2001). Low surgery volume was a still a feature in 2007, with 58 surgeons performing less than 5 colon and RS junction resections annually (54 in 1996). Rectal cancer was centralised and survival improved (2-year survival 67% 2006, 57% 1996), in particular Dukes C (2-year survival 83% 2006, 58% 1996) and those who had surgery (2-year survival 85% 2006, 60% 1996). There was increased referral to palliative care specialists (20% 2006, 3% 1996).

Conclusions

By 2006 there was evidence of service centralisation but only for rectal cancer. Rates of MDT, referral to palliative care improved generally. Significant improvements in survival for patients with rectal cancer were noted.

Poster 63: PANCREATIC CANCER CARE AND OUTCOME IN NORTHERN IRELAND 2007 (WITH COMPARISIONS 2001)

Deirdre Fitzpatrick, N.Ireland Cancer Registry; Arlene Connolly, N.Ireland Cancer Registry; Anna Gavin, N.Ireland Cancer Registry

Objectives

160 patients diagnosed with pancreatic cancer annually in Northern Ireland. NICR carried out an audit of pancreatic patients diagnosed in 2001, and recommended service centralisation. A further audit was undertaken of 2007 to determine if care and outcome for pancreatic cancer had changed.

Methods

Retrospective clinical note review of patients diagnosed with pancreatic cancer in Northern Ireland 2001 and 2007. Data were entered onto an electronic proforma developed with input from clinicians. Information on patient referral, presenting symptoms, co morbidities, investigations, pathology, staging, treatment, aftercare and survival was collected.

Results

Data were collated on 152 patients diagnosed in 2001 and 173 in 2007. Patients' co-morbidities were similar in both years. 75% patients were referred to hospital by their GP, with self-referrals almost doubling to 13% by 2007. Over half of GP referrals presented at A&E. Presenting symptoms and duration differed little, with weight-loss (69%) and loss of appetite (68%) being the most frequently recorded. 51% had a histological/cytological confirmation of their diagnosis (42% 2001). Staging improved (28% unstaged 2007, 48% 2001). More patients had an MDT (47% 2007, 13% 2001) and preoperative surgery plan (96% 2007, 22% 2001) recorded. More patients received surgery (26% 2007, 20% 2001), which was carried out in fewer hospitals (7 vs. 11) by fewer surgeons (13 vs. 18). Surgery with curative intent was centralised in one hospital. Patients undergoing curative resection had one year survival of 54%. There was increased referral to dietician (65% vs. 1%), HPB nurse (18% vs. 0%) and palliative care specialists/team (61% vs. 17%).

Conclusions

In 2007 there was better recording of patient information such as stage. There was evidence of centralisation of services to the HPB unit. More patients were having MDT, referral to dieticians and palliative care. These results have been fed back to service providers and clinicians.

Poster 64: THE IMPACT ON USERS & PATIENTS OF REDUCING TURNAROUND TIMES IN HISTOPATHOLOGY

Susie Peachey, NHS Improvement; Dr Saimah Arif, Whipps Cross University Hospital

Objectives

- Histopathology – TAT reduced from 13 to 4days (average) – 30% in 7days - Sep09 – 97% in 7days & 47%in 3days - Dec2010
- Are the clinicians aware? What are they doing about it?
- Are patients getting – results – MDT discussion – management plans any earlier? Importance of histopathology work can only be realised if clinicians are aware of the reduced turnaround times and translating this into benefits for patients.

Methods

- Engaged high volume user as active member of project
- Project presented : – Executive team meeting – Cancer Strategy Day – Cancer Board –Medical Division meeting – Medical Grand Round – GP Pathology day
- Written about in : – Trust Gazette – Trust Annual Report
- One-to-one meetings with clinicians- Gastroenterology, Dermatology, Gynaecology & Urology
- Won 1st prize in Trust 'dragons den' award for in-house innovative database design

Results

Unexpected malignancies Up to 10 cases/ year . Previously could sit in 'routine' pile for weeks as cases were prioritised and reported according to clinical demand/urgency. Now reported first-in-first-out Earlier discussion at MDM Urology patients with suspected malignancy – Biopsied on Friday – Discussed at MDM on following Tuesday am – Patients given result and management plan Tuesday pm A whole week saved! Fewer follow-up appointments? 'When I see complex surgical patients for suture removal at one week, I can now give them their result and discharge them straight away which means one less follow-up' Consultant Dermatologist 25 fewer outpatient slots required per month. Consultant Gynaecologist .
A more patient-focussed service with a reduction in the patient journey especially if a malignancy is found. Fewer problems with breach dates, fewer phone calls from patients about their results. Confidently giving patients appointments at 2 weekly intervals if needed.

Conclusions

'This will ultimately provide a much improved, faster and safer service for patients'- Chair of the Patients' Panel

Poster 65: UPTAKE OF BREAST SCREENING: IS WHERE YOU LIVE IMPORTANT?

Dr Heather Kinnear, Queen's University Belfast; Dr Dermot O'Reilly, Queen's University Belfast; Mr Michael Rosato, Queen's University Belfast

Objectives

To determine if area of residence is an independent factor influencing breast screening uptake.

Methods

Record linkage study combining data from the National Breast Screening System and the Northern Ireland Longitudinal Study (NILS) with cohort attributes from the 2001 Census. After ethical approval and data encryption, five mutually exclusive areas were defined; Belfast Metropolitan Area (BMA) (comprising 21% population) and the remaining parts - the four Health Boards responsible for the organisation and promotion of screening but not part of the BMA. 37,059 women aged 48-64 at the time of the Census were invited for routine breast screening during the three years following the Census.

Results

Uptake of screening was 75% during the study period. In fully adjusted models, uptake was lower amongst women aged 60+, not currently married and those whose general health was 'not good'. Uptake was related to car ownership and housing tenure but not educational status or NS-SEC. Even after adjustment for all other factors, there was significant variation in uptake within areas; uptake was lowest in the Eastern Board (OR=0.61, 95% CI=0.56, 0.66, compared to the Northern Board) and lower again in the BMA (OR=0.49, 95% CI=0.45, 0.53). The reduction in Belfast was evident across most social strata.

Conclusions

Linkage of screening data to health card registration-based longitudinal studies is an efficient and powerful way to increase the evidence base on sources of variation in uptake within the UK. This study shows that lower breast screening uptake in and around the city is of concern as it affects a large number of women. It requires further investigation. The lower attendance rates are not due to socio-economic factors and appear to be independent of factors related to organisational aspects. Possible reasons and solutions for this problem will be discussed at presentation.

Poster 66: ETHNICITY COMPARISONS OF LINKED AND NON-LINKED PATIENTS IN HOSPITAL EPISODE STATISTICS (HES) AND NATIONAL CANCER DATA REPOSITORY (NCDR)

James Thomas, NYCRIS; Eva Morris, NYCRIS; John Wilkinson, NYCRIS

Objectives

The Hospital Episode Statistics (HES) extract available in the National Cancer Data Repository (NCDR) contains information on all individuals who have cancer mentioned in any of their episodes of care. However, not all patients match to registry data and the reasons for this are not clear. This study aimed to investigate differences in ethnicity for patients linking/not linking from HES data into cancer registry data.

Methods

A major grouping ethnicity code was derived for all individuals by determining their most frequently recorded code across all their hospital episodes. For patients with an equal number of episodes assigned to more than one ethnicity code the ethnicity was re-assigned to unknown. The proportion of unlinked patients with a valid NHS number was then determined. The proportion receiving a major resection was also determined to assess the likelihood that these patients had a 'true' cancer recorded.

Results

There are differences in the proportions of ethnic groups in the linked and non-linked HES data. 96% of linked patients were in the 'White' ethnic grouping but only 89.7% of the unlinked patients were in this category. For these non-linked patients the percentages without a valid NHS number in any of their episodes were White (8.48%), Black (17.6%), Asian (11.7%), Chinese (20.3%), Mixed (12%), Other (71.5%). 20% of unlinked patients had a resection recorded but ethnicity breakdown of unlinked patients receiving a resection were very similar to the total proportion of unlinked patients (White 89.8% versus 89.6%) suggesting that the linking of cancers is equivalent in both groups.

Conclusions

Unlinked patients identified in HES data have a different ethnic make up than linked patients. The proportions of missing NHS numbers in ethnic minorities may explain the poorer linkage rates.

Poster 67: MATCHING HES DATA TO THE WEST MIDLANDS REGISTRY DATABASE – CHALLENGES AND SUCCESSES

Charman, J., West Midlands Cancer Intelligence Unit; Brown, J., West Midlands Cancer Intelligence Unit; Francis, M., West Midlands Cancer Intelligence Unit; Vernon, S., West Midlands Cancer Intelligence Unit; Lawrence, G., West Midlands Cancer Intelligence Unit

Objectives

Historically, the linkage between HES and registry data has been done mainly by matching on NHS number alone. This method omits matches which are clearly the same patient from demographic data. The National Cancer Data Repository implements detailed demographic matching to produce national links between HES and registry data, but local matching enables more timely use of HES data in the registration process. Best practice should be shared between national methods and local methods, with the intent to standardise.

Methods

NHS number was used as the primary data item for data linkage. If other demographic factors did not support the match, this was flagged for further investigation. When there was no match on NHS number, a match was sought using dates of birth, sex and postcode. In cases where registry data were linked on demographics but not NHS number, NHS numbers were compared between the two datasets. Where NHS numbers were inconsistent, probability and transposition functions were applied to assess possibility of typographical errors masking a true match. Death dates and ICD-10 groupings were used as a retrospective check of the matching accuracy.

Results

The majority of West Midlands patients (approximately 75%) matched to HES on NHS number and all demographic fields. Using more sophisticated matching on demographics with checks on NHS number transpositions improved this matching rate to approximately 80%. The success of the matching varied with age and cancer site.

Conclusions

Using demographic data together with probability functions allows more accurate matching than NHS number alone. However for the most complete matching, manual intervention cannot be completely removed. While improved matching algorithms enable better analysis the concern should still be the 20% of cases with no apparent record in HES.

Poster 68: NOAH'S ARK: A GLOBAL DATABASE SUCCESS STORY OR WHAT MIGHT ONE LEARN AT A ZOO?

Pamela Harvey, Great Ormond Street Hospital

Objectives

Consider the reporting requirements for a Trust in England caring for a child diagnosed with a brain tumour. Data pertaining to each case will be sent to the National Cancer Registry, to the Children's Cancer Registry, the National Brain Tumour Registry, as well as for Cancer Waiting Times management. Data in some cases might also be submitted to a Clinical Trial Unit and/or Biobank. What, if anything, is wrong with this picture? What, if anything, might cancer information, service and research networks learn from the experiences of other industries? The modern Zoo and Aquarium network provides a safety net for the survival of endangered species. Successful captive animal management is as dependant on effective inter-institutional access to accurate data as a successful cancer care delivery service.

Methods

My presentation will compare and contrast the mechanisms for data capture and sharing in NHS cancer information systems with those used in the world of captive animal management.

Results

It will:

- highlight the potential risks to quality in terms of both process and content resulting from the current NHS cancer data management strategy
- explain how the Animal Records Keeping Systems (ARKS) was created by the International Species Information Systems (ISIS) to solve similar problems in the international zoo world and
- clarify the lessons learned from the ISIS approach and apply these to cancer data management systems - with a particular focus on improved efficiency and data quality

Conclusions

The aim in both industries is to provide "sophisticated knowledge management tools and connection to a global professional scientific network."

Poster 69: ARE THERE DIFFERENCES IN SURVIVAL RATES BETWEEN PATIENTS INCLUDED IN THE NATIONAL HEAD AND NECK CANCER AUDIT AND THOSE NOT INCLUDED?

Monica Roche, Oxford Cancer Intelligence Unit; Ann Watters, Oxford Cancer Intelligence Unit; Richard Wight, NCIN

Objectives

Compare the survival of patients whose data is recorded in two separate databases and identify whether one cohort of patients experience better survival than the other. The two databases are: The DAHNO (Data for Head and Neck Oncology) system, which supports the National Head and Neck Cancer Audit. The National Cancer Data Repository (NCDR), which holds merged data from the eight English cancer registries.

Methods

Two cohorts were extracted for comparison:

1. Patients recorded in the DAHNO database
2. Patients recorded in the NCDR that were not included in the DAHNO database For both cohorts, one year and three year relative survival rates were estimated for patients diagnosed with a head and neck cancer in the years 2004 to 2006. Survival rates were analysed by tumour site group, and by age group and geographical area (Strategic Health Authority) for larynx, oral cavity and oropharynx.

Results

Overall, patients included in the DAHNO audit have significantly higher relative survival rates than the NCDR patients that are not included in the DAHNO audit. Analysis of subsets of the data suggest that survival rates for the DAHNO data are generally higher than for the unmatched NCDR data, but the differences are not always statistically significant. The paucity of information on stage on NCDR means it is not possible to compare survival by stage between the two cohorts.

Conclusions

There is some evidence to suggest that the patients included in the DAHNO audit experience better survival than those patients who are not included.

Poster 70: TRENDS IN INCIDENCE OF SMALL CELL LUNG CANCER AND ALL LUNG CANCER

Sharma P Riaz, King's College London, Thames Cancer Registry; Margreet Lüchtenborg, King's College London, Thames Cancer Registry; Victoria H. Coupland, King's College London, Thames Cancer Registry; James Spicer, King's College London, Division of Cancer Studies; Michael D. Peake, Department of Respiratory Medicine, Glenfield Hospital; Henrik Møller, King's College London, Thames Cancer Registry

Objectives

The incidence of small cell lung cancer (SCLC) is often quoted as 'around 20%' of all lung cancers but is reportedly decreasing over time. We analysed the trends in incidence of SCLC and compared these with the trends in lung cancer overall among males and females in South East England.

Methods

We identified 237,792 patients diagnosed with lung cancer (ICD-10 C33-C34) between 1970 and 2007. We used a Poisson regression age-cohort model to estimate the age-specific rates in the 1890 to 1960 birth cohorts and the 1970 to 2007 calendar periods. We computed age-standardised incidence rates using the European standard population. In addition, we analysed the trends of lung cancer subtypes according to morphology.

Results

In the most recent time period, SCLC accounted for 10% and 11% of cases of all lung cancer among males and females, respectively. Among the morphologically specified lung cancers, SCLC accounted for 15% and 17% among males and females, respectively. There was a decrease of SCLC incidence over time and by birth cohort in both sexes. The decrease in SCLC was more marked than that in all lung cancers.

Conclusions

The decrease in SCLC incidence rates may reflect decreases in the prevalence of cigarette smoking, and changes in the type of cigarettes smoked.

Poster 71: PREDICTING CANCER INCIDENCE AND MORTALITY AS AN IMPORTANT TOOL IN IMPROVING ASSESSMENT OF CANCER OUTCOME AND INFORMATION

Tadeusz Dyba, Finnish Cancer Registry

Objectives

High quality health and care services depend on good information about current and predicted future cancer burden. In this context providing reliable predictions of future cancer incidence and mortality is crucial since planning health care services and accompanying them expenses has to be as reliable as possible. Fundamentally, predictions about future cancer incidence are made in either administrative or scientific context. In the administrative context the predictions should be as accurate as possible as only then can the correct amount of resources be allocated for diagnosis, treatment and rehabilitation. In the scientific context the predictions which failed are as important as those which come true. The predictions which did not come true are the starting point for finding out the reasons of this discrepancy which, for example, can be due to risk factors or be attributable to the success of intervention programs.

Methods

Finnish Cancer Registry has developed the method to provide routinely future cancer burden. The laborious and time consuming process of performing predictions can be significantly shortened by applying the Stata macros written by the author allowing for automatization.

Results

The investigation based on simulations confirmed a good reliability of the proposed approach to prediction, also when compared with alternative ones. The results of the simulations for models chosen showed good theoretical properties of the prediction interval, as based on the models, in terms of efficiency and accuracy. The practical application of the method has been successful for the majority of cancer sites in Finland, supported by satisfactory results of ex-post predictions made with past data.

Conclusions

The method has proved to be useful in improving assessment of cancer outcome and information and its application is now a permanent part of the routine reports produced by the registry.

Poster 72: DOES THE INCIDENCE OF PRIMARY LIVER CANCER VARY BETWEEN ETHNIC GROUPS IN ENGLAND?

Julie Konfortion, Thames Cancer Registry, King's College London; Ruth H Jack, Thames Cancer Registry, King's College London; Victoria H Coupland, Thames Cancer Registry, King's College London; Hemant M Kocher, Barts Cancer Institute, Queen Mary University of London; David P Berry, University Hospital of Wales; William Allum, Royal Marsden Hospital; Karen M Linklater, Thames Cancer Registry, King's College London; Henrik Møller, Thames Cancer Registry, King's College London

Objectives

The aim of this study was to describe the variation in incidence of primary liver cancer between ethnic groups in England for patients diagnosed between 2001 and 2007.

Methods

Data on patients with primary liver cancer (ICD10 C22) diagnosed in England between 2001 and 2007 were extracted from the National Cancer Dataset Repository. Ethnicity information was obtained from the Hospital Episode Statistics dataset and the following seven ethnic groups were analysed: White, Indian, Pakistani, Bangladeshi, Black Caribbean, Black African and Chinese. Age-standardised incidence rate ratios (IRRs) were calculated for both males and females using the White ethnic groups as the baseline.

Results

Ethnicity data were available for 75% (13,139/17,458) of primary liver cancer patients. Compared with the White male baseline, Chinese males had the highest IRR at 3.9 [95% CI 2.6-6.0]. This was followed by the Black African (3.3[2.1-5.1]), Bangladeshi (3.1[1.9-5.2]) Pakistani (2.8[2.1-3.7]) and Indian males (1.4[1.2-1.7]) with statistically significant high IRRs. The Black Caribbean males had a similar incidence rate to the White males (1.2[1.0-1.5]). In comparison with White females, Pakistani females showed the highest IRR at 3.5 [2.3-5.3]. The Bangladeshi females came next (2.9[1.3-6.4]), followed by the Chinese (1.9[1.1-3.5]), Black African (1.8[1.1-3.2]) and the Indian groups (1.5[1.1-2.0]). As similarly observed in males, Black Caribbean females (1.3[1.0-1.8]) had an incidence rate close to that of White females.

Conclusions

This study has found large variation in incidence of primary liver cancer between ethnic groups, possibly due to high prevalence of established risk factors such as hepatitis B and C infection in some, but not all ethnic groups.

Poster 73: WCRF/AICR POLICY AND ACTION FOR CANCER PREVENTION: FOOD, NUTRITION AND PHYSICAL ACTIVITY

Prescilla Perera, World Cancer Research Fund International; Martin Wiseman, World Cancer Research Fund International; Lisa Cooney, World Cancer Research Fund International; Kate Allen, World Cancer Research Fund International

Objectives

Public health policies need to be based on robust evidence. The objective of the WCRF/AICR Policy Report is to summarise the evidence and make recommendations to help achieve the public health goals of the 2007 WCRF/AICR Report Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective.

Methods

Two systematic literature reviews were commissioned from independent research institutions. A Panel of international experts with observers from United Nations and other international organisations judged this evidence, and with further information from the Panel and reviewers, made recommendations for policies and actions.

Results

The report comprehensively evaluates and integrates the evidence on physical, environmental, economic, and social dimensions of food, nutrition, physical activity, and body fatness, and identifies international examples of good practice. It estimates that about a third of the most common cancers in higher-income countries such as in the UK are preventable through these factors. The Panel's recommendations for policies and actions are aimed at nine different actor groups across society who directly or indirectly influence people's food intake, physical activity, or body fatness at international, national and local levels. This includes governments, civil society organisations, industries related to food and drink, health and other professionals and people. The report also identifies considerations that need to be addressed, e.g., political feasibility and acceptability, benefits and harms, acceptability, costs and timeframes. If implemented, these recommendations will help change people's behaviour, reducing their risk of cancer and other chronic diseases.

Conclusions

Much cancer and other chronic diseases is preventable. Promoting public health is not just the responsibility of health departments, but is shared by all sectors of society. All actors need to work together in order for changes in society to happen.

Poster 74: COMPLETENESS OF CASE ASCERTAINMENT AND SURVIVAL TIME ERROR IN ENGLISH CANCER REGISTRIES: IMPACT ON ONE-YEAR SURVIVAL ESTIMATES

Henrik Moller, Thames Cancer Registry; Stephen Richards, King's College London; Neil Hanchett, King's College London; Sharma P Riaz, King's College London; Margreet Luchtenborg, King's College London; Lars Holmberg, King's College London; David Robinson, King's College London

Objectives

It has been suggested that cancer registries in England are too dependent on processing of information from death certificates, and consequently that cancer survival statistics reported for England are systematically biased and too low.

Methods

We have linked routine cancer registration records for colorectal, lung and breast cancer patients with information from the Hospital Episode Statistics (HES) database for the period 2001-2007. Based on record linkage with the HES database, records missing in the cancer register were identified, and dates of diagnosis were revised. The effects of those revisions on the estimated survival time and proportion of patients surviving for one year or more were studied. Cases that were absent in the cancer register and present in the HES data with a relevant diagnosis code and a relevant surgery code were used to estimate (a) the completeness of the cancer register. Differences in survival times calculated from the two data sources were used to estimate (b) the possible extent of error in the recorded survival time in the cancer register. Finally we combined (a) and (b) to estimate (c) the resulting differences in one-year cumulative survival estimates.

Results

Completeness of case ascertainment in English cancer registries is high, around 98-99%. Using HES data added 1.9%, 0.4% and 2.0% to the number of colorectal, lung and breast cancer registrations, respectively. Around 5-6% of rapidly fatal cancer registrations had survival time extended by more than a month, and almost 3% of rapidly fatal breast cancer records were extended by more than a year. The resulting impact on estimates of one-year survival was small, amounting to 1.0, 0.8 and 0.4 percentage points for colorectal, lung and breast cancer, respectively.

Conclusions

English cancer registration data cannot be dismissed as unfit for the purpose of cancer survival analysis. However, investigators should retain a critical attitude to data quality and sources of error in international cancer survival studies.

Poster 75: AN ANALYSIS OF THE CHANGE IN PATTERNS OF TREATMENT IN THE NORTHERN AND YORKSHIRE CANCER REGISTRY AND INFORMATION SERVICE (NYCRIS) AREA BETWEEN 1998 AND 2007 FOLLOWING THE PUBLICATION OF IMPROVING OUTCOMES IN GYNAECOLOGICAL CANCERS

Ruth Burns, Northern and Yorkshire Cancer Registry and Information Service; Ariadni Aravani, Northern and Yorkshire Cancer Registry and Information Service; Roman Tatarek-Gintowt, Northern and Yorkshire Cancer Registry and Information Service; John Wilkinson, Northern and Yorkshire Cancer Registry and Information Service

Objectives

The Improving Outcomes in Gynaecological Cancers (IOGC) guidance was published in 1999 'to help Chief Executives of Health Authorities and NHS Trusts review and identify ways to improve services for gynaecological cancers'. We set out to measure the extent to which treatment patterns within the NYCRIS region had changed to comply with its recommendations, to inform local cancer networks of progress within their areas.

Methods

Data were extracted from the NYCRIS database for all gynaecological tumours diagnosed in NYCRIS residents between 1998 and 2007, including details of types of treatment, location of surgery and stage at diagnosis. Linked Hospital Episode Statistics (HES) data were used to obtain the method of admission for late stage ovarian tumours. Comparisons were made by network for overall gynaecological tumours and for individual cancer sites. The aim was to investigate compliance with the recommended shift in surgery from cancer unit to cancer centre and the change in treatment combinations for cervical cancer. 1-year survival rates before and after implementation of the recommendations were calculated.

Results

In each network the percentage of gynaecological oncology surgical procedures performed in cancer centres had increased markedly during the ten years, although no network had reached the 80% target specified in the Cancer Commissioning Guidance published January 2009 and updated December 2009. The greatest increase was in ovarian cancer where the percentage had increased from 35% to 81%. A significantly increased survival rate was observed in ovarian cancer after the implementation of the guidelines in Yorkshire Cancer Network.

Conclusions

Changes have been observed in treatment patterns and survival of gynaecological cancers in NYCRIS since the introduction of IOGC. Analysis of Registry data can provide a useful tool to assist Networks in measuring the extent to which recommendations of IOGC have been implemented in their areas

Poster 76: EVALUATION OF THE BREAST CANCER SCREENING PROGRAMME (NHSBSP) WITHIN THE NORTHERN AND YORKSHIRE CANCER REGISTRY AND INFORMATION SERVICES (NYCRIS) AREA

Catherine Wood, NYCRIS; Ariadni Aravani, NYCRIS; Sarah Lawton, NYCRIS; John Wilkinson, NYCRIS

Objectives

Breast Cancer in the UK is the most common cancer in women. The NHSBSP was introduced in 1988 aiming to detect breast cancer at an earlier stage. Using NYCRIS data, this report looked at elements which relate to the impact of the NHSBSP in the NYCRIS region.

Methods

Information on women aged 50-69 and diagnosed with breast cancer between 1998 and 2008 was obtained from NYCRIS database. Descriptive statistics were used to illustrate the patterns in cancer detection by stage at diagnosis, deprivation and network. Incidence and survival rates were also calculated.

Results

Between 1998 and 2008, 28,720 women in the screening age group were diagnosed with a breast tumour (ICD10: C50 & D05). 46% of invasive tumours were screen detected and 27% were interval (diagnosed between screening dates) tumours (27% - other). 72% of in-situ tumours were screen detected whilst 10% were interval (18% - other). This pattern has been reflected in the three cancer networks within NYCRIS. Survival analysis showed that patients with screening detected tumours have a 12% higher probability of surviving 5 years than those diagnosed between screening dates. Moreover, those not attending regular screening have an 8.8% lower probability of surviving 5 years than those with interval cancers. Analyses by deprivation have shown that the most deprived patients present symptomatically (interval and other) more often than those in the most affluent areas (53% vs. 50% respectively). In 2008, 67% of stage 0 tumours were screen detected, whilst interval tumours were more commonly later staged.

Conclusions

Screen detected breast cancers in the NYCRIS region are detected at an early stage and tumours diagnosed between screening dates at a later stage. The need for regular screening has been highlighted in the survival analysis; with future work needed to attract the lapsed and non-attendees to the programme.

Poster 77: THE IMPACT OF PREDICTORS OF CO-MORBIDITY AND TREATMENT INTENSITY ON SURVIVAL FROM CHILDHOOD LEUKAEMIA IN ENGLAND AND WALES, 1980-2006

Dr Anjali Shah, Childhood Cancer Research Group; Nicole Diggens, Childhood Cancer Research Group; Charles Stiller, Childhood Cancer Research Group; Michael FG Murphy, Childhood Cancer Research Group

Objectives

To evaluate the impact of birth-weight and congenital malformations on five-year survival, and to ascertain whether these factors are predictors of co-morbidity in children who were diagnosed with leukaemia.

Methods

Records for children aged 0-14 years diagnosed with leukaemia while resident in England during 1980-2006 were identified in the National Registry of Childhood Tumours. Their registry records were linked to birth records for birth weight data, and Children's Cancer and Leukaemia Group records and Hospital Episode Statistics (HES) available from 1998 onwards for information on congenital malformations. Relative survival was estimated by birth weight (<2,500g, 2,500-4,000g, >4000g), presence of a congenital malformation, age at diagnosis (<1, 1-4, 5-9, 10-14 years), sex, type of leukaemia and clinical trial entry. Multivariable analysis will be used to model the impact of demographic factors and predictors of co-morbidity on survival.

Results

Children with a low or high birth weight (<2,500g and >4,000g) had slightly poorer five-year survival than other children (80% v 83% during 2000-06), but the difference was never significant. Children with a congenital malformation had lower survival of at least 10% compared with other children. Children under one year at diagnosis consistently had poorer survival of at least 15% compared with older children. Children with lymphoid leukaemia had higher survival than children with other types of leukaemia (87% vs 64% during 2000-2006). Children who were entered into clinical trials had higher survival of at least 10% compared with other children throughout the study.

Conclusions

Initial findings suggest that birth weight is not an independent prognostic factor for childhood leukaemia survival. Presence of a congenital malformation, age at diagnosis, type of leukaemia and non-entry into a clinical trial are all predictors of a poorer outcome in children with leukaemia. Final conclusions based on multivariable analyses will be presented.

Poster 78: PLACE OF DEATH AND HOSPITAL CARE FOR CHILDREN WHO DIED OF CANCER IN ENGLAND, 1999-2006

Dr Anjali Shah, Childhood Cancer Research Group; Nicole Diggens, Childhood Cancer Research Group; Charles Stiller, Childhood Cancer Research Group; Dr Dermot Murphy, The Royal Hospital for Sick Children, Glasgow; Dr Jane Passmore, Childhood Cancer Research Group; Dr Michael FG Murphy, Childhood Cancer Research Group

Objectives

To describe patterns of hospital care and to evaluate factors influencing place of death for children who died after a diagnosis of cancer in England during 1999-2006.

Methods

Registrations of children on the National Registry of Childhood Tumours (NRCT) who were diagnosed with cancer and died during 1999-2006 in England were linked to the Hospital Episode Statistics (HES) and to death certificates. Multivariable logistic modelling was used to assess factors that influence dying at home or in hospital.

Results

1,864 (96%) of children with cancer registrations were linked to HES records. The validation of hospital as a place of death and ethnicity between data sources was good, although anomalies within HES data exist. Similar proportions of children are dying at home (45%) and in hospital (47%), and the percentage dying in a hospice or care home increased from 2% to 10%. Of the children who died in hospital, 74% were admitted as emergencies or as a transfer from another hospital. Greater proportions of children diagnosed with a leukaemia or lymphoma, those dying within six months of diagnosis, Asian and Black children, those from a deprived background, and those not treated in a CCLG centre died in a hospital.

Conclusions

Patterns of hospital care varied considerably by type of cancer, death within six months of diagnosis, ethnicity and deprivation. Further research is required to elucidate explanations for these patterns and to evaluate methods to increase the proportion of children dying at home who wish to do so.

Poster 79: TRENDS IN SURVIVAL AND THE PROPORTION CURED OF ADULT ACUTE MYELOID LEUKAEMIA IN ENGLAND, 1971-2006: A POPULATION-BASED STUDY

Dr Anjali Shah, Childhood Cancer Research Group; Therese Andersson, Karolinska Institute; Dr Bernard Rachet, London School of Hygiene and Tropical Medicine; Prof Alan Burnett, Cardiff University School of Medicine; Dr Paul Lambert, University of Leicester

Objectives

To estimate five-year survival and the proportion of patients 'cured' of acute myeloid leukaemia (AML) and the survival of the 'uncured' by age at diagnosis, and to compare estimates for England with those observed in Sweden.

Methods

This population-based study included records of 47,250 adult patients within the National Cancer Registry who were diagnosed with AML in England during 1971-2006. Relative survival and cure mixture models were used to produce estimates and predictions of outcome.

Results

Five-year survival and the proportion 'cured' increased for those under the age of 70 years at diagnosis during 1971-2006, but the magnitude of the increase varied with age. Increasing age at diagnosis was associated with poorer outcome. The most dramatic increase in five-year survival occurred in those aged 15-24 years, from 7% to 50%, but for those over the age of 70 years it remained less than 5%. The proportion 'cured' is predicted to increase to 46% for those aged 15-24 years and 13% for those aged 60-69 years at diagnosis in 2006. The median survival of the 'uncured' increased from 0.41 years in 1975 to 0.93 years in 2000 in those aged 15-24 years, and from 0.19 years to 0.38 years in those aged 60-69 years at diagnosis.

Conclusions

Improvements in the long-term outcome of patients with AML have been age-dependant, with dramatic improvements seen in those diagnosed under the age of 25 years. Whilst these improvements are welcome, long-term outcome of adults with AML in England is still poorer than in Sweden, especially in those under the age of 40 years.

Poster 80: LENGTH OF STAY- A CONSISTENT PROCESS FOR MEASURING PROGRESS IN LOCAL PROVIDERS

Ian Hodge, Merseyside and Cheshire Cancer Network; Neil Swindlehurst, Lancashire and South Cumbria Cancer Network; Linda Devereux, Merseyside and Cheshire Cancer Network; Marian Hopwood, Lancashire and South Cumbria Cancer Network

Objectives

To support implementation of the enhanced recovery programme by developing a consistent approach to measurement and monitoring of progress across cancer networks. To quantify differences in length of stay (LOS) over time between providers and clinicians. To demonstrate potential savings, and stimulate enthusiasm for the initiative. To provide a baseline against which progress can be monitored. To focus the analysis on a subset of patients who are ideally suited to ERP principles.

Methods

Establish an agreed minimum dataset using learning drawn from the national ERP dataset for the main speciality groups of colorectal, urology and gynaecology. Obtain contracting data from existing data sources via the shared services units supporting primary care trusts for elective surgical procedures, including laparoscopic episodes for 2008, 2009 and 2010. Establish network and provider average length of stays (ALOS) for preoperative, postoperative and total length of stay for each elective procedure. Benchmark local performance against the top 10% of best performing providers in England. Present the variations in LOS between providers and between clinicians within local clinical network groups to encourage shared learning and adoption of best practice.

Results

The data set indicates the mean ALOS has reduced since 2008 for three main speciality sites. In 2010 there remains variation between providers and within clinical teams. For 2010 the excision of rectum procedure has the largest variation in the median LOS between providers.

Conclusions

A consistent process for measuring progress has been achieved with an analytical process consistent for each trust. Establishing this process identified the dataset can be affected by coding and in-trust approaches to information collection and management which is being followed up at trust level.

Poster 81: CANCER OF UNKNOWN PRIMARY (CUP): A CASE STUDY OF DATA INEQUALITY

John Symons, Cancer of Unknown Primary Foundation

Objectives

Cancer of Unknown Primary (CUP) is not just a hidden cancer in the body but a hidden cancer in the representation of the UK's cancer picture. The aim of the presentation is to use published and anecdotal evidence to: explore the possible causes and the implications of the omission of CUP from cancer "league tables"; whilst putting forward the case, and the steps needed, to liberate information to improve outcomes for CUP patients.

Methods

Meta-analysis of ONS, CRUK, NCIN incidence and mortality data compared with Cancer Australia, supplemented by data used in the APPG Report on Inequalities and the NICE CUP Guideline (2010).

Results

The NICE Guideline represented CUP as the 4th commonest cause of cancer mortality in England and Wales (2006 data). Following its publication, CRUK included CUP in their incidence data (2007). It showed CUP to be the 6th most common cancer for women and the 8th for men (4% overall). However CUP is not shown in CRUK tables of the 10 most common cancers. The Australian Government by comparison show CUP.

Conclusions

- Historically, CUP may have been dismissed because of the difficulties of achieving a simple definition or classification of a disease spectrum; but this argument is specious if it is accepted that CUP is captured by ICD codes 77-80. Qualification of the data may be necessary.
- When CUP is hidden in national statistics it is difficult to argue for research funding. This has a negative impact on patients who suffer also from "CUP nihilism".
- The NICE Guideline offers a new way of classifying the CUP continuum which offers a protocol for improving information that can benefit clinicians, researchers and patients.
- Various initiatives (introduction of Peer Review Measures, review of NICE's Referral Guidelines for suspected cancer, data emerging from Acute Oncology practice about CUP) puts pressure on Registries, NCIN and CRUK to include CUP within the top 10.

Poster 82: FIRST NON-CONTRA-LATERAL EVENTS AFTER 15-YEAR FOLLOW-UP OF SCREEN-DETECTED DCIS

Lawrence, G., West Midlands Cancer Intelligence Unit; Wallis, M., Cambridge Breast Unit; Clements, K., West Midlands Cancer Intelligence Unit; Kearins, O., West Midlands Cancer Intelligence Unit; Ball, G., Nottingham Trent University

Objectives

The incidence of ductal carcinoma in situ (DCIS) rose rapidly when breast screening started in 1988. Some authorities consider that this represents both over diagnosis and over treatment. We report long-term follow up of DCIS diagnosed in the first 10 years (April 1988 to March 1999) of the West Midlands NHS Breast Screening Programme.

Methods

840 cases of screen-detected DCIS were recorded in the West Midlands on the national breast screening computer system. Following exclusions, and thorough case note and pathology review, 700 cases were available for follow-up.

Results

After a median follow up of 183 months (range 133 to 259 months) 102 (14.6%) first local recurrences were identified; 48% were invasive. A further 8 women presented with metastases. Of those with known original DCIS grade, median time to the first local non contra-lateral event was 15 months for non-invasive recurrence and 60 months for invasive recurrence regardless of original DCIS grade. The median time was 76 months for invasive recurrence from initially high grade DCIS and 131 months for invasive recurrence arising from low/intermediate grade DCIS. Median time for metastasis as first event was 82 months (range 15 to 188 months). In multivariate analysis radiotherapy mitigates.

Conclusions

When evaluated over a long period, DCIS is a significant cause of morbidity, suggesting that short-term follow up will miss significant numbers of events, especially invasive local recurrences, and that longer term follow-up is required to capture accurately what happens to patients diagnosed with DCIS.

Poster 83: THE SLOANE PROJECT – FIVE-YEAR FOLLOW-UP RESULTS

Lawrence, G., West Midlands Cancer Intelligence Unit; Dodwell, D., St James's Institutue of Oncology; Clements, K., West Midlands Cancer Intelligence Unit; Kearins, O., West Midlands Cancer Intelligence Unit; Bishop, H., Sloane Project Steering Group

Objectives

Relatively little is known about the natural history, invasive potential and optimal treatment of ductal carcinoma in situ (DCIS). Several clinical trials have produced conflicting results.

Methods

All cases of DCIS submitted to the Sloane Project are followed up and details of ipsilateral local recurrences, contra-lateral disease, metastases and death are collected. In 2010 the Breast Screening QA Reference Centres assisted the Sloane Project team in collecting follow-up data from their participating screening services from the first two years of the project (2003/04 and 2004/05).

Results

Complete follow-up data were received for 1768 (70%) of 2523 cases (minimum of five years follow-up). 40 local recurrences (20 [50%] invasive, 17 [43%] non-invasive and 3 unknown type), 33 cases with contra-lateral disease, 2 cases with bilateral disease and 5 cases with distant metastases have been recorded as the first event following the initial primary tumour. 114 cases (4.5%) are known to have died; 11 from breast cancer. Details of the radiological and pathological features of and the treatment provided to the cases that did and did not recur within the 5-year follow up period will be presented.

Conclusions

There is wide variation in the management of the DCIS cases submitted to the Sloane Project. Sloane Project outcome data should eventually provide conclusive information on which treatments are optimal for tumours with differing radiological and pathological features. However, other studies into DCIS indicate that long-term follow-up (i.e. over 10 years) is required to ensure that the majority of recurrences and contra-lateral disease are identified.

Poster 84: THE USE OF DATA IN HISTOPATHOLOGY SERVICE IMPROVEMENT

Saimah Arif, Whipps Cross Hospital; Susie Peachey, NHS Improvement

Objectives

Historically, departmental performance had not been measured. Upon embarking on a major service improvement project in conjunction with NHS Improvement, it was realised that data was going to play a major role measuring the changes that were being made. There was also a requirement for continual measurement to ensure sustainability.

Methods

Electronic data extraction from the laboratory software was undertaken and provided timings for key steps in the specimen pathway. Analysis of the data allowed evaluation and monitoring of turnaround times. Use of statistical process control charts facilitated assessment of variation and root cause analysis of any special causes. The data was also used to populate a value stream map of the specimen pathway, enabling calculation of the 'value add time' and 'waste'.

Results

Demand data was collected across the pathway and capacity adjusted to maximise flow. This was particularly useful when tackling issues of specimen delivery and transport. Daily workloads and targets are displayed on a centrally located board within the laboratory which acts as an effective visual management tool. An electronic dashboard based on real-time data is in use by consultant staff and monitors individual and departmental performance. As the project progressed, the impact of any change that was introduced was measured by comparing pre- and post-change data. This included the implementation of several innovations and new technology. Any improvement could therefore be quantified.

Conclusions

Quantifying improvements and presentation of the data in an appropriate format

- provided feedback and encouraged the improvement team
- was used to gain support and agree actions
- was an influential tool to convince others of the need and benefit of change
- was a powerful vehicle of communication both within the department and with the trust board, service users and patients

Poster 85: WORSENING PROGNOSIS OF UPPER-TRACT URINARY CANCERS

Luke Hounsome, South West Public Health Observatory; Julia Verne, South West Public Health Observatory, Bristol

Objectives

Cancers of the urinary upper tract are rare, with just over 800 cases diagnosed each year. The two sites studied are the renal pelvis (C65) and ureter (C66). These sites are predominantly Transitional Cell Carcinoma (TCC), in contrast to Renal Cell Carcinoma (RCC). Incidence of these cancers is increasing and there are indications that prognosis is getting worse in these sites.

Methods

Data was extracted from the National Cancer Data Repository and relative survival calculated for one year and five years of follow-up. Stage at diagnosis was analysed.

Results

Since 1990-92 the number of deaths from upper-tract urinary cancer has increased by more than 50%, with a corresponding increase in age-standardised mortality rate of 13%. One-year survival decreased by nearly 5% points to 73% from 1990-92 to 2003-05. Five-year survival has decreased, with the 2002-04 cohort survival of 51% being 10% points lower than 1990-92. This decrease in five-year survival from 1990-92 is equivalent to 130 extra deaths over five years, and given the decrease in one-year survival is likely to become worse. Analysis of the stage at diagnosis shows that although the majority of upper-tract tumours are diagnosed at an advanced stage, the ratio between stages has remained stable in the last 10 years.

Conclusions

The incidence of upper-tract urinary cancers is increasing and survival is worsening. It appears unlikely that this is due to a shift in stage at presentation. Possible explanations include later detection of cancers within specific stage groups, a change in the aetiology or biological behaviour of these cancers, or worsening treatment. It is notable that the 2002 IOG guidance on urological cancers did not offer specific advice on management of cancers of the renal pelvis and the ureter, in contrast to other rare urological cancers i.e. penile and testicular cancer.

Poster 86: RARE SKIN CANCER IN ENGLAND

Veronique Poirier, South West Public Health Observatory; Matthew Iles, South West Public Health Observatory; Julia Newton-Bishop, University of Leeds; David de Berker, University Hospitals Bristol NHS Foundation Trust; Julia Verne, South west Public Health Observatory

Objectives

Little is known about rare skin cancers. They are a heterogeneous group of pathologies and some can be associated with significant mortality. They can be broadly divided into dermal and epidermal malignancies. This is the first national assessment of rare skin cancers England using the National Cancer Data Repository (NCDR). It provides useful information on incidence, coding and geographic distribution.

Methods

Data were extracted from the NCDR for the years 1999 to 2008. The cases were selected for ICD code C44 (skin) and specific morphology codes. T cell cutaneous lymphoma was excluded. Age standardised rates (ASR) were calculated and factors such as gender, ethnicity and inequality were considered. Focus was specifically given to Merkel cell carcinoma, an aggressive rare skin cancer.

Results

A total of 5,169 cases were identified of which 29% were Merkel cell carcinoma, the most frequent rare skin cancer. Overall the ASR for rare skin cancer in 2008 in England was 0.9 per 100,000 population compared to 16.1 for Malignant Melanoma. The ASR for rare skin cancer increased by 54% over the last ten years (0.6 in 1999 v 0.9 in 2008). ASRs across the English cancer registries over the last 3 years show high variability around the England rate. Males presented with higher incidence than females for both dermal and epidermal types. Dermal types, which are mainly sarcoma, were more frequent in under 50 year olds than epidermal types (41% v 9 %) for a 3 year period (2006-08). 95% (3105/3262) of cases were from White background. There is no association with deprivation found.

Conclusions

The clinical pathways of rare skin cancers are not always clear across England, and some uncertainties concerning their clinical management remain. It is important to establish if the ASR variation between registries is due to coding or a true disease difference.

Poster 87: INCREASING INCIDENCE OF THYROID CANCER IN GREAT BRITAIN, 1976 – 2005: AGE-PERIOD-COHORT ANALYSIS

Miss Karen Blakey, Institute of Health & Society, Newcastle University; Dr Richard JQ McNally, Institute of Health and Society, Newcastle University, Newcastle upon Tyne, England, United Kingdom; Dr Peter W James, Institute of Health and Society, Newcastle University, Newcastle upon Tyne, England, United Kingdom; Dr Basilio Gómez Pozo, Institute of Health and Society, Newcastle University, Newcastle upon Tyne, England, United Kingdom; Mrs Nermine Basta, Institute of Health and Society, Newcastle University, Newcastle upon Tyne, England, United Kingdom; Dr Juliet Hale, Northern Institute of Cancer Research, Newcastle University, Newcastle upon Tyne, United Kingdom

Objectives

To examine temporal trends in the incidence of primary thyroid cancers diagnosed in 0-49 year olds in parts of Great Britain (GB) during the period 1976-2005. We specifically aimed to analyse age, period and cohort effects.

Methods

Case data on thyroid cancer were obtained from four regional cancer registries in GB (Northern and Yorkshire, North West, Wales and Scotland). Age-standardised incidence rates (ASRs) and 95% confidence intervals (CIs) were calculated. Negative binomial regression was used to examine the effects of age, sex, drift (linear trend), non-linear period and non-linear cohort.

Results

The study analysed 4327cases of thyroid cancer aged 0-49 years at diagnosis. For males, the overall ASR was 3.9 per million persons per year (95% CI: 3.6-4.1). For females, the overall ASR was 12.5 per million persons per year (95% CI: 12.0-12.9). The best fitting negative binomial regression model included age ($P<0.001$), sex ($P<0.001$) and drift ($P<0.001$). Non-linear period ($P=0.42$) and non-linear cohort ($P=0.71$) were not statistically significant. For males aged 0-14 years, the ASR increased from 0.2 per million persons per year in 1976-1986 to 0.6 per million persons per year in 1997-2005. For males aged 15-29 and 30-49 the ASRs increased from 1.9 to 3.2 and from 7.3 to 12.6 per million persons per year, respectively. For females aged 0-14 years, the ASR increased from 0.3 to 0.5 per million persons per year. For females aged 15-29 and 30-49 the ASRs increased from 7.0 to 12.3 and from 21.2 to 40.0 per million persons per year, respectively.

Conclusions

There has been a linear increase in the incidence of thyroid cancer, which has led to a doubling of the number of cases diagnosed over a twenty year time span. The reasons for this increase are not well understood, but it is consistent with findings from other countries.

Poster 88: GEOGRAPHICAL ANALYSES OF THYROID CANCER IN GREAT BRITAIN, 1976 – 2005

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Objectives

Previous studies have suggested that recent increases in the incidence of thyroid cancer may be due to exposure to radiation from the Chernobyl disaster. We studied geographical variation in the incidence of primary thyroid cancers diagnosed in 0-49 year olds in parts of Great Britain (GB) during 1976-2005. We specifically aimed to compare incidence between the pre- and post-Chernobyl periods (1976-1986 and 1987-2005, respectively) and analyse putative associations with area-based measures of deprivation and population density.

Methods

Case data on thyroid cancer were obtained from four regional cancer registries in GB (Northern and Yorkshire, North West, Wales and Scotland). Relative risks (RRs) and 95% confidence intervals (CIs) were calculated for each geographical area. Negative binomial regression was used to examine the effects of area-based measures of deprivation and population density.

Results

4327 cases of thyroid cancer were analysed. The most marked statistically significant increases were seen in the areas of North Yorkshire (RR=2.55; 95% CI 1.49-4.36), Hartlepool (RR=5.53; 95% CI 1.28-23.98), North East Lincolnshire (RR=2.55; 95% CI 1.05-6.19), North Lincolnshire (RR=3.46 95% CI 1.02-11.77), York (RR=4.28; 95% CI 1.29-14.15), Cumbria (RR=2.89; 95% CI 1.47-5.67), Caerphilly (RR=2.67; 95% CI 1.00-7.14), Rhondda (RR=14.41; 95% CI 1.96-106.07), the Scottish Borders (RR=3.64; 95% CI 1.42-9.33), North Ayrshire (RR=2.76; 95% CI 1.06-7.21) and North Lanarkshire (RR=2.82; 95% CI 1.51-5.28). There were statistically significant associations with population density (RR for an increase of one person per hectare = 1.016, $P<0.001$) and deprivation (RR for an increase of one unit in the deprivation score = 1.071, $P<0.001$).

Conclusions

Higher incidence of thyroid cancer was observed in a number of geographical regions, including some which experienced high levels of fallout from the Chernobyl explosion. Higher rates were also associated with urban living and greater deprivation, indicating that other environmental or lifestyle factors may play a role in aetiology.

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